

## Knowledge, Attitudes, and Practices of Parents Regarding Gastroenteritis in Children Under the Age of Five Attending FRRH Fort Portal City

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### ABSTRACT

A study was conducted to assess the knowledge, attitudes, and practices of parents and caregivers regarding gastroenteritis among children under five years at Fort Portal City Regional Health Hospital (FRRH). The study involved 96 participants and found a 16.7% gastroenteritis prevalence. Caregivers' knowledge of gastroenteritis was low, with only those with children with the disease and those without it could describe it. A significant correlation was found between gastroenteritis occurrence and caregivers' attitude towards sanitation. Caregivers who considered poor sanitation as not associated with gastroenteritis were at a 75% risk of developing the disease. Exclusive breastfeeding was found to be a protective factor against gastroenteritis, with 57.5% of children who had EBF never developing the disease. The study suggests that the population needs to be educated about gastroenteritis and the government should improve clean water and sanitation services to reduce infection exposure.

**Keywords:** Gastroenteritis, Children aged under 5 years, Caregivers, Disease, Exclusive breastfeeding.

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### INTRODUCTION

Acute gastroenteritis is an inflammation of the stomach and intestines that may be accompanied by vomiting and diarrhoea. It can affect any part of the gastrointestinal tract [1]. According to a [2] report, Gastroenteritis has remained the major cause of death for children, especially under five years of age. Acute gastroenteritis disorder accounts for a large proportion (18%) of childhood deaths, with approximately 1.8 million deaths per year, [2]. UNICEF suspects that there are more than 700 million diarrheal episodes per year in children under 5 years of age in developing countries, [3]. In the US, there are 1.5 million outpatient visits for acute gastroenteritis, 200,000 hospitalizations, and 300 deaths yearly, [4]. In developed countries, acute diarrhoea approximately causes 1.8 million child deaths per year, mostly among children under five years of age [5].

An estimated 1,000 million episodes occur each year in children below five years, causing 5 million deaths among them annually, out of which 80% occur in the first two years of life, [6]. In sub-Saharan Africa the deaths from Gastroenteritis are majorly due to rotavirus disease, an estimated 453,000 children are affected with 145,000-300,000 of these dying in sub-Saharan Africa, [2]. Taking a look at East Africa, a study that was done by [7], to assess the high burden of gastroenteritis in young children, it was revealed that there were 4991 hospitalizations of children below five years of Age, 1134 (23%) were for gastroenteritis. In Uganda, diarrhoea and vomiting account for 75% of all outpatient cases of children treated and about 52% of all child admissions in child clinics. In a study on Kashenyi, Mugungu, and Masyoro fishing sites on Lake George in 2017 management of childhood diarrhoea

and vomiting, 107 of the 200 children recruited in the study at least had either diarrhoea or vomiting with 17% having bloody stool diarrhoea, [8]. According to the LQAS report 2020 Fort Portal City, on diarrheal management in children, there was an increase in reported gastroenteritis cases from 218 to 276, which was about a 4.6 prevalence increase of diarrhoea as compared to all child conditions in a two-year duration between July 2018 to June 2020 in the fort portal city. There was not much more evidence of any related study that has been done, therefore, this study is I9KM to be carried out in addition to some other research that might have been done and not published so as to improve the knowledge, attitudes and practices of parents and the community at large towards contributing factors to Gastroenteritis as this will scale up its prevention.

About 80% of Ugandan children are taken to healthcare facilities and are diagnosed with diarrhoea and vomiting each year [8]. Unfortunately, studies show that the parents have inadequate knowledge and lack understanding of gastroenteritis and its causes, they cannot mention all the causes and risk factors associated with diarrhoea, [9]. A study by UNICEF, in Uganda, in 2020, indicated that in children acquiring Gastroenteritis, over 65% of their

mothers do not know how to care for them at home, Observation revealed that some mothers prepare ORS and sugar-salt solution (SSS) incorrectly. There was no evidence of any published study about Gastroenteritis is available in Fort portal city, however, the researcher as a resident of this area has observed poor sanitation and unprotected water systems and slums are challenged with faecal oral infections due to poor waste disposal, unprotected wells that are highly susceptible to contamination and there is a shortage of latrines in fort portal city because most “landlords” prefer building semi-permanent houses without well-finished latrines due to lack of space and high demand for accommodation. In view of all these, there is a need to assess parents' KAP on factors contributing to Gastroenteritis among children because they dominantly influence their practices in the prevention of gastroenteritis. If this is not addressed more incidences of Gastroenteritis will be seen in vulnerable children thus affecting the country's development as a result of failure to achieve SDG. Therefore, this study assesses the knowledge, attitudes and practices of parents on factors contributing to Gastroenteritis among Children Aged Under Five Years Attending FRRH Fort Portal City.

