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Research Article

The Study of Psychological Implication of the Awareness of Mothers' Knowledge of the Causes, Treatment and Prevention of Gastroenteritis among Children in Aguata Local Government Area, Anambra State

Okoli Paul Chibuike[1]*, Nduka Chienyem Chidubem[2], Ofojebe Chukwuma Philip[3], Chime Peter Ekpunobi[1] and Akpoke Victor Okorieh[4]

[1]*Department of Internal Medicine, ESUT College of Medicine, Enugu State University of Science and Technology, Enugu, Nigeria*

[2]*Department of Nursing Sciences, School of Health, National Open University of Nigeria, Enugu Study Centre, Enugu, Nigeria*

[3]*Department of Psychology, Nnamdi Azikiwe University, Awka, Nigeria*

[4]*Department of Psychology, Enugu State University of Science and Technology, Enugu, Nigeria*

***Corresponding Author:** Okoli Paul Chibuike, Department of Internal Medicine, ESUT College of Medicine, Enugu State University of Science and Technology, Enugu, Nigeria.

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Abstract

This study investigated the psychological implication of awareness of mothers' knowledge on the causes, treatment and prevention of gastroenteritis among children in Aguata Local Government Area, Anambra State. It is said that knowledge is power, and often our actions are determined by the things we know and how we got to know them. Our knowledge influences us in responding to event that affects us, health conditions inclusive. Gastroenteritis is a medical condition from inflammation of the gastrointestinal tract that involves both the stomach and the small intestine. It is common in children five years and under and remains the leading cause of mortality and morbidity among this age group worldwide. The objective of the study was to assess mother's knowledge of gastroenteritis and its characteristics, to evaluate their knowledge of the causes, treatment and prevention of gastroenteritis. Based on these objectives, some literatures were reviewed according to the concept of the study. The research design used for the study was descriptive method and sample size was 150 mothers of children five years and under. From the findings, it was discovered that majority of the mothers have adequate knowledge of what gastroenteritis is, the causes and preventive measures, but lack knowledge of its treatment. A considerable percentage still has poor understanding of the subject matter. The study recommends that there is need for more awareness to be created to the populace on the dangers of gastroenteritis among children with more emphasis on its prevention and to psycho-educate mothers on the correct and appropriate treatment modalities including the preparation and use of homemade salt and sugar solution as prevent techniques. It recommends also that government should assist with the provision of basic social amenities.

Keywords: *Mothers' Knowledge; Causes; Treatment and Prevention of Gastroenteritis*

Introduction

Regardless of improved safety of food, water and sanitation and belligerent promotion of non-invasive interventions: oral rehydration therapy and prevention strategies: increased breastfeeding; gastroenteritis remains a common cause of morbidity and mortality worldwide. It accounts for 1.8 million annual deaths in children 5 years of age [1]. Gastroenteritis ranks with respiratory tract infection as the most common infectious disease syndrome of humans. Approximately, billion episodes of diarrhea occur worldwide annually, accounting for 15 - 30% of all deaths in some countries (WHO, 2012). Gastroenteritis or infectious diarrhea is a medical condition from inflammation of the stomach and intestines. It causes diarrhea, vomiting and stomach pain. It usually happens because of infection by a virus or bacteria [2]. Acute gastroenteritis is a diarrhea disease of rapid onset, with or without accompanying symptoms and signs such as nausea, vomiting, fever, or abdominal pain [3].

Acute gastroenteritis accounts for millions of deaths each year in young children mostly in developing communities. In developed countries, it is a common reason for presentation to general practice or emergency departments and for admission to hospital. Globally, most acute gastroenteritis is caused by viruses mainly: rotavirus and bacteria mainly *E. coli, Shigella* and *Campylobacter*. Although less common, protozoan parasites such as *Giardia lamblia* and *Entamoeba histolytica* also cause gastroenteritis mostly in children. But bacterial infections account for 15 to 20% of all paediatric gastroenteritis cases [4]. Besides, poor socio-economic conditions, poor personal hygiene and unsafe water supply are the factors responsible for high incidence of gastroenteritis in our country (WHO, 2012). In underdeveloped and developing countries, acute gastroenteritis involving diarrhea is the leading cause of mortality in infants and children younger than 5 years of age. Watery diarrhea and vomiting accompanied with abdominal cramps or pain are the major symptoms of gastroenteritis. Diarrhea is a serious problem in many areas of the world and is especially lethal when superimposed on malnutrition. It results in large losses of water and electrolytes, especially sodium and potassium [5].

