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Research Article

Knowledge, Attitude, and Practices regarding Prevention and Management of Under-five Diarrhea among mothers of Worawora Community

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Received date: June 24, 2024; Accepted date: July 24, 2024; Published date: September 20, 2024

Citation: Eugene D. Kuugbee, Abdul R. Alhassan; Amina P. Mamani, (2024), Advancements in Patient Care and Safety: Integrating Nursing Innovations for Enhanced Healthcare Outcomes, *Clinical Research and Clinical Trials*, 10(5); **DOI:10.31579/2693-4779/215**

Abstract:

Background: Diarrheal illness continues to be the second greatest cause of under-five mortality worldwide. Diarrhea is responsible for roughly 1.5 million infant fatalities per year, or close to one in five. Aim: This current study was to assess knowledge, attitude, and practices regarding prevention and management of under-five diarrhea among mothers of Worawora Community. Methodology: A cross-sectional descriptive study was carried out using a total of 207 mothers with children less than 5 years. SPSS version 20 software was used for data analysis. Means, frequencies, and percentages were used for descriptive analysis and Pearson correlation for association with a set P value of 0.05.

Results: The ages of the mothers ranged from 13 to 50 years, with a mean age of 27.70 ± 7.15 years. About 68.1% had good knowledge of diarrhea definition, causes, and prevention. The majority (74.4%) of the mothers had a good attitude. The majority had moderate food hygiene practices. About half (51.2%) had good hand-washing practices. About 34.3% had good home management of child diarrhea. Mothers' diarrhea prevention and management knowledge positively correlated with attitude, $r(207) = .301$, $p < .001$, hand hygiene practice, $r(207) = .417$, $p < .001$ and diarrhea management score, $r(207) = .339$, $p < .001$. Also, the attitude of respondents positively correlated with their practice scores for hand hygiene $r(207) = .246$, $p < .001$, and food hygiene $r(207) = .299$, $p < .001$. Finally, there was a significant correlation between mothers' hand hygiene practice and diarrhea management practice $r(207) = .459$, $p < .001$.

Conclusion: Most of the respondents exhibited good knowledge and attitude toward under-five diarrhea management and prevention. However, the good knowledge and attitude did not translate to good practice and management in all of the respondents.

Keywords: attitude; diarrhea; knowledge; mothers; under-five; worawora

Introduction

Diarrhea is a symptom and not a disease. The World Health Organization defined diarrhea as the passage of three or more loose or liquid stools per day or more frequent passage than is normal for the individual.[1] In children under the age of five, the diarrheal illness continues to be the second greatest cause of death worldwide [2] Diarrhea is responsible for roughly 1.5 million infant fatalities per year, or close to one in five.[3] It claims more young lives than measles, AIDS, HIV, and malaria combined [4].

[2]. Ghana is said to have a high incidence of diarrhea. According to estimates, 113,786 instances of diarrhea in children under five were reported in Ghana in 2011. Within 2011 years, 354 people died from severe dehydration in 2,318 documented instances of diarrhea [6]. The main means, by which the agents that cause diarrhea are transferred, along with the propagation of epidemics, are contaminated food and water [7]. In an epidemic, the source of contamination is typically an infected person's feces, which contaminates food and/or water. In locations where sewage and drinking water are not properly treated, diarrhea is contagious and can spread quickly [8]. The main risk factors among children included the child's age, size at birth, the quality of the main floor material, the mother's education and occupation, the type of toilet, and habitation [9]. The term "fecal-oral transmission" refers to the process through which infectious organisms, such

as viruses, bacteria, protozoa, and helminths, spread from one person's stool into another's mouth to cause diarrhea. A significant number of these agents are probably still to be identified. Some are well-recognized, and others are recent discoveries or emerging new agents. They differ in the number of organisms required to induce infection and illness as well as the path taken by the feces to reach the mouth [10].

One of the age groups most susceptible to infectious diseases, such as diarrhea, is children under the age of five. Though diarrhea affects people of all ages, it is more prevalent and severe in kids, especially bottle-fed babies and children who are undernourished [11]. The unsanitary preparation of weaning food, which most frequently affects children between the ages of six and twenty-four months, usually causes the peak incidence to occur after the introduction of complementary feed [12].

