



Knowledge of Home-Based Management of Diarrhea in Under Five Children in Jimma Town, South West Ethiopia

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Abstract

Introduction: Diarrhea is the second leading cause of morbidity and death in children under 5 years of age worldwide, especially in growing countries. Knowledge regarding causes of diarrhea at household is a key way to reducing mortality and morbidity. Thus, is why this study is important.

Objective: To assess knowledge of home-based management diarrhea among mothers' givers in under five children in Bacho Bore kebele, Jimma town, South west Ethiopia, 2019.

Method: A community based cross-sectional study was employed at bacho bore kebele from May 1 - June 1, 2019. Data was collected using structured questionnaire interviewer administered tool by using systematic sampling technique. The data were entered in to computer by using Epi Data version 3.1 and transferred to statistical Package for Social Sciences version 20. Logistic regression analysis was conducted to assess the relationship between outcome variable and independent variables.

Results: Among 378 samples population, only 352 participants were participated which yield response rate of 93.2%. Only 56.5% of respondents knew home based management of diarrhea, more specifically 52.3% and 67.9% had knowledge of causes of diarrhea, and signs and symptom respectively. Occupation, and family size are significantly associated with women's knowledge of home-based management of diarrhea at a P value less than 0.05.

Conclusion and Recommendation: Just more than half (56.5%) of women are knowledgeable about home-based management of diarrhea. Occupation, and family size are significantly associated with women's knowledge of home-based management of diarrhea. Efforts should be made to disseminate information on under five diarrheas through using media to enhance women's knowledge of diarrhea management.

Keywords: Knowledge; Mothers; Home-Based Management; Diarrhea; Under-Five Children

Introduction

Diarrhea refers to passing 3 or more loose or watery stools within 24 hours [1]. Diarrhea is the second leading cause of morbidity and death in children under 5 years of age worldwide, especially in growing countries, following acute respiratory tract

infection [2]. It is one of the leading causes of morbidity and death in children under five years of age worldwide, especially in developing countries [3]. Globally, there are about 1.7 billion diarrheal cases every year [4]. It is estimated that there are 2.5 billion incidences and 1.5 million deaths for children under five each year.

This represents 21% of all deaths in developing countries, and this figure remains unacceptably high. Diarrhea causes more childhood deaths than acquired immunodeficiency syndrome (AIDS), malaria, and measles combined. It also exposes children to secondary infections [5,6].

Most people who die of diarrhea actually die from severe dehydration and fluid loss. Children with malnutrition or impaired immunity and people infected with HIV are at increased risk of life-threatening diarrhea. Infections are spread through contaminated food or drinking water or spread from person to person due to poor sanitation [7].

According to United Nations Children, Education Fund (UNICEF) and WHO guidelines, ORT should begin at home with “home fluids” or a home prepared “salt and sugar” solution at the first sign of diarrhea to prevent dehydration [8]. Proper family management can reduce the incidence and mortality of diarrhea. Dealing with diarrhea at home is common among mothers, but their level of consciousness is very low. Although Oral Rehydration Solution (ORS) is widely used to prevent diarrhea and dehydration, its use rate in practice is very low [9].

Diarrhea is defined as the passage of three or more loose or liquid stools per day (or more frequent passage than is normal for the individual [10]. It is diagnosed and categorized as hypovolaemic shock from diarrhoea/ dehydration, severe dehydration, some dehydration, no dehydration, severe persistent diarrhea, persistent diarrhea and dysentery based on the following basic criteria's; weak/absent pulse, not alert, cold hands +temp gradient capillary refill > 3 sec, lethargic or unconscious, Restless and irritable, sunken eyes, able to drink or drinking poorly, drinking eagerly, thirsty, Skin pitch. ORS is indicated to manage all types of diarrhoea to prevent potential complication and it's prepared the approximate amount of ORS required (in ml) by calculated by multiplying the child's weight (in kg) with 75 [11].

Diarrhea itself is not fatal. Inadequate understanding of mothers and their wrong management and prevention methods lead to severe dehydration and ultimately death. The knowledge about home based diarrheal management is critically important to prevent and/or manage the disease, has paramount importance to reduce diarrhea-related morbidities and mortalities [12]. Most of the time diarrhea is managed by mothers in their home. However,

family diarrhea treatment for caregivers of children under 5 years old is not enough, especially in developing countries, due to insufficient knowledge and practice gaps. Similarly, they have very little knowledge and practice in using the popular oral rehydration solution (ORS) to prevent diarrhea and dehydration. Therefore, this lack of knowledge leads to improper management of diarrhea and complications [13].

As findings from the study conducted in India and Iran show, the level of knowledge of Insufficient nursing staff to manage diarrhea at home [14,15]. A study conducted in Ethiopia also showed that the proportion of nursing staff members who had insufficient knowledge about family management of diarrhea were under five years of age [16].

As the primary caregiver of children under 5 years of age in Ethiopia, the mother's knowledge and management skills are very important to minimize the impact of morbidity and mortality related to diarrheal diseases. However, no previous study in this field has evaluated the level of knowledge of caregivers of children under 5 years of age about home management of diarrhea. Therefore, this study seeks to determine knowledge and associated factors of home-based management of diarrhea among care givers under-five in bacho bore kebele, Jimma zone, southwest Ethiopia.

Methods

Study area and period: The study was conducted from May 1 – June 1, 2019 in Jimma town, Bacho bore kebele, Oromia regional state, southwest Ethiopia. Jimma town is located at 352 km southwest from Addis Ababa. Based on data 2016 from the town administration, it has a total population of 195,443. For administrative reason the town divided three sub city, and 17 kebeles. Bacho bore kebele has a total population of 28,375 and 5911 households, from these 1600 women have under five children. The kebele has one health center, one elementary school and seven mosques.

Study design: Community based cross sectional study design was employed.

Source population: All mothers/care givers who had under five children.

Study population: All randomly selected mothers/care givers who had under five children living in selected kebeles of Jimma town.

Eligibility criteria: All Mothers/care givers, those who have under five children were included and Mothers/caregivers, those who were seriously sick to give response were excluded.

Study variables

- **Dependent variable:** Knowledge of home-based diarrheal management.
- **Independent variables:** Age, sex, religion, ethnicity, level of education, marital status, occupational status, family size.

Sample size determination: Sample size was determined using sample size formula for estimating a single population proportion with a margin of error of 5%, confidence interval of 95%, and expected non-response rate of 5%. It is calculated based on the proportion of knowledge of mothers on home-based diarrhea management, 37.5% in Asosa, Ethiopia, 2015 [17].

After adding 5% for the non-response rate the final sample size was 378.

Sampling technique and procedures: Systematic sampling technique was used to collect data from respondents. First list of mothers who had under-five children were taken from local health extension workers. Then K value was calculated. The first household was selected by lottery method and continued every K interval ($k = 5$). For household, which had two or more mothers/care givers, study subject was selected by lottery method. If the eligible mother was not available at home at the time of data collection, the next sampled house was used after visiting for three consecutive days to consider as non-response.

Operational definition

- **Knowledge:** Mothers/care givers understanding about home based diarrheal management of under five children.
- **Good knowledge:** Those mothers/care givers who answer above or equal to 50% of the knowledge questions were considered as good knowledge.
- **Poor knowledge:** Those mothers/care givers who answer below the 50% of the knowledge questions were considered as poor knowledge.
- **Data collection procedure:** Data were collected by structured questionnaire. Randomly selected study participant was interviewed by face-to-face to collect data.

Data quality assurance

To assure the quality of data collection tool Pre-test was conducted on 10% of the sample at serbo town to identify any weakness in the organization and structuring of the research instruments. Adequate training and supervision were provided for the data collectors and the supervisor. The filled questionnaire was checked for completeness by supervisor every day.

Data analysis procedure: After checking the completeness, the data was entered into computer by using Epi Data version 3.1 and exported to statistical Package for Social Sciences (SPSS) version 20 for analysis. A score 1 was given for correct response and 0 was given for subjects who answered incorrectly. Respondents were categorized based on their overall knowledge scores using the percentage. Therefore, the score of greater than 50% of knowledge score was considered as knowledgeable and score of less than and equal to 50% of the knowledge score was considered as not knowledgeable. Binary Logistic regression analysis was carried out and all variables with p-value less than 0.25 in bi-variate analysis was considered as candidates for multiple logistic regression analysis to identify a variable which has a significant association on the basis of OR, with 95%CI and P-value of less than 0.05.

Results

Socio- demographic characteristics

Out of 378 samples population, only 352 respondents were participated with a response rate of 93.2%. In this study, the age group of mothers/care givers, 90 (25.6%) was found between the ages of 25 - 29 years. The study also indicated that, 95 (27%) mothers/care givers were attended elementary school while 28 (8%) were illiterate. Regarding occupational status of mothers/care givers, more than half 100 (28.4%) were Government employed, and 43 (12.2%) were housewife. Of the total participants, 319 (90.6%) were married, and 240 (68.2%) of mothers have 1 - 4 children (Table 1).

Knowledge of mothers (care givers) about causes of diarrhea

Regarding respondent's knowledge of causes of diarrhea, relatively low 52.3% knowledge score was observed, however, on the specific area of causes of diarrhea like: poor hygiene, contaminated food, contaminated water and teething were scored by more than half of the respondents (Table 2).

Variables		Frequency	Percentages
Age group	< 19	13	3.7
	20 - 24	78	22.2
	25 - 29	90	25.6
	30 - 34	65	18.5
	35 - 39	63	17.9
	40 - 44	27	7.7
	45+	16	4.5
Educational status	Illiterate	28	8.0
	Elementary school	95	27
	High school	81	23.0
	Preparatory school	63	17.9
	College/University	85	24.1
Occupation	Housewife	100	28.4
	Private employee	110	31.3
	Governmental employee	43	12.2
	Merchant	99	28.1
Marital status	Single	5	1.4
	Married	319	90.6
	Divorced	19	5.4
	Widowed	9	2.6
Family size	Less than or equal to 4	240	68.2
	Five and above	112	31.8

Table 1: Socio-demographic characteristics of the mothers/caregivers in Jimma town, Jimma zone, southwest Ethiopia, 2019 (N = 352).

Variables		Frequency (N = 352)	Percent
Poor hygiene	Yes	203	57.7
	No	149	42.3
Contaminated food	Yes	190	54
	No	162	46
Contaminated water	Yes	234	66.5
	No	118	35.5
Teething	Yes	207	58.8
	No	145	41.2
Medication	Yes	129	36.6
	No	223	63.4

Table 2: Distribution of respondent’s knowledge of causes of diarrheal disease in under- five children in bacho bore kebele, Jimma zone, South west Ethiopia, 2019 (N = 352).

Knowledge of mothers (care givers) about sign and symptom of dehydration

Concerning the overall knowledge of dehydration signs and symptom 67.9% of the respondents were knowledgeable this indicated that the respondents were relatively had a good knowledge score than causes of diarrhea. More than two thirds of the respondents were mentioned; becoming weak, sunken eye, and poor feeding as a sign and symptom of dehydration (Table 3).

Variables		Frequency (N = 352)	Percent
Becoming weak or lethargic	Yes	242	68.8
	No	110	31.2
Sunken eye	Yes	243	69.0
	No	109	31.0
Marked thirst of water	Yes	217	61.6
	No	135	38.4
Poor feeding	Yes	263	74.7
	No	89	25.3
Vomiting everything	Yes	210	59.7
	No	142	40.3

Table 3: Distribution of respondent’s knowledge of dehydration symptoms in under- five children in bacho bore kebele, Jimma zone, South west Ethiopia, 2019 (N = 352).

Overall level of knowledge of home-based diarrheal management

About 56.5% of the respondents were knowledgeable about overall knowledge of home-based diarrheal management. Specifically, the respondent’s had better knowledge score 67.9% on signs and symptom of dehydration; while about 52.3% were observed on knowledge of causes of diarrhea (Figure 1).

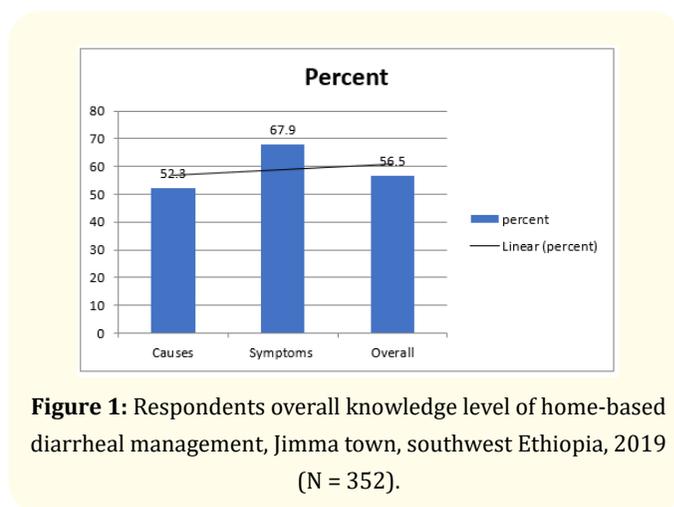


Figure 1: Respondents overall knowledge level of home-based diarrheal management, Jimma town, southwest Ethiopia, 2019 (N = 352).

Factors associated with the knowledge of home-based diarrheal management

The association of different background factors of the respondents with home based diarrheal management was investigated using logistic regression analysis. Variables were Age, educational status, marital status, occupation, and family size. But, only occu-

pation and family sizes were significant. Private Employed women were 2.12 times (AOR = 2.179/95% CI: 1.176, 4.037) more likely knowledgeable than housewife women. Mothers who had more than 4 family size were 2.2 times (AOR = 2.2/95% CI: 1.145, 4.325) more likely knowledgeable than who had four and less than four family size (Table 4).