Diarrhea disease remains the second cause of death among under 5 children globally and kills more young children than malaria, HIV/AIDS, and measles together [6-9]. Diarrhea disease in Nigeria was estimated to cause a total of 492,473 post neonatal deaths, 2,009 neonatal deaths, 72,777 post neonatal death and 74,785 under five deaths [10]. Although gastroenteritis involving diarrhea kills about 4 million people in developing countries each year, it remains a problem in developed countries as well. In the United State, each child would have had 7 - 15 episodes of diarrhea by the age of 5 years. Nine percent (9%) of all hospitalizations of children less than 5 years old are associated with diarrhea, and 300 - 500 children die each year from this potentially preventable condition (WHO, 2012). Diarrhoeal is more common in less than 2 years of age with males affected more than females and more cases areas seen from rural areas. It is more common in lower educated group and low socioeconomic status families with prevalence of overcrowding Padhy, Sethi and Behera [11].

The World Health Organization launched the programme in 1978 for control of diarrhea disease to reduce diarrhea related mortality and morbidity. This programme has developed clear guidelines for management of diarrhea with emphasis on oral rehydration therapy, continued feeding during diarrhea, rational use of drugs, education of parents regarding home management and prevention of diarrhea. Approximately, 90% cases of diarrhea can be successfully managed with oral rehydration therapy and continued feeding without use of drugs. Oral rehydration therapy is a well-established therapy for the prevention and treatment of dehydration clinically as effective as intravenous therapy and in most cases can be carried out at home, thus avoid hospital stay. Twenty four years ago, oral rehydration therapy was first proven to be effective in the outpatient management of patients with severe dehydrating diarrhea caused by cholera. The development of this simple therapy for the treatment of diarrhea one of the most common illnesses of mankind; was heralded as one of the greatest medical achievements of the 20th century.

Oral rehydration therapy adopted by the UNICEF and WHO have been successful in the management of diarrhea among children. Diarrhea Disease Control Programs have been established in more than 100 countries worldwide. It is estimated that in the 1990s, more than 1 million deaths related to gastroenteritis involving diarrhea must have been prevented, largely to the promotion and use of this therapy. Today however, there are indications that in some countries, knowledge and use of appropriate therapies to successfully manage or treat gastroenteritis including oral rehydration therapy may be declining [1]. Although rotavirus may be spread in aerosols, gastroenteritis is highly contagious and is usually spread by the faecal-oral route and from one person to another. Bacterial gastroenteritis can occur in young children served uncooked hamburgers, unwashed fruits and salads and water contaminated by animal faeces. It may also be acquired from environmental sources such as children's animal farms, swimming pools, and beaches, child care facilities, schools, nursing homes and cruise ships.

Prevention is the key to controlling gastroenteritis since the microorganisms that cause it are diverse and with new strains coming up from year to year, making it impossible to vaccinate people against it. The preventive measures amongst other things include: Breast feeding babies which counteract the hazard of contaminated water and unsterile bottles and teats, practicing good food-storage techniques to prevent bacteria growth and contamination, proper cooking of food to ensure the death of any bacteria, peeling fruits and vegetables and

thoroughly washing them to prevent the risk of contamination human and animal manure, keeping insects and animals away from food preparation zone, ensure that waters are properly boiled, reheating properly previously prepared food. In summary, an adequate hygiene is important to prevent the spread of infection and it involves taking precautionary measures such as careful washing of hands thoroughly with soap and water for 20 seconds after using the toilet or changing diapers and always before eating or handling food; nappy disposal, preparation and storage of food and drinking water as outlined in WHO's step guide to safe food (Kirkwood, 2008). Millennium Development Goal number 4, is made to reduce mortality among children under the age of five in developing countries by two-thirds by the year 2015, so efforts should be made to achieve this goal by monitoring important outcomes like by improving oral rehydration therapy coverage, utilizing qualified providers and reducing disparities in recommended childhood gastroenteritis management practices. Also, appropriate healthcare seeking behaviour and improvement of mother's care-seeking behaviour could contribute in reducing a large number of child morbidity and mortality in developing countries [12].

Statement of Problem

Gastrointestinal disease ranks as the most common infectious disease syndrome of humans. Gastroenteritis involving diarrhea is the leading cause of mortality and morbidity in infants and children younger than five years of age.