Even though diarrhea is a preventable disease its incidence remains on the increase, especially among children under five due to poor knowledge, attitudes, and practices among mothers who are the primary caregivers. The wrong information, bad habits, negative attitudes, and misguided management and preventative strategies of mothers cause high levels of severe dehydration, which ultimately results in mortality. Diarrhea is not fatal in and of itself [13,14].

In earlier studies, more than half of respondent mothers demonstrated poor knowledge of diarrheal disease and its prevention [15,16]. Even though Walker et al., study more than half had good knowledge of diarrheal disease and its prevention, the attitude towards diarrheal disease and its prevention was poor in early more than half of the respondents [17].

In Rokkappanavar et al., study, only 43.62% of mothers showed the correct hand-washing technique. 86.27% of participants were aware of ORS, and more than half of them were sufficiently knowledgeable about its administration and preparation. Mothers dewormed their children only 26.96% of the time (15). Unfortunately, in Alshammari et al., study respondents lacked the essential preventative behavior to avoid diarrheal illness. According to the mother's age, education, and occupation, it was found in the current study that their knowledge and behavioral practices had improved (16). Although more than half of the participants in the Walker et al. study had a strong understanding of diarrheal disease and its prevention, this study showed that mothers' attitudes and practices toward the prevention and home-based care of diarrheal infections in children under five were deficient (17).

According to information obtained from the Biakoye District Health Directorate for the Worawora sub-district, diarrhea was the third on the list of the top ten common diseases for both 2016 and 2017 but was ranked first in 2018 for children under five years. Little research has been done concerning childhood diarrhea. Concerning the pivotal role mothers play in the management of diarrhea, a joint statement of WHO/UNICEF stressed the need ‘to understand their present attitudes, perceptions, and practices regarding diarrhea [18]. Hence this present study aimed to assess mothers’ knowledge, attitude, and management of under-five diarrheal among mothers in the Worawora community of Ghana.

Study Area

This study was carried out in the Worawora sub-district, one of the four (4) sub-districts in the Biakoye district, located in the middle belt of the Volta region of Ghana.

Study Design

A cross-sectional study was employed in this study considering the use of the quantitative method of data collection. A structured questionnaire was used to gather quantitative data. Therefore, all the interpretations of the data were done concerning quantitative variables.

Study Population

The study population adopted for this research comprised all mothers who visited the Child Welfare Clinic with their wards as well as all mothers whose children were on admission at the Children’s ward of the Worawora Government Hospital. They included mothers of children who are under 5 years.

Sample Size Calculation

Estimation of the sample size in this study was based on the significance level and the rate of initial treatment options of mothers with childhood diarrhea. The significance level (also known as the p-value or alpha) of 0.05 and confidence level of 95% was used in this study. Any significant relationship between variables was accepted if and only if the p-value was less than 0.05.

Using the formula proposed by Cochran, (1977) as contained in Avelyn, (2012) and the rate of initial treatment options of mothers with childhood diarrhea; the sample size was calculated as follows:

$$N = [Z2 \times P (1 - P)] \quad e2$$

Where N = sample size per group,

Z = the critical probability value for a 95% confidence level (1.96),

P = 84.6% rate of initial treatment option of mothers with childhood diarrhea (Panom and Ying- Chun, 2018) and

e = margin of error, (0.05).

Hence, the Sample size (N) was approximately 200. Moreover, a 5% attrition rate was added to give a total sample size of 210 respondents for the study.

Sampling Technique

We adopted the convenience sampling technique. Data was obtained from study participants who brought their children to the Child Welfare Clinic and those on admission at the Children’s Ward of the Worawora Government Hospital. A total of 180 mothers who attended the Child Welfare Clinic were interviewed whiles the remaining 27 respondents were mothers whose children had been admitted to the children’s ward. A greater number of respondents was from the CWC Centre because they were normally of higher numbers than mothers of children admitted in the children’s ward. The interview was conducted mostly in Twi, English, or Ewe depending on which of the three languages was convenient for the interviewee, since all the researchers could speak both English and Twi, with one of the researchers speaking Ewe in addition.

Data Collection Tool

The data collection tool employed was a structured questionnaire. It contained closed-ended questions grouped into sections; socio-demographic characteristics of the respondents, mothers’ knowledge, and attitude toward diarrhea. The questionnaire was first of all pre-tested before the commencement of the main research study. This was to ensure that the questionnaire was able to communicate the right information and also solicit the right responses needed for the study

Data Analysis

Data entry and analysis were done using SPSS version 20. The descriptive test estimate for continuous variables was a mean plus standard deviation and that of categorical variables was frequencies with percentages. Inferential statistics for associations were done using chi-square and binary logistics regression at a level of significance of 5%. The analyzed data is presented using tables and charts.