## METHODOLOGY

### Study design

A descriptive cross-sectional study was used for children under five years who were brought to FRRH, Fort Portal City with gastroenteritis. The design was chosen because the collection of data involved direct interaction between the interviewer and the respondents.

### Area of Study

The study was carried out at Fort Portal Regional Referral Hospital found in Fort Portal City in western Uganda. Fort Portal Regional Referral Hospital is located 148 km by road west of Mubende Regional Referral Hospital. The coordinates of the hospital are 0°39'.0" N30°16'53.0" E. It is a public hospital funded by UMoH, and it was also an internship hospital. Has 330 bed capacity serving the Tooro, Rwenzori and Kasese regions.

### Study population

Parents or caregivers with children under five years seeking health care at FRRH who consented to participate in the study.

### Sample Size Determination

The sample size was determined based on (Kish Lesli, 1965)

$$n = \frac{Z^2 pq}{e^2}$$

Where:

**n** is the desired minimum sample size,

**Z** was valued at  $\alpha = 0.05$  which is 1.96  
**e** =margin of error which is proposed to be 0.1

**P**; the existing prevalence of gastroenteritis in the southwest. If there is no literature about **P**, then **P** is conventionally taken to be 0.5.

If  $p=0.5$ , the  $Q=1-0.5$  which is  $Q=0.5$   
 $N = (Z^2 PQ)/e^2$

$$= (1.96^2 \times 0.5 \times 0.5) / (0.1^2)$$

$$= 0.9604 / 0.001$$

$$= 96.04$$

Therefore 96 children were recruited into the study.

#### **The sampling procedure**

The study was carried out among parents with children under five at FRRH, a total of 96 parents of these children were considered and using a purposive sampling method where all those parents with children presenting with gastroenteritis were considered to provide relevant information on behalf of the children.

#### **Inclusion Criteria**

The study included all parents with children under five years of age attending FRRH, and all children under five years of age of the intended population whose caretakers accepted to give consent.

#### **Exclusion criteria**

Parents with children above five years of age,  
 Parents/caretakers of very sick children.  
 Parents/caretakers of children who never consent.

#### **Study Instruments**

A semi-structured questionnaire with both open and close-ended questions will be designed and administered to the selected respondents who would have consented to participate in the study.

#### **Data collection procedure**

The data was collected using a questionnaire with both open and close-ended questions the data was collected by the principal investigator herself and three trained research assistants. The questionnaires were filled by the child's mother/attendant for those parents/caregivers who can read and write. The variables of interest included age, sex, education, occupation, marital status, income and occupation. Others were hygiene and sanitation practices,

water related factors exposure to infective pathogens were captured by the questionnaire.

#### **Data management**

To ensure quality control, the researcher prior to the exercise conducted one day of training for three research assistants who thereafter were set for field testing of the study tools. A total of nine questionnaires were distributed for the pre-test. The research assistants were supervised closely by the principal invigilator herself.

#### **Data Analysis and Presentation**

The data collected from the study were computed using Microsoft Excel and SPSS. The analysis was made in line with the study objectives so as to achieve the purpose of the study and was presented in the form of tables, pie charts, bar graphs, and narratives depending on the data analyzed. The data obtained was kept in safe custody and treated with respect and confidentiality. Coding and Sorting at the end of the data collection process were done to ensure the adequacy completeness and correctness of the information collected.

#### **Ethical Consideration**

The study was carried out after the approval of the report by the university. An Introductory Letter from the Administrator faculty of clinical medicine and dentistry was obtained. The researcher obtained permission from the administration of FRRH Fort portal city, through a letter obtained from the faculty. Respondents requested consent prior to the interviews. Confidentiality was maintained all throughout the research process and the interviews were conducted in reasonable privacy by use of codes that were only known by responsible parties other than the use of names, and ensured not to disclose their information to third parties without their consent [10].