Most are caused by viruses mainly rotavirus and some are caused by bacteria mainly *E. coli, Shigella* and *Campylobacter* or other organisms. Reduction of this disease will require targeted strategies against the common agents causing this disease condition.

Knowledge is power and prevention is better than cure, hence the need to explore mothers' knowledge of the causes, treatment and prevention of gastroenteritis among children.,

Purpose of the Study

The general purpose of the study is to assess the mother's knowledge of the causes, treatment and prevention of gastroenteritis among children in Aguata L.G.A. Anambra State.

Objective of the Study

The specific objectives include:

- To assess mother's knowledge of gastroenteritis.
- To evaluate the mother's knowledge of causes of gastroenteritis in children.
- To access their knowledge of the treatment of gastroenteritis in children.
- To evaluate their knowledge of the prevention of gastroenteritis.

Relevance of the Study

The findings of this study is hoped to help educate and enlighten mothers on the nature, characteristics, causes, treatment and preventive measures of gastroenteritis in children. This in turn will create awareness among mothers leading to reduction of the morbidity and mortality rate in children due to this disease condition.

Research Questions

1. Will the mothers have the knowledge of gastroenteritis and its characteristics in children?
2. Will the mothers have the knowledge of the causes of gastroenteritis in children?
3. Will the mothers have the knowledge of the treatments of gastroenteritis in children?
4. Will the mothers have the knowledge of the preventive measures against gastroenteritis?

Scope/Delimitation of the Study

This study is limited to mothers of children aged 5 and under in Aguata Local Government Area, Anambra State. It includes all mothers of this category physically present at the time of the study.

Operational definition of terms

- **Evaluation:** To find out or form an opinion of the amount, value or quality of something after thinking about it carefully.
- **Mothers:** Female parent of children aged 5 and under.
- **Knowledge:** An understanding one has about something.
- **Causes:** The source or origin of a thing or what brings about something.
- **Treatment:** How something can be corrected or minimized.
- **Prevention:** Keep or stop something from happening.
- **Gastroenteritis:** Inflammation of the stomach and intestine which causes diarrhea and vomiting.
- **Children:** Young human beings aged 5 years and under.

Method

Participants

A total of 150 mothers that met the inclusion criteria were selected using simple random sampling. Mothers of children 5 years and under resident in Aguata L.G.A. Aguata Local Government is one of the Local Government Areas of Anambra State. It has an area of 195 km^2 (75 sq m) and a population (2006) of 370,172 inhabitants, Density of: 1.898/ km^2. Households without at least one under-five child in the study areas were excluded.

Instruments

Instrument for data collection

The main research was Scale developed by the researcher mothers' knowledge of mothers on the causes, treatment and prevention of gastroenteritis, developed by Nduka [13]. The contain mothers' knowledge of mothers on the causes, treatment and prevention of gastroenteritis. It contains two sections: one and two. Section one contains demographic factors like: Occupation, Marital Status and Level of ed-

ucation while section two contains five clusters, A, B, C, D and E. Cluster A contains 9 items, Cluster B contains 5 items, Cluster C contains 7 items, Cluster D contains 5 items and D contains 5 items and Cluster E contains 7 items each. All the items have a response of strongly agreed, agreed, disagreed and strongly disagreed. The instrument was validated by the supervisor and other experts in measurement and evaluation. The corrections of the supervisor and other validators were effected on the instrument. The face validated instrument which had 38 items was distributed to thirty eight (38) respondents in a trial testing in Ebonyi State not part of the sample for the main study. This was to prevent interaction of the instruments. Their responses were collected and used for determine the reliability coefficient of the instrument using their Cronbach Alpha Approach by this method; reliability indices based on clusters were obtained. Cluster 1 (0.77) cluster 2 (0.83) cluster 3 (0.70) cluster 4 (0.72) and cluster 5 (0.68). However, the 38 item gave a reliability coefficient of 0.93, which showed a very high internal consistency.

Procedure

Data was collected through a structured self-administered questionnaire. The researcher obtained permission from the appropriate authorities and after words went to the selected areas on scheduled with their various village heads or heads of women groups. On arrival they gave permission for the members involved to be gathered in the village hall where the researcher introduced themselves and the work they intend to embark on. There after consent form was shared and signed by the willing participants and returned at once. Afterwards the researchers through the help of research assistants shared the questionnaire to participants which were collected back the same day.