Mothers were quizzed on the definition, causes, and prevention of diarrhea using a series of structured questions. A correct answer (yes) was scored 1 and a wrong answer (no) was scored 0, giving a total overall score of 15. Knowledge of diarrhea was categorized into poor (0-7), and good (8-15) based on the score obtained. The attitude of mothers towards diarrhea in children was assessed through a series of questions to ascertain behaviors toward diarrhea management and control. A correct answer to a question was scored 1 and a wrong answer was 0. A maximum of 13 points can be obtained

and categorized into a poor attitude (0-6), and a good attitude (7-13). Eight structured questions assessed food hygiene practices with a maximum total score of 9 points. The score was categorized into poor (0-4), and good (5-9) food hygiene practices. Hand washing practices were also evaluated using 8 structured questions with a maximum score of 23 to hand practice those with (0-11) had poor hand washing practice, and (those with 12-23) had good hand washing practices. For management, a maximum of 12 points can be scored for the recognition of danger signs (10) and treatment of diarrhea (2). The score was categorized into poor (0-6), and good (7-12) management practices. Categorizations of scores were done taking guidance from an earlier study [19].

Ethical Consideration

Permission was sought from the authorities of the district, as well as the Sub-District where the research was conducted. The permission letters were signed by the Head of the Department of the Community Health and Family Medicine Department of UDS-SMHS and offered to the District Health Director and Medical Superintendent of the Worawora Government Hospital respectively. This work was done to ensure that it is morally acceptable as determined by the World Medical Association's Declaration of Helsinki. Also, the consent of each participant was obtained before the interview. Adequate information about the purpose and essence of the research was given. Further explanation was offered to them to assure them of their privacy about the information they rendered and it was also made clear to them that their participation in the exercise was solely voluntary.

Results

Demographic Characteristics of Mothers and Children

A summary of the biodata of mothers and children is presented in Table 1.

Variables	Frequency (N)	Percentage (%)
Age(years)		
<20	32	15.5
20-29	93	44.9
30-39	69	33.3
40-49	12	5.8
≥50	1	0.5
Marital status		
Single	70	33.8
Separated	4	1.9
Divorced	2	1.0
Married	131	63.3
Educational Status		
None	24	11.6
Primary	96	46.4
Secondary	74	35.7
Tertiary	13	6.3
Occupation		
Not employed	50	24.2
Employed-private sector	140	67.6
Employed- government sector	17	8.2
Child Biodata		
Sex		
Male	104	49.3
Female	101	50.7
Age (months)		
0-12	85	47.8
13-24	63	35.4
25-36	7	13.9
37-48	14	7.9
49-60	9	5.1
Immunization		
Yes	204	98.6
No	3	1.4
Diarrhea (within 6 months after birth)		
Yes	163	78.7
No	40	21.3

Table 1: Demographic characteristics of Mothers and Children at Worawora

A total of 207 mothers were recruited in the study. The ages of the mothers ranged from 13 to 50 years, with a mean age of 27.70 ± 7.15 and median age of 28.0 years. 78.2% of mothers were within the age range of 20 to 39 years. The majority of the mothers were married (63.3%). About 46.4% of mothers had at most primary education. Mothers' employment status showed that 67.6% were engaged in the private sector (67.6%). Children presented to the postnatal clinic by mothers included 49.3% males and 50.7% females. Their ages ranged from 1 to 60 months with a mean age of 19.50±14.90 months. The majority (98.6%) were immunized. The occurrence of diarrhea in infants within the first 6 months of birth was recorded in 78.7% of the respondents.