## RESULTS

### Knowledge of caregivers on gastroenteritis

**Table 1: shows caregivers' knowledge of gastroenteritis**

Child status	With gastroenteritis n <sub>1</sub> =16		Without gastroenteritis; n <sub>2</sub> =80	
	Freq.	per cent	Freq.	Per cent
<b>Gastroenteritis definition</b>				
Correct definition	04	25.0	29	36.3
Wrong definition	12	75.0	51	63.7
<b>Information access</b>				
Health educated	06	37.5	42	52.5
No information given	10	62.5	38	47.4
<b>Risk factors</b>				
Have good knowledge	05	31.2	45	56.3
Didn't know the risk factors	11	68.8	35	43.7
<b>Signs and symptoms</b>				
Knew the presentations	08	50.0	24	30.0
Didn't know	08	50.0	56	70.0

From Table 1 above, the majority of the respondents didn't know the correct definition of gastroenteritis, at 12(75%), and 51(63.7%) for those whose children had and those without gastroenteritis respectively, there was no significant correlation between a caregiver knowing definition and occurrence of disease. The study also established that lack of information about gastroenteritis among caregivers was a significant factor in the occurrence of the disease whose children had gastroenteritis and didn't have access to information regarding gastroenteritis. The study found that having prior

knowledge of the risk factors of gastroenteritis was a protective factor against the disease, here majority of the caregivers 45(56.3%) whose children had no disease knew the risk factors for the disease. The study also shows a positive correlation between not knowing risk factors and the occurrence of the disease. From the table above, it can be noted that having no knowledge of clinical presentations of gastroenteritis was not a significant factor for its occurrence, the majority 56(70%), didn't know the signs and symptoms but this didn't correlate with disease occurrence.

### Attitude of Caregivers on gastroenteritis

**Table 2: shows the attitude of caregivers toward gastroenteritis**

Child status	With gastroenteritis n <sub>1</sub> =16		Without gastroenteritis; n <sub>2</sub> =80	
	Freq.	per cent	Freq.	Per cent
<b>Attitude Response</b>				
About gastroenteritis				
Serious illness	09	56.3	48	60.0
Not a serious illness	07	43.7	32	40.0
<b>Prevention</b>				
Preventable	11	68.8	42	52.5
Not preventable	05	31.2	38	47.5
<b>Regarding poor sanitation</b>				
Gastroenteritis associated	04	25.0	44	55.0
Not associated	12	75.0	36	45.0
<b>unsafe Drinking water</b>				
Gastroenteritis associated	06	37.5	47	58.8
Not associated	10	62.5	33	41.2

From Table 2, above, the majority of 9(56.3%) of those with gastroenteritis children believed it was a serious illness, however, this showed no significant correlation with the disease occurrence. The participants were asked if they thought gastroenteritis could be prevented, in which majority 11(68.8%), of those whose children with gastroenteritis thought it was preventable, The study established that there was no significant correlation between a caregiver attitude on prevention The study established that

there was a significant correlation between the occurrence of gastroenteritis and caregivers' attitude on sanitation, caregivers who regarded poor sanitation as not having association with gastroenteritis were at risk of having gastroenteritis The study also showed that caregivers' negative attitude toward drinking water was a significant factor in the occurrence of gastroenteritis, a majority 10(62.5%) of the caregivers whose children had gastroenteritis didn't associate unsafe drinking water with the disease.

### Practices on gastroenteritis

**Table 3: shows caregivers' practices in association with gastroenteritis**

Child status	With gastroenteritis n <sub>1</sub> =16		Without gastroenteritis; n <sub>2</sub> =80	
	Freq.	per cent	Freq.	Per cent
<b>Practice Response</b>				
<b>ORS/Zinc</b>				
Administered	04	25.0	27	33.8
Not administered	12	75.0	53	66.2
<b>Hand washing practice</b>				
Regularly	07	43.7	70	87.5
Irregularly	09	56.3	10	12.5
<b>Breastfeeding</b>				
Child exclusively breastfed	05	31.2	46	57.5
No exclusive breastfeeding	11	68.8	34	42.5
<b>Immunization status</b>				
Fully immunized	10	62.5	56	70.0
Partially immunized	06	37.5	24	30.0

From Table 3, above, the study established that the majority of the caregivers 12(75%) had not administered ORS/zinc to their children, the study shows this didn't have a significant correlation with the disease. The study shows that irregular hand washing among caregivers was a significant predisposing factor to gastroenteritis, with correlatively there was a good hand washing percentage practice of 70(87.5%) among those caregivers whose children didn't have the disease. The study showed that exclusive

breastfeeding was a protective factor against gastroenteritis, with, the study also showed that the majority 11(68.8%) of children who had gastroenteritis had not had exclusive breastfeeding. The study showed that the immunization status of the child didn't significantly influence, the occurrence of gastroenteritis, the majority of the children both with and without gastroenteritis, 10(62.5%): and 56(70%) respectively said their children had been fully immunized.

## DISCUSSION

### **Knowledge of caregivers on gastroenteritis**

The majority of the respondents didn't know the correct definition of gastroenteritis, at 12(75%), and 51(63.7%) for those whose children had and those without gastroenteritis respectively, This could be because of lack of health education these mothers by public health experts or health workers, the study further revealed no significance correlation between a caregiver knowing definition and occurrence of disease at an OR(95%CI)and when this study is compared with other studies, a study by [11] had also showed that knowledge of mothers about the definition of gastroenteritis, its danger, when to seek medical help and the three rules of home management significantly improved from 35, 28, 13 and 29% to 91, 94, 92 and 93% respectively after the training intervention. The study also established that lack of information about gastroenteritis among care givers was a significant factor in the occurrence of the disease and, this was reflected in 10(62.5%) whose children had gastroenteritis and didn't have access to information regarding gastroenteritis, this could be because information access is limited to health facilities and those who go there, little or no information regarding gastroenteritis in communities, therefore children are likely to be exposed to the disease when the caregivers are not aware, Similarly, a study by [12], had shown that knowledge regarding cause, recognition, and prevention of Gastroenteritis in their study was unsatisfactory in which only 330 of the caregivers with children under five

years, only 12 (3.6%) of the caregivers had access to information in regards to the causes and risk factors to gastroenteritis. The study found that having prior knowledge of the risk factors of gastroenteritis was a protective factor against the disease, here the majority of the caregivers 45(56.3%) whose children had no disease knew the risk factors for the disease. The study also shows a positive correlation between not knowing risk factors and the occurrence of the disease, at OR(95%CI) which could be because the caregivers would be taking necessary caution to protect the child against being exposed to the disease, when compared with other studies, this study shows a difference from a study by [13] in which, they had indicated that only one third (1/3) of parents were aware of the risk factors and causes of childhood gastroenteritis, correlatively [9] had also cited that about 33% of the caregivers were not aware of the risk factors of diarrhoea due to gastroenteritis, whereas 30% described diarrhoea as normal in the child's growth stage. From the study, it can be noted that having no knowledge of clinical presentations of gastroenteritis was not a significant factor for its occurrence, majority 56(70%), didn't know the signs and symptoms but this didn't correlate with disease occurrence and, this could be because prevention of gastroenteritis may not necessarily depend on one knowing its presentation but risk factors, in comparison with other studies, according to a study conducted in Colombia by [13], it had showed that nearly 50% of the mothers in the study did

not know the dangers or signs of gastroenteritis. The study further recommended that education intervention would be important to be included so as to increase the caregivers' knowledge about diarrhoea, thus reducing its incidence.

#### **Attitude of Caregivers on gastroenteritis**

Above, the majority 9(56.3%) of those with gastroenteritis children believed it was a serious illness, however, this showed no significant correlation with the disease occurrence and people's attitude about gastroenteritis would draw the seriousness in ensuring its prevention, The majority of the members citing that gastroenteritis was not a serious child illness, could lag their enthusiasm on its prevention, when compared with other studies, the study shows a correlation with a study by [4] who revealed that 41% of the participants considered gastroenteritis self-limiting and never bothered taking children to the hospital, up to when they developed other complications such as sunken eyes, lethargy or inconsolable cry. The participants were asked if they thought gastroenteritis could be prevented, in which majority 11(68.8%), of those whose children with gastroenteritis thought it was preventable, The study established that there was no significant correlation between a caregiver attitude toward prevention and occurrence was a positive step, since the majority of the participants had a willing that it was preventable, however regardless of their good attitude, the disease still occurred, a comparison with other studies indicated a difference from a study by [14] in which they compared mothers willingness to prevent gastroenteritis and only 56 in every 70 of cohort group members considered the disease being preventable while 14(5%) though there was a need for prophylactic treatment for their children. The study established that there was a significant correlation between the occurrence of gastroenteritis and caregivers attitude toward sanitation, caregivers who regarded poor sanitation as not having an association with gastroenteritis were at risk of having gastroenteritis good sanitation is key in reducing bacterial colonization responsible for gastroenteritis, caregivers with poor