Design/statistics

This is cross-sectional study design and data were analyzed using frequency tables and bar charts.

Results

Demographic Data	Response	% of Total
Occupation		
Student	21	14
Trading	85	56.7
Civil servant	19	12.7
House wife	25	16.6
Total	150	100
Marital Status		
Married	147	98
Single	3	2
Total	150	100
Level of education		
Primary	20	13.3
Secondary	85	56.7
Tertiary	45	30
Total	150	100

Table 1: *Demographic data.*

The above table indicated that majority of the respondents are traders which represent 56.7% of the total population studied. The least is civil servant which is 12.7% of the total population. 147 (98%) of the respondents are married while 3 (2%) are single. Also, from the table, 85 (56.7%) of the respondents had secondary education, while 45 (30%) have tertiary education. The least is primary education which represents 13.3% of the population.

Causes of gastroenteritis	Response	% of Total
Disease as a result of contaminated food and water	143	95.3
Diseases as a result of eating what the body dislikes	91	60.7
Disease as a result of teething	77	51.3
Diarrhea which is common with children	115	76.7
Disease as a result of food poisoning	132	88
Disease as a result of infection	99	66
Disease as a result of poor sewage disposal	95	63.3
Disease as a result of improper hand washing	118	78.7
Disease as a result of dirty environment	116	77.3
Total	986	Above 100

Table 2: *Mothers perception of causes of gastroenteritis.*

From the above table, the percentage total is above 100% as each of the respondents responded to different options. On the causes of gastroenteritis, 143 (95.3%) believed it is as a result of contaminated water and food, 91 (60.7%) agreed it is as a result of eating what the body dislikes, 77 (51.3%) said it is as a result of teething, 115 (76.7%) believed it is diarrhea which is common in children, 132 (88%) said food poisoning, 99 (66%) believed it is infection, 95 (63.3%) said poor sewage disposal, 118 (78.7%) agreed on improper hand washing and 116 (77.3%) believed it is as a result of dirty environment.

Signs and Symptoms of gastroenteritis	Response	% of Total
Frequent vomiting and watery stool for more number of times than normal	140	93.3
Frequent stooling with presence of blood or mucous	95	63.3
Dehydration as a result of loss of body fluids	131	87.3
Loss of appetite and weakness	118	78.7
Abdominal cramps and pain	110	73.3
Total	594	Above 100

Table 3: *Mothers perception of signs and symptoms of gastroenteritis.*

From the above table on the characteristics of gastroenteritis, 140 (93.3%) believed it is frequent vomiting and watery stool for more number of times than normal, 95 (63.3%) agreed is frequent stooling with presence of blood and mucous, 131 (87.3%) said it is dehydration as a result of loss of body fluid, 118 (78.7%) agreed to loss of appetite and weakness and 110 (73.3%) believed there is abdominal cramps and pain.

Gastroenteritis can be spread through	Response	% of Total
Contaminated food and drink	143	95.3
Sugar and sugary food	97	64.7
Milk and milk products	107	71.3
Uncooked or poorly cooked foods	62	41.3
Worm infestation	104	69.3
Mothers' non-challant attitude towards child care	93	62
Poor sanitation and unhygienic environment	121	80.7
Total	727	Above 100

Table 4: *Mothers perception of how gastroenteritis can be spread.*

The above table indicated that on how gastroenteritis can be spread, 143 (95.3%) of the respondents agreed it is contaminated food and drink, 97 (64.7%) said sugar and sugary food, 107 (71.3%) milk and milk products, 121 (80.7%) agreed to poor sanitation and unhygienic environment, 62 (41.3%) said uncooked or poorly cooked foods, 104 (69.3) worm infestation, while 93 (62%) believed in mother's non-challant attitude towards child care.

Gastroenteritis can be treated using	Response	% of Total
Antibiotics	143	95.3
Herbal medicine	101	67.3
Self-medication	102	68
Salt and sugar solution	48	32
Packet oral rehydration solution	94	62.7
Total	488	Above 100

Table 5: *Mothers method of treating gastroenteritis.*

On the treatment of gastroenteritis, 143 (95.3%) believed it is antibiotics, 101 (67.3%) said herbal medicine, 102 (68%) self-medication, 48 (32%) salt and sugar solution, and 94 (62.7%) agreed to using packet oral rehydration solution.