Knowledge of Mothers on Childhood Diarrhea

The minimum score was 0 and the maximum was 11. The mean score was 7.7 ±1.7 with an IQR of 2 (7-9). About 31.9% had poor knowledge whilst 68.1% had good knowledge of diarrhea definition, causes, and prevention. Table 2

Variables	Frequency (N=207)	Percentage (%N)
1. Have you heard of diarrhea? (yes)	141	69.5
2. Definition of Diarrhea(yes)		
Watery stool	204	98.6
Stool with blood	48	23.5
Sunken fontanel	9	4.5
Repeated vomiting	150	73.9
3. Causes of diarrhea(yes)		
Lack of safe drinking water	196	95.1
Unhygienic disposal of human excreta	188	90.8
Eating contaminated food	198	95.7
Not washing hands after defecating	193	94.1
Unhygienic living environment	189	91.7
Not taking diarrhea vaccine or immunizing child	74	36.3
4. Prevention of diarrhea(yes)		
Routine immunization	93	45.1
Wash hands before preparing food	195	94.7
Boiling of drinking water	143	69.1
using sanitary latrines	179	88.2
5. Knowledge level		
Poor (0-7)	66	31.9
Good (8-15)	141	68.1

Table 2: Responses of mothers on the definition, causes, and prevention of diarrhea

depicts the responses of mothers on their knowledge of diarrhea. 69.5% of mothers had heard of diarrhea. The sources of information on diarrhea for the mothers included TV (29.9%), health facility (44.5%), friend or neighbor (10.6%), and print media (11.2%). On the definition of diarrhea, many mothers perceive diarrhea as watery stool (98.6%), repeated vomiting (73.9%), sunken fontanel (4.5%), and stool with blood (23.5%). Averagely, more than 90% of mothers were able to identify a lack of safe drinking water (95.1%), unhygienic disposal of human excreta (90.8%), eating of contaminated food (95.7%), no hand washing after defecating (94.1%), and unhygienic living environment (91.7%) as causes of diarrhea. However, only 36.3% of mothers were able to recognize that not vaccinating or immunizing a child predisposes them to diarrheal diseases. Mothers' responses further indicated that diarrhea can be prevented via routine immunization (45.1%), hand washing (94.7%), boiling of drinking water (69.1%), and use of sanitary latrines (88.2%).

The attitude of Mothers towards Childhood Diarrhoea Prevention

The mean attitude score was 7.6 ± 1.7 with a minimum and maximum score of 1 and 12 respectively. The majority (74.4%) of the mothers had a good attitude. Generally, greater than 80% of mothers were of the view that diarrhea could cause death in children and that it was caused by an unclean environment and open defecation. Also, an overwhelming proportion (97.6%) of the mothers was of the view that children should be taken to a health facility when they have diarrhea. A low proportion (below 30%) of mothers knew that anti-diarrhea medication should not be given to children with diarrhea (27.8%) as well as antibiotics (19.0%) unless prescribed in a health facility. Slightly above half of the respondents (57%) were aware of the importance of immunization in the prevention of diarrheal diseases. About 12% of mothers had ORS at home. When a child presented with diarrhea, it lasted 4-7 days for the majority (96.7%) of mothers to take them to a health facility. Many (36%) of the respondent mothers resorted to the use of porridge or rice water when a child presented with diarrhea followed by 31.6% (66) who resorted to home management (using ORS and/or Zinc tablets). only 31.5% of the mothers usually consulted a local drug store for the management of diarrhea in their children. Then again, 0.5% (1) of the mothers readily visited a health facility when the child presented with diarrhea (Table 3).

Variable	Frequency(N=207)	Percentage (%N)
1. Diarrhea can cause death in children	177	85.9
2. Diarrhea is caused by an unclean environment	197	97.0
3. Immunization prevents diarrhea	117	56.8
4. Open defecation causes diarrhea	191	93.6
5. Washing hands with soap prevents diarrhea	196	94.7
6. ORS should be given to a child vomiting repeatedly	158	78.2
7. Anti-diarrhea medication should not be given to a child with diarrhea	57	27.8
8. Antibiotics should not be given to a child with diarrhea	39	19.0
9. Children should be taken to a health facility when they have diarrhea	202	97.6
10. Do you have ORS at home?	25	12.3
How long does it take you to take your child to a health facility when he/she presents with diarrhea		
i. 0-3 days	8	3.9
ii. 4-7 days	199	96.1
What is the first thing you do when your child has diarrhea		
i. Take to a health facility	1	0.5

ii. Take to the drugstore	65	31.4
iii. Home management (ORS, Zinc)	66	31.9
iv. Others (porridge, rice water)	75	36.2
Good Attitude	53	25.6
Poor Attitude	154	74.4

Table 3: Attitude of mothers towards diarrhea in children

Food Hygiene Practices of Mothers for the Prevention of Childhood Diarrhea

Food hygiene and hand washing practices were assessed in mothers in Worawora using structured questions to determine hygiene practices for the prevention of childhood diarrhea and presented in table 4.

