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DETERMINANT FACTORS OF WOMENS TOWARDS MODERN HEALTH CARE SEEKING BEHAVIOR FOR CHILDHOOD DIARRHEAL DISEASE IN HETOSA DISTRICT, ARSI ZONE

BY

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DETERMINANT FACTORS OF WOMENS TOWARDS MODERN HEALTH CARE SEEKING BEHAVIOR FOR CHILDHOOD DIARRHEAL DISEASE IN HETOSA DISTRICT, ARSI ZONE

A comparative cross sectional study

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List of Acronyms

AAU- Addis Ababa University

AOR-Adjusted Odds Ratio

COR-Crude Odds Ratio

EDHS- Ethiopian Demographic and Health Survey

OR- Odds Ratio

ORS- Oral Rehydration Salt

ORT- Oral Rehydration Therapy

RHF-Recommended Home Fluid

SPSS-Statical Package for Social Science

WHO- World Health Organization

Abstract

Background: Diarrheal disease remains one of the principal causes of morbidity and mortality in children of developing countries. One major reason for the poor outcomes of diarrheal episodes is the mother's treatment of diarrheal disease at her home and the kind of modern treatment she seeks.

Objectives: To assess mothers' modern health care seeking behavior and its determinants for childhood diarrheal illnesses in Hetosa District,Arsi Zone, Oromia region.

Methods: a comparative cross sectional study was conducted from December 2010-January 2011 in Hetosa Woreda, Arsi zone, Oromia region. The study participants were 434 mothers/caretakers who had at least one under five years old child with diarrhea in the previous four weeks and selected from eight kebeles and one town. Data were collected using structured questionnaire and entered through Epi enfo version 3.5.1 and analyzed by SPSS version 16. A distractive statistics, bivarate and multivariate analysis was done using cross tabulation and binary logistic regressions.

Results: the study revealed that residence, excretal disposal method, income, distance of health care facilities and educational status of the mothers or care takers were significantly associated with mother's modern treatment seeking behavior. Mothers who live in urban were four and half times sought modern treatment than rural dwellers, [OR(95%CI)=4.49(2.07, 9.7)].Mothers of those grade 9-12 were nine times more likely to seek modern treatment than illiterate one[OR(95%CI)=8.88(1.15, 68.6)]. Those households used latrine and income greater than 500 per month were 4.6 and 3.3 times more likely to seek modern treatment than who use open field and earn less than 500 Ethiopian birr respectively,[OR(95%CI)=4.62(1.84,11.6)]and [OR(95%CI)=3.31(1.45, 7.54)]. Concerning the composition of fluid given, only 38.8% of the mothers used oral rehydration therapy (ORT) (ORS and RHF) while the rest of them gave soup (36.2%) and others (25.2%) such as plain water, tea, raw milk and traditional remedies which are generally not as such helpful for the diarrheal child.

Conclusion: Majority of study mothers perceived that contaminated food is the major cause of childhood diarrhea. But there were mothers perception on childhood diarrhea those not treated by modern treatment. Regarding Mothers seeking behavior of modern treatment mothers who live in urban was more likely seek modern treatment than rural dwellers.

1. Introduction

1.1. Background

Diarrheal disease remains one of the principal causes of morbidity and mortality in children. Globally, children aged less than five years experience, on average, 3.2 episodes of diarrhea every year and consequently 1.87 million children will die from dehydration associated with diarrheal disease, Particularly in the countries of Asia, Africa and Latin America are dying millions of children under age of five. The child mortality rate in Ethiopia in 2007 was 199 per 1,000 births, and approximately one of every five deaths every year in Ethiopia is due to diarrheal disease (1, 2).

According to Ethiopian demographic health survey of 2005, the two weeks prevalence of diarrheal disease among under- five years of age is 18%. In short, diarrheal disease is the major health problems in Ethiopia (3).

Most cases of diarrhea are caused by some type of infection. For example, surveillance studies in rural Bangladesh have cited infection as the cause of 86 percent of the diarrheal cases in that population. This is the case in much of the developing world.(4). Also it is Common for children in developing countries to have between 3 and 11 diarrheal episodes per Year child. The infection of intestine can cause intestinal losses of fluid and electrolyte which Are relatively large and may progress rapidly to cause dehydration. And having multiple and Persistent episodes of diarrhea can cause nutritional deficiencies. Through loss of water and Electrolyte from the body and nutritional consequences diarrhea can cause death in children (5).

Furthermore, managing acute diarrhea appropriately is critical in preventing dehydration and deaths of children. The use of ORT, ongoing fluid replacement, and age-appropriate nutritional support represent the foundation for the management of acute diarrheal illnesses among children.

Mothers are encouraged to continue feeding children with diarrhea normally and to increase the amount of fluids. These practices help to reduce dehydration and minimize the adverse Consequences of diarrhea on the child's nutritional status.

Even though care seeking intervention have the potential to substantially reduce child mortality, in developing countries large number of children die without ever reaching a health facility and due to delay in seeking care. Appropriate care seeking is of particular importance in areas where access to health services is limited. In addition, effective management of childhood illness involves a partnership between families and health workers. Families need to be able to respond appropriately when their children are sick, seek a timely assistance when children need additional care and give the recommended treatments (24).

1.2 Rationale of the study

Dehydration caused by diarrhea is a major cause of morbidity and mortality among young children. Increased fluid intake with continued feeding is one of the indicators of appropriate management to decrease childhood death due to diarrheal disease since 1983. But diarrheal disease remains a leading cause of children death in developing countries. This is due to the challenge faced in Convincing parents on promoting increased fluid intake and continued feeding during episodes. Similarly an individual's decision about household management of illness and about when and where to seek care are influenced by his/her perceptions of types and severity of signs and symptoms and other determinant factors like income of the family, education of the mother, distance of health facilities and place of residence.

Assessing, the determinant factors, perceptions, beliefs and practice in childhood diarrheal disease management of the community and seeking modern treatment, therefore provides a clue for further intervention such as preparing educational messages based on existing beliefs. This study was conducted to assess the determinant factors that affect mothers seeking behaviors of modern health service and the perception in childhood diarrheal disease management of the community in the district.

The results from this study will be used to design effective intervention strategies to address improper childhood diarrheal disease home management and health seeking behavior.

2. Literature review

2.1. Magnitude of diarrheal disease and severity

Diarrheal disease is a major cause of morbidity and mortality among children accounting for around three million deaths in developing countries. About 80% of these deaths occurred in the first two years of life. Across the globe, there are an estimated 1.8 billion episodes of childhood diarrhea annually, mostly in developing countries. In urban Ethiopia, the median incidence for the under two years of age is 6.5 episodes per child per year. The proportion of mortality associated with diarrhea in Ethiopia is about 22.6% in the different regions with a median of 45% (1).

The most common cause of severe diarrhea in children throughout the world is intestinal infection. And it causes intestinal losses of fluid and electrolytes which are relatively large and may progress rapidly to cause dehydration (7).

Most episodes of childhood diarrhea, last 1-7 days, and are characterized by frequent loose or watery stool. Deaths associated with this type of diarrheal results from dehydration (5). It is common that in developing world to have between 3 and 11 episodes of diarrhea per year per child, and most diarrheal episodes occur during the first two years of life. Incidence is highest among age group 6-11 months, when weaning often introduced. This pattern reflects the combined effects of a declining level of maternal acquired antibodies, the lack of active immunity in the infant; the introduction of food that may be contaminated with feces when infant start to crawl (8).

According to EDHS of 2005, the two weeks prevalence of diarrheal disease among under five years of age is 18% while 6 percent had diarrhea with blood and it is more common among rural children (19 percent) than urban children (12 percent) (3).

2.2. Perception of women towards cause, type and severity of child hood diarrheal disease and management.

Most health professionals believe that unsatisfactory treatment of diarrhea and the consequent death of causes of children are due to lack of adequate knowledge of causes and consequence of diarrheal disease and to a negative attitude to modern medicine. Study conducted indifferent countries and communities shows that many things are believed to cause diarrhea, such as, worms, eating earth, un boiled porridge, various fruits such as passion fruits and ripe banana, hard food, climate and even teething (9).

Research done in Pakistan on causes of childhood diarrhea, as perceived by the mothers, that a distended abdomen was the visual indicator that a child had had more food than the digestive system could handle. Not only solid foods, but also liquids in large amounts would provoke diarrhea. Too much of certain kinds of foods or combinations of food were perceived as inappropriate and associated with having a bad influence on the stomach. Very sour and very sweet foods were examples. Spicy food was related to diarrhea, despite this being part of the normal diet of small children. Buffalo and cow milk were considered as difficult to digest and easily causing diarrhea. Drinking water and at the same time eating certain foods such as *chapatti* (flat wheat breads) was considered inappropriate. The combination of water and melon was seen as the cause of cholera. Certain symptoms or physical states were perceived as causes of diarrhea, such as teething, throat pain, dehydration and general weakness (10).

Diarrhea was expected with the arrival of every tooth. This was because when teeth appeared, the head would become heavy with an excess of heat. Mothers believed this to be a necessary evil as the child would otherwise suffer from eye or headaches, which were considered more harmful for the child than diarrhea (10).

Other research done in Indian mother's beliefs and practices regarding prevention and management of diarrheal disease, most of the mothers described multiple causes for occurrence of diarrhea. Consumption of uncovered food, eating 'dirty' or stale food, eating mud, and 'dirty' feeding bottle were believed to be the cause by 23.0 %, excessive 'heat' by 75% and 'cold' by 14.5%, specific food items by 52%, over eating by 22.9%, teething by 14.5%, top milk by 4.2%, side effect of medication by 6.2%, and constipation (hard stools) by 4.1% (11).

In different countries traditional healers specialized in treating specific folk categories of diarrheal illness. Diarrhea and dehydration are popularly thought of as symptoms of folk illness and may be treated as such. For example, in Brazil, diarrhea, perceived to be due to evil eye, may be treated ritually; diarrhea due to sunken fontanel may be treated by physical maneuver; and diarrhea is thought to be due to spirit, intrusion by negotiation with the sprit. In Cameroon, the traditional treatment is also based on the perceived causes. There are many perceived causes of diarrhea, with certain themes that are common across Cultures (12).

The concept that teething causes diarrhea is among the widest spread. In many parts of the world, diarrhea is attributed to supernatural influences such as evil eye or spirit Possession. The idea that an imbalance of “hot" and "cold" causes illness is common in Latin America, Asia and Africa. Other perceived causes of diarrhea include the environment (such as hot and dry weather or" dirty" surroundings), physical actions of the child (such as falling Down or sitting in one place too long), behavior or action of the parents, coexisting diseases, and eating contaminated food or inappropriate food. In many culture the perceived cause of Diarrhea determines how the episode is managed (12).

A group of mothers in the central highland region of Mexico were asked how they decided about the severity of diarrhea and whether their child was getting better or worse. For them the most important signs were changes in the child's behavior which interfered with household activities, such as crying or restlessness. They also took notice of signs associated with the eyes, and changes in the frequency and appearance of the stools (12).

In other study on the knowledge of causative factor, 110 (33.3%) mothers said that diarrhea is always associated with vomiting, which is probably because of predisposing factors like altered food and water habits 165 (50.0%). Only 3.6% of the mothers knew that the microorganisms were the cause of diarrhea, where rest of the mothers said they do not know. Regarding the signs and symptoms of diarrhea nearly 62% of mothers knew that loose motions and pain abdomen were symptoms of diarrhea. When knowledge on signs of severe dehydration i.e. dry buccal mucosa, loss of skin turgor and marked sunken eyeballs was probed, only 12.1%, 1.2% and 5.7% of mothers had experienced these signs respectively (14).

2.3 Mothers treatment practice of diarrheal disease

One major reason for the poor outcomes of diarrheal episodes is the mother's treatment of diarrheal disease at her home and the kind of professional treatment she seeks. Research done in India show that, out of 48 respondents, 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. 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 (11).

EDHS 2005 assessed mothers feeding practice of their child during diarrheal illness. Nineteen percent of children who had diarrhea were given the same amount of liquid as usual, 9 percent were given more, 32 percent were given somewhat less than the usual amount, and 26 percent were given much less than the usual amount. Fourteen percent of children who had diarrhea were given no liquids. Regarding the amount of food given to children who had diarrhea, 14 percent were given the same as usual, only 1 percent were given more, 30 percent were given somewhat less than the usual amount of food, 26 percent were given much less than the usual amount of food, and 18 percent did not receive food during their illness, presumably because these children had not yet started eating solid food. Older children aged 36 months and above, children who did not have bloody diarrhea, children of the most educated mothers, children in the highest wealth quintile and children residing in Tigray were more likely to receive more or the same amount of liquid during episodes of diarrhea than other children. A similar pattern is seen regarding the amount of food offered during diarrhea (3).

Research done on Risk Factors and Case Management of Acute Diarrhea in North Gondar Zone 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) (1).

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 (15).

2.4. Factors affecting modern health care seeking behavior of mothers

The practice of appropriate health seeking has a great potential to reduce the occurrence of severe and life-threatening child illnesses. However, varieties of factors have been identified as the leading causes of poor utilization of primary health care services. Poor socio-economic status, lack of physical accessibility, attitude to modern treatment, low literacy level of the mothers, large family size, number of symptoms, previous experience of child death, and perceived severity of illness were the predictors of care seeking behavior (23, 24, 25).

In the 2005 EDHS, mothers of children who had diarrhea were asked about what was done to treat the illness. Twenty-two percent of children with diarrhea were taken to a health provider. Nearly one in two children (45 percent) of mothers with some secondary or higher education and more than one in three children (37 percent) of mothers in the highest wealth quintile were taken to a health provider. Notable differences also exist by place of residence. The proportion of children in urban areas taken to a health facility is 35 percent whereas only 22 percent of children in rural areas were taken to a health provider (3).

The choice of modern or traditional healer depended on the way in which the family perceived and described a diarrheal illness. Children with blood in the stools or who passed many stools were more likely to be taken to a modern health facility. Those with fever were more likely to be taken to a traditional healer. Cultural beliefs and attitudes also affect how a family perceives a child's illness, the health care and treatment options available to them, and what they decide about where and when to seek help. Many societies have their own classification systems for illnesses. Diarrhea, for example, may not always be described as a single disease. Different types of diarrhea can have local names and there may be local beliefs about symptoms, causes and treatments of the illness. Families may seek treatment for some types of childhood diarrhea and not for others, depending on how serious they think the illness is (12).

A study in western Nepal found that mothers more likely to seek appropriate care for their children when the child had more than one symptom, mothers had secondary level or higher education, and higher family income. similar to this a cross-sectional study conducted in a rural part of western Kenya, identified that, mothers' health seeking behavior was influenced by proximity to the health facility, lack of income, convenience and lack of adequate services at the health facility(13,23)

Appropriate care seeking is of particular importance in areas where access to health services is limited. In addition, effective management of childhood illness involves a partnership between families and health workers. Families need to be able to respond appropriately when their children are sick, seek a timely assistance when children need additional care and give the recommended treatments (24).

2.5. Factors associated with proper management of diarrheal disease.

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 (25).

Feeding behavior of mothers was influenced by the symptom of vomiting during diarrhea episodes. One research found that children who vomited during the illness were associated with mothers giving less fluid, which concurs with the results from Zambia that found 65% of mothers completely stopped fluids if children vomited during a diarrhea episode and mothers may be consciously withholding fluid as suggested from a study in Ethiopia where 73% of mothers thought that increased fluid intake worsens diarrhea (10).

The other most important thing is knowledge of mothers about ORS/ORT .To ascertains how widespread knowledge of ORS is in Ethiopia; respondents were asked whether they know about ORS packets. Slightly less than half of women (46 percent) who gave birth in the five years preceding the survey know about ORS packets. There are significant differences in knowledge of ORS packets between women residing in urban and rural areas. Knowledge is twice as high among urban women (85 percent) than among rural women (43 percent). There are marked differences in knowledge of ORS packets by mother's level of education; 89 percent of mothers with some secondary or higher education know about ORS packets compared with 41 percent of mothers with no education. Similarly, knowledge of ORS packets is widespread among mothers in the highest wealth quintile (73 percent), compared with mothers in the lowest wealth index (41 percent). There has been a steep decline in the proportion of mothers who have heard about ORS, from 66 percent in 2000 to 46 percent in 2005 (3).

3. Objectives of the study

3.1. General objective

- To assess mothers' modern health care seeking behavior and its determinants for childhood diarrheal illnesses.

3.2 Specific objectives

- To assess and compare mothers/caretakers practice on child hood diarrheal disease home management by place residence.
- To determine mothers/caretakers perception on type, causes and severity of childhood diarrheal disease.
- To assess determinant factors for mothers seeking modern treatment among urban and rural.

4. Methods and Materials

4.1. Study Design

A community based comparative cross-sectional study was conducted to examine concurrent determinants of mother's modern health care seeking behavior and to determine mothers/caretakers perception on type, causes and severity of childhood diarrheal disease

4.2. Study area and period

The study was conducted from December 2010- January 2011 in Hetosa District, Arsi Zone, Oromia Regional State, Ethiopia. Hetosa is one of the 180 Woredas' in Oromia Regional state of Ethiopia. It is located in Arsi zone, the District has two towns and twenty three kebeles. Iteya town is the capital of Hetosa District; located 150 kilometers (k.ms) south east of Addis Ababa. Based on the projection of the 2007 national population and housing census; the total population of the District in 2010 will be 155,035 of which 14,897 and 140,138 are urban and rural dwellers respectively and estimated household in the district are 31,000.Top five disease in the district are pneumonia, acute upper respiratory infection, typhoid fever, all diarrheal disease and skin disease

4.3 .Source population

The sources of the population are all mothers/caretakers living in Hetosa District.

4.4. Study population

The study population is all mothers/caretakers living in Hetosa District and who have at least one under-five year's child with diarrhea in the previous four weeks during the study period.

Inclusion criteria;

- Mothers/caretakers living in Hetosa district during study period.
- Mothers/caretakers who have at least one under-five child with diarrhea in the previous four weeks during the study period.

Exclusion criteria;

- Mothers/caretakers who are unable to participate due to illness and other causes.
- Mothers/caretakers who didn't volunteer to participate in the study.

4.5. Sample size determination

The sample size was determined by estimating two population proportions of mothers' who seek modern treatment of diarrheal disease in urban and rural.

$$n_1 = \frac{\left[Z_{\frac{\alpha}{2}} \sqrt{\left(1+\frac{1}{r}\right) P(1-P)} + Z_{\beta} \sqrt{P_1(1-P_1) + \frac{P_2(1-P_2)}{r}} \right]^2}{(P_1 - P_2)^2}$$

The following assumption are taken to obtain the maximum sample size

P_1=percentage of Urban mothers who seek modern treatment is 35% (EDHS2005)

P_2= percentage of Rural mothers who seek modern treatment is 22% (EDHS2005)

Power to detect a significant difference between P1 and P2, if it exists (1 - β) = 80%

$Z_{\alpha/2}$ =1.96 and Z_{β} =0.84

Urban to rural ratio = 1: 2

Sample size for urban = n1

Sample size for rural = n2 = 2(n1)

Sample size =414 and 5% non response rate= **434**(n_1=**144** and n_2=**290**)

4.6. Sampling procedure

A two-stage sampling methods was used to select the study participants. Eight rural kebeles and one town were selected from twenty three rural kebeles and two towns, using lottery method. The sample size was distributed between town and rural kebeles by ratio of 1:2. The first sample was identified randomly and subsequent households were identified systematically until total sample needed is achieved. In the case of no under five children with diarrhea in the previous four weeks the next house was included. Within each selected household only one child was selected using lottery method whenever there is more than one under five children.

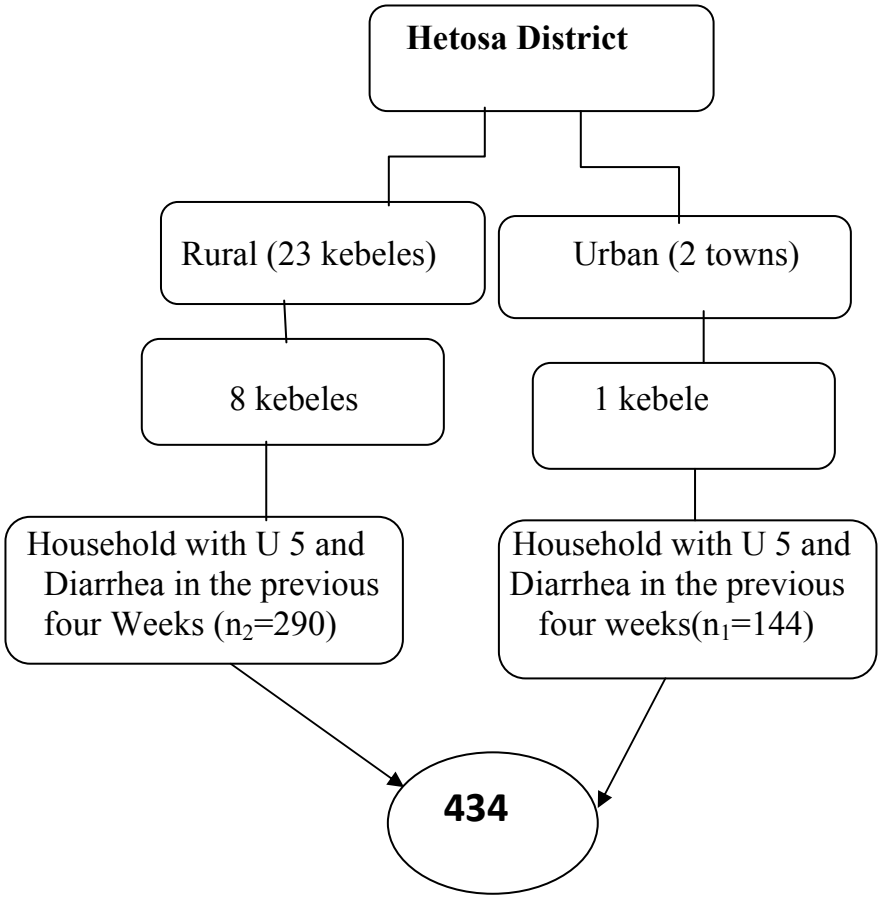


Figure 1: Schematic presentation of the sampling procedure

4.7. Data collection tools

The data collection was carried out using interviewer administered pre-tested, structured and standardized questionnaires. The questionnaire was prepared in English and translated to Afan Oromo and later on translated back to English.