sanitation expose their children to pathogens, that can lead to the disease, a related study by [9], showed that 39.3% of caregivers stated that they did not improve the sanitation or hygiene situation around their homes because they were only renting the house, their study further revealed that 49.9 % of the caregivers felt that it was normal for children to get diarrhoea regularly, and only 68% of the caregivers agreed to gastroenteritis being preventable if more hygienic measures were ensured. The study also showed that caregivers negative attitude on drinking water was a significant factor on occurrence of gastroenteritis of the caregivers whose children had gastroenteritis didn't associate unsafe drinking water with the disease, this could be because drinking unsafe water predisposes one to water borne pathogens, so any care givers who doesn't give attention to the nature of water they give to their children puts them at risk of diseases, including gastroenteritis, a comparative study by [15] noted that diarrhea was acquired via contaminated water and foods, water-related factors were very important determinants of diarrhea occurrence, Lack of safe water for domestic water at a 8%, Increased distance from water sources at 5%; poor storage of drinking water at 2% and use of open water sources, 1% (such as rivers, pools, dams, lakes, streams, wells and other surface water sources, another related study by [16] cited that water storage in wide mouthed containers , low per capita water used were risk factors for about 65% of diarrhea occurrence among children less than five.

#### **Practices on gastroenteritis**

The study established that the majority of the caregivers 12(75%) had not administered ORS/zinc to their children, the study shows this didn't have a significant correlation with the disease this shows that there were no immediate interventions for those with diarrhoea and could result into complications, this study shows a difference from a study by [17], whose study findings revealed that 22% of the caregivers couldn't access ORS and zinc for management of gastroenteritis, only 50% of the caregivers accessed

prescribed antibiotics. The study shows that irregular hand washing among caregivers was a significant predisposing factor to gastroenteritis, with, correlatively there was a good hand washing percentage practice of 70(87.5%) among those caregivers whose children didn't have the disease, hand washing helped to wipe off disease-causing pathogens, which would otherwise be introduced into the mouth and GIT while eating, this helps to prevent against, many enter diseases, including gastroenteritis, This however, is not shown by a study in Santo Domingo, Dominican Republic by [17], where findings revealed that 38% of caregivers were too busy to wash the children's hands before they ate or they were busy working that they could not boil water for drinking for their children, similarly [18] had noted that Such neglect or forgetfulness increased the risk for children getting gastroenteritis by 0.5%. The study showed that exclusive breastfeeding was a protective factor against gastroenteritis The study also showed that the majority 11(68.8%) of children who had gastroenteritis had not had exclusive breastfeeding, this is because breast milk contains antibodies against diseases, and promotes nutrition, but also EBF reduces chances of inoculating pathogens into GIT through

There was a high prevalence of gastroenteritis at 16.7%. There was low knowledge and understanding of gastroenteritis as only 25.0% whose children had gastroenteritis could describe and define it. There was a poor attitude towards gastroenteritis and its effect on children, at least 43.7% of those whose children had the disease, considered unserious and self-limiting. There were poor caregiver practices since at least 56.5% of the caregivers whose children

developed the disease irregularly washed their hands, a correlative study result by [9], found out that, compared with exclusively breastfed infants, those who were partially breastfed had a 4.2 times higher risk of death caused by diarrhoea due to gastroenteritis which increased to 14.2 times higher for those not receiving any breastfeed. The study further states that each additional feed of breast milk reduced the risk of diarrhoea deaths by 20%. Therefore, caregivers were encouraged to practice breastfeeding as it reduced deaths in children due to diarrhoea. The study showed that the immunization status of the child didn't significantly influence, the occurrence of gastroenteritis, the majority of the children both with and without gastroenteritis said their children had been fully immunized, this could be because boosts a child's immunity against enteroviruses, as well as bodies capacity to eliminate other pathogens responsible for gastroenteritis, a study by [15], had also showed that 61 % of children who developed diarrhoea and vomiting had not been vaccinated of rotavirus, and only 33% of caregivers and 14% of all persons observed washed both hands with soap after defecation. Less than 1% used soap and water for hand washing before eating or feeding a child, [15].

#### CONCLUSION

developed the disease irregularly washed their hands.

#### Recommendations

The population needs to be health educated about gastroenteritis such that they take more caution against the disease in children. The government should improve clean water and sanitation services to people so as to reduce exposure to infections. Caregivers should be encouraged to seek immediate medical attention when their children become ill so as to avoid complications.

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