Variable	Frequency(N=207)	Percentage(%N)
1. Latrine at home	129	62.3
2. Domestic waste bin	170	82.1
3. Do you wash your hands before preparing food?	173	83.6
4. Do you wash your hands before feeding your child?	188	91.7
5. Do you prepare special food for your child?	58	28.6
6. What is your food holding time before eating?		
a. Less than one hour	179	86.5
b. Greater than one hour	28	13.5
7. How do you dispose of your child's feces?		
a. Burry	18	8.7
b. Latrine	85	41.1
c. Bola	97	46.9
d. Other	7	3.4
8. How do you store your food?		
a. Opened	3	1.5
b. Closed	197	98.5

Table 4: Food Hygiene Practices among Mothers in Worawora

Eight structured questions assessed food hygiene practices with a maximum total score of 9 points. Out of the 207 respondent mothers, the average score was 5.60 ± 1.20 with a minimum score of 1 and a maximum of 8. The score was categorized into poor (0-3), moderate (4-6), and good (7-9) food hygiene practices with 3.9% (8), 74.4% (154), and 21.7% (45) of mothers respectively in the various categories. About 62.3 % of mothers have a latrine at home, 82.1% have domestic waste bins, 83.6% wash their hands before preparing food, 91.7% wash their hands before feeding children with 28.65% and 87.3% respectively preparing special food for their infants and holding food for less than one hour before eating. The majority (98.5%) store their food closed with 84.5% feeding their infants with warm food. Many mothers (46.7%) discard their children's feces in the bola and 41.1% in the latrine.

Hand hygiene practices among mothers in Worawora hospital.

Hand washing practices were also evaluated using 8 structured questions with a maximum score of 23 to assess knowledge of hand washing, the importance of hand washing, materials for hand washing, diseases associated with dirty hands, and hand washing practices (Table 5).

Variables	Frequency(N=207)	Percentage(%N)
1. Have you heard of hand washing (yes)?	182	87.9
2. Do you have education on hand washing? (yes)	79	38.2
3. Importance of hand washing (yes)		
a. Help prevent diseases	203	98.1
b. Protect the child from diseases	202	97.6
c. Prevent the spread of diseases in the community	202	97.6
4. Diseases acquired by not washing hands		
a. Malaria (no)	169	81.6
b. Typhoid (yes)	89	43.0
c. Diarrheal diseases (yes)	202	97.6
d. Airway infections (no)	94	45.4
5. Materials for hand washing (yes)		
a. Water only	4	1.9
b. Water and soap	203	98.1
c. Water and ash	0	0
d. Hand towel and clean piece of cloth	0	0
6. How often do you wash your hands?		
a. Rarely	4	1.9
b. Sometimes	188	90.8
c. Always	15	7.2

7. How do you wash your hands? (yes)		
a. Water only	100	48.3
b. Water and soap	193	93.2
8. Do you wash your hands after the following?		
a. Urinating	107	51.7
b. Defecating	204	99.1
c. Before preparing food	193	93.7
9. After returning from the market or farm	107	52.0
10. Before eating	205	99.0
11. After handling child feces	152	73.4

Table 5: Hand hygiene practices among mothers in Worawora

Out of the 207 mothers recruited into the study, the average score was 16.3 ± 2.32. 0.5% had poor hand-washing practices (0-7), 48.3% had moderate, and 51.2% had good hand-washing practices. About 87.9 % of the 207 mothers have heard of hand washing with 38.2% being educated on hand washing. Water and soap were identified by 98.1% of mothers as the material for hand washing with 93.2% properly using water and soap to wash their hands. Practically, about 98% sometimes or always wash their hands with greater than 90% washing their hands after defecating, before preparing food, and before eating. Between 50-55% of mothers wash their hands after urinating or after returning from the farm or market. After handling child feces, 73.4% of mothers wash their hands. 97.6% of mothers were able to identify those diarrheal diseases are caused by not washing hands but ironically, 43.0% could identify typhoid as a diarrheal disease associated with unhygienic hands.

Management and Treatment of Childhood Diarrhea by Mothers

Mothers were assessed on the management of diarrhea by their ability to recognize the danger signs associated with diarrhea, the first management option by a mother when a child has diarrhea and the treatment options used. A correct answer for a danger sign is assigned a 1 and a wrong answer is assigned a 0 score. For the treatment of diarrhea, the use of ORS is assigned 2, zinc tablets 1, and others (use of porridge, and rice water) were assigned 0. A maximum of 12 points can be scored for recognition of danger signs (10) and treatment of diarrhea (2) (table 6).