Gastroenteritis can be prevented through	Response	% of Total
Use of clean and treated water	144	96
Regular use of ORS	111	74
Good mother, child and environmental hygiene	117	78
Eat well cooked food and avoid contaminated food	117	78
Reducing sugary food and milk intake	107	71.3
Prompt treatment of infection	88	58.7
Regular hand washing with soap and water	115	76.7
Total	784	Above 100

Table 6: *Mothers perception of preventive measures against gastroenteritis.*

From the above table on how gastroenteritis can be prevented, 144 (96%) of the respondents believed is through the use of clean and treated water, 111 (74%) said regular use of ORS, 102 (68%) good mother child and environmental hygiene, 117 (78%) agreed to eating well cooked food and avoid contaminated food, 107 (71.3%) reducing sugary food and milk intake, 88 (58.7%) prompt treatment of infection and 115 (76.7%) said regular hand washing with soap and water.

Discussion

From table 3, an assessment of the characteristics of gastroenteritis revealed that 140 (93.3%) agreed that there is frequent vomiting and watery stool for more number of times than normal, 95 (63.3%) said it is frequent stooling with presence of blood and mucous, 131 (87.3%) believed there is dehydration as a result of loss of body fluid. These findings are consistent with a previous study conducted by Olakunle, Odili., *et al*. [14] in the study on assessment of mothers' knowledge of use of drugs and home management of childhood diarrhoea in Nigeria. The study found that frequent vomiting and watery stool with presence of blood and mucous and dehydration are the characteristics of gastroenteritis in children.

This shows that majority had good understanding of the characteristics of gastroenteritis and also shows that mothers will be able to identify episodes of gastroenteritis when their children have one. And these characteristics should be carefully observed so that necessary action/intervention should be taken promptly.

From table 2, among the causes of gastroenteritis majority of mothers agreed that contaminated food and water 143 (95.3%) and poor sewage disposal 95 (63.3%) are the causes of gastroenteritis. This corresponded with the study by Olakunle., *et al*. [14] which revealed gastroenteritis as a disease that result from contaminated food and drink and poor sewage disposal. Therefore, sewage should be properly disposed and contaminated food and water avoided among children, to efficiently eradicate or reduce childhood mortality from gastroenteritis. A large percentage of mothers 132 (88%) believed it is as a result of food poisoning, 91 (60.7%) said it is eating what the body dislikes and 99 (66%) said it is as a result of infection. These findings are consistent with the study by Webber [3] which revealed that gastroenteritis is mainly due to infection which may be viral or bacterial and food poisoning which is food infected by microbes. This may be due to the fact that these infectious agents are not visible with the naked eyes and so its presence in a food might not be recognized. But if foods are properly handled, cooked and preserved, it will go a long way to reduce the incidence. Some of the mothers interviewed believed it is as a result of improper hand washing 118 (78.7%), and 116 (77.3%) agreed it is due to dirty environment. This is in line with WHO [15] findings which observed that gastroenteritis is caused by improper hand washing and dirty environment. This may be due to mothers' ignorance or lack of adequate knowledge on the effectiveness of proper hand washing and good personal and environmental hygiene in combating infection particularly among children. Some mothers agreed it is as a result of teething 77 (57.3%) and diarrhea which is common with children, 115 (76.7%). This also agree with the study conducted by Olakunle., *et al*. [14] which revealed that gastroenteritis is not as a result of teething, neither is it is a normal process when a child is growing up. This shows that the mothers have adequate knowledge of the causes of gastroenteritis and this may be attributed to increased awareness on this and more enlightened society. However, on the contrary, the findings of () noted that majority of mothers (77.2%) in their study disagreed with the notion that washing hand without soap while preparing food for the child could prevent diarrhhoea. But virtually all (97%) of the respondents agreed that one should ensure that water is clean before giving the child to drink [16].

From table 5, on the assessment of the treatment of gastroenteritis, majority of the mothers 143 (95.3%) agreed that gastroenteritis can be treated with antibiotics, 101 (67.3%) said herbal medicine and 102 (68%) believed it is self medication. This partially agrees with the study conducted by Olakunle., *et al*. [14] on the assessment of the use of drugs and home management of childhood diarrhoea which revealed that substances used during diarrhoea episode were antibiotics, herbal medicine and general self-medication to stop the stooling. On the contrary, the findings of this study did not agree with the findings of Andrew (2012) which stated that over the counter medications; antibiotics and anti-diarrhoea are avoided during the episode. This may be due to the fast that mothers thought that medications can stop the diarrhoea and its associated discomfort immediately. Use of salt and sugar solution and packet oral rehydration solution appear to be effective in the treatment of gastroenteritis. Some mothers agreed to this although their percentage among the total population is low; 48 (32%) and 94 (62.7%) respectively. Olakunle., *et al*. [14] which indicated that salt and sugar solution and packet oral rehydration therapy are the substances preferred for the treatment of gastroenteritis. This shows that mothers do not have adequate knowledge of how gastroenteritis in children can be treated. And may be due to the fact that majority of the mothers are addicted to the use of over-the counter medications.

From table 4, according to how gastroenteritis can be spread, majority of the mothers 143 (95.3%) agreed it is through contaminated food and drink, 107 (71.3%) said contaminated milk and milk products, 104 (69.3) worm infestation and 121 (80.7%) poor sanitation and environmental hygiene. This shows that mothers have good understanding of the spread.

From table 6, among the preventive measures against gastroenteritis, some mothers agreed to the use of clean and treated water 144 (96%), good mother child and environmental hygiene 102 (68%), eating well cooked food and avoid contaminated food 117 (78%), regular hand washing with soap and water 115 (76.7%). These findings agree with the work of Agbolade, Dipeola and Ajuwon [16] which

indicated that gastroenteritis can be prevented if appropriate preventive measures are put in place; use of clean and treated water, good personal and environmental hygiene, avoiding contaminated food and regular hand washing with soap and water. Prompt treatment of infection, 88 (58.7%) agreed on that which also agrees with the work of Murray [12] which indicated that prompt treatment of infection and vaccination can be effective in preventing gastroenteritis. Some mothers believed that regular use of ORS and reducing sugary food are good preventive measures [16,17]. This shows that mothers have a good understanding of the preventive measures against gastroenteritis. But the fact remains in the number of mothers who are willing and capable of implementing these targeted strategies.

Implications of the Findings

The result of the study will create awareness and motivate health care providers to guide the public in the right way to reduce the incidence of gastroenteritis. Since health care workers are the first source of knowledge for the public, their knowledge has to be enhanced regarding patient oriented health topic and educate the public regarding gastroenteritis. The study can be published in journal so that the message of the causes, appropriate treatment and preventive measures especially oral rehydration therapy use should be universalized with the general public. The finding of the study will serve as a basis to highlight a need to enhance efforts that will empower mothers/ care givers to protect their children from gastroenteritis associated morbidity and mortality. Health administrators should take active part in health policy making, developing protocol, procedures and standing orders related to health promotion and maintenance. Health workers or personnel should create awareness with more emphasis on the preventive measures and treatment using extensive mass media propaganda so as to reduce the incidence of gastroenteritis.

Limitations of the Study

The strength of this study is that similar study has not been conducted in the study locality which gives clues that although, a higher percentage or good majority have good knowledge or understanding of what gastroenteritis is, its causes and preventive measures, a considerable percentage still lack knowledge of the subject matter. However the result should be viewed within the context of the limitations posed by the method and sample size. This study focused solely on mothers' awareness, thereby excluding fathers and nanny's who in the absence of the mothers who are also children's care-givers.

Suggestions for Further Research

It suggested that conducting an observational and experimental study to ascertain whether the knowledge of the causes and treatment of gastroenteritis is adequate as it was said is crucial.

This work was limited to the Aguata Local Government Area, Anambra State, Nigeria. A broader study that may cover the entire other local Government in the six geopolitical zones is recommended.

Summary and Conclusion

Although, a higher percentage or good majority have good knowledge or understanding of what gastroenteritis is, its causes and preventive measures, a considerable percentage still lack knowledge of the subject matter. Despite their good understanding of this, the incidence of child mortality and morbidity as a result of gastroenteritis is still high.

Awareness should be created by health personnel and mothers adequately health educated on this. And more emphasis should be laid on the mode of spread and appropriate preventive measures. This is because in as much as they have good knowledge of the preventive measures, majority is ignorant of its practice. And when these measures are properly and efficiently understood and adhered to, the incidence of child mortality and morbidity from gastroenteritis will be reduced if not eradicated. However, majority of mothers lack knowledge of the treatment.

Compliance with Ethical Standards Conflict of Interest

All authors declare that they have no conflict of interest. All participants filled the consent form to declare their free will to participate in the study. Again, this study was not funded by any person, group or organization.

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