Variables		Knowledge level		AOR/95%CI/P-value
		Poor	Good	
Age group	< 19	3	10	1.00
	20 - 24	27	51	2.936/.477,18.077/.246
	25 - 29	40	50	1.257/.354,4.456/.724
	30 - 34	37	28	872/.252,3.014/.828
	35 - 39	23	40	.584/.166,2.048/.401
	40 - 44	14	13	1.469/.432,4.989/.538
	45+	9	7	1.259/.319, 4.975/.742
Educational status	Illiterate	50	58	1.00
	Elementary school	41	54	1.460/.625, 3.411/ .381
	High school	31	50	1.153/.499, 2.667/ .739
	Preparatory school	14	19	2.205/.912, 5.334/ .079
	College/University	17	18	2.182/.750, 6.345/.152
Occupation	Housewife	36	64	
	Private employee	47	63	2.179/1.176, 4.037/.013*
	Governmental employee	22	21	1.501/.822, 2.740/ .186
	Merchant	48	51	1.252/ .528, 2.970/.610
Marital status	Single	3	2	1.00
	Married	134	185	2.951/.238, 36.562/.399
	Divorced	9	10	4.095/.735, 22.279/.103
	Widowed	7	2	4.860/.605, 39.038/.137
Family size	Less than or equal to 4	93	147	1.00
	Five and above	60	52	2.225/1.145, 4.325/.018*

Table 4: The logistic regression of association between respondent’s socio-demographic and knowledge of home-based diarrheal management in Bacho bore Kebele, Jimma town, southwest Ethiopia, 2019.

Discussion

The findings of this study confirmed that mothers of under five children living in Bacho bore kebele, Jimma town had good (56.5%) knowledge of home-based diarrheal management. However, they have a relatively better knowledge score on diarrheal signs and symptom than causes of diarrhea. This is important information that indicates the knowledge level of community on under five chil-

dren diarrhea. The fact that only 56.5% of the women had overall knowledge of diarrhea suggests a presence of a number of unrecognized cases of diarrhea. This implies a lot of children with diarrhea are not benefited from the importance of home-based diarrheal management. The findings of the current study of the overall knowledge of home-based diarrheal management are lower than with the study reported from; India (64.5%) Cambodia (85.1%)

and coastal Karnataka (84%) [12,15,16]. These differences can be attributed to types of study participants, set up of the study and socioeconomic status of the study populations.

The current study also revealed that the occupation, and family size were significantly associated with the knowledge of home-based diarrheal management. Regarding occupation Private Employed women were 2.12 times (AOR = 2.179/95% CI: 1.176, 4.037) more likely knowledgeable than housewife women. This shows the influence of occupation in promoting the knowledge level of home-based diarrheal management.

This study revealed that mothers who had more than 4 family size were 2.2 times (AOR = 2.2/95% CI: 1.145, 4.325) more likely knowledgeable than who had four and less than four family size. This implies those who had not many children may have not enough knowledge regarding diarrhea.

Conclusion

Even though there is variation in the level of the dimensions of the knowledge of home-based diarrheal management, the home-based diarrheal management knowledge of the women of under five children of bacho bore kebele, Jimma town is relatively good (56.5%). From this study we can also conclude that; occupation, and family size are significantly associated with the women's knowledge of home-based diarrheal management.

Recommendation

- The community should follow health education given by a health professional and follow different media to promote diarrheal management at home.
- Mothers/care givers should be involved in health promotion and prevention of illness by incorporating with health professionals.
- Finally, future research should also explore the impact of other variables that are not measured in the current research. These variables may also directly or indirectly affect the mother/caregiver's knowledge, attitude and practice of family diarrhea management.

Ethics and Consent

This study was approved by the ethics committees of Institutional Review board of Jimma University. A formal letter from Institute of health science was submitted to Bacho Bore Kebele and

Jimma town municipality to obtain their cooperation and a written informed consent was obtained from all the study subjects.

Consent to Publish

The University allowed us to publish this paper and all authors who participated in this study are listed under authors and they agree to publish process.

Availability of Data and Materials

The data of this study are found in our university research and post graduate coordinator office store. As our university regulation the raw data of the project/student thesis are strictly forbidden to share for third parties.

Competing Interest

We strongly clarify that there is no any financial and non-financial competing of interest among us and with other bodies.

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Authors' Contributions

YBT designed the study, conducted the literature search and review, and trained data collectors, supervised the data collection, analyzed the data, and wrote the paper. EB, and AO supervised the data collection, contributed in data entry, analyzed the data, interpretation of the findings and wrote the paper. All authors read and approved the final version of the manuscript.

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