Health Extension Workers and 10^{th} grade completed were collected the data by moving house to house. Supervisors were followed the data collectors and necessary correction were gave at spot. Based on the stated sampling technique, mothers living in the selected houses were interviewed. Prior to the interview oral consent was obtained from the study subject.

4.8. Data quality control

The questionnaire was pre- tested in similar settings which are not part of the study. The necessary adjustments or standardization of the questionnaire for that setting were made after the pre-test.

The three days of training was carried out for data collectors and supervisors on how to complete the questionnaire. The necessary practices were made for more understanding of how to collect data using this questionnaire.

4.9. Data processing and analysis

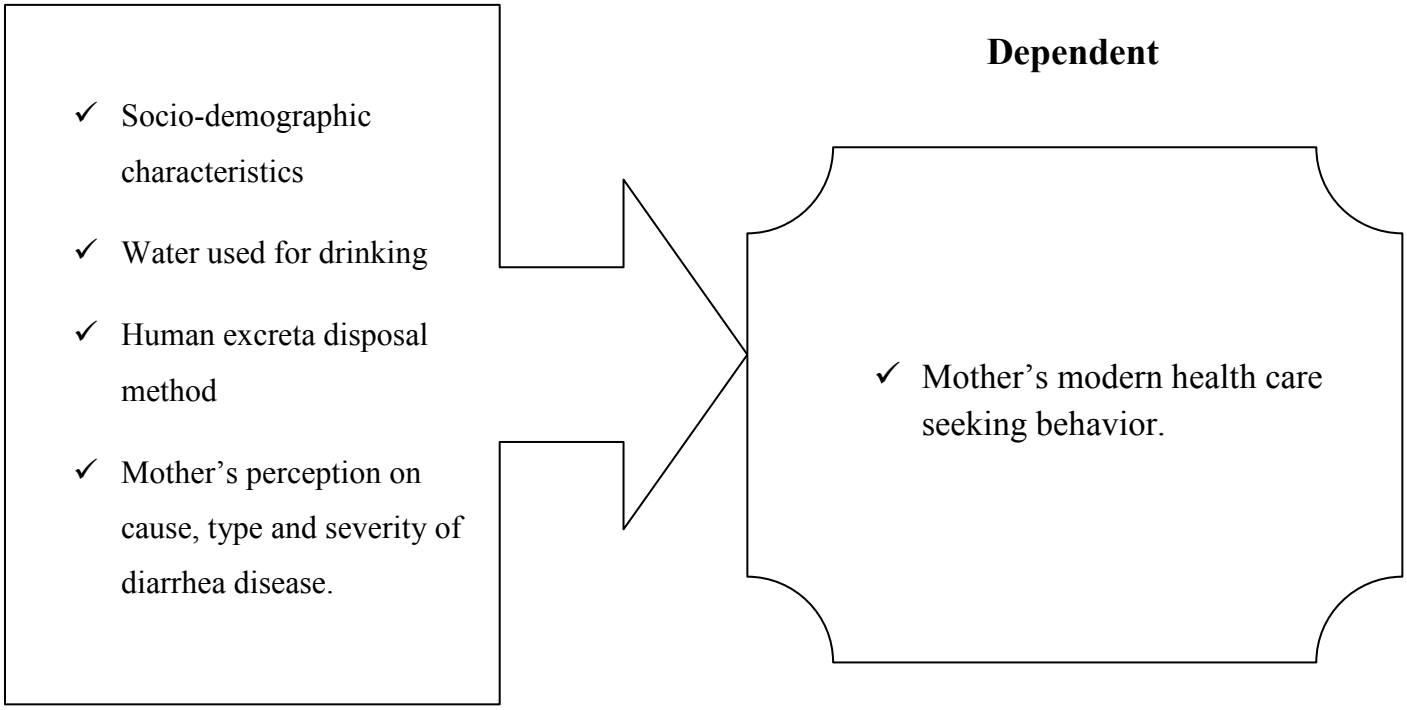
All returned questioners have been checked for completeness and consistency of responses manually. After cleaning data was entered, in to Epi info version 3.5.1 and analyzed using SPSS versions 16. Both descriptive and analytical statistical test procedure were utilized; bivariate and multivariate analysis were used to determine the presences of statistically significant associations between the dependent variable and the independent variables

4.10. Ethical Considerations

After getting ethical clearance and approval from research and ethics committee of the school of public health, AAU, formal letter of support was submitted to district administration and health departments. Data was collected with the consent of study participants after they were informed about the objective of the study, how long it takes the interview and the fact that they have the right to decide not to participate or discontinue the interview, if they wanted to. Questionnaires were anonymous and participants were reassured of the confidentiality of the information they provide to this study. A respondent was not been identified and advice about proper care management was given for those mothers/caretakers who have child with diarrhea during data collection. The explanations and interviews were conducted by respondent's native language, Afan Oromo.

4.11. Variables

Independent



4.12 Operational definition

- **Diarrhea** – it defined as three or more loose or watery stools with or without blood or mucous in day
- **Oral rehydration salt** (ORS) - refers to the UNICEF package for treatment of diarrhea.
- **RHF (homemade cereal based oral rehydration therapy)** - cereal flour with water and salt made at home for the treatment of diarrhea.
- **Modern treatment** – the treatment schedules given in health institutions, and includes use of ORS packages or homemade cereals based ORT.
- **Traditional treatment**- treatment given by traditional healers, wogeshas, herbalists and magicians (holy water, pray).

5. Result

A total of 434(100%) study subjects have participated in the study. Among these, 21(4.8%) households' data were omitted from the analysis due to incomplete information. Hence, analysis was made based on 413(95.2%) households with complete information.

5.1. Socio demographic characteristics of respondents

Thirty two percent of the respondents were urban by residents with urban to rural ratio of 1:2. Sixty four percent of women's age was between 20-29 years which 80(60.5%) and 184(65.5%) in urban and rural respectively.

The assessment of educational status of study women involved in the survey showed that 32(24.2%) urban and 89(31.7%) of rural study women were illiterate. About 48(36.4%) of urban and 102(36.3 %) of rural women attained primary education, 41(31.1%) of urban and 53(18.8%) of rural Women have attended their secondary school (grade 7-12).

With regarding child sex 235(56.9%) and 178(43.1%) of children with diarrhea were male and female respectively. Majority of diarrheal child are in the age of 12-23 month 158(38.3%) and 24-59 month 169(40.4%).

Muslim was the dominant religion both in urban 81(61%) and rural 186(66.2%) Kebeles.

Assessment of households on sanitary usage showed that 4(3%) of urban household and 22(7.8%) rural household were use open field. Hundred percent of households reported that they got drinking water from pipe. Nearly hundred percent of urban and 171(60.9%) of rural dwellers were living less than or equal to five kilometers from the nearest health center or private drug shop (table 1).

Table: 1. Socio-demographic and household characteristics of care takers (mothers); Hetosa district, January 2011 (n=413)

Variable	Urban, n=132(32%)	Rural, n=282(68%)	Total, n=413(100%)
Mother age (years)			
≤ 19	6(4.5%)	6(2.1%)	12(2.9%)
20-29	80(60.6%)	184(65.5)	264(63.9%)
30-39	31(23.5%)	75(26.7%)	106(25.7%)
40-49	15(11.3%)	16(5.7%)	31(7.6%)
Education status			
Illiterate	32(24.2%)	89(31.7%)	121(29.3%)
Read and write	11(8.3%)	37(13.2%)	48(11.6%)
Grade 1-6	48(36.4%)	102(36.3%)	150(36.3%)
Grade 7-8	21(15.9%)	38(13.5%)	59(14.3%)
Grade 9-12	20(15.2%)	15(5.3%)	35(8.4%)
Child sex			
Male	75(56.8%)	160(56.9%)	235(56.9%)
Female	57(43.2%)	121(43.1%)	178(43.1%)
Child age(month)			
< 6	2(1.5%)	24(8.5%)	26(6.3%)
6-11	23(17.4%)	39(13.9%)	62(15%)
12-23	48(36.4%)	110(39.1%)	158(38.3%)
24-59	59(44.7%)	108(38.4%)	167(40.4%)
Religion			
Orthodox	50(37.9%)	85(30.2%)	135(32.7)
Muslim	81(61%)	186(66.2%)	267(64.6)
Protestant	1(0.8%)	10(3.6%)	11(2.7)
Distance from H.C			
≤ 5km	131(99.2%)	171(60.9%)	302(73.1%)
>5km	1(0.8%)	110(39.1%)	111(26.9%)
Drinking water			
River	-	-	-
Pond	-	-	-
Pipe	132(100%)	281(100%)	413(100%)
Excreta disposal			
Open field	4(3%)	22(7.8%)	26(6.3%)
Use latrine	128(97%)	259(92.2%)	387(93.7%)

5.2. Diarrheal disease and action taken by mothers

Sixty one percent of urban and 52.9%of rural women reported that diarrheal disease was their community problem. Mothers were asked to respond on actions they took to manage occurred episodes of diarrhea four weeks prior to study. Twenty eight point six percent of them were not taken any action, 32.7% giving home remedies, 6.1 %(0.8% of urban and 8.5% of rural) were restrict food and water &22.3%of mothers was gave additional food and fluid.

Action taken by mothers was determined by identified types 190(46%), cause 42(10.2%), severity 60(14.5%) and by wording lose stool 110(26.6%).

Concerning the composition of fluid given, only 145(38.6%) of the mothers used ORT (ORS and RHF) while the rest of them gave soup 136(36.2%) and others 95(25.2%) such as plain water, tea, raw milk and traditional remedies which are generally not as such helpful for the diarrheal child.

Knowledge of mothers were assessed about use of ORS and 130(31.5%) of them said that it add lost water, 226(54.7%) mothers said that it cure diarrheal disease and 38(9.2%) of them said that they never heard of it.

During interview outcome of diarrheal child were assessed. 2(0.7%) of death occurred in rural diarrheal child, 19(4.6 %); 1.5% of urban and 6% of rural child of case was worsted during interview, 333(80.6%) show improved and 59(14.3%) of them are show no change (table 2).

Table 2.Diarrheal disease and action taken by mothers or care takers; Hetosa district, January 2011

Variable	Urban, n=132(32%)	Rural, n=282(68%)	Total, n=413(100%)
Health problems			
Yes	80(60.6%)	148(52.9%)	228(55.3%)|
No	52(39.4%)	132(47.1%)	184(44.7%)
Action taken during diarrhea			
no action	43(32.6%)	75(26.7%)	118(28.6%)
give home remedies	45(34.1%)	90(32%)	135(32.7%)
Restricting food, fluid	1(0.8%)	24(8.5%)	25(6.1%)
Adding food, fluid	27(20.5%)	65(23.1%)	92(22.3%)
Others	16(12.1%)	27(9.6%)	43(10.4%)
Based on what does mothers taken action			
Type	74(56.1%)	116(41.3%)	190(46%)
Cause	9(6.8%)	33(11.7%)	42(10.2%)
Severity	25(18.9%)	35(12.5%)	60(14.5%)
Loose stool	23(17.4%)	87 (31%)	110(26.6%)
Others	1(0.8%)	10(3.6%)	11(2.7%)
Fluid intake			
Only Breast milk	9(6.8%)	54(19.2%)	63(15.3%)
Stopped fluid	5(3.8%)	32(11.4%)	37(9%)
Decrease fluid	9(6.8%)	54(19.2%)	63(15.3%)
Usual amount	42(31.8%)	68(24.2%)	110(26.6%)
Increase amount	67(50.8%)	73(26.0%)	140(33.9%)
Food intake			
Not yet weaned	7(5.3%)	40(14.2%)	47(11.4%)
Stopped	2(1.5%)	9(3.2%)	11(2.7%)
Decrease	23(17.4%)	77(27.4%)	100(24.2)
Usual amount	60(45.5%)	114(40.6%)	174(42.1%)
Increased	40(30.3%)	41(14.6%)	81(19.6%)
Composition of fluid			
RHF	11(8.7%)	40(16%)	51(13.6%)
ORS	36(28.3%)	58(23.3%)	94(25%)
Soup	38(30%)	98(39.3%)	136(36.2%)
Others	42(33%)	53(21.3%)	95(25.2%)
Use of ORS			
Add lost water	43(32.6%)	87(31.0)	130(31.5%)
Cure	66(50%)	160(56.9)	226(54.7%)
Never heard	16(12.1%)	22(7.8%)	38(9.2%)
Others	7(5.3%)	12(4.3%)	19(4.6%)
Outcome of diarrhea			
Death	0(-)	2(0.7%)	2(0.5%)
Worse	2(1.5%)	17(6.0%)	19(4.6%)
Improved	112(84.8%)	221(78.6%)	333(80.6%)
No change	18(13.6%)	41(14.6%)	59(14.3%)

5.3 Mothers home fluid and food management for child with diarrheal disease

Regarding mothers home treatment of diarrheal disease, quantity of fluid and food given by mothers indicated that 6.8% of urban and 19.2% of rural women gave only breast milk, 3.8% of urban and 11.4% of rural women stopped fluid, 6.8% of urban and 19.2%of rural women decreased fluid from usual amount, 31.8% of urban and 24.2% of rural women gave fluid as usual amount and 50.8% of urban and 26% of rural women increased fluid (figure; 2).

Only twenty percent of (30.3% of urban and 14.6% of rural) women increased food while the rest 42.1% decreased and 2.7% stopped food for child with diarrheal disease (Table; 2).

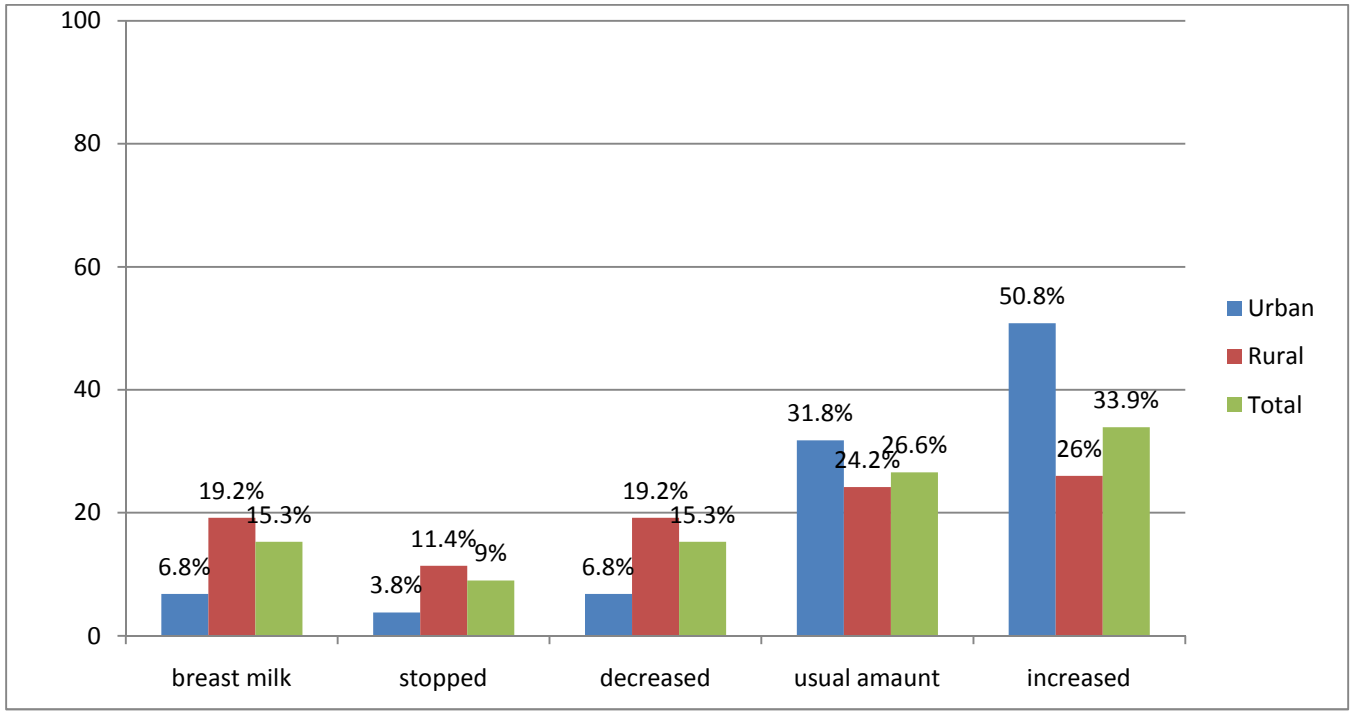


Figure: 2 mothers' home fluid management for child with diarrheal disease

5.4. Modern treatment seeking behavior of mother and common practice for childhood diarrheal disease.

Fifteen percent of the respondent did not seek help when diarrheal disease happened to their child. Of those who did seek help, 18.6 %(7% urban and 24.1%of rural) took their child to a traditional treatment place, 21 %(23%of urban and 20% of rural) went to private drug shops, and 60.4 %(69.9%of urban and 54.4%of rural) of mothers took their diarrheal child to health institution.

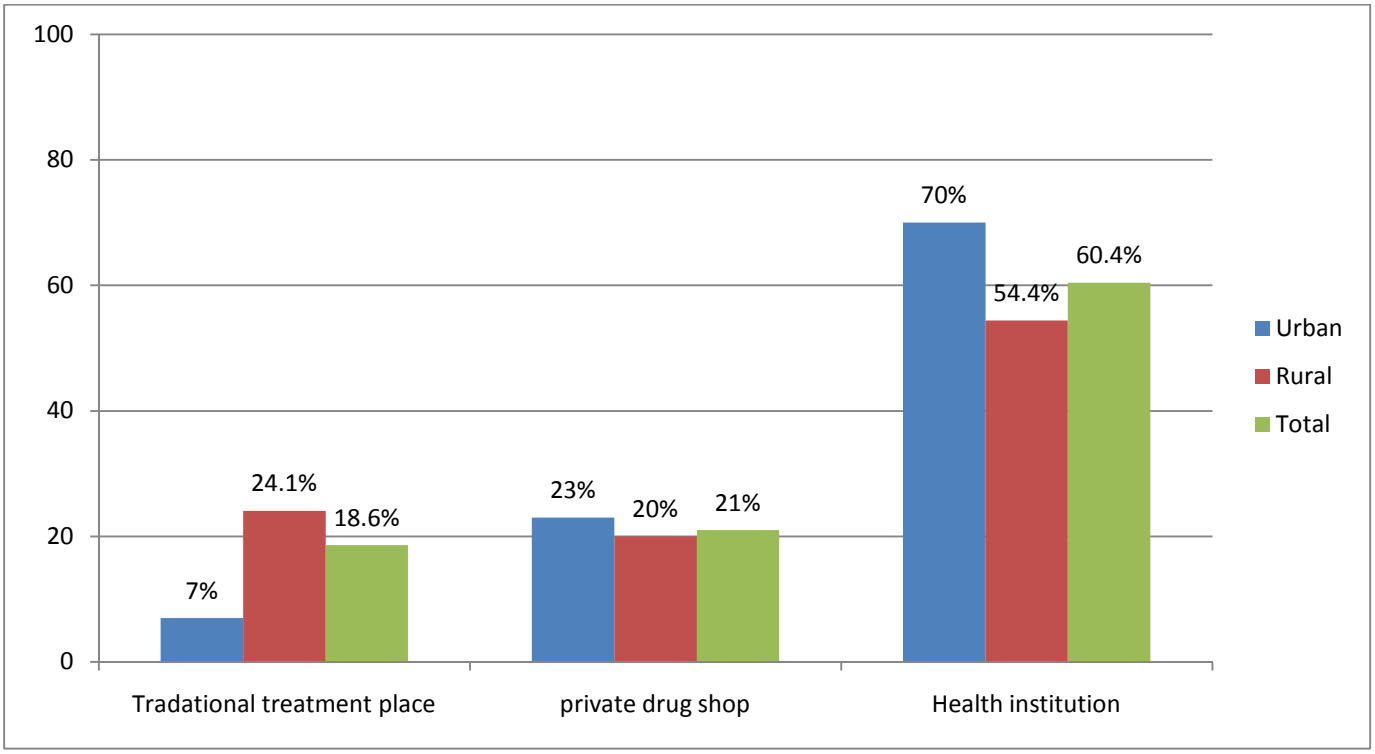


Figure: 3. places where mothers care was sought for child with diarrheal disease

Among who did seek professional help 54.2% (68.1%of urban and 47.6%of rural) of the respondents took their child within the first two days and 45.8% after three or more days of diarrhea. Question rose to respondent about treatment option, 60%, 8.7%, 3.6% and 2.4% of mothers select injection or tablet, massage of abdomen, herbalist medicine and magic procedure respectively. Only twenty five percent of them were select ORS or RHF.

Seventy two percent of (83.3% of urban and 66.2% of rural) mothers or care takers think that health care worker is the most successful person for treating diarrheal child. Five percent, 2.9%, 5.1% and15.3% of mothers respectively think that herbalist, magician, wogesha and private drug shop owner is the most successful person for treating diarrheal child. In addition to this, the study showed that perceived management for childhood diarrhea determined by cause identification. Forty two percent of (32.6%of urban and 46.6%of rural) mothers reported that there was childhood diarrhea that is not treated by modern treatment. They reported that, teething 10.9%, evil-eye 27.6%, abdominal belly 46.5%, wan-ijole (child thing) 5.7% and others 9.2% causes of childhood diarrhea those not treated by modern treatment.

Table 3.Modern treatment seeking behavior of mother and common practice for childhood diarrheal disease; Hetosa district, January 2011

Variable	Urban, n=132(32%)	Rural, n=282(68%)	Total, n=413(100%)
Did you seek			
Yes	113(85.6%)	239(81.1%)	352(85.2%)
No	19(14.4%)	42(14.9%)	61(14.8%)
Where you seek			
herbalist	1(0.885%)	13(5.4%)	14(3.9%)
Magician	-	5(2.08%)	5(1.4%)
Wogesha	7(6.19%)	30(12.5%)	37(10.5%)
Private drug shop	26(23.0%)	48(20.0%)	74(21%)
Health center	76(67.25%)	120(50.0%)	196(55.7%)
Hospital	3(2.65%)	13(5.4%)	16(4.5%)
Other place	-	10(4.1%)	10(2.8%)
After how many day			
Same day	14(12.4%)	10(4.2%)	24(6.8%)
After one day	21(18.6%)	36(15%)	57(16.2%)
After two day	42(37.1%)	68(28.4%)	110(31.2%)
After three day	24(21.2%)	75(31.3%)	99(28.1%)
After four day	8(7%)	35(14.6%)	43(12.2%)
After five day	4(3.5%)	15(6.2%)	19(5.4%)
Which treatment			
Injection or tablet	90(68.2%)	158(56.2%)	248(60%)
Massage of abdomen	5(3.8%)	31(11%)	36(8.7%)
Herbalists medicine	6(4.5%)	9(3.2%)	15(3.6%)
Magic procedure	2(1.5%)	8(2.8%)	10(2.4%)
ORS/ORT	29(12%)	74(26.3%)	103(24.9%)
Others	-	1(0.4%)	1(0.4%)
Which person			
Herbalist	5(3.8%)	16(5.7%)	21(5.1%)
Magician	-	12(4.3%)	12(2.9%)
Wogesha	6(4.5%)	15(5.3%)	21(5.1%)
Private drug shop owner	11(8.3%)	52(18.5%)	63(15.3%)
Health worker	110(83.3%)	186(66.2%)	296(71.7%)
Cannot treated by modern medicine			
Yes	43(32.6%)	131(46.6%)	174(42.1%)
No	89(67.4%)	150(53.4%)	239(57.9%)
Which one			
Teething	8(18.6%)	11(8.4%)	19(10.9%)
Evil eye	8(18.6%)	40(30.5%)	48(27.6%)
Abdominal belly	19(44.2%)	62(47.3%)	81(46.5%)
Child thing	2(4.6%)	8(6.1%)	10(5.7%)
Others	6(13.9%)	10(7.6%)	16(9.2%)

5.5 Mother's perception on type, causes of childhood diarrhea and, signs and Symptoms of severities.

The assessment done on how mothers or care takers can identified types of childhood diarrhea was showed that by using color and appearance of diarrhea 75.3%, by child condition 9.9%, by diarrhea contents 9% and by perceived causes 4.8%.

The study revealed that there were different types of childhood diarrhea those perceived by mothers depending on their identification methods. Yellow 34.1%, red 9% and green 23% those identified by using color of diarrhea, and watery 32% those identified using appearance of diarrhea and its contents.

Mothers asked to respond why they identified types of childhood diarrhea and the data showed that 66.6% were to decide on action taken and 28.1% to identify the causes of childhood diarrhea.

Different types of perceived causes by mothers on the study were evil-eye 15.3%, teething 12.8%, eating contaminated food 49.6 % (59.1%of urban and 45.2%of rural), remains long hour without food11.1% and play in hot areas22.8%.use of knowing cause of diarrhea were assessed and 31.2% and 60.5% of mothers respectively said that it is important to take action and to choice management. Mothers knowledge on cause of diarrhea also assessed in different way and 48.3%,94.9% and 97.1% of mothers respectively said that lose stool, river water and dirty hand are the cause of diarrheal disease.

Perceptions of mothers on severity of diarrhea were assessed and 14% 68% and 17.9% are mild, moderate and sever respectively. Sign and symptoms of severity of childhood diarrhea those reported by mothers were increase frequency and duration of diarrhea21.8%, presence of fever12.6%, bloody diarrhea13.3%, change of child behavior30.3% which showed that mothers perceived multiple signs and symptoms of severity of diarrhea. Most mothers take their diarrheal child to medical care81.6 %(86.4 %of urban and 79.4% of rural %) if sign and symptoms of severity see (Table: 4).

Table 4.Mother's perception on type, causes of childhood diarrhea and signs & Symptoms of severities; Hetosa district, January 2011

Variable	Urban, n=132(32%)	Rural, n=282(68%)	Total, n=413(100%)
Type of diarrhea			
Yellow	52(39.4%)	89(31.7%)	141(34.1%)
Red	8(6.1%)	29(10.3%)	37(9%)
Green	24(18.2%)	71(25.3%)	95(23%)
Watery	48(36.4%)	84(29.9%)	132(32%)
Others	0(-)	8(2.8%)	8(1.9%)
How you identify			
Color	122(92.4%)	189(67.3%)	351(75.3%)
Child condition	4(3%)	37(13.2%)	41(9.9%)
Content	4(%)	33(11.7%)	37(9%)
Perceived condition	2(%)	18(6.4%)	20(4.8%)
Others	0(-)	4(1.4%)	49(1%)
Use			
To decide on mgt	104(78.8%)	171(60.9%)	275(66.6%)
To identify cause	26(19.7%)	90(32%)	116(28.1%)
Others	2(1.5%)	20(7.1%)	22(5.3%)
Cause of diarrhea			
Evil eye	4(3%)	59(21%)	63(15.3%)
Teething	36(27.3%)	17(6%)	53(12.8%)
Remains long hour	13(9.8%)	33(11.7%)	46(11.1%)
Contaminated food	78(59.1%)	127(45.2%)	205(49.6%)
Play in hot area	23(17.4%)	71(25.3%)	94(22.8%)
Others	12(9.1%)	21(7.5%)	33(8%)
Use of knowing			
To take action	46(34.8%)	83(29.5%)	129(31.2%)
To choice mgt	79(59.8%)	171(60.9%)	250(60.5%)
Others	7(5.3%)	27(9.6%)	34(8.2%)
Loss of fluid			
Yes	122(92.4%)	232(82.9%)	354(85.9%)
No	10(7.6%)	48(17.1%)	58(14.1%)
River water			
Yes	125(94.7%)	266(95%)	391(94.9%)
No	7(5.3%)	14(5%)	21(5.1%)
Dirty hand			
Yes	128(97%)	272(97.1%)	400(97.1%)
No	4(3%)	8(2.9%)	12(2.9%)
Severity			
Mild	14(10.6%)	44(15.7%)	58(14.1%)
Moderate	93(70.5%)	188(66.9%)	281(68.0%)
Sever	25(18.9%)	49(17.4%)	74(17.9%)
Signs and symptoms			
Increase frequency	27(20.5%)	63(22.4%)	90(21.8%)
Presence of fever	19(14.4%)	33(11.7%)	52(12.6%)
Bloody diarrhea	8(6.1%)	47(16.7%)	55(13.3%)
Change child behavior	57(43.2%)	68(24.2%)	125(30.3%)
Weakness	55(41.7%)	48(17.1%)	103(24.9%)

5.6. Association between socio-demographic factors and seeking behavior of mothers to modern medicine treatment.

Binary logistic regression analysis was done to see associations in between socio-demographic characteristics and modern treatment seeking behavior of mothers or care takers. The results showed that residence, excretal disposal method, income, distance of health care facilities and education status of the mothers or care takers were significantly associated with mother's modern treatment seeking behavior. Mothers who live in urban were four and half times sought modern treatment than rural dwellers, [OR (95%CI) =4.49(2.07, 9.7)].Mothers of those grade 9-12 were nine times more likely to sought modern treatment than illiterate one [OR(95%CI)=8.88(1.15, 68.6)]. Households those used latrine and income greater than 500 per month were 4.6 and 3.3 times more likely to seek modern treatment than who use open field and who earn less than 500 Ethiopian birr respectively,[OR(95%CI)=4.62(1.84,11.6)]and [OR(95%CI)=3.31(1.45,7.54)]. Distance of health care facilities greater than five kilometers from home and modern treatment seeking behavior of mothers or care takers have negative association when compared with distance less than five kilometers, [OR(95%CI)=0.5(0.28, 0.88)].

Other factors were assessed whether or not having association with seeking modern treatment and outcome of diarrhea disease were significantly associated (p-value<0.05). Child that shows no change and worsen during interview time were 75% and 83% less likely to seek modern treatment than child who shows improved, respectively [OR (95%CI) =0.25(0.13, 0.49)] and [OR (95%CI) =0.17(0.05, 0.57)] (Table; 5).

Table 5.Association between socio-demographic factors and seeking behavior of mothers to modern medicine treatment; Hetosa district, January 2011

Variables	Sought modern treatment		Crude OR(COR)	Adjusted OR(AOR)
	Yes Freq (%)	No freq (%)		
Residence				
Rural	178(62.9%)	61(88.4%)	1.00	1.00
Urban	105(37.1%)	8(11.6%)	**4.49(2.07-9.7)**	**3.41(1.44-8.1)**
Mother age				
≤19 years	9(3.2%)	1(1.4%)	1.00	1.00
20-29 years	173(61.1%)	49(71%)	0.39(0.05-3.17)	0.56(0.05-5.6)
30-39 years	78(27.6%)	14(20.3%)	0.62(0.07-5.25)	0.74(0.06-8.2)
40-49 years	23(8.2%)	5(7.2%)	0.5(0.05-5.16)	0,96(0.06-14.4)
Education status				
Illiterate	79(27.9%)	26(37.7%)	1.00	1.00
Read and write	37(13.2%)	7(10.1%)	1.74(0.69-4.37)	2.3(0.8-6.58)
Grade 1-6	99(34.9%)	26(37.7%)	1.25(0.67-2.3)	0.9(0.45-1.83)
Grade 7-8	38(13.4%)	9(13%)	1.39(0.59-3.25)	1.1(0.42-2.97)
Grade 9-12	30(10.6%)	1(1.4%)	**8.88(1.15-68.64)**	4.9(0.59-40.9)
Child sex				
Male	156(55.1%)	45(65.2%)	1.00	1.00
Female	127(44.9%)	24(34.8%)	1.52(0.88-2.64)	1.75(0.95-3.23)
Child age				
< 6 month	19(6.7%)	2(2.9%)	1.00	1.00
6-11 month	40(14.1%)	14(20.3%)	0.3(0.06-1.46)	**0.16(0.03-0.9)**
12-23 month	112(39.6%)	25(36.2%)	0.47(0.1-2.15)	0.37(0.07-1.9)
24-59 month	112(39.6%)	28(40.6%)	0.42(0.09-1.9)	0.23(0.04-1.2)
Religion				
Orthodox	94(33.2%)	21(30.4%)	1.00	1.00
Muslim	178(62.9%)	48(69.6%)	0.83(0.46-1.46)	0.8(0.4-1.58)
Protestant	11(3.9%)	0(.0%)	-	-
Income				
≤ 500 ETB	206(72.8%)	62(89.8%)	1.00	1.00
>500 ETB	77(27.2%)	7(10.2%)	**3.31(1.45-7.54)**	2.11(0.85-5.19)
Distance from H.C				
≤5km	220(77.7%)	44(63.4%)	1.00	1.00
>5km	63(22.3%)	25(36.6%)	**0.50(0.28-0.88)**	0.59(0.3-1.17)
Drinking water				
Pond	283(100%)	69(100%)	1.00	1.00
Pipe	0(.0%)	0(.0%)	-	-
Excreta disposal				
Use Open field	10(3.5%)	10(14.5%)	1.00	1.00
Use latrine	273(96.5%)	59(85.5%)	**4.62(1.84-11.6)**	2.62(0.87-7.82)
Out come				
Improved	249(88%)	44(63.4%)	1.00	1.00
No change	27(9.5%)	19(27.5%)	0.25(0.13-0.49)	0.24(0.12-0.47)
Worse	6(2.1%)	6(8.7%)	0.17(0.05-0.57)	0.17(0.05-0.58)
Death	1(0.4%)	0(.0%)	-	-

5.7. Association between socio-demographic factors and seeking behavior of mothers to modern treatment within short period.

Binary logistic regression analysis also done to see associations between selected socio-demographic characteristics and sought professional help quickly. The results showed that residence, income and distance of health care facilities were significantly associated with mother's professional help seeking behavior within short period. Those who did seek professional help sought it quickly, 54.3 percent of the respondent took their child within a two day period which is 67.9 percent of urban and 47.9 percent of rural and 45.7 percent of (32.1% of urban and 52.1% of rural) mothers went after three or more days of diarrhea. Mothers who live in urban were 2.33 times sought professional help within two days period than rural mothers [OR (95%CI) =2.33(1.46, 3.74)].

Distance of health care facilities greater than five kilometers from home and professional help seeking of mothers or care takers within two days period have negative association when compared with distance less than five kilometers, [OR (95%CI) =0.45(0.27, 0.73)].mothers of household income greater than 500 per month were two times more likely to sought professional help within two days period than mothers of household income less than 500 per month. [OR (95%CI) =1.77(1.06, 2.96)](Table: 6).

Table 6.Association between socio-demographic factors and seeking behavior of mothers to modern treatment within short period; Hetosa district, January 2011

Variables	Sought modern treatment		(COR)	(AOR)
	≤2 days Freq (%)	≥3 days freq (%)		
Residence				
Rural	113(47.5%)	125(52.5%)	1.00	1.00
Urban	76(67.9%)	36(32.1%)	**2.33(1.46, 3.74)**	**1.87(1.08, 1.82)**
Child sex				
Male	116(58%)	84(42%)	1.00	1.00
Female	127(48.7%)	77(51.3%)	1.19(0.79, 1.82)	1.05(0.75, 1.99)
Education status				
Illiterate	52(49.1%)	54(50.9%)	1.00	1.00
Read and write	21(47.7%)	23(52.3%)	1.37(0.81, 2.3)	1.34(0.77, 2.34)
Grade 1-6	70(56.9%)	53(43.1%)	1.95(0.95, 1.9)	**2.29(1.04, 5.0)**
Grade 7-8	30(65.2%)	16(34.8%)	0.95(0.47, 1.9)	1.01(0.48, 2.1)
Grade 9-12	16(53.6%)	15(46.4%)	1.2(0.52, 2.7)	0.89(0.36, 2.1)
Religion				
Orthodox	63(55.8%)	50(44.2%)	1.00	1.00
Muslim	122(54%)	104(46%)	0.93(0.59, 1.46)	0.9(0.54, 1.48)
Protestant	4(36.4%)	7(63.6%)	0.45(0.12, 1.6)	0.45(0.11, 1.8)
Income				
≤ 500 ETB	136(50.7%)	132(49.3%)	1.00	1.00
>500 ETB	53(64.6%)	29(35.4%)	**1.77(1.06, 2.96)**	1.38(0.78, 2.43)
Distance from H.C				
≤5km	155(58.9%)	108(41.1%)	1.00	1.00
>5km	34(39.1%)	53(60.9%)	**0.45(0.27, 0.73)**	0.62(0.35, 1.1)
Excreta disposal				
Open field	7(35%)	13(65%)	1.00	1.00
Use latrine	273(55.2%)	148(44.8%)	2.3(0.88, 5.8)	2.02(0.75, 5.4)
Out come				
Improved	161(55.5%)	129(44.5%)	1.00	1.00
No change	21(45.7%)	25(54.3%)	0.67(0.36,1.25)	0.65(0.34, 1.2)
Worse	6(46.2%)	7(53.8%)	0.68(0.22, 2.1)	0.71(0.23, 2.2)
Death	1(100%)	0(.0%)	-	-

6. Discussion

A major objective of this study was to identify mother's treatment of her child's current diarrhea. One major reason for the poor outcomes of diarrheal episodes is the mother's treatment of diarrheal disease at her home and the kind of professional treatment she seeks. Regarding mothers feeding practice of their child during diarrheal illness, twenty seven percent of children, 31.8 percent of urban and 24.2 percent of rural children who had diarrhea were given the same amount of fluid as usual which is higher than found in the year 2005 Demographic and Health Survey (DHS) of Ethiopia, where only nineteen percent of children were given usual amount. But lower than study in India where forty percent of the respondent gave fluid as usual amount which thirteen percent higher than the present study. Thirty four percent children were given more than usual amount, which is significant difference with other study like EDHS report in 2005 and research done in India which is 9 percent and 6.3 percent, respectively. This might be the introduction of health service extension program in the district. Twenty four percent of the respondents had decreased or stopped fluids which are lower than found in rural community of Kenya, where more than 70% of mothers decreased or stopped fluid intake during diarrhea episodes (3, 11, 21). Regarding the amount of food offered to children who had diarrhea, 42.1 percent were given as usual, 19.6 percent were given more, which is more higher than EDHS 2005 report, and 11.4 percent of children did not received food during their illness, which is lower than study in Iran where, twenty percent of diarrheal children received solid food at the time of diarrheal episode (3, 20).

Thirty nine percent of children with diarrhea were treated with some kind of oral dehydration therapy (ORT): 25 percent were treated with ORS prepared from an ORS packet and 13.6 percent were given RHF which are comparable with EDHS 2005 report (3). On the other hand, a study in Mexico, rural Vietnam and India showed that 14.1%, 43% and 61.1% of children with diarrhea received ORS, respectively (16, 17, 22).

Eighty six percent of the respondents requested help when diarrheal disease happened to their child. Of those who did seek help 60.4 percent of mothers went to health institution. This is Consistent with a study in Nepal, about one half of the children with diarrhea under the age of five are taken to the health care facility (18). Notable differences exist by place of residence. The proportion of children in urban areas taken to a health facility is 70 percent and children in rural areas were taken to a health provider are 54.4 percent. These are much higher than found a study in Rural Community in Kenya and Western Nepal where taken to the health facility are 14.9% and 26.4%, respectively. But similar to a study in Dera district, north showa zone, oromia which 86.4 percent of urban children and 45.5 percent of rural children with diarrhea were taken to health care provider and EDHS 2005 report show that 35% of urban and 22% of rural children with diarrhea were taken to health facilities during diarrheal episodes. (3, 21, 23, 24).This difference might be the increment availability of health institution in the district. The bivariate analysis result show that residence are significantly associate with seeking modern treatment (p-value<0.05). Mothers who live in urban were four and half times sought modern treatment than rural dwellers, [OR (95%CI) =4.49(2.07, 9.7)].The choice of modern treatment are affected not only by the residence of the mothers or care takers, but also by other socio-demographic factors like distance of modern health care facilities, Educational status of the respondent women, household income and latrine usage. In this study those socio demographic factors mentioned above are significantly associated with modern health seeking behavior of mothers, which consistent with other study (19).

Most episodes of childhood diarrhea, last one to seven days, and are characterized by frequent loose or watery stool. Deaths associated with this type of diarrhea results from dehydration (5). Those who did seek professional help sought it quickly: 54.3 percent of the respondent took their child within a two day period of which 67.9 percent were urban and 47.9 percent were rural and 45.7% of mothers went after three or more days of diarrhea. This is similar to the finding in southern Ethiopia rural district where 54.9 percent of the respondents took their child within a two day period and 45.1 percent after 3 or more days' of diarrhea (9). This show that mother's especially rural mothers don't understand the potentially serious consequences of diarrhea until it is too late. Mothers of household income greater than 500 per month were two times more likely to sought professional help within two days period than mothers of household income less than 500 per month (p value<0.05).From this result we can conclude that mothers with highest wealth quintile were receive modern medicine and seek professional help within short period than lowest wealth quintile. This is consistent with 2005 Ethiopian demography and health survey (3).

The causes of childhood diarrheal disease identifications by mothers were depending on types of diarrhea and child's conditions. According to this study there were childhood diarrhea those not treated by modern treatment; teething, evil-eye, abdominal belly, wan-ijole (child thing) and others.

The most common cause of severe diarrhea in children throughout the world is intestinal infection. And it causes losses of fluid and electrolytes which are relatively large and may progress rapidly to cause dehydration (7). Different types of perceived causes by mothers on this study were evil-eye 15.3%, teething 12.8%, eating contaminated food 49.6 %, remains long hour without food 11.1% and play in hot areas22.8%. One previous study, reported that only 3.6% of the mothers knew that the microorganisms were the cause of diarrhea, where rest of the mothers said they do not know and study in Pakistan also show that only 26%of mothers said contaminated food is the cause diarrhea (10, 15). Other research done in Indian mother's beliefs and practices regarding prevention and management of diarrheal disease, most of them described multiple causes for occurrence of diarrhea. Consumption of uncovered food, eating 'dirty' or stale food, eating mud, and bottle feeding were believed to be the cause (11). Study conducted indifferent countries and communities shows that many things are believed to cause diarrhea, such as, worms, eating earth, un boiled porridge, various fruits such as passion fruits and ripe banana, hard food, climate and teething (9).

Mothers or care takers asked how they decided about the severity of diarrhea and whether their child was getting better or worse. For them the most important signs and symptoms were changes in the child's behavior, increase frequency and duration of diarrhea, presence of fever, and bloody diarrhea, which showed that mothers perceived multiple signs and symptoms of severity of diarrhea. Similar question were rose to mothers in the central highland region of Mexico and they respond how they decided the severity of diarrhea; changes in the child's behavior which interfered with household activities, such as crying or restlessness, signs associated with the eyes, and changes in the frequency and appearance of the stools (12)

The outcome of the diarrhea at the time of the interview was affected by where the child went for treatment. Modern professional treatment resulted in higher rates of improvement, so mothers who seek modern treatment during diarrheal episodes have got better response.

7. Strength and limitation of the study

7.1 Strength of the study

- Respondents were all mothers
- Modern health service utilization was assessed

7.2 Limitations of the study

- No qualitative methods were used.
- This study used a long recall period for four weeks, thus susceptible to recall bias.
- Cross sectional study design is not strong enough to see cause and effect relationship.

8. Conclusion

Majority of study mothers perceived that contaminated food is the major cause of childhood diarrhea. But there were mothers perception on childhood diarrhea those not treated by modern treatment; teething, evil-eye, abdominal belly, wan-ijole (child thing) and others.

Concerning the composition of fluid given and knowledge of mothers about ORS, small number of mothers used ORS and RHF and knows about ORS.

Regarding mothers seeking behavior of modern treatment mothers who live in urban was more likely sought modern treatment than rural dwellers.

Those who did seek professional help sought it quickly: majority of the respondent from urban took their child within a two days period but more than half of rural mothers took their child within 3 and above days of period. This show that rural mothers don't understand the potentially serious consequences of diarrhea until it is too late.

The outcome of the diarrhea at the time of the interview was affected by where the child went for treatment. Modern professional treatment resulted in higher rates of improvement. So, mothers who seek modern treatment have got better response during diarrheal episodes and thus traditional treatment had a clearly negative impact on the outcome of diarrhea.

9. Recommendations

1. Mothers need Health education on how treat diarrhea disease at her home and where to take their child if the diarrhea gets worse. This might be accomplished by health extension workers.

2. ORS should be distribute more widely and vigorously in drug shops and health posts and education should be given about how to use and prepare it. Wereda health office should take this responsibility.

3. The wereda health office should be strengthened the intensive and continuous health education for the community to improve the culture of early seeking care from the health facilities/ health personnel for childhood diarrheal illnesses.

4. Health education about cause of diarrheal disease should be given to mothers or care takers especially rural mothers.

5. There is need to implement interactive communication strategies for mothers/caregivers and health workers at community level in order to facilitate sustainable positive change in the practice on home management of diarrhea among under-fives.

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8. Annexes

8.1 Informed consent (English version)

Addis Ababa University

College of health sciences

School of public health

Questionnaire on determinants of women's towards seeking modern treatment for child hood diarrheal disease

Ser.No_____

1. Greeting
2. Introduce your self
3. Explain the aim of the study for the respondent by saying that:-The reason why I came here is to ask you some question related to child health. The purpose of this interview is to have your perceived cause, types, sign and symptoms of diarrhea and action you take for it. It helps in designing appropriate intervention for childhood diarrhea disease management in your community.
4. Read the following paragraph for the selected mother/caretaker**.**

   To conduct our study, I would like to ask you some questions which may take about 30 minutes. As your participation is very important to the outcome of the study, we kindly request you to give us your sincere and truthful answer. All the information that you and other respondents are going to provide us remains confidential and you do not need to mention your name. If you feel discomfort with the interview, please feel free to drop at any time you want.

Are you willing to participate in the interview?

Yes, _____ (continue the interview) No, _____ (Thank and stop)

Collectors (name and signature) _____date_____

Principal investigator address

Name Ephrem Mamo Gebrehiwot **Tell-0910406803**

Email-ephremmamo@yahoo.com

8.2 Questionnaires (English version)

Section 1:- General information

101	Residence	Urban 1 Rural 2	
102	Age of mother	< 19 years 1 20 - 29 years 2 30 -39 years 3 40-49 years 4 >50 years 5	
103	Age of the child	<6months 1 6 -11 months 2 12 -23 months 3 24 -59 months 4	
104	Sex of the child	Male 1 Female 2	
105	Educational status of mothers	Illiterate 1 Read and write 2 Grade 1 to 6 3 Grade 7 to 8 4 Grade 9 to 12 5 Above grade 12 6	
106	Average monthly income of your family	……ETB	
107	Religion of households	Orthodox 1 Muslim 2 Protestant 3 Other 4	
108	Distance of the house from nearest health institution or drug shop	……..km	
109	water used for drinking	River 1 Pound 2 pipe 3	
110	Human excretal disposal method	open field deification 1 use latrine 2	

Section 2; - Diarrheal disease and action taken by mother

No	Questions and filters	Coding categories	Skip to
201	Is diarrheal disease health problem of your community?	Yes 1 No 2	
202	Did your child attack with diarrhea in the last four weeks?	Yes 1 No 2	
203	If the answer is 'yes' what action was taken by you	No action taken 1 Give home remedies 2 Restricting of food and water 3 Give additional food and fluid 4 Others 5	
204	How you can decide on action you take for managing your child with diarrhea?	Depending on types of diarrhea 1 Depending on causes of diarrhea 2 By its signs and symptoms of severity 3 By wording of the lose stool 4 Others 5	
205	What was done in terms of fluid intake	Only on breast milk 1 Stopped giving fluid 2 Decreased amount of fluid 3 Gave usual amount of fluid 4 Increased amount of fluid 5	
206	What was done in terms of food intake	Not yet weaned 1 Stopped giving food 2 Decreased amount of food 3 Gave usual amount 4 Increased amount of food 5	
207	If not stopped giving fluid, what was composition of fluid given to the diarrheal child	ORT 1 ORS 2 Soup 3 Other type 4	
208	What are the use of ORS	Adds the lost water to the child's body 1 cure diarrheal disease 2 Had never heard of it 3 Others 4	
209	Did you seek help from someone for your diarrhea child	Yes 1 No 2	

210	Where did you seek help for your diarrheal child	Herbalist 1 Magician 2 Wogesha 3 Private drug shop 4 Health center 5 Hospital 6 Other place 7	
211	After how many days of diarrhea did you seek someone's help	On the same day of diarrhea 1 After one day of diarrhea 2 After two day of diarrhea 3 After three day of diarrhea 4 After four day of diarrhea 5 Fife and above day of diarrhea 6	
212	If you had the choice, which treatment would you like most for you diarrheal child	Injection or tablets 1 Massage of abdomen 2 Herbal medicine 3 Magic procedure (holy water...) 4 ORS/ORT 5 Others 6	
213	Which person do you think is the most successful in the treating diarrhea	Herbalist 1 Magician 2 Wogesha 3 Private drug shop owner 4 Community or institution health worker 5	
214	Is there childhood diarrhea that cannot treat by modern medicine?	yes 1 No 2	
215	If the answer on question 214 is 'yes' which one?	Teething 1 Evil eye 2 Abdominal belly 3 Wan ijoole (child thing) 4 Others 5	
216	What action you take for sunken fontanel	Applying herbal medicine on fontanel 1 Applying butter on it 2 Doing tonsillectomy 3 Giving herbal medicine by mouth in liquid form 4 Put smoky tar from tacked root on fontanel 5 Others 6	
217	What was the outcome of the diarrhea at time of interview	Death 1 worse 2 Improved 3 no change 4	

Section 3:- perceptions on types of diarrhea

No	Questions and filters	Coding categories	Skip to
301	What are the types of childhood diarrhea you can Identifies?	Yellow 1 Red 2 Green 3 Watery 4 Chichita 5 Teething (dawa'oo) 6 Others 7	
302	How you can identify?	using color of diarrhea 1 By child conditions 2 By its contents 3 By perceived cause 4 Others 5	
303	What is the use of identifying types of diarrhea?	To Decide on management 1 To identify the cause 2 Others 3	

Section 4;- perceptions on cause of childhood diarrhea

No	Questions and filters	Coding categories	Skip to
401	what are causes of childhood diarrhea that you know	Evil eye 1 Teething /Dawa'oo/ 2 If the child remains with out food for long hours 3 Eating contaminated food 4 If the child play in hot 5 Others 6	
402	How you can identifies the cause of childhood diarrhea?	By the types of diarrhea 1 By the child conditions 2 By the color of diarrhea 3 By symptoms of diarrhea 4 others 5	
403	What is the use of knowing Cause of child hood diarrhea?	To take action 1 To choice management possibilities 2 Others 3	
404	Does eating with dirty hands cause diarrhea	Yes 1 No 2	
405	Can drinking river water cause diarrhea	Yes 1 No 2	
406	Does diarrhea cause loss of fluid	Yes 1 No 2	

407	Can loss stool of your child with diarrhea cause diarrhea?	Yes 1 No 2	
408	What is the causes of sunken fontanel	Tonsillitis 1 Watery diarrhea 2 Fever 3 If the child caught with child thing (wan ijoole) 4 Others 5	

Sections 5; - perceived signs and symptoms of severity

No	Questions and filters	Coding categories	Skip to
501	According to the respondents perception, how sever was the diarrhea	Mild 1 Moderate 2 Severe 3	
502	How severity of childhood diarrhea identified	By the child condition 1 By combined symptoms of the disease (vomiting) 2 If the child refused to eat 3 If the diarrhea continue for long 4 If there is sunken eye 5 Others 6	
503	What are signs and symptoms of severity you can identifies for child with diarrhea disease	Increased frequency and duration of diarrhea 1 Presence of fever 2 Bloody diarrhea 3 Sunken fontanel 4 Change of child behavior 5 Weakness of the child with diarrhea 6 Others 7	
504	If you see sign of severity on your child with diarrhea what is your action?	Trying home remedies 1 Taking to elder care givers to checked by them 2 Take to religion leader 3 Take to medical care 4 Take to traditional healer 5 Using medication of child things /waan ijool 6 Drinking medication prepared from lemon sugar and water 7 Others 8	

8.3 Informed consent (Oromifa version)

Univarsitii Addis Abaabaa

Kollejii Sayinsii Fayyaa

Mana Barumsaa Fayyaa haawasaa

Gafilee sababa fi ilalicha hadholee dadhimani dhukuba garaa kasaadhan qabaman waladhanuu iraati qabaan.

Lakkofisaa: ----------

1- Hunda-duraa nagaa kabajaa gaafachu

2- Iti aansudhaan offi ibisu.

3- Kaayoo qoranaa kanaa haadha da'imaatiifi akka asii gaditi argamu kanati ibisufi:-

Sababiin ani iddo kanati argamu danda'e gaafiwan fayaa ijooleetin wal-qabatee isin gaafachufii. Kaayoon gaafifii deebii taasifinu kanaatisi Amantaa keesani malattoo gaaraa kasaa da'imani addani baafachufi iti fayadamitan, sababii gaaraa kasaa itti dhufu mallattolee dhibeen gaaraa kasaa itti ciimuu isaa agarisiisaniifi tarkaafii dhibee kana wal-dhaanufii fudhatan isin irraa baruufi. Kunsi, ittisa dhibee kanatifi rakkoolee dhibichaan umamu danda'an akka uummata birratti fudhatama arigatufi jeechoota uummaata galun akkekame akka karroorifamu kan gargaran ta'a.

5. Ijooleen wagaa shanii gadi akka jiraniifi hinjiirree qulquleefadhu. Yoo kan hinjiire ta'e galateefadhu gara mana itti aanee jiiru deemi. Yoo da'imn jiiratee akka asi gadi kanati itti fufii. Ibsii gahaan erga keename bodee tolee jeechuu isanii yoo hubate aka,Jeecha asi gadi jiiru kana gaafii haadhaa da'imani filatamanif dubisufi.

   Qooranna kenyaa adeemsisudhafi gaafiwwaan muraasa daqiiqaa 30 fudhachuu danda'u kanafuu oso isiin gafadhee naaf heyemtuu? Hirimanan keesani/ kee bu'aa qoorumsa kanattif faayidaa baayee qaba. Kanaafu, feedhidhan deebii keesani mi'aawafii kan dhugaa ta'ee akka nuf keenu dandeesani gaafii kon kan jaalalaa isinifi dhiyeesa.Deebiin isin irra arganeeffi kan namoota bira irrayis arganu nama sadafaatifi dabarsinee hin keeninu/ ni eegamu. Kanaafiisii waadaa gala.Maqaan keesaniis waraqqaa ittin isin gaafanu irrat hin barreefamu. Fedhi keesan /kee yoo ta'ee malee eenyumaan keesan akka beekkamu hin ta'u.gaaffii fi deebichi yoo sitti toluu dide, gidduutti adda kutuu ni dandeessa.

   Gaafiifi deebii kan irrati hirmaachuufi toolee nu jeetu? Deebiin

Eyeen yoo ta'ee ---------- Gaafiifi deebii itti fufii Lakki yoo jeedhan _____

Maqaa fi mallattoo abba gaafi gafatee _____

Teessoo abbaa qorannoo

Maqaa Efreem Maamoo Gerehiyiwot Tell-0910406803 Email-eph2003@yahoo.com

Gaafilee

Kuta 1:- Odeefannoo walgalaa

Lak.	Gaafii	Deebii	Lak.irra darbu
101	Iddo jirenyaa	Maagalaa 1 Baadiyaa 2	
102	Umrii haadhaa	Wagaa 19 gadi 1 Wagaa 20 – 29 2 Wagaa 30 -39 3 Wagaa 40-49 4 Wagaa 50 oll 5	
103	Umrii da'ima	Ji'a 6 gadi 1 Ji'a 6 -11 2 Ji'a 12 -23 3 Ji'a 24 -59 4	
104	Saala da'ima	Dhiira 1 Dhalaa 2	
105	Sadarkaa Barumsaa hadhaa	Kan hin baranne 1 Dubisuu fi baressuu 2 Kutaa 1 hanga 6 3 Kutaa 7 hanga 8 4 Kutaa 9 hanga 12 5 Kutaa 12 oli 6	
106	Amantaa	Ortoodoxii 1 Musiliima 2 protestantii 3 kan biro 4	
107	Gatii matiin Ji'an argatan	……ETB	
108	Fagenyi manni, buufataa fayyaa ykn mana qorichaa irraa jiru.	……..km	
109	Bishaan dhugaati essaa arigatu?	Laga irra 1 Harro 2 Ujumoo 3	

110	Akkataa fayadama mana fincanii	Badheeti bahu 1 Mana fiincaaniti fayyadamu 2	

Kuta 2; - Dhukuba gaaraa kaasaa fi walansa hadhaa

Lak	Gaafii	Koodii	Irra darbu
201	Dhibeen garaa kasaa rakkoo fayyaa ummata keesanitii?	Eyeen 1 Miti 2	
202	Mucaan kee kun toorban afurii asi dhibee albaatitin qabame beekaa?	Eyeen 1 Hin qabamnee 2	
203	Deebiin Eyen yoo ta'ee gargarsa akamitu godhameefi?	Homaa 1 Gargarsa mana kessaa 2 Nyataa fi bishaan dhorkuu 3 Nyataa fi dhangaldha dabalta kennu 4 Kan biroo 5	
204	Tarkkanfii waldhaansa da'ima keesan albaatin qabamefi akkamit murteesu dandechuu?	Bifa albaati irrat hunda'udhan 1 Sababii dhibiichii ummamee irrat hunda'udhan 2 Mallaattoolee hubinisa irrat hunda'udhan 3 Haala/furdina fi qallina/ albatii irrat hund'udhan 4 Kan biro 5	
205	Dhangaladha maaliin bakka buustuu	Harmaa hadha qoofa 1 Dhangaladha akka hin furane gochuu 2 Dhangaldha furatamu hiridhisu 3 Hanga duritin dhangaladha kennu 4 Dhangaldha dabalinaan kennu 5	
206	Iddoo nyataa maltuu kennameef	Nyaata yomiyuu kan hin jalqbne 1 Nyaata keenuuf dhabisu 2 Bayiina nyaata xinnessu 3 Bayiinuma barameen kennu 4 Bayiina nyaata dabalaanii kennu 5	
207	Osoo dhangaladha kennuufi hin kunne ta'e,,komposishiin dhangaladha da'iman garaa kasaa tiif kenamu maal fadha	Dakuu, ashabo fi shukara bishaan irra/ORT 1 Miniraala lubbu bararu/ORS 2 Bulluqa/Soup 3 Kan biroo 4	

208	Fayidaan ORS maal fadha	Dhangaladha albatiin bahe bakka busuu 1 Dhukuba gaaraa kasaa fayisuu 2 Wayee ORS hooma hin agenye 3 Kaan biroo 4	
209	Da'iman garaa kasaan dhukubsateef gargarsa nama biro barbadan turtanii	Eyeen 1 Miiti 2	
210	Eessa irraa gaargarsa barbadani turtan	Hakiima aadaa 1 Iddo amantaa irra 2 Ogeessaa aadaa 3 Mana qoricha unfaa 4 Bufaata fayaa 5 Hospiitaala 6 Iddo biraa 7	
211	Gaaraa kasaan jalqabe guyyaa meqaan boddee gargaasra gaafattu	Guuyuma jalqaba 1 Guuyaa tokkoon boodde 2 Guuyaa lamaan boodde 3 Guuyaa sadii boodde 4 Guuyaa afuuriin boodde 5 Guuyaa shanii fi isa oli boodde 6	
212	Osoo filanno qabaatte ,walansa yaalii kami da'ima garaa kasaaf qabameef filattu	Limoo ykn qoricha liqimsamu 1 Garaa dhidhibu/sukuumu 2 Dawaa aadaa fayadamu 3 Yaalii amantaan wal qabate gochu 4 ORS/ORT 5 Kan biiroo 6	
213	Eenyuun yaalii dhibee garaa kasaatiif bayiistee filaatamaa jeette yaaddu	Hakiima aadaa 1 Abootii amantaa 2 Ogeessaa aadaa 3 Warra mana qoricha unfaa 4 Qoondaloota faayaa 5	
214	Albaatiin da'iman kan haakiman hin fayan jeetan yaadan jiru?	Eyeen 1 Hinjiran 2	
215	Yoo deebin eyeen ta'ee isa kami?	Dawa'oo 1 Ija-nama 2 Bu'a 3 Wan ijoole 4 Kan birro 5	
216	Tarkaafiin samun yoo bollofitee fudhatan mali?	Qoorichaa baala irra qopha'ee samu irrati dhobu 1 Dhadhaa samu irra ka'u 2 Huuba fusisu 3	

		Qoorichaa baala irra qopha'ee obasuu 4 Qaqaa mana dhadhaa waliin samu irrati dhobu 5 Kan birro 6	
217	Yeroo gafiin kuun ademsifamut midha dhibee gaaraa kaasaan fide maalidha	Lubbuu mucaa baasee jiira 1 Itti cimee jiira 2 Foyadhe jira 3 Jiijirama hin qabu 4	

Kuta 3:- Hubatinsa biffota/goosoota albaati da'iman

Lak	Gaafii	Koodii	Irra darbu
301	Goosoon/bifini albaati da'imani isin adaan baafatan beektan kam fa'aa?	Keelloo 1 Diimaa 2 Magariisa 3 Bishaan/ Qalaa 4 dawa'oo 5 Ciiciitaa 6 Kan birro 7	
302	Akkamti adaan bafachuu dandeesu?	Bifa albaatitin 1 Mallattoolee da'iman irrati mulatuni2 Waan offiikeesaa qabun 3 Hubanaa sababii d hibeen kun umame irrat hunda'udhan 4 Kna birro 5	
303	Bifa/goosa albaati adaan baafachuun maalif fayyada?	Waldhansi akka goodhamufi murteesufi 1 Sababii dhibee kana beekkufi 2 Kan birro 3	

Kuta 4; - Hubatinisa sababii dhibee albaati itti dhufu danda'u irrat qaban

Lak	Gaafii	Koodii	
401	Sababiin albaatin da'imanti dhufu kan isin beekitan kami fa'aa?	Ija nama 1 Dawa'oo 2 Da'imn nyaata mallee yeroo dheerafi yoo turee 3 Nyaata quliqulina hin qabne yoo nyaate 4 Da'imn aduu kesa yoo tuurte 5 Kan birro 6	
402	Sababii isaa maliin adaan baafachuu dandeesu?	Bifa/goosa albaatitin 1 Mallaattoo da'imn mulidhisun 2 Qallama albaatitiin 3 Mallaattoo albaatin mulidhisun 4 Kan birro-------- 5	
403	Sababii dhibee albaati da'imani beekun mal fayyaada ?	Tarikaanfii fudhachuufi 1 Waldhaansa goodhamufi filachuufi 2 Kan birro 3	
404	Harka qulquliina hin qabneen nyachuun dhibee garaa kasaa fidu ni danda'aa	Eyeen 1 miiti 2	
405	Bishaan lagaa dhuguun ibee gaaraa kasaa fiduu ni danda'aa	Eyeen 1 miiti 2	
406	Albaatiin xuxinsa dhangaladha ni fiidaa	Eyeen 1 Miiti 2	
407	Albaatin da'iman tokko irra tokkoti darbaa?	Eyeen 1 Hin darbuu 2	
408	Sababiin samu ijoolee itti bolladhatu mal ini?	Huubin/qoonqoon yoo butee 1 Albaati bishaan ta'ee yoo albaasee 2 Nafa yoo ho'isee 3	

		Wani-ijoolee yoo qabee 4 Kan birro 5	

Kuta 5; - Hubatinisa mallaattoolee dhibeen albaati da'iman irrat hamaachu isa ittin beekan

Lak.	Gaafii	Koodii	Irra duabu
501	Tilmama abicha debii latuuf irrati hundadhuun ,haalli albatii akam tuure.	Bayemiiti 1 Giddu galeesa 2 cimadha 3	
502	Dibeen albaati da'ima kan hubee ta'u isa akkamiti adaan baafachuu dandeesu?	Mallaattoo da'imni mulidhisun 1 Mallaattoo makkaa ta'anin / yoo hoqiisiisu dabalatee 2 Nyaata didinisa da'iman 3 Albaatini yeeroo dherafi yoo irra turee 4 Ijji yoo kessati galte 5 Kan birro 6	
503	Mallattoolee dhibeen albaati da'iman irrat hammachuu isa mulidhisan kan isin adaan bafachuu dandeesan kam fa'aa?	Dadafii fi dheerina da'iman itti gadi tesisu 1 Yoo nafa ho'isisee fi hoqisisee 2 Dhigaa yoo gadi tesisee 3 Samun yoo gadi bollofite 4 Ammali da'ima yoo jiijaramee 5 Da'imn yoo dadhabee 6 Kan birroo 7	
504	Yoo mallaattoo da'iman albaatidhan hubamani adaan bafatan /beektan tarkaafiin keesan mali?	Qooricha manati qophaa'ee keeninafi 1 Mangudoon akka laalan gona 2 Bakka itti bulutii geesiina 3 Hakiimii geesiina 4 Nama qooricha beeku birran dhaqina 5 Qoorichaa waan ijoolee goonafi 6	

		Loomiifi sukara bishaanin keeninafi 7 Kan birro 8	

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