Variable	Frequency(N)	Percentage (%N)
Identification of danger signs of diarrhea (YES)		
1. Fever	194	95.1
2. Sunken abdomen, cheeks, and fontanel	109	53.2
3. Weight loss	151	74.0
4. A child crying without tears	60	29.6
5. Children urinating less frequently	90	44.6
6. Dry mouth and tongue	70	34.7
7. Extreme thirst	63	31.8
8. Belly Pain	155	76.7
9. Blood in stool	186	91.2
10. Frequent vomiting	198	97.1

Field Survey, 2019

Table 6: Management (Danger signs and Treatment options) of childhood diarrhe

A summary of the responses on the management of diarrhea by mothers is presented in figure Out of the 207 mothers interviewed, 20.3% (42) were able to identify all the ten danger signs of diarrhea. The majority (22.2 % (46)) were able to identify four out of the ten danger signs of diarrhea. In all, 35.7% (74) had good knowledge (score: 7-10) of the danger signs of diarrhea, 55.1% (114) had moderate knowledge (score: 4-6) and 9.2% (19) had poor knowledge (score: 0-3) on the danger signs of diarrhea (table 6).

In the treatment of diarrhea, 66% (133) of the mothers would usually use ORS and about 33.6% (69) would have treated diarrhea using porridge or rice water. In all, based on the recognition of danger signs and the treatment option of mothers when a child presents with diarrhea, 23.3% (48) had poor management (score: 0-4), 42.5% (88) had moderate management (score: 5-8) and 34.3% (71) had good management (score: 9-12) of child diarrhea.

Correlations among mothers' knowledge, attitude, practice and management of under-five diarrhea

Mothers' diarrhea prevention and management knowledge positively correlated with attitude, $r(207) = .301$, $p < .001$, hand hygiene practice, $r(207) = .417$, $p < .001$ and diarrhea management score, $r(207) = .339$, $p < .001$. Also, the attitude of respondents positively correlated with their practice scores for hand hygiene $r(207) = .246$, $p < .001$, and food hygiene $r(207) = .299$, $p < .001$. Finally, there was a significant correlation between mothers' hand hygiene practice and diarrhea management practice $r(207) = .459$, $p < .001$ (Table 7).

Discussion

About 30.5% of the mothers in the survey were unaware of childhood diarrhea even though the majority of the mothers had at least heard of this condition. This corresponded with a study that showed that primary caregivers (mothers) especially in Africa display poor perception of the signs and symptoms of diarrhea [20]. The finding in this current study confirmed that the perception of the seriousness of diarrhea among caregivers varies which is similar to a study conducted earlier in Amhara, Northwest Ethiopia [21].

Most of the respondents in the study, who had heard of childhood diarrhea, also had good knowledge of diarrhea. The current finding is relatively higher than the findings reported by Kaur et al., and also of the finding in Pakistan [22,20]. Then again, similar findings were observed in Ankura [23], and India [24].

The source of the information was chiefly the health facilities. This could be attributed to the effective implementation of the concept of Community-based Health Planning and Services (CHPS) at almost all peripherals in Ghana. This concept enables community health workers at the CHPS compounds to reach out to households with basic health information at the community level. Similarly, Olaniyi and Oyerinde found health institutions to be the main source of health information on diarrhea [25]. Contrarily, studies found the internet and social media as sources of information on diarrhea (16,21). In support of the latter finding, mothers in the current study

were mostly not formally educated and therefore did not find it beneficiary to use social media and the internet to access health information on their children's health conditions.

Children with diarrhea are exposed to malnutrition and vulnerable to other infections. Frequent episodes of diarrhea place the additional nutritional requirement to fight infections and also continue to provide nourishment for child growth and development. It is therefore necessary for caregivers to ensure that children are not exposed to preventable causes of diarrhea [26]. The finding in this current study revealed that mothers perceived diarrhea as life-threatening. The study also found that almost all mothers had moderate to good attitudes toward the prevention of diarrhea.

Then again, almost all mothers in the current study practiced food hygiene as a preventive measure against childhood diarrhea. Food hygiene is inevitably a viable practice to prevent food from being contaminated from the point of cooking to consumption. Similarly, Olaniyi and Oyerinde also agreed that 72.5% of respondents in Nigeria found food hygiene necessary to prevent childhood diarrhea [25]. In addition, other studies also underscore the importance of food hygiene to prevent childhood diarrhea [27,24]. Also, in the last decade, mothers in rural Kenya agreed unclean water and contaminated food were predictable risk factors for childhood diarrhea [28]. Contrarily, women in their study, unfortunately, did not perceive the importance of food hygiene, particularly safe water practices to prevent diarrhea among their children [16].

Another preventive measure determined in the study was personal hygiene as indicated by hand washing before preparing food and feeding children, 83.6% and 91.7% respectively. Quite a several mothers in other studies agreed that personal hygiene was a preventive measure against childhood diarrhea among children [16,27].

Environmental factors such as household latrines use and proper domestic waste disposal was also mentioned to have prevented diarrhea among children under five years. Similarly, Panom and Ying-Chun reported that environmental factors were related to childhood diarrhea [27]. Undoubtedly, in community-based management of diarrhea in Liberia, it was recommended that mothers practice a list of food and water hygiene and also environmental hygiene to prevent their children from diarrhea [29].

Home diagnoses of childhood diarrhea included frequent vomiting (97.1%), fever (95.1%), the passage of stool (91.2%), belly pain (76.7%), weight loss (74.0%), and sunken abdomen, check and fontanel (53.2%) among others. The combination of these signs and symptoms necessitated mothers to initiate appropriate measures to treat their children with diarrhea. Mothers are the major caregivers in developing countries like Ghana (30). They are responsible for food preparation, feeding of children, personal and environmental hygiene at the household level, and also the overall management of children when they are sick [30].

Mothers in the study were of the perception that diarrhea was a life-threatening illness among children with 66% resorting to ORS, 33% also using other alternatives such as rice water and porridge, and 1% giving zinc tablets, which is not so different from a study conducted by in Ghana which showed that 55.2% of the respondents gave ORS to their children before hospital visit with 23.3% giving their children some recommended home fluids like rice water [31]. Kiran et al. also identified a similar proportion have used ORS for the management of children with diarrhea as a homemade remedy by mothers (24). Posit to this accession, Priti et al., found that about 76% of mothers never gave ORS to their children with diarrhea [32]. The findings from this study indicated that most mothers did not appropriately manage diarrhea using the recommended medication (ORS + Zinc tablet). This could largely be because sachets of ORS are readily available at all local drugs outlet without the necessary accompanying zinc tablets. Similarly, Alshammri et al., found that drought solution was used for the treatment of diarrhea among children in Saudi Arabia (16). Contrarily, a higher percentage of mothers in South India preferred homemade remedies to ORS for the initial treatment of diarrhea among children [33].

Moreover, empirical evidence also in the last decade supported the role of food in the management of childhood diarrhea. The report indicated that a diet supplemented with Medium Chain Triglyceride oil had a significant influence on the management of diarrhea in children [34]. This undoubtedly proved the case of the respondents in the current study. Also, a good number of mothers used porridge and/or rice water for the treatment of their children with diarrhea.

Knowledge, attitude, and practice express positive relationships with each other, in that increase in one lead to an increase in the other [35]. This was demonstrated in this current study. Mothers' diarrhea prevention and management knowledge positively correlated with attitude, hand hygiene practice, and diarrhea management score. Also, the attitude of respondents positively correlated with their practice scores for hand hygiene and food hygiene. However, in an earlier study, adequate awareness of food safety did not transfer to strict adherence to hygienic procedures when processing and handling food products [36]. Finally, there was a significant correlation between mothers' hand hygiene practices and diarrhea management practices. This had a similarity with an earlier study in which mothers who wash their hands more frequently had a lower risk diarrhea in their children [37].

Conclusion

Most of the respondents exhibited good knowledge and attitude toward under-five diarrhea. About half of the respondents had good hygienic practices and only about 1 out 3 of the respondents had good practices of home management of diarrhea.

Knowledge positively correlated with attitude, hand hygiene practice, and management Also, the attitude of respondents positively correlated with their practice scores for hand and food hygiene practice. Finally, there was a significant correlation between mothers' hand hygiene practices and diarrhea management practices.

Data Availability

Data for the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

This submission has no conflict of interest associated with it.

Funding Statement

The research did not receive funding from any sources.

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DOI:10.31579/2693-4779/215