



# **Knowledge And Use Of Oral Rehydration Therapy In The Treatment Of Diarrhoea In University Of Port Harcourt Teaching Hospital (UPTH), Nigeria**

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## **ABSTRACT**

The first choice in diarrheal disease control efforts is the use of oral rehydration therapy (ORT). This study investigated the knowledge and use of Oral rehydration therapy in the treatment of diarrhoea in University of Port Harcourt Teaching Hospital (UPTH) Nigeria. The study was guided by three research questions. A descriptive research design was adopted for the study with a population which comprised of all women of childbearing age attending clinics at the University of Port Harcourt Teaching Hospital (UPTH). A purposive sampling technique was used to select a sample size of 110 for the study. Data was collected using a semi-structured questionnaire was used for data collection. The instrument was validated by experts in related field. Data collected was analyzed using frequency and percentage. The result showed that, majority of the respondents who mentioned that ORT is a method used to prevent insect bite in children, most of the respondents also mentioned that ORT is administered once a day, they further agreed that ORT is administered using just one teaspoon and ORT can be stored for 30 days. This showed a low knowledge level among the respondents in this study. The result also showed that, only 35.0% had used ORS to treat diarrhea within 24 hours. It further shows that there is no significant relationship between knowledge and use of ORT among mothers ( $p>0.05$ ). The study concluded that, when knowledge is increased and practice is encouraged by finding solutions to knowledge on the current use of ORS and poor practice of diarrhoea treatment with ORS, there will be reduction in diarrhea epidemics in Nigeria.

**Keywords:** Diarrhoea, Knowledge, Oral rehydration therapy

## **INTRODUCTION**

The use of oral rehydration therapy (ORT) is the first choice in diarrheal disease control efforts. It was advised that all children with diarrhoea should be given more fluids to drink to compensate for the loss of fluids and that feeding should not be stopped during diarrhea (WHO, 2014). According to different country-specific data sources, significant progress was reported during the 1980s regarding the effects of oral rehydration therapy at the country level. The low coverage of ORT in Nigeria has, in contrast, been seen as a major reason for higher rates of diarrhoeal deaths in children. Despite well-implemented clinical management training in many countries, advising mothers on how to treat their children for diarrhoea at home, this remains the weakest element of case management. Results of health facility surveys show that only 1-10% of mothers were correctly advised (WHO, 2014).

Diarrhoea disease is one of the leading causes of infant and child mortality in Nigeria, where it accounts for an estimated 250,000 deaths per annum (Iyun & Oke, 2014). Although the federal government has contributed appreciable resources towards the reduction of the disease in Nigeria, these efforts have not yielded significant results. The gravity of childhood diarrhoea has been documented by Asakitikpi (2014) in Ibadan city, by far the largest city in Nigeria and the second largest on the African continent next to Cairo. Report of the United Nations' children, education, and

scientific fund indicates that more than one child in every five fails to survive to the age of five in Nigeria, and that as high as 40% of these deaths are due to diarrhoea (UNICEF 2015).

In developing countries, an estimated 1.3 thousand million episodes of diarrhoea and million deaths occur each year in those under five years of age. Overall these children experience an average of 3.3 episodes of diarrhoea per year, but in some areas the average exceeds nine episodes per year. The median incidence of diarrhoea is greatest for infants aged 6 – 11 months (5 episodes /child /year). Where episodes are frequent children may spend 15% of their days with diarrhoea (UNICEF, 2014). Factors underlying increased risk of diarrhoea morbidity and mortality are: low socio-economic status; poor personal and domestic hygiene; low family income; living in a crowded room and earthen floor; lower maternal education; lack of breastfeeding; malnutrition-increases severity and duration, also some studies recently (Sudan and Mexico) have suggested that malnutrition increases the risk of frequent diarrhoeal episodes; low birth weight; measles (WHO/UNICEF, 2015).

Although these studies confirm that diarrhoeal disease is a major health problem in Nigeria, they necessarily focus on broad demographic data and general morbidity and mortality patterns. They do not delve into the complex complementary area of traditional health beliefs and practices surrounding childhood diarrhoea although there are few exceptions to this observation (Jinadu, 2015; Yoder & Hornik, 2015; Cogswell et al., 2016). De Zoysa and colleagues (2016) in Zimbabwe combined survey and interview data to examine the relationship between mothers' perception of diarrhoea and treatment actions. They found that there was a close relationship between mothers' perception of diarrhoea and the treatment that was sought. However, in examining ORT use among mothers, Coreil and Genece (2016) found no association between ORT use and perception of specific episodes but they found significant associations between urban/rural residence and the use of ORT. Although researchers have studied and found increases in the knowledge of diarrhoea and ORT use in populations that are exposed to a campaign, increases in knowledge have not been necessarily associated with increases in the use of ORT (Molla et al., 2010; Foster 2016, Akpede, 2016).

Seasonal patterns of diarrhoea occur in many geographic areas. In temperate climates, viral diarrhea, particularly diarrhea caused by rotavirus, occurs throughout the year, increasing in frequency during the drier, cool months, whereas bacterial diarrhea peaks during the warmer, rainy season. The incidence of persistent diarrhoea follows the same seasonal pattern as that of acute watery diarrhoea (Dorah, 2017). The infectious agents that cause diarrhoea are usually spread by the fecal oral route, which includes the ingestion of faecally contaminated water or food, and direct contact with faeces. A number of behaviours promote the transmission of enteric pathogens and thus increase the risk of diarrhoea. These include: failing to breastfeed exclusively for the first 4 – 6 months of life; using infant feeding bottles; storing cooked food at room temperature; using drinking water contaminated with faecal bacteria; failing to wash hands after defecation, after disposing faeces or before handling food; failing to dispose of faeces (including infant faeces) hygienically (WHO, 2017).

Globally, improved access to sanitation, clean drinking water, and increased availability of oral rehydration therapy (ORT) have significantly reduced diarrheal-related deaths in under five children by nearly half the figures obtained in 1980- 2015 (WHO, 2015). Despite this progress, in many developing countries today especially in Africa and SouthEast Asia, diarrhea still poses a significant threat to the health, wellbeing and survival of under-fives, accounting for as much as 16% of childhood deaths. This is despite the fact that the majority of mothers are reportedly reached by health education on oral rehydration therapy. Even in areas where ORS utilization is high, there is growing concern that practice is inappropriate. Additionally, inappropriate feeding practices by the mothers may contribute to worsen diarrheal morbidity and mortality. Irrational use of antibiotics, anti-diarrhoeal preparations and other forms of drug, including herbal remedies during diarrheal episodes has been reported. These findings are reportedly more prevalent in the rural than urban communities. As research into diarrheal incidence and home management practices has generally declined, there is at present a dearth of published work on maternal diarrheal related practices even in Nigeria (Dorah, 2016). Morbidity rates, however, have not followed a similar decline, but have remained between 2 to 3 episodes per child per year through the decade (UNICEF, 2016). The main complication with diarrhoea is the development of dehydration with insufficient fluid intake, which can be prevented through the appropriate use of ORS. However, there are indications that in some developing countries, knowledge and use of oral rehydration salts to successfully manage diarrhoea in under-fives,

especially at home, may be declining. Hence, this study on the knowledge and use of Oral rehydration therapy in the treatment of diarrhoea in University of Port Harcourt Teaching Hospital (UPTH) Nigeria. The study provided answers to the following research questions:

1. What is the knowledge of mothers on ORT and its usefulness in the treatment of diarrhoea?
2. Do mothers use ORT as treatment for diarrhoea treatment?
3. What are the factors influencing the use of ORS in the treatment of diarrhoea?

### METHODOLOGY

A descriptive research design was adopted for the study with a population which comprised of all women of childbearing age attending clinics at the University of Port Harcourt Teaching Hospital (UPTH). A purposive sampling technique was used to select a sample size of 110 for the study. Data was collected using a semi-structured questionnaire was used for data collection. The instrument was validated by experts in related field. Data collected was analyzed using frequency and percentage.

**Table 1: Summary of knowledge of mothers on ORT in percentage (%)**

SN	Statement	SA	A	SD	D
1	ORT is a method used to treat a child with malaria	3	5	41	51
2	ORT provides solution to children with diarrhoea	32	42	10	16
3	Oral rehydration therapy (ORT) is the first choice in diarrheal disease control efforts	23	48	21	8
4	ORT is used to rehydrate a child from dehydration	22	4	25	49
5	ORT is a method used to prevent insect bite in children	19	62	16	3
6	ORT is administered once in day	23	40	25	12
7	ORT is administer using just one tea spoon	55	15	20	10
8	ORT can be stored for 30 days	20	42	30	8

The cumulative responses in the table 1 above shows knowledge of mothers on ORT with 92 (92%) who disagreed that ORT is a method used to treat a child with malaria, 74 (74%) agreed that ORT provides solution to children with diarrhoea, 71 (71%) mentioned that Oral rehydration therapy (ORT) is the first choice in diarrheal disease control efforts while 74 (74%) disagreed that ORT is used to rehydrate a child from dehydration. The result also showed 81 (81%) who mentioned that ORT is a method used to prevent insect bite in children, 63 (63%) of the respondents mentioned that ORT is administered once in day, 70% agreed that ORT is administer using just one tea spoon while 62% also agreed that ORT can be stored for 30 days.

**Table 2: Knowledge of mothers on the usefulness of ORT in the treatment of diarrhea**

SN	Statement	Yes	No
1	ORT is really not effective in my child	72	28
2	ORT is very effective in the treatment of diarrhea	58	42
3	ORT is just another means to exploit the poor	37	63
4	ORT is not as effective as the sugar/salt solution I prepare at home	79	21
5	ORT is the best treatment for diarrhoea disease	44	56
6	6. ORT replaces the lost water from the child	87	13
7	ORT replaces lost electrolytes	34	66
8	ORT makes diarrhoea to Stop	77	23
9	ORT makes diarrhoea worse	45	55

The cumulative responses in the table 4.3 above shows level of knowledge of mothers on the usefulness of ORT in the treatment of diarrhoea with 72% who agreed that ORT is really not effective in my child, 58% agreed that ORT is very effective in the treatment of diarrhoea, 63% disagreed that

ORT is just another means to exploit the poor while 79% agreed that ORT is not effective as the sugar/salt solution I prepare at home. The result also showed that 56% of the respondents disagreed that ORT is the best treatment for diarrhoea disease, 87% agreed that ORT replaces the lost water from the child, 66% disagreed that ORT replaces lost electrolytes, 77% agreed that ORT makes diarrhoea to stop while 55% disagreed that ORT makes diarrhoea worse.

**Table 3: Summary of use of ORT in the treatment of diarrhea in (%)**

SN	Statement	Yes	No
1	Do you have children under five years used ORS	89	11
2	Has diarrhea	43	57
3	I treat diarrhoea with ORS within 24 hours	35	65
4	I use locally prepared sugar/salt solution in the treatment of diarrhoea in my child	55	45
5	I always keep a sachet of ORT at home in case of emergency	23	67

The cumulative responses in table 4.4 above showed the use of ORT for diarrhoea treatment among mothers with 89% respondents who have children under the age of five years, 57% disagreed that they use ORT for diarrhoea treatment in my child anytime he/she has diarrhoea, 65% disagreed that they treat diarrhoea with ORS within 24 hours, however 55% use locally prepared sugar/salt solution in the treatment of diarrhoea in their child while 67% do not keep a sachet of ORT at home in case of emergency.

**Table 4: Summary of what uncontrolled diarrhea can cause in Children (%)**

SN	Responses	Frequency	Percentage
1	Death	32	32.0
2	Malaria	43	43.0
3	Typhoid	10	10.0
4	Yellow eyes	5	5.0
5	Dehydration	10	10.0
	<b>Total</b>	<b>100</b>	<b>100.0</b>

Table 4.4.1 above shows that 43 (43%) respondents mentioned malaria as a cause of uncontrolled diarrhoea, 32 (32%) mentioned death, 10 (10%) mentioned typhoid and dehydration respectively while 5 (5%) also mentioned yellow eyes.

**Table 5: Percentage showing where respondents get their ORT (%)**

SN	Responses	Frequency	Percentage
1	Pharmacy	28	28.0
2	Patent medicine store	20	20.0
3	Anywhere	10	10.0
4	Hospital	17	17.0
5	No response	25	25.0
	<b>Total</b>	<b>100</b>	<b>100.0</b>

Table 4.4.2 above shows that 28 (28%) of the respondents get ORT from pharmacy, 25(25%) had no response, 20 (20%) buy it from patent medicine store, 17 (17%) mentioned hospital while 10 (10%) buy ORT anywhere they like.

**Table 6: Summary of factors influencing the use of ORS in the treatment of diarrhoea (%)**

SN	Statement	SA	A	SD	D
1	Misconceptions about diarrhoea in under five children for example diarrhoea is normal during teething, diarrhoea is normal during teething so I don't use ORT, diarrhea comes with malaria	43	42	10	5
2	Non availability of adequate portable safe and clean water (The water at home is not safe enough to prepare ORT and I can't afford bottle water)	71	2	20	7
3	I prevent diarrhoea by washing hands and food utensils and using good water to prepare food	21	4	42	33
4	We don't have water system toilet in the house	43	22	20	15
5	We only need to give malaria herbs to the child having diarrhea to stop it	41	22	20	17
6	I don't know where to get ORT	43	39	10	8
7	My house is far from the health centre	23	14	52	11

The cumulative response in table 6 showed the factors influencing the use of ORS in the treatