

ADDIS ABABA UNIVERSITY
COLLEGE OF HEALTH SCIENCES
ALLIED SCHOOL OF HEALTH SCIENCES
DEPARTMENT OF NURSING AND MIDWIFERY

Assessment of Factors Affecting Initiation of Early Care Seeking Behavior Among Mothers and Child Care Takers of Under Five Children Having Acute Diarrhoea Attending Integrated Management of Neonatal and Child Hood Illness Clinic in Governmental Health Centers, Addis Ababa, Ethiopia, 2014.

By: Ketema Dewi Muraga

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ABBREVIATIONS

ADD: Acute Diarrhoeal Disease

AAU: Addis Ababa University

DHN: Dehydration

HSB: Health Seeking Behavior

HUAS: Health Care Utilization and Attitudes Survey

IMNCI: Integrated Management Of Neonatal and Child Hood Illness

MDG: Millennium Developmental Goal

MSD: Moderate –To- Severe Diarrhoea

MR: Mortality Rate

ORS: Oral Rehydrating Salt

U5MR: Under Five Mortality Rate

WHO: World Health Organizations

UNICEF: United Nations International Children's Emergency Fund

ABSTRACTS

Back ground: Appropriate medical care seeking behavior could prevent a significant number of child deaths and complications due to acute diarrhoeal illnesses. This study aims to determine factors affecting initiations of early care seeking behavior /HSB/ of mothers /care takers/ towards acute diarrhoeal illnesses, thereby improving child health.

Objective: To determine the factors affecting initiation of early care seeking behavior among mothers and care takers of under five children having acute diarrhea attending IMNCI clinic.

Method: A quantitative /cross-sectional/ and qualitative institutional based survey was conducted to assess the factors affecting initiation of early care seeking behavior of mothers /care takers/ towards acute diarrhea at the selected health centers of Addis Ababa. Sample size is 333. The collected data was cleaned and checked for completeness, then was entered, compiled and analyzed using SPSS version 16.00 for further analysis.

Results: Out of 333 respondents identified for the study 100% (n=333) were responded for the interview. From the total of 100% (n=333) respondents 59.2% (n=197) of them were not seek any care. The mean time for seeking care was 2.45 days. Majority of the respondents have no any information about danger signs.

Conclusions and Recommendations: The findings enhance our understanding of the factors that influence treatment-seeking behavior of the mother/care-givers in cases of childhood diarrhoea. The caregivers, especially the mothers need to be educated about the importance of seeking appropriate and timely treatment.

Most of the factors that negatively affect decision to seek treatment are addressable by creating community awareness and health systems strengthening.

CHAPTER ONE

INTRODUCTION

1.1 Back Ground

Diarrhoea is the leading cause of childhood morbidity and mortality in children < 5 years of age, despite the improvements in case management and diagnostic technologies over the last decades [Bryce J, Boschi-Pinto C, Shibuya K, Black ER, 2005; Black RE, Morris SS, Bryce J, 2003]. Inability of caretakers to recognize early signs of dehydration and under management results in more fluid loss and electrolyte imbalance, which contribute to child mortality. The majority of these deaths can be decreased by timely intervention with oral rehydration therapy and continued feeding practices [Victoria CG, Bryce J, Fontaine O, Monasch R, 2000].

Even though different activities are performed to minimize the mortality and morbidity rate of acute respiratory infections (ARI) and acute diarrheal diseases, but the impact of these diseases are remained the major problem of public health important. Diarrhoea and ARI are among the five major causes of infant mortality in the developing countries [1].

A thorough understanding of the health care-seeking behavior of a population and its use of resources and expenditures on health services is needed to guide improved practices toward reducing disease burden.

Appropriate and prompt medical care seeking behavior can prevent a significant number of child deaths and complications from different types of child hood illness. This study aims to determine factors affecting health seeking behavior (HSB) of childhood illnesses (acute diarrhea) thereby improving child health [2].

1.2 Statement of the Problem

Globally, nearly one in five child deaths and 1.5 million deaths each year is due to diarrhea [1]. Diarrhea remains the second most common cause of childhood mortality all over the world (next to pneumonia) [2, 3, and 4]. Of this 78% of the deaths are occur in Africa and Asia [5].The mortality rate in Ethiopia is73700, this accounts for an estimated 20% of the deaths among children under- five years of age in the country [6]. Data on factors that affect mothers` child health care-seeking behaviors in Ethiopia is scarce.

Maternal practices regarding children`s health care have been recognized as an important factor behind mortality rates among children < 5 years of age [7]. Timely care seeking for diarrheal disease is positively related to children`s healthy life [8].

Various studies from developing countries reported that delay in seeking appropriate care and not seeking any care contributes to the large number of child deaths. [9,10,12,and13].

Existing interventions could prevent many deaths among children if they are presented for appropriate and timely care [14].

Epidemiologists and social scientists have devoted increasing attention to studying health seeking behavior associated with acute diarrheal disease in recent years.

There are critical factors that determine health care seeking behavior for acute diarrhoeal disease, which are related to perceived illness severity and recognition of certain signs and symptoms (TaffaanChepngeno, 2005; Sreeramareddy *et al*, 2006; Sudharsanam and Rott, 2007).This perception of caretakers about the severity of diarrheal illness ultimately affects the decision for seeking treatment and influences the type of therapies received [4].

And lack of access and high cost of health care are perhaps the most common determinant factors to optimal health care seeking in both rural and urban communities (Tarimo et al. 2000; Thind& Andersen 2003; Thind& Cruz 2003).

Hill et al (2003). Argue that health beliefs are also one of the barriers to care seeking in addition to the maternal ability to recognize symptoms. This health belief is predicted by household size and the age and education of the mother.

Some illnesses are recognized as “not-for-hospital”. And also past experience with similar illnesses in children can motivate mothers to wait and see if the illness resolves on its own, particularly in situations where the cost of care is an inhibitory factor (D’Souza, 1999). There are studies demonstrating health seeking behavior is influenced by a variety of socio-economic variables, sex, age, the social status of women, the type of illness, access to services and perceived quality of the service (Tipping and Segall, 1995). Seeking care from trained providers was found to be associated with birth order, and antenatal care of the mother from trained providers, the father’s education and monthly expenditure of the family.

A proper understanding of health seeking behavior may reduce delay in diagnosis, improve treatment compliance and improve health promotion strategies in a variety of contexts.

Mbonye (2004) found that mothers were more likely to seek help for diarrheal disease than acute respiratory infections, since diarrhea weakens children more quickly than respiratory symptoms, despite the fact that both are leading causes of child mortality in developing countries. Even though, majority of diarrhoea related deaths are prevented by early diagnosis, timely use of oral rehydration solution (ORS), continued feeding of appropriate diet and utilization of qualified health care providers [1 and 15].

The mortality rate related to acute diarrhea is still high (78%) particularly in developing countries.

Thus the health workers are trained to teach the mothers about danger signs and counsel them about the need to seek care promptly if these signs occur [16].

Achieving Millennium Development Goal-4 of reducing child mortality by two-thirds by the year 2015 requires evidence based intervention to reduce burden of childhood illnesses [Byomkesh Manna, Dilruba Nasrin, 2013].

A few studies were found in Ethiopia on early care seeking behavior of acute diarrhea.

The principal investigators hypothesized that there are multiple factors that make mothers /care takers/ to be late in early care seeking behaviors when their under five years old children were affected by acute diarrhoea.

Therefore:

1. Is there any factor that contributes to be late in early care seeking behaviors among mothers and child care takers whenever their under five years old children were affected by acute diarrhea?
2. Is there any care seeking behavior of mothers /care takers/ during acute diarrhoeal illnesses?
3. Is there any care seeking behavior of mothers /care takers/ in relation to perceived illness severity?

Hopefully the finding of this research will fill the existing gap and contribute to educators, clinicians and policy makers for creation of better awareness among the mothers /care takers/.

1.3 Significance of the Study

Assessment of factors affecting initiation of early care seeking behavior of mothers /care takers/ towards acute diarrhoea is important to identify areas for improvement and encourage better communication with mothers /care takers/, and communities who need appropriate services. In addition it may be an input for those researchers and educators who need reference on this issue. Besides these, the study can provide evidence based information for clinical policy makers, FMOH, Addis Ababa Health Bureau, and NGOs about the overall situation.

CHAPTER TWO

LITERATURE REVIEW

2.1 Demographic characteristics

Most of the caretakers were the mothers (98.58%) while the remaining 1.42% was grandmother and aunts. Regarding the age of children, the mean was 18 months ($SD \pm 17$) and it ranged from 10 days to 59 months.

The median number of siblings was two; it ranged from 1 to 9 [17]. Health care seeking was highest for the youngest age group (62.9%) and slowly declined thereafter for older groups, where it reached 42.5% for children older than 4 years. Health care seeking for boys was slightly more likely than for girls, especially for children less than a year old, but this difference was not statistically significant. In general, a child with diarrhoea was more likely to be taken for treatment than a child with a cough regardless of the level of perceived illness severity. Maternal age markedly affected decisions to seek health care outside the home. Mothers aged 35 years and older (43%) were less likely to take their sick children for health care than younger mothers (63%). About 59% of mothers with primary education or less (434 of 732) took their sick children for health care, compared with 64.1% of those with at least a secondary education ($P > 0.05$). One-third of the mothers mostly between 20 and 34 years old, were engaged in some form of income generating activity within the last month. Two-thirds of these were small informal businesses, such as selling vegetables and food items. About 20% of mothers were casually employed. Maternal participation in income generating activity was not significantly associated with more health care seeking for child illnesses [18]. A higher percentage of respondents seeking care for ADD was from urban than rural locations however, this difference was not significant [19]. Perceived illness severity, maternal age (beyond 35

years) and household expenditure levels were independently associated with health care seeking for child illness. Although the associations were not strong, child age (less than a year old vs. those above 4 years) and maternal ethnicity (Kamba) also positively influenced health care seeking. [18] Nearly all caretakers (95.4%) cited consumption of clean food and water as the most effective measure for preventing childhood diarrhea, whereas hand washing (49.0%), improved nutrition (16.3%), proper disposal of human waste (5.7%), and breastfeeding (0.4%) were named less commonly. All caretakers believed that oral rehydration solution (ORS) is effective for treating diarrhea. Ninety-nine percent caretakers responded positively that vaccine could help to prevent childhood diarrhea.[20] Twenty three out of the 26 (88.5%) mothers who gave home remedies and 38 out of the 44 (86.4%) mothers who purchased medicines from pharmacies gave the care within 24 hours from the recognition of illness. But only 64 out of 135 (47.4%) mothers who took the child to a pharmacist and 33 out of 77 (42.9%) mothers who took the child to medical doctor did so within 24 hours from the recognition of illness. [21]

2.2 Determinants of seeking advice/treatment at a health facility

Mother's education was an important determinant of seeking treatment for child's diarrhoea; mothers with higher secondary and above were more likely to seek treatment compared to those who were illiterate (OR 1.65; 95% CI, 1.08 – 2.54). Economic status of the family significantly influenced seeking treatment; children belonging to richer and richest wealth index categories had higher chances of being taken to a health facility. Mother working away from home, distance to the nearest health facility being a “major” problem and mother's lack of knowledge about oral rehydration solution were associated with lower odds of seeking treatment. On the other hand, possession of a health card) and residing in a rural area were associated with higher odds of seeking treatment. [22].

2.3 Reasons for not seeking care for acute diarrheal disease

Studies have shown that early health seeking prevents complications and equally reduces the rate of death. Various studies from developing countries have reported that delay in seeking appropriate care and not seeking any care, contributes to the large number of child deaths. [23]

When health care are sought, the quality of treatment or care received might not be adequate and may cause delay in subsequent seeking for the same health care. Further health care system deficiencies include limited human resources, drug supplies and services management capacity despite these documentations of health care provision and system deficiencies, little attention has been paid to understanding how users view the quality of care provided and received. Early recognition, seek and treat has greatly reduced complications of common child health problems. To reduce diarrhoea mortality, three crucial steps in management have been suggested by UNICEF: recognize, seek, and treat. These steps are equally important for malaria and pneumonia. Many child deaths could be reduced if timely recognition of symptoms was followed by prompt care seeking at a place where accurate diagnosis would lead to administration of right drugs in correct doses. [23]

Fifty-six point three percent of respondents with ADD during the preceding four weeks did not seek care. The commonest reasons for not seeking care were: the illness was mild (53.6%), self-medication (22.3%), and the illness was cured already (9.1%).

The first three main reasons for not seeking care for ADD were similar across all education levels and all income groups: the illness was mild, self-medication, and the illness was cured already except those house hold whose monthly income were > RM 5,000 was not required as the third main reason. The same reasons for not seeking care held true for both rural and urban respondents. [19]

Another significant reason was limited access to medical care (22.6%) either for geographic or economic reasons, or because the physician was absent at the clinic that day. [24]

And also the main reasons that they gave were the child did not seem to need care (44.3%), the cost of treatment was too high (32.8%), the clinic was too far from home (9.8%), and they were unable to find transportation (8.2%). The most common means of transportation to the nearest health facility of choice was walking (74%) followed by commercial transportation (which included riding on the back of a bicycle; 13%) and personal transport (generally a bicycle; 4%).

We asked caretakers how long it would usually take to reach the health facility of choice; 770 (74%) of 1,035 respondents estimated that it would usually take less than 1 hour. [25]

The other reason for not seeking care among caretaker of children with diarrhea was no childcare for other children, heavy rains and flooding. [26]

2.4 Place first sought care for acute diarrheal disease

The type of health facilities most commonly utilized by respondents when first seeking care for ADD were private clinics (41.9%), government health clinics (20.9%), pharmacies (16.7%) and government district hospitals (9.0%).

There was no difference between males and females in the choice of health facilities where the respondent first sought care.

Respondents from all education levels first sought care for their diarrhea at private clinics.

The main health facilities where respondents first sought care for ADD in urban areas were private clinics (51.7%), followed by pharmacies (14.5%) and government health facilities (14.3%). The majority of rural respondents first sought care from government health clinics (31.4%), followed by private clinics (26.2%) and pharmacies (20.2%). [19]

However, Public clinics and hospitals are not primary sites for health care seeking by rural residents because they are mostly found outside these communities. [18]

2.5 Duration after onset of illness for seeking care

The mean time from the start of diarrhoeal episode to seeking treatment “outside home” was 1.39 days.[22] Majority of the ill children were taken to a health facility after 1 day of illness. [22]. Respondents sought care 13-24 hours after the onset of ADD. A higher percentage of males sought care <24 hours after the onset of diarrhea, whereas a higher percentage of females sought care >24 hours after the onset of diarrhea. However, these differences are not significant. A higher percentage of respondents seeking care ≤ 12 hours after the onset of diarrhea were observed among all ethnic groups compared to other time intervals. A similar pattern of promptness in seeking care was seen at all education levels. Those with tertiary education had the highest percentage of seeking care ≤ 12 hours after the onset of diarrhea the lowest percentage being observed in those with no formal education. The highest percentage of respondents seeking care ≤ 12 hours after the onset of diarrhea was seen in the RM2,000-RM2,999 monthly household income group. Those families with a monthly household income of RM400-RM699 had the lowest percentage of seeking care ≤ 12 hours after the onset of diarrhea. A significantly higher percentage of respondents seeking care in ≤ 12 hours was observed in urban than rural locations.[19] Seventy seven (26.4%) out of the 292 mothers interviewed sought 'appropriate care' during the child's illness whereas 166 (56.8%) mothers sought 'prompt care' and only 33 (11.3%) mothers sought 'appropriate and prompt care.[21] Maternal education, number of symptoms and perceived severity of illness were the predictors of 'appropriate care'. Family income and number of symptoms were the predictors of 'prompt care'. The mothers gave 'appropriate care' significantly more often when the child had more than one symptom, if the

mother was more educated and when the illness was perceived as 'serious'. The mothers sought 'prompt care' more often when the total family income was more than 10,000 Nepali rupees per month (1 US\$≈73 Nepalese rupees) and when the child had more than one symptom. [21]

2.6 Mothers' awareness about danger signs of childhood illness

The mothers' awareness about the danger signs of childhood illness was poor. None of the mothers were aware of all the danger signs and 10 (3.4%) mothers were not aware of any danger signs. One hundred and forty nine (51%) mothers were aware of fever, 132 (45.2%) knew about child becoming sicker and 124 (42.5%) mothers were aware about drinking poorly as the danger signs of childhood illness. [21] The most common features accompanying the diarrhea were dry mouth (84.8%), lethargy (77.8%), sunken eyes, more than usual (67.3%), and excessive thirst (69.8%). [20] In addition to this, other signs of more severe illness that indicate dehydration were decreased urination, wrinkled skin, bloody stool, rice water stool, frequent (more than six) loose stools per day, and vomiting more than three times per day. [25] Unable to drink or drinking very little by of caregivers were also an indicators of dehydration. [29] The most important sign that induced a mother to take her child to a health care facility was bloody diarrhea. In decreasing order, vomiting, weight loss, sunken eyes, fever, and illness for longer than three days, and thirst were also closely related to the mothers' decision to look for health care. Isolated signs of dehydration had higher odds ratios than the presence of actual dehydration. [24]

Caretakers who looked for coma/loss of consciousness as an indicator of dehydration had a 5.16 higher odds of taking their child to a traditional healer for diarrhea compared with other sources of care. Among indicators of perceived susceptibility, caretakers reporting decreased urination associated with the diarrheal episode had a 3.46 times greater odds of seeking care from a

traditional healer compared with other sources of care. With decreased urination and mucus or pus in the stool showing a strong positive association with seeking care from a traditional healer along with caretaker's belief that coma and thirst were indicators of dehydration. The belief that wrinkled skin was an indicator of dehydration was negatively associated with seeking care from a traditional healer. [27] The seriousness of signs and symptoms of disease is an important determinant of care-seeking pattern for a sick child. [30]

2.7 Feeding practices

It was observed that 52.3% of the children had received some home remedies thought to stop diarrhoea. The remedies were mostly herbal teas, of which chamomile was the most commonly used (27.7%). Most children received liquids to prevent dehydration (92.2%). In relation to the type of liquids, mothers provided some form of oral rehydration therapy (71.8%). Mothers gave tea, rice beverages, milk, or water (53.0%), while 14.1% of the children were treated with ORS, and 4.7% took home-based solutions. On the other hand, 20.0% of the children received some type of non-recommended liquids. Carbonated drinks, commercial solutions, or wrongly combined ones were the most commonly used. Only 3.0% of the children did not receive any liquids at all, neither for treating diarrhoea nor for preventing dehydration.

Regarding the use of drugs, 35.2% of the children received some medication, mainly anti diarrhoeal suspensions or symptomatic drugs. As to changes in feeding patterns, 36.3% had some dietary restrictions. Milk was the most commonly restricted food (27.2%). Among the breast-fed infants, breast feeding was interrupted in 12.2%.

Children who had been ill for three or fewer days, those who had diarrhoea as the single manifestation of disease and those who had diarrhoea plus vomiting and/or fever, were treated with recommended liquids (chi square test, $p < 0.01$). On the other hand, children who had

dehydration signs, alone or combined, were primarily treated with standard ORS ($p < 0.01$). Children with bloody diarrhoea also received ORS. Not recommended liquids were not significantly associated with any clinical characteristic. Household treatment and maternal health-seeking behavior were analyzed in relation to three variables: children's need for medical care, presence of dehydration signs, and maternal level of information. Among children who needed medical care, the mothers restricted food (41.9%), provided some home remedies (56.5%), and went to see a physician (66.0%). Among children who had dehydration signs, the mothers restricted food (44.9%), provided home remedies (60.6%), and sought medical care (67.9%). On the other hand, the mothers' decisions to use drugs, to restrict food or to provide home remedies or to go to a health care facility, were not based upon their level of information. We did not observe any significant differences between well-informed and not well informed mothers.[24] Details about home management of the illness were solicited. Most caretakers (61.3%) reported that they offered the child the same amount to drink as usual, whereas 27.9% offered more than usual and 10.8% offered less than usual. Most caretakers (71.4%) offered their child the same or more than usual to eat, whereas 28.7% offered less food. Before seeking care from outside the home, 12.2% of caretakers gave their child ORS, no one administered zinc, and 27.6% provided homemade fluids including thin watery porridge made from maize, rice, or wheat, soup, sugar salt water solution, yogurt. Children from wealthier households and those passing rice-water stools were more likely to receive ORS at home compared with those who did not pass rice-water stools. After seeking care from a hospital or health center, 75.8% received ORS, and 45.9% received zinc[20]

A total of 994 of the 1067 children (93.2%) with clinically defined diarrhea in the previous two weeks were breastfed at the time of the interview, and 98.8% of these children continued to b

during the diarrhea episode. [28] Despite several plans to institute diarrheal disease control programs and the advent of low cost, effective interventions and, programs aimed at reducing the morbidity and mortality from pediatric diarrheal disease have not achieved their expected target because of a lack of knowledge at the individual and community level, and inconsistencies in local and international policy making. The major factors, though, are the gaps of knowledge in individual and community practices where there is inadequate awareness of the disease and its danger signs, low educational levels and socioeconomic status, and poor sanitation and hygiene. However, the other confounders like deficient local health infrastructure and health care delivery systems, inappropriate allocation of funds to different programs, and inadequate coordination and collaboration among different sectors and agencies also contribute to the inability to achieve greater success.

Conceptual frame work

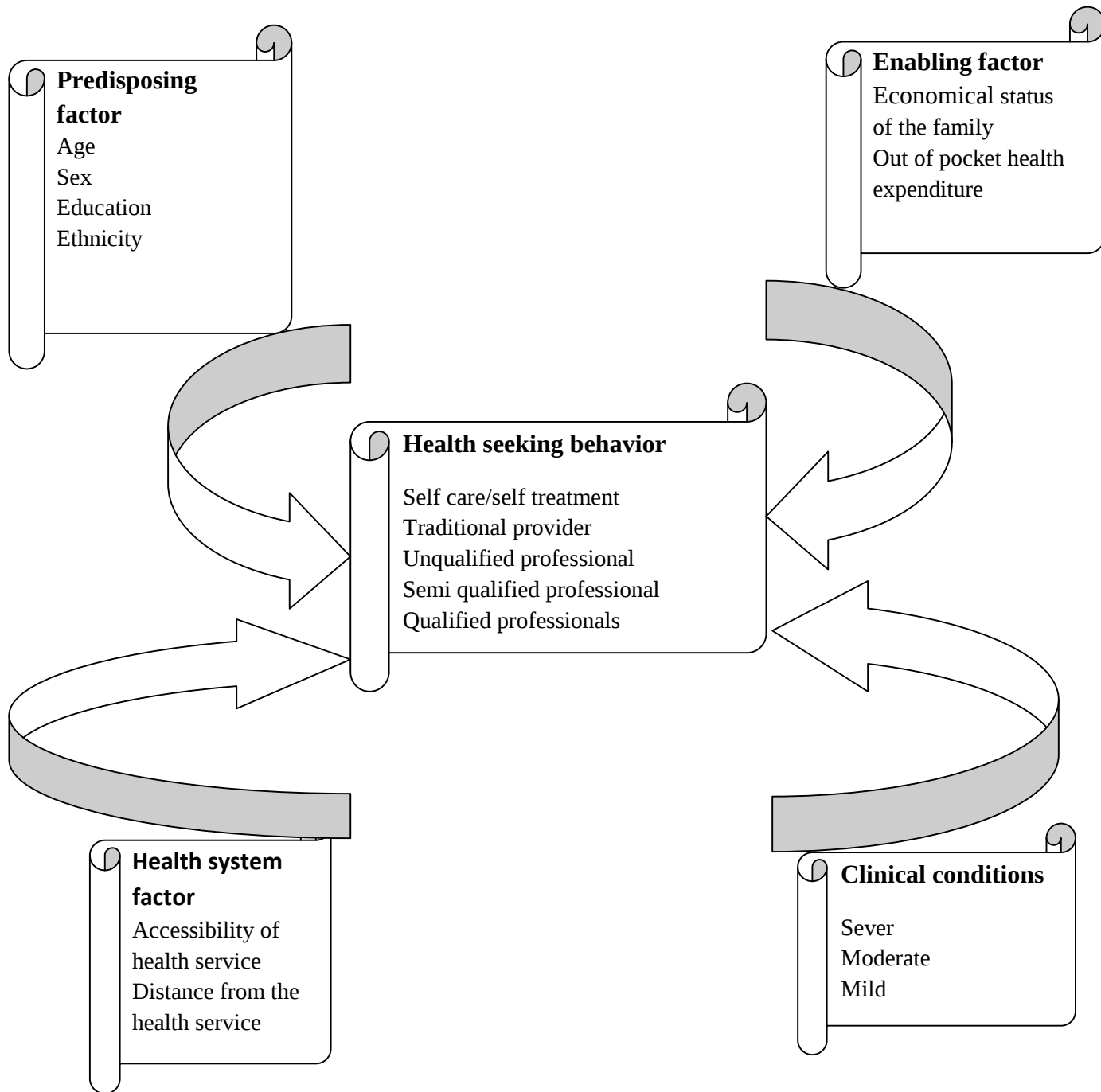


Figure 1: Conceptual framework for care seeking behavior for childhood illness.

(Modified from Anderson)

CHAPTER THREE

OBJECTIVE

3.1 General Objectives

To determine factors affecting initiation of early care seeking behavior among mothers and care takers of under five children having acute diarrhea attending IMNCI clinic in governmental health centers, Addis Ababa, Ethiopia, 2014.

3.2 Specific Objectives

- ❖ To identify factors contributed to be late in early care seeking behaviors among mothers and child care takers whenever their under five years old children were affected by acute diarrhea.
- ❖ To describe care seeking behavior of mothers /care takers/ during acute diarrhoeal illnesses.
- ❖ To identify care seeking behavior of mothers /care takers/ in relation to perceived illness severity.

CHAPTER FOUR

METHODOLOGY

4.1 Study Area

The research area is Addis Ababa which is the capital city of Ethiopia. Being the center 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. Its area is 540km² and the total population of the city is estimated nearly 3 million populations from these 222000 of them are under five years old children (central statistic agency of Ethiopia 2009).

For administrative purpose Addis Ababa is divided in to 10 sub-cities and 106 woreda which is the smallest administrative level.

4.2 Study Design

A quantitative /cross- sectional/ and qualitative institutional based survey was conducted at Addis Ababa governmental health centers to determine the factors that affect the early care seeking behavior of mothers /care taker/ when their under five years old children were affected by acute diarrhoea and to develop a model of health-care seeking behavior.

4.3 Source population: All under five children who were attending at IMNCI clinics for treatment at governmental health centers in Addis Ababa.

4.4 Study population: was under five children having diarrhea and seeking medical care at IMNCI clinic in selected governmental health centers of Addis Ababa.

4.4.1 Inclusion Criteria

- ✓ Those mothers /care takers/ seeking care for acute bloody diarrhoea.
- ✓ Those mothers /care takers/ seeking care for acute mucoid diarrhoea.
- ✓ Those mothers /care takers/ seeking care for acute watery diarrhea in the IMNCI clinics within 14 days.

4.4.2 Exclusion Criteria

- ✓ Those mothers /care takers/ seeking care for any type of persistent diarrhoea.
- ✓ Those mothers /care takers/ seeking care for other acute illness.
- ✓ Those mothers /care takers/ who were not voluntary to give their responses.
- ✓ Those mothers /care takers/ who were not able to hear.
- ✓ Those non respondent mothers /care takers/.
- ✓ Those children who were critically ill.

4.5 Sample size determination:

Sample size was calculated using a single population proportion formula with a source population of size greater than 10,000. Assuming prevalence of HSB

Used to be 27% to get the maximum possible sample size; Z value of 1.96 and Marginal error 5%.

Sample size is calculated as follows:

$$N = z^2 \frac{p q}{d^2}$$

Where: - N= sample size, Z =normal deviate = 1.96 for 95% CI

P =proportion of children with acute diarrhea expected to be treated at the health facility = 0.27

Q =1-p=0.73, D = precision (marginal error) = 0.05, by substituting the numbers we get 303.

Non respondent rate 10%=30+303=333: N=333 (the total sample size to be interviewed).

4.6 sampling procedure

Simple random sampling method was used in this study population among the six health centers depending on their respective number of patient flows.

Each study participants were selected using systematic sampling technique in which every third client was interviewed in each health center.

Proportional allocation of the study subjects to the six health centers were as follows:

Kolfe health centers:

$$300/1104 \times 333 = 90 \quad k^{\text{th}} = N/n = 300/90 = 3$$

Addis ketema health center:

$$230/1104 \times 333 = 69 \quad k^{\text{th}} = N/n = 230/69 = 3$$

Woreda 3 health center:

$$100/1104 \times 333 = 32 \quad k^{\text{th}} = N/n = 100/32 = 3$$

Meshalekia health center:

$$157/1104 \times 333 = 47 \quad k^{\text{th}} = N/n = 157/47 = 3$$

Kirkos health center:

$$159/1104 \times 333 = 48 \quad k^{\text{th}} = N/n = 159/48 = 3$$

Woreda 11 health center:

$$158/1104 \times 333 = 47 \quad k^{\text{th}} = N/n = 158/47 = 3$$

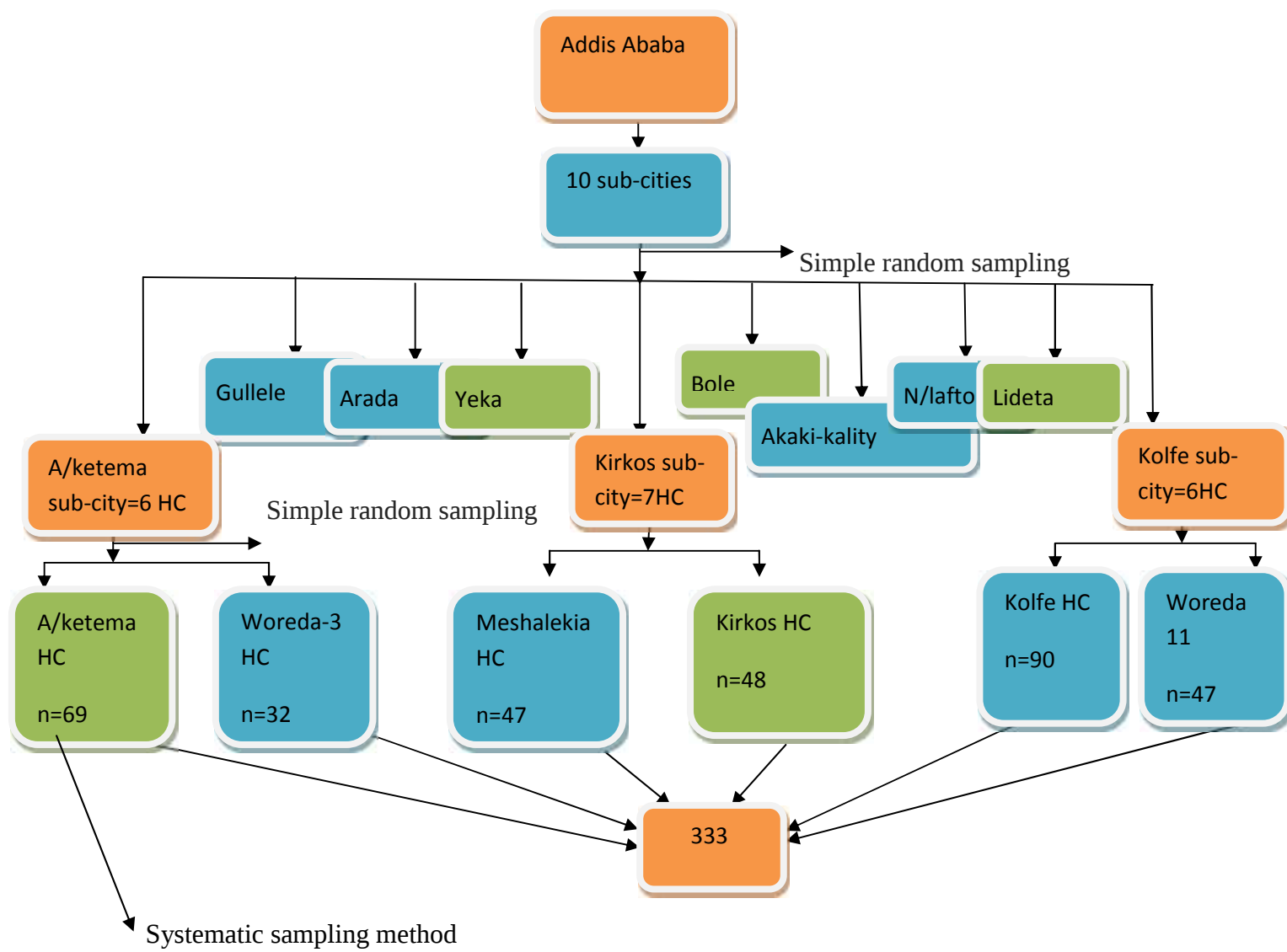


Figure: 2 Schematic representation of sampling procedure

4.7 Data collection instrument

A structured questionnaire was adapted from the survey tools developed by India urban Slums of Kolkata and it was modified in to Ethiopian context to assess determinants of Health Care Seeking behavior for Diarrheal Illness in under five years old Children. It includes all the relevant variables to meet my objectives.

For qualitative aspect of the study, open-ended questions were prepared to guide an in-depth interview. The purpose of administering such open ended questions were in order to get deep information from those mothers or care takers of the child regarding factors affecting care seeking behavior. A tape recorder was used in order to record all issues raised in the deep interviewing session.

4.8 Data collection procedure

Six diploma clinical nurses who were not working in the IMNCI clinic were recruited as data collectors, and two BSC, graduate nurses were recruited as supervisors. All data collectors and supervisors were trained for one day on data collection process based on the guide that was developed by principal investigator. They were allowed to fill the questionnaire and later discussion was made in all contents of the format and areas of difficulties were revised.

Beside this, they were trained for one day on their responsibilities for describing the purpose of the study, giving orientation, telling clients the importance of honest and sincere reply, on responding to questions and how to interview and fill the questionnaire accurately.

At the time of the actual data collection, the data collectors arrived early in the morning and Clients were interviewed after they got the IMNCI service. The principal investigator and the supervisors strictly followed the overall performance of each activity on daily base to ensure the completeness of questionnaire, and to give further clarification of support for data collectors.

Qualitative questionnaire includes five questions about factors affecting early care seeking behavior among mothers and care takers of under five children having acute diarrhea which is not investigated with the quantitative method.

4.9 variables

Independent

Socio demographic factors (age, sex, Education).

Health service accessibility

Dependent variable:

Maternal (child care takers) health seeking behavior for under five children having acute diarrhea.

4.10 Data quality assurance

Questionnaire was prepared in English version and translated in to Amharic and back to English. The questionnaire was pre-tested in the same study population two weeks prior to the actual questionnaire on 5 % of the calculated sample size in health institutions which were not selected in the survey. Additional adjustment was made based on the findings of the pre-test. Data collection was carried out by trained nurses who were not working in the same IMNCI clinics rather from other department of the health institutions. Five percent of the collected data was checked by the supervisor daily for completeness, validity and reliability. Finally, the principal investigator had monitored the overall quality of data collection.

4.11 Data analysis procedure

The collected data was cleaned and checked for completeness, then was entered, compiled and analyzed using SPSS version 16.0 packages.

Binary logistic regression analysis was determined to assess association between variables, and the strength of statistical association was measured by adjusted odds ratios and 95% confidence intervals.

For qualitative data, data from in-depth interview of participants were analyzed by thematic analysis technique and described each theme descriptively.

4.12 Ethical Consideration

For ethical purposes and for the success of this study, ethical clearance of the proposal was obtained from IRB of department of nursing and midwifery then, permission letter was obtained from nursing and midwifery department of Addis Ababa University to Addis Ababa health bureau. I was obtained permission from the staff members. The investigator also explained the purpose of the study to the participants, informed, assured about confidentiality, and also a written informed consent was obtained from all the participants. It was made clear to them that they may stop at any time from the research.

4.13 Dissemination and utilization of results

Result of the study was submitted to Addis Ababa University School of Nursing and midwifery department. The thesis will be disseminated in to the Ministry of Health, Addis Ababa Health Bureau, Addis Ketema, Kirkos and Kolfe sub-cities health office and health centers. The findings will be presented at various seminars, meetings and workshops and will be published in a scientific journal. Hard and soft copy was available in the library of Addis Ababa University for graduate students as well as for other concerned body.

4.14 Operational definition

Integrated management of child hood illness /IMNCI/: A protocol used to treat different types of under five years child illnesses.

Care seeking behavior: Defined as any action undertaken by mothers /care takers/ when their under five year's old children have acute diarrhoea.

Care seeking behavior: Those mothers /care takers/ ability of searching different health facilities when their under five children are affected by acute diarrhea.

Care taker: A person that gives care for the child during different types of under five years illnesses.

Government health center: are public institutions that provide medical care for different types of illnesses with minimum level of cost.

CHAPTER 5

RESULTS

Out of 333 respondents identified for the study 100% (n=333) were responded for the interview. From those respondents 86.2% (n=287) were mothers. The mean ages of the children were 2.2 years. Majority of the children affected by acute diarrhea were 24-59 months and 0-11 months which is 36.9% (n=123) and 35.1% (117) respectively. 50 % (n=168) of the children have no siblings but 49.2% (n=164) have 1-2 siblings. About 54.1% (n=180) of the care seekers have information about provision rotavirus vaccine at the health facilities despite of these 45.1% (n=153) of the respondents have no idea about the vaccine. The ages of most respondents were between (27-32) 38.1% (n= 127) and (21-26) 35.7% (n=119) years old. Regarding educational status of the respondents most of 29.7% (n=99) them were completed primary school. 83.5% (n=278) were married and 9% (n=30) were single. Majority of care seekers were house wife 46.2% (n=154). Most of 29.7% (n=99) of the fathers were completed secondary school. 55.6% (n= 185) and 2.7% (n=9) of the fathers have a monthly income of highest (1000+) and lowest (100-300) respectively. As shown in the table below

Table: 1 Demographic characteristic of mothers and care takers of under five years old children having acute diarrhoea in governmental health centers of Addis Ababa, 2014.(n=333)

Variable Name	Frequency	Percent (%)
Children age		
0-11 months	117	35.1
12-23 months	93	27.9
24-59 months	123	36.9
Total	333	100.0
Sex		
M	154	46.2
F	179	53.8
Total	333	100.0
Number of siblings		
No siblings	168	50.5
1-2	164	49.2
3-4	1	0.3
Total	333	100.0
Rota virus vaccination		
Yes	180	54.1
No	153	45.9
Total	333	100.0
Care seekers		
Mothers	287	86.2
Fathers	31	9.5
Care takers	9	2.7
Grand mothers	5	1.5
Others	1	0.3
Total	333	100.0

Respondent age		
15-20	28	8.4
21-26	119	35.7
27-32	127	38.1
33+	59	17.7
Total	333	100.0
Mothers educational status		
Illiteracy	72	21.6
Primary school	99	29.7
Secondary school	87	26.1
Diploma	59	17.7
Degree and above	16	4.8
Total	333	100.0
Marital status		
Single	30	9
Married	278	83.5
Divorced	18	5.4
Windowed	7	2.1
Total	333	100.0
Ethnicity		
Amhara	72	21.6
Oromo	73	21.9
Tigre	25	7.5
Guraguae	124	37.2
Others	39	11.7
Total	333	100.0

Religion		
Orthodox	160	48
Muslim	104	31.2
Protestant	50	15
Others	19	5.4
Total	333	100.0
Mothers (care taker) occupation		
Governmental employee	51	15.3
Private employee	62	18.6
House wife	154	46.2
Merchant	44	13.2
Others	22	6.6
Total	333	100.0
Fathers education		
Illiteracy	23	6.9
Primary school	77	23.1
Secondary school	99	29.7
Diploma	50	15
Degree and above	39	11.7
Total	288	86.5
Missing system	45	13.5
Total	333	100.0
Fathers monthly income		
100-300	9	2.7
301-500	24	7.2
501-1000	69	20.7
1000+	185	55.6
Total	287	86.2
Missing system	46	13.8
Total	333	100.0

Majority 28.8% (n=96) of the respondents gave their children ORS and home based solutions during the illness, 16.2% (n=54) of them gave home based solutions like porridge, Roth water, egg and milk, while, 22.8% (76) of the respondents gave home based solutions and breast during the illness. Only 7.8% (n=26) and 0.6% (2) of respondents gave breast and ORS during the acute diarrheal attack respectively. About 20.1% (67) of the respondent gave ORS, home based solutions and breast during the diarrhoeal attack. As shown in the table below.

Table: 2 ORS use and Feeding practices of those mothers /care takers/ whenever thier under five years old children were affected by acute diarrhea in governmental health centers of Addis Ababa, 2014.(n=333)

Variable name	Frequency	Percent (%)
ORS(1)	2	0.6
Home based solution(2)	54	16.2
Breast feeding(3)	26	7.8
2,3	76	22.8
1,2	96	28.8
1,3	12	3.6
1,2,3	67	20.1
total	333	100

Majority of the respondents have no any information about danger signs, despite of these 35.1% (n=117) and 28.5% (n=95) of them have an information about danger signs sunken eye and restless respectively. 24.3% (n=81) of the respondents has an information about dry mouth, and 16.8% (n=56) has an awareness about thirsty. 9.6% (n=32) and 14.4% (n=48) of the respondents were among the least number of danger signs a warred by the respondents.

As shown from the table below:

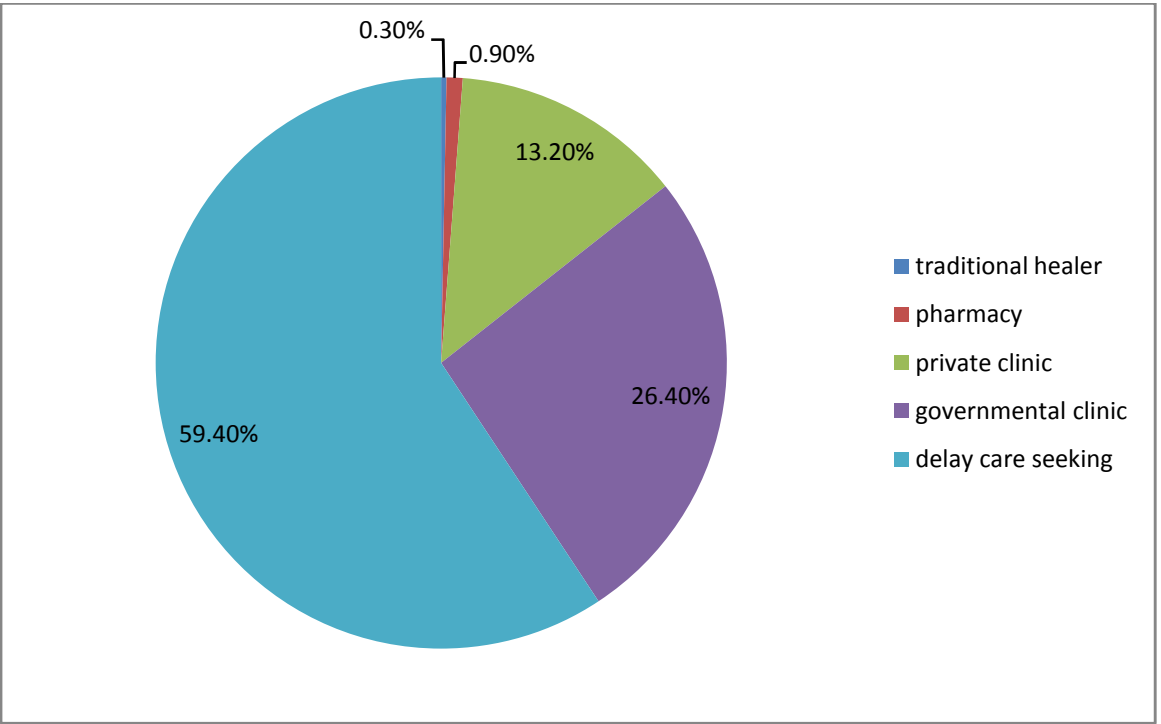
Table: 3 Mother's /Care takers/ awareness about danger signs whenever their under five years old children were affected by acute diarrhoea in governmental health centers of Addis Ababa, 2014.(n=333)

Variable name	Attributes	Frequency	Percent (%)
Dry mouth	Yes	81	24.3
	No	252	75.7
	Total	333	100.0
Decrease urine out put	Yes	32	9.6
	No	301	90.4
	Total	333	100.0
Restless	Yes	95	28.5
	No	238	71.5
	Total	333	100.0
Irritability	Yes	48	14.4
	No	285	85.6
	Total	333	100.0
Thirsty	Yes	56	16.8
	No	277	83.2
	Total	333	100.0
Sunken eye	Yes	117	35.1
	No	216	64.9
	Total	333	100.0

Out of 333 respondents 100.0% (n=333) of them reported that their children have diarrhea during the illnesses and the second most reported signs and symptoms by the respondents were fever,vomiting,and lethargy that is 66.1% (n=220),61.3% (n=204) and 56.5% (n=188) respectively. 45.9% (n=153) of the respondents reported a clinical sign of unable to drink /poorly drink/, whereas, 19.5% (n=65) of them said irritability/restless/ during the diarrhoea attack. Only 8.4% (n=28) of the respondents reported that their children have bloody stool during their illness. As shown in the table below.

Table: 4 Care seeking behavior of mothers /care takers/ of those under five years' old children in relation to perceived illness severity in governmental health centers of Addis Ababa, 2014.(n=333)

Variable name	Attributes	Frequency	Percent /%/
Diarrhoea	Yes	333	100.0
	No	0	0.0
	Total	333	100.0
Thirsty	Yes	107	32.1
	No	226	67.9
	Total	333	100.0
Irritability/restless	Yes	65	19.5
	No	268	80.5
	Total	333	100.0
Poorly drink/unable to breast feed	Yes	153	45.9
	No	180	54.1
	Total	333	100.0
Lethargy	Yes	188	56.5
	No	145	43.5
	Total	333	100.0
Sunken eye	Yes	50	15
	No	283	85
	Total	333	100.0
Bloody stool	Yes	28	8.4
	No	303	91
	Total	333	100.0
Fever	Yes	220	66.1
	No	113	33.9
	Total	333	100.0
Vomiting	Yes	204	61.3
	No	129	38.7
	Total	333	100.0



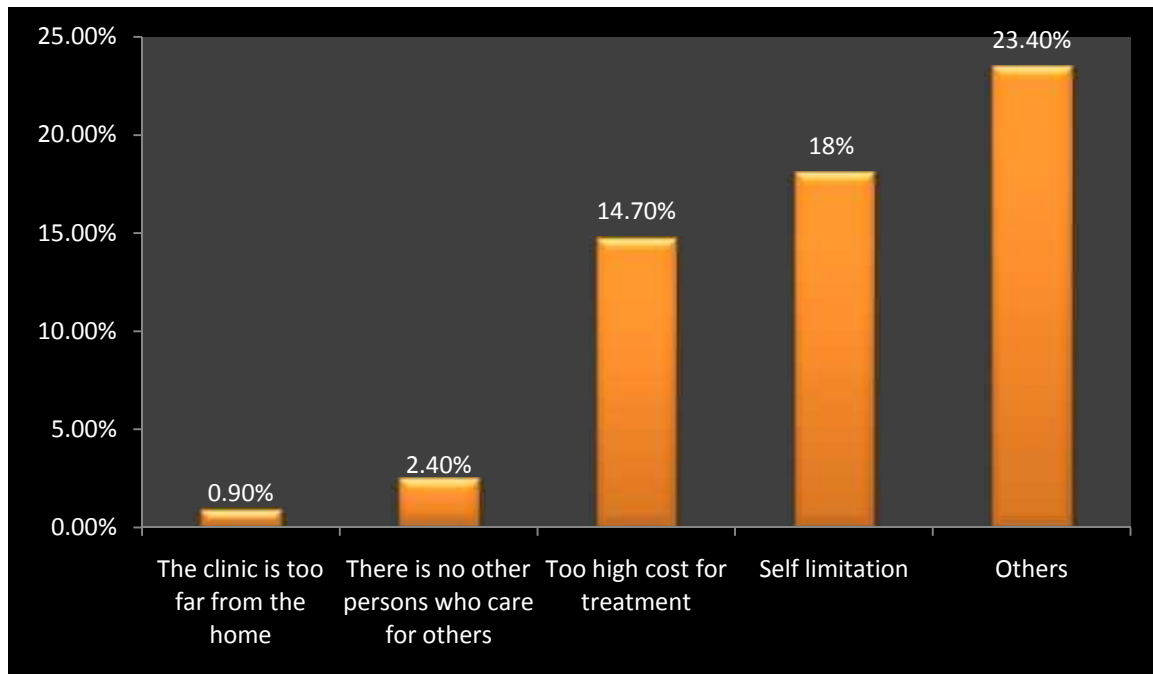


Figure: 4 Contributing factors that cause late in early care seeking behavior among mothers/care takers/ of under five years old children when their children were affected by acute diarrhoea in govern mental health centers, Addis Ababa, 2014.(n=333)

The association between the dependant and independent variables in mothers/care takers/ of under five years old children in govern mental health centers, Addis Ababa, 2014.

Bi-variate and multiple -variate analysis was done to see the relationship between dependent variables and independent variables.

Thus fathers who were completed degree and above were 2.83 times more health care seeking behavior than those who were illiterate (OR= 2.83,p=0.02). HSB of those respondents who sought care less than one day duration was 0.38 times less likely than those who sought care after one day duration(AOR=0.38,95% CI 0.15,0.92).

HSB of those respondents that get excellent services were 9 times more early care seeking behavior than those who get poor service provision (OR=9.37,95% CI 1.01,86.87).

Care seekers whose children have sunken eye and vomiting during the illness were 1.92 and 1.79 times more care seeking behavior than those who haven't have the signs and symptoms (OR=1.92,95% CI 0.99,3.71) and (OR=1.79,95% CI 1.14,2.80) respectively.

Respondents whose children have a danger sign of restless and irritability have 1.82 and 2.91 times more care seeking behavior than those who have no information about danger signs (OR=1.82,95% CI 1.10,3.03)and(OR=2.91,95% CI 1.42,6.19) respectively.

Table: 5 The association between dependant and independent variables in factors affecting early care seeking behavior of mothers /care takers/ of under five years old children affected by acute diarrhoea in govern mental health centers, Addis Ababa, 2014.

Variable name	Health seeking behavior						
	Attribute	Y (%)	N (%)	P-value	COR	P-value	AOR
Age	15-20	11(8.1%)	17(8.6%)	0.90	1.06(0.42,2.65)	0.67	0.75(0.19,2.86)
	20-26	45(33.3%)	74(37.4%)	0.71	1.12(0.59,2.13)	0.91	1.05(0.40,2.75)
	27-32	55(40.7%)	72(36.4%)	0.73	0.89(0.48,1.68)	0.59	0.78(0.31,1.95)
	33+	24(17.8%)	35(17.7%)	0.15	1.45		
Care seeker	Mothers	122(90.4%)	165(83.3%)	1.00	0.00	1.00	0.00
	Fathers	8(5.9%)	23(11.6%)	1.00	0.00	1.00	0.00
	Care takers	2(1.5%)	7(3.5%)	1.00	0.00	1.00	0.00
	Grand mother	3(2.2%)	2(1%)	1.00	0.00		
		0(0%)	1(0.5%)	1.00	1.61		
	Others						
Marital status	Married	109(80.7%)	169(85.4%)	0.34	2.06(0.45,9.41)	0.99	1.40(0.00)
	Unmarried	14(10.4%)	16(8.1%)	0.61	1.52(0.29,8.01)	0.99	1.69(0.00)
	Divorced	8(5.9%)	10(5.1%)	0.57	1.66(0.28,9.70)		
	Widowed	4(3%)	3(1.5%)	0.70	0.75		
Maternal educational status	Illiterate	22(16.5%)	49(24.7%)	0.52	0.80(0.42,1.55)	0.99	0.99(0.42,2.35)
	Primary	35(26.3%)	63(31.8%)	0.04	0.50(0.26,0.97)	0.31	0.60(0.22,1.63)
	Secondary	41(30.8%)	46(23.2%)	0.12	0.57(0.27,1.17)	0.92	0.93(0.21,4.00)
	Diploma	26(19.5%)	33(16.7%)	0.06	0.34(0.11,1.05)	0.37	0.40(0.05,2.94)
	Degree and above	9(6.8%)	7(3.5%)	0.002	2.22		
Maternal occupation	Gov-empl	22(16.5%)	29(14.6%)	0.20	0.49(0.16,1.47)	0.26	3.39(0.39,28.99)
	Priv-empl	28(21.1%)	34(17.2%)	0.14	0.45(0.15,1.31)	0.13	4.50(0.63,31.95)
	House wife	64(48.1%)	88(44.4%)	0.19	0.51(0.19,1.39)	0.42	2.13(0.33,13.44)
	Merchant	13(9.8%)	31(15.7%)	0.84	0.89(0.28,2.79)	0.23	3.49(0.44,27.12)
	Others	6(4.5%)	16(8.1%)	0.04	2.66		
Fathers educational status	Illiterate	6(5.1%)	17(9.9%)	0.64	0.77(0.27,2.22)	0.99	1.00(0.28,3.49)
	Primary	24(20.5%)	53(31.0%)	0.20	0.52(0.18,1.43)	0.16	0.40(0.11,1.44)
	Secondary	40(34.2%)	59(34.5%)	0.03	0.30(0.10,0.88)	0.08	0.26(0.05,1.19)
	Diploma	27(23.1%)	23(13.5%)	0.05	0.33(0.10,1.03)	0.06	0.21(0.04,1.12)
	Degree and above	20(17.1%)	19(11.1%)	0.02	2.83		

Fathers monthly income	100-300 301-500 501-1000 1000 and above	3(2.6%) 8(6.8%) 28(23.9%) 78(66.7%)	6(3.5%) 16(9.4%) 41(24.1%) 107(62.9%)	1.00 0.67 0.60 0.32	1.00(0.19,5.07) 0.73(0.16,3.17) 0.68(0.16,2.82) 2.00	0.93 0.81 0.67	0.92(0.13,6.50) 1.26(0.18,8.44) 1.49(0.23,9.47)
Duration of care seeking	Less than one days Within one days Greater than one days	27(20%) 42(31.1%) 66(48.9%)	20(10.1%) 47(23.7%) 131(66.1%)	0.003 0.028 0.000	0.37(0.19,0.71) 0.56(0.33,0.93) 1.98	0.034 0.037	0.38(0.15,0.92) 0.47(0.23,0.95)
Service status	Excellent Very good Good Poor	35(25.9%) 54(40%) 42(31.1%) 4(3%)	82(41.4%) 79(39.9%) 36(18.2%) 1(0.5%)	0.04 0.11 0.28 0.21	9.37(1.01,86.87) 5.85(0.63,53.79) 3.42(0.36,32.07) 0.25	0.99 0.99 0.99	2.51(0.00) 1.98(0.00) 1.25(0.00)
Number of siblings	No siblings 1-2 siblings 3-4 siblings	56(41.5%) 78(57.8%) 1(0.4%)	112(56.6%) 86(43.4%) 0(0%)	1.00 1.00 1.00	3.23(0.00) 1.78(0.00) 0.00	0.99 0.99	9.05(0.00) 6.13(.00)
Sunken Eye	Yes No	14(10.4%) 121(89.6%)	36(18.2%) 162(81.8%)	0.05 0.01	1.92(0.99,3.71) 1.33	0.52	0.77(0.34,1.73)
Bloody Stool	Yes No	9(6.7%) 126(93.3%)	19(9.6%) 179(90.4%)	0.34 0.003	1.48(0.65,3.39) 1.42	0.84	1.11(0.38,3.25)
Vomiting	Yes No	72(53.3%) 63(46.7%)	133(67.2%) 65(32.8%)	0.11 0.86	1.79(1.14,2.80) 1.03	0.33	1.35(0.73,2.49)
Restless	Yes No	29(21.5%) 106(78.5%)	66(33.3%) 132(66.7%)	0.02 0.09	1.82(1.10,3.03) 1.24	0.56	1.23(0.60,2.55)
Irritability	Yes No	10(7.4%) 125(92.6%)	38(19.2%) 160(80.8%)	0.004 0.039	2.96(1.42,6.19)	0.08	2.40(0.90,6.41)
Fever	Yes No	83(61.5%) 52(38.5%)	137(69.2%) 61(30.8%)	0.14 0.39	1.40(0.88,2.22) 1.17	0.68	1.13(0.60,2.13)
Thirsty	Yes No	36(26.7%) 99(73.3%)	71(35.9%) 127(64.1%)	0.07 0.06	1.53(0.95,2.48) 1.28	0.47	1.26(0.66,2.39)

***Significant at 1%, **significant at 5%,*significant at 10% level

QUALITATIVE RESULTS

Respondent 1

This was a 28 years old women brought her child to the health center with a complain of diarrhea, crying and lethargy. The interview was around 60 minutes.

Interviewer: Do you have any information about acute diarrhea?

Respondent: *“Yah! It is a disease that made the child tired/weak, decrease the weight. It occurs mostly during with eruption of the tooth and uvula”*.

Interviewer: Why don't you bring your child deliberately after the onset of diarrhea?

Respondent: *“Because I suspect the diarrhea is secondary to eruption of tooth and uvula so let me weight and cured by itself, due to work load, absence of care takers for other children at home”*.

Interviewer: What is your major action when your child is affected by acute diarrhoea?

Respondent: *“Nothing, I didn't do traditional practices unlike other neibourings, frequently breast feed, by leaving the work I care for the child, em,I made different home based solutions to feed him”*.

Interviewer: Do you know about the causes of acute diarrhea?

Respondent: *“From dirty things, unclean formula feeding, lack of personal and environmental hyegine,provision of any food that were not recommended for the child, provision of those expired foods”*.

Interviewer: Do you have any information about the consequences of acute diarrhea?

Respondents: *“Withdraw from the work, exposed to different related diseases, if he is not treated appropriately he might be died”*.

Respondent 2

This was a 56 years old women brought her grand child to the health centers with a complain of diarrhea, irritability and poor appetite. The interview takes 90 minutes.

Interviewer: Do you have any information about acute diarrhea?

Respondent: *“A disease that made the child weak/tird, it dangerous disease for the child because it made the child very weak and tired,a disease that made immediately weaken the child,it is atype of watery stool”.*

Interviewer: Why don`t you bring your child deliberately after the onset of diarrheal?

Respondent: *“Because I didn`t have information about the degree of severity of the disease,negeligence,lack of attention for the disease, economical problems, the perception to self limitation”.*

Interviewer: What is your major action when your child is affected by acute diarrhoea?

Respondent: *“Brought the child in to the health facilities, brought ORS and different home based solutions”.*

Interviewer: Do you know about the causes of acute diarrhea?

Respondent: *“From dirty things, provision of unclean water, communicate from other children, lack of personal and environmental sanitations”.*

Interviewer: Do you have any information about the consequences of acute diarrhea?

Respondent: *“Expenditure of unnecessary resources, loss of immunity, and finally might be died”.*

Respondent 3

This was a 32 years old women presented her child with a complain of diarrhea, unable to breast feed, irritability and crying. The interview takes 80 minutes

Interviewer: Do you have any information about acute diarrhea?

Respondent: *“A disease that decrease immunity, leads more complicated infections, decrease appetite, made the child irritable and weak”.*

Interviewer: Why do not you bring your child deliberately after the onset of diarrhea?

Respondent: *“The perception to self limitation, poor service provision, economical problems”.*

Interviewer: What is your major action when your child is affected by acute diarrhoea?

Respondent: *“Breast feeding, home based solutions”.*

Interviewer: Do you know about the causes of acute diarrhea?

Respondent: *“Bacteria,germs,lack of personal and environmental sanitation, food poisoning”.*

Interviewer: Do you have any information about the consequences of acute diarrhea?

Respondent: *“Decrease immunity, died”.*

Respondent 4

This was a 27 years old women brought her child with a complain of diarrhea, fever and vomiting. The interview takes 90 minutes

Interviewer: Do you have any information about acute diarrhea?

Respondent: *“A disease caused by amoeba with mucoied or watery stool, that made the child weak/tired, that was accompanied by fever and vomiting”.*

Interviewer: Why do not you bring your child deliberately after the onset of diarrhea?

Respondent: *“The perception to eruption of tooth, lack of awareness about opening of the health facilities throughout the day, economical problems, provision of new foods”.*

Interviewer: What is your major action when your child is affected by acute diarrhoea?

Respondent: *“Supplementation of ORS and home based solutions”.*

Interviewer: Do you know about the causes of acute diarrhea?

Respondent: *“From dirty things, food poisonings, and lack of personal and environmental sanitations”.*

Interviewer: Do you have any information about the consequences of acute diarrhea?

Respondent: *“With draw from the job, unnecessary money and resource expenditure, disturbance of family members and death”.*

Respondent 5

This was a 30 years old women brought her child with a complain of diarrhea,vomiting and irritability. The interview takes 90 minutes

Interviewer: Do you have any information about acute diarrhea?

Respondent: *“It is caused by amoeba, food poisoning, food allergies, and lack of personal and environmental sanitations and due to ingestion of expired day foods”.*

Interviewer: Why don't you bring your child deliberately after the onset of diarrhea?

Respondent: *“The perception to eruption of tooth, self limitations, food allergies and economical problems”.*

Interviewer: What is your major action when your child is affected by acute diarrhoea?

Respondent: *“Provision of ORS, home based solutions, and lastly brought in to the health facilities”.*

Interviewer: Do you know about the causes of acute diarrhea?

Respondent: *“It is caused by food poisoning, ingestion of dirty things, feeding of expired date foods”.*

Interviewer: Do you have any information about the consequences of acute diarrhea?

Respondent: *“It leads in to different infectious diseases weight loss, decrease immunity”.*

Main themes from interview 1

1. It is a disease that made the child tired/weak

“Yah! It is a disease that made the child tired/weak.”

2. It occurs mostly during eruption of the tooth and uvula.

“It occurs mostly during eruption of the tooth and uvula.”

3. I made different home based solutions to feed him.

“...Em,i made different home based solutions to feed him.”

4. From dirty things

“From dirty things, unclean formula feeding, lack of personal and environmental hygiene.”

5. If he is not treated appropriately he might be died.

“Exposed to different related diseases, if he is not treated appropriately he might be died.”

Main themes from interview 2

1. A disease that made the child weak/tired

“A disease that made the child weak/tired, it dangerous disease for the child because it made the child very weak and tired, a disease that made immediately weaken the child.”

2. The perception to self limitation.

“...negligence, lack of attention for the disease, economical problems, the perception to self limitation.”

3. Different home based solutions

“Brought ORS and different home based solutions.”

4. From dirty things

“From dirty things, provision of unclean water, communicate from other children, lack of personal and environmental sanitations.”

5. Death.

“Loss of immunity, and finally might be death.”

Main themes from interview 3

1. Made the child irritable and weak.

“A disease that decrease immunity, leads more complicated infections, decrease appetite, made the child irritable and weak.”

2. Poor service provision

“The perception to self limitation, poor service provision, economical problems.”

3. Home based solutions

“Breast feeding, home based solutions.”

4. Lack of personal and environmental sanitation

“Bacteria,germs,lack of personal and environmental sanitation, food poisoning.”

5. Death

“Decrease immunity, death”

Main themes from interview 4

1. A disease that made the child weak/tired.

“A disease caused by amoeba with mucoied or watery stool, that made the child weak/tired.”

2. Economical problems

“The perception to eruption of tooth, lack of awareness about opening of the health facilities throughout the day , economical problems, the perception to self limitation.”

3. Home based solutions.

“Supplementation of ORS and home based solutions.”

4. From dirty things.

“From dirty things, food poisonings, and lack of personal and environmental sanitations.”

5. Unnecessary money and resource expenditure

“With draw from the job, unnecessary money and resource expenditure, disturbance of family members”.

Main themes from interview 5

1. Lack of personal and environmental sanitations

“Food poisoning, food allergies, and lack of personal and environmental sanitations and due to ingestion of expired day foods.”

2. The perception to eruption of tooth

“The perception to eruption of tooth, self limitations, food allergies”.

3. Home based solutions.

“Provision of ORS, home based solutions.”

4. Ingestion of dirty things.

“It is caused by food poisoning, ingestion of dirty things, feeding of expired date foods.”

5. Decrease immunity

“It leads in to different infectious diseases weight loss, decrease immunity.”

Combined list of themes

Table: 1 combined themes /analysis of the result/.

1	It is a disease that made the child tired/weak
2	Lack of personal and environmental sanitations
3	The perception to eruption of the tooth and uvula.
4	The perception to self limitation
5	Poor service provision
6	Economical problems
5	Home based solutions
6	Ingestion of dirty things
7	Decrease immunity
8	Death
9	Unnecessary money and resource expenditure

Majority of the respondents that replied similar responses were:

1. The response replied by the respondents for the question about awareness of diarrhoea most of them said *“It is a disease that made the child weak and tired”*.
2. The major action taken while their children were affected by acute diarrhea was *“They provide home based solutions”*.
3. When most of them responded for the question causes of acute diarrhea they said *“It is due to ingestion dirty things”*.

Some of the respondents replied different responses were:

1. The response given by the mothers for the open ended question: Why don't you brought your child deliberately after the onset of diarrhea?

They said "*It was secondary to the perception to eruption of the tooth and uvula*" which is a cultural believe and it is the most common situation occurs during childhood period. As a result, they didn't sought any care rather they kept their own home until cure. They perceive the onset of diarrhea is not due to infection rather it is secondary to eruption of tooth and uvula.

2. "*Poor service provision*" has a greatest effect on the care seeking behavior of mothers as they said. This is highly related with the findings from quantitative result which is mothers who get excellent service provision have 9.37 times more care seeking behavior than the mothers that get poor service provision. (OR=9.37, 95% CI 1.01, 86.87).
3. Economical problems: have direct effect on care seeking behavior of mothers because "*Without financial activities nothing could be done*" as they said.
4. The other heterogeneous responses were "*Death, decrease immunity, and unnecessary expenditure of resources*". These were the consequences of untreated diarrhea as they said.

CHAPTER SIX

DISCUSSION

The aim of this study is to assess the factors that affect initiation of early care seeking behavior of mothers (care takers) when their under five years old children were affected by acute diarrhoea at the selected health centers of Addis Ababa Ethiopia. There are different factors that made them to be late when their children were affected by acute diarrhoea.

Maternal age markedly affect the decision to seek health care outside the home. Mothers age 33 and older were (17.7%) times less likely care seeking behavior than those mothers whose ages were less than 33 years old young (73.8%). This was in line with the research done in china (Malaysia) (2011) [18].

Mothers with higher level of educational status have 2.22 times more care seeking behavior than the illiterate mothers (OR 2.22, $p=0.002$). This was analogous to the study conducted in china. This might be due to the difference in residential area which is urban. [31] Educational level of fathers have also positive association with the care seeking behavior outside the home.

Economical status of poor (2.7%) family has significantly influenced the care seeking behavior of mothers /care takers/ compared with the richest family (55.6%). This was similar with the research done in India [22]. And also consistent with the study conducted in Ethiopia (2011 EDHS). In addition this was also comparable with the findings of qualitative result which is the care seeking behavior of richest families have much more care seeking behavior than those poorest families.

From the total of ($n=333$) respondents only 40.8% of respondents provide their children in to health facilities. This was higher than the study conducted in Ethiopia (2011 EDHS). This might be due to an increase in awareness of mothers /care takers/ related to care seeking behavior.

This also implies that the care seeking behavior of mothers /care takers/ in Ethiopia was improved from time to time (2011 EDHS). Comparable data from the 2000 EDHS and 2005 EDHS show an increase in mothers' health seeking behavior for children with diarrhoea over the past years. The percentage of children with diarrhoea who were taken to a health provider increased steadily from 13 percent in 2000 to 22 percent in 2005 and 32 percent in 2011.

When the respondents sought a care the quality of treatment or inadequate care provisions may cause delay in subsequent care seeking services. In addition health care system deficiencies like limited human resources, drug supplies and services management capacity also cause delay in early care seeking behavior. Respondents that get excellent service Provision has 9.37 times more early care seeking behavior than those that get poor service provision.(OR= 9.37,95% CI 1.01-86.87).This was similar with the study conducted in Botswana [23].And also supported by qualitative result too.

The commonest reasons they present to be late for early care seeking behavior were (self limitation) (18%) the cost of treatment was too high (14.7%), the clinic was too far from home (0.9%), and they were unable to find transportation (0.15%). The other reason for not seeking care among caretaker of children with acute diarrhea was no care takers for other children. This was contrary to the research conducted in western kenya (2007-2010). [25].This was due to an increase in improvements in accessibility of health institutions which provide health services.The health care seeking behavior of respondents who sought care first was governmental health facilities (26.4%), private (13.2%) and pharmacy (0.9%) which is contrary to the research done in china (Malaysia) (2011). where private clinic (51.7%), governmental health facilities (14.5%), pharmacy (14.3%) respectively [19].This might be due to the difference in economical status. The mean time from the onset of diarrhea to seeking treatment was 2.45 days. This was higher compared with the study conducted in India which is 1.39 days (2013) [22].This might be

secondary to low level of awareness over the timely care seeking behaviors mothers /care takers/. However, Majority of the ill children were taken into the health facility after one days of their illness. This is in line with the study done in India (2013) [22]. Mothers /care takers/ awareness about danger sign of child hood illnesses were poor. 24.3% (n=81) care takers were aware of dry mouth, 28.5% (n=95) knew about restless and 35.1% (n=117) care takers were aware about sunken eye as danger sign of child hood illnesses. This is contrary to the study done in western Nepal (2006) [21]. This might be due to the difference in knowledge level of the care takers. The most important factors associated with any care seeking approach outside the home were the reported presence of associated clinical symptoms fever (OR1.40 CI 0.88,2.22),and vomiting (OR1.79 CI 1.14-2.80).This is consistent with the research done in Burkina Faso (2012) [28].The most common features accompanying the diarrhea were fever 66.1% (n=220), vomiting 61.3% (n=204), unable to breast feed (drink poorly) 45.9% (n=153), lethargy 56.5% (n=188) and thirsty 32.1% (n=107).This is analogous to the study done in western kenya (2007-2010).This might be due to the difference in perceived illness severity of mothers /care takers/ [25].The seriousness of signs and symptoms of the disease is an important determinant of care-seeking behavior for a sick child. This is similar with the study conducted in Uganda (2003) [30].

STRENGTH AND LIMITATION OF THE STUDY

STRENGTH OF THE STUDY

- ❖ The study has included all the illegible respondents in the selected health centers and has got 100% response rate.
- ❖ The questioner was pre-tested on similar settings and a necessary adjustment was done to increase the quality of the questionnaire.
- ❖ Recall bias was minimized since the questionnaire emphasizes only acute diarrhoeal cases.
- ❖ The study constitutes both quantitative and qualitative approaches.
- ❖ Could be a base line data for other researcher since there is scarcity of similar article done in our country.

LIMITATION OF THE STUDY

- ❖ Scarcity of similar literatures on early care seeking behaviors of mothers/care takers/ related with child hood diarrhoeal illness.
- ❖ Limited number of sample size

CHAPTER SEVEN

CONCLUSION AND RECOMMENDATIONS

CONCLUSIONS

Since diarrhea remains the second most common cause of childhood mortality all over the world. In addition, to this various studies from developing countries revealed that delay in seeking appropriate care and not seeking any care contributes to the large number of child deaths. As a result, care takers could prevent many childhood deaths and morbidity among children by seeking appropriate and timely care because timely care seeking for diarrheal disease is positively related to children's healthy life. The perception of caretakers about the severity of diarrheal illness ultimately affects the decision for seeking treatment and influences the type of therapies received.

The findings enhance our understanding of the factors that influence treatment-seeking behavior of the mother/care-givers in cases of childhood diarrhoea. The caregivers, especially the mothers need to be educated about the importance of seeking appropriate and timely treatment.

RECOMMENDATIONS

- ❖ The policy makers/government/, Ministry of health, and Addis Ababa health bureau should create awareness over timely care seeking behaviors of child hood illnesses, especially on diarrhoeal diseases because of highest number of morbidity and mortality.
- ❖ The health centers and health professionals should provide appropriate service since it has a direct relationship with care seeking behavior of the care takers.
- ❖ The government should provide free services for those families who were not able to afford the fee for treatment.
- ❖ Educating mothers/care takers/ about seriousness of diarrhoea and differentiating it from traditional believes.
- ❖ Recommended for other researchers to do further investigation on the timely care seeking behavior of mothers/care takers/.

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Annex

**Addis Ababa University
College of Health Sciences
Allied School of Health Sciences
Department Of Nursing and Midwifery**

Annex I: Information Sheet

Questionnaire on Factors affecting of early care seeking behavior of mothers (care takers) towards acute diarrhea at Addis Ababa health centers.

Code of the health institution_____

Hello! My name is (Name of the data collector) _____. We are conducting a survey on Factors affecting initiation of early care seeking behavior of mothers towards acute diarrhea. This is beneficial to identify areas of improvement in the mother care seeking behavior and highlighting the need for corrective actions. By doing this we will provide sufficient information for policy makers, clinicians and researchers, as a result they could make informed decision. In order to attain this goal, you are kindly requested to provide your genuine response on the questions given below. I would like to confirm you that you have the right to with draw the interview at any time or skip any question that you do not wish to answer. Because taking part in this survey is not mandatory and your responses will be held in strict confidence. Your privacy will also be confidential and no one will know your answer. If you do not wish to participate, it will not affect the services you receive at the clinic now or in the future.

I also request you to answer it candidly because your answers are like one important piece of brick in the whole research and determine the outcome of this study.

Thank you very much for your willingness to listen to me. In case if you have any question you can ask.

Ketema Dewi Mobile phone: +251-913011856

Are you willing to participate?

If the answer is, YES, - Please continue

NO _____ Thanks her

Signature: _____ Date: _____

**Addis Ababa University
College of Health Sciences
Allied School of Health Sciences
Department Of Nursing and Midwifery**

Annex II: Consent Form

My name is. ----- (Interviewer)

I temporarily represent Addis Ababa University, College Of Allied Health Science, and Department Of Nursing And Midwifery. This study is conducted with the objective of assessing factors affecting initiation of early care seeking behavior of mothers (care taker) attending IMCI clinic towards acute diarrhea. As the study is directly related to women who are attending IMCI clinics, you are one of the women who have been selected randomly to participate in this study. Therefore, you are kindly requested to participate in this study and provide the essential information required from you. I would like to ask you a few questions if I may, but you can refuse to answer any question I ask. You may end the interview at any time. You can also refuse to participate in the study completely. Your refusal will not restrict you from obtaining the required medical care when you need. The interview will last approximately 40 minutes. Your responses will be kept confidential and there will be no way of linking your individual responses to the final results of the study findings. We would like to inform you that the responses that you provide to the questions are very essential, not only, for the successful accomplishment of the study, but also for producing relevant information which will be helpful in the planning and implementation of intervention activities to prevent delays and improve the health of under 5 children. Are you voluntary to respond to the questions?

Yes; ----proceed with the interview

No; ---- thank her and End.

Name of interviewer who sought the consent: _____

Date Signature: _____

Name of supervisor: _____

Annex III: English version questionnaires for exit interview

Identification information

1. Code No. _____
2. Kifle ketema _____ Keble _____ House no. _____

Section 1: Socio-demographic Information

1. Age: -----
2. Marital status:
1/ Single 2/ Married/in union
3 /Widowed 4/ Divorced /Separation
3. Religion:
1/ Orthodox 2/ Catholic
3/ Protestant 4/ Muslim
5/ Other (Specify) _____
4. Ethnicity:
1/ Amhara 2/ Oromo,
3/ Tigray 4/ Guragae
5/ Other (Specify) _____
5. Occupation:
1/ Housewife 2/ Government employee
3/ Private employee 4/ Business
5/ Other (Specify) _____
6. Educational status
1/ Illiterate 2/ Read & write
3/ elementary 4/ Secondary
5/ Diploma 6/ degree& above
7. Monthly income in Eth. Birr:
1/ 100 – 300 2/ 301 – 500
3/ 501 – 1000 4/ > 1000
8. Husband's occupation:-
1/ Government employee 2/ Private employee
3/ Business 4/ Other (Specify) _____
9. Husband's educational status
1/ Illiterate 2/ Read & write
3/ elementary 4/ Secondary 5/ diploma 6/ degree and above
10. Monthly income in Eth. Birr:
1/ 100 – 300 2/ 301 – 500
3/ 501 – 1000 4/ > 1000
11. Family size: -----
1/ 1 – 3 2/ 4 – 6 3/ > 6
12. What is your relationship with the child?

1/ Mother 2/ Care taker 3/ Grandmother 4/ others

13. How many number of under five years old children are there other than this child?

Age sex/ M or F

Section:2 Determinants of care seeking behavior and other related questions.

14. How many times your child affected by diarrhea within the last month including this one?

1/ one times 2/ two times 3/ three times

15. During the illness does he/she have any of the following signs and symptoms?

1/ More than 3 loose or watery stools in a day

2/ Increased thirst

3/ Irritability or restlessness

4 / Decreased liquid intake or inability to drink fluids

5/ Decreased activity or lethargy

6/ Loss of consciousness

7/ Decreased urination

8/ Sunken eyes

9/ Bloody diarrhoea

16. Did the illness lasts longer than 14 days?

1/ Yes 2/ No

17. Did you sought medical care outside your home?

1/ Yes 2/ No

18. If you do not seek care outside your home, what is the reason?

1/ Clinic too far from house

2/ Unable to find transport

3/ Cost for travel too high

4/ Cost for treatment too high

5/ Other children at home who could not be left alone

6/ Other

19. If Yes where do you seek care for?

1/ Private clinic in your community

2/ Government/public clinic in your community

3/ Pharmacy

4/ Traditional healer

20. Do you receive oral rehydration solutions (ORS) during his/her treatment?

1/ Yes 2/ No

21. If Yes ORS first given at home or at the clinic/hospital?

1/ Home 2/ Clinic/hospital

22.If during his/her illness, he/she developed signs and symptoms of dehydration, such as irritability, restlessness, decreased urine output, increased thirst, dry mouth or sunken eyes, where would you take him/her for care?

1/ Private clinic in your community

2/ Government/public clinic in your community

- 3/ Pharmacy
 - 4/ Hospital outpatient department
 - 5/ Hospital emergency centre
 - 6/ Friend or relative
 - 7/ Traditional healer
 - 8/ Surveillance hospital (name)
23. If, during his/her illness, he/she also experienced loss of consciousness or lethargy and inability to drink, where would you take him/her for care?
- 1/ Private clinic in your community
 - 2/ Government/public clinic in your community
 - 3/ Pharmacy
 - 4/ Hospital outpatient department
 - 5/ Hospital emergency centre
 - 6/ Friend or relative
 - 7/ Traditional healer
24. What is your opinion of the care your child might receive?
- 1/ Excellent
 - 2/ V. Good
 - 2/ Good
 - 4/ Fair
25. When do you bring your child to the health facility from the onset of diarrhea?
- 1/ within one days of onset
 - 2/ less than one day of onset
 - 3/ greater than one days of onset
 - 4/ if other specify.....
26. Among the following options of acute diarrhoea which one urge you to bring your child to the health facility?
- 1/ vomiting
 - 2/ fever
 - 3/ lethargy
 - 4/ unable to drink
27. Do you have information about childhood diarrhoea vaccination?
- 1/ Yes
 - 2/ NO
28. Does your child taken the vaccine?
- 1/ Yes
 - 2/ No
29. Do you heard about the danger sign of acute diarrhea?
- 1/ Yes
 - 2/ No
30. Among the following alternatives which of them are the sign and symptoms of danger sign?
- 1/ Restless
 - 2/ irritability
 - 5/ sunken eye
 - 3/ dry mouth
 - 4/ thirsty
 - 6/ decrease urine out put
31. Did your child ever admitted in hospital due to diarrhea?
- 1/ Yes
 - 2/ No
32. From the following liquid types which one is more interested to feed your child during the diarrhoeal episode?
- 1/ milk
 - 2/ breast feed
 - 3/ ORS
 - 4/ juice

33. Among the following food items which one is more frequently used during the diarrhoeal illness?

1/ porridge 2/ soup

3/ egg 4/ routh

34. When you compare the amount of liquid you give during the illness with the healthy situation:

1/ less than 2/ greater than

2/ similar 4/ nothing given

This is the end of the interview

THANK YOU!

Date of Data Collection _____

Name of Data Collector _____

Signature _____

Name of Super Visor _____

Signature _____

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Qualitative questions

Title of Research Project: Assessment of Factors Affecting Initiation of Early Care Seeking Behavior among Mothers and care takers of under five children having acute diarrhoea attending IMNCI Clinics in Governmental Health Centers of Addis Ababa, Ethiopia, 2014.

In-depth interview

English version qualitative questions:

1. Do you have any information about acute diarrhea?
2. Why do not you bring your child deliberately after the onset of diarrhea?

3. What is your major action when your child is affected by acute diarrhoea?
4. Do you know about the causes of acute diarrhea?
5. Do you have any information about the consequences of acute diarrhea?

Amaharic version qualitative questions:

1. _____ ?
2. _____ / _____ /
_____ ?
3. _____ / _____ / _____ ?
4. _____ ?
5. _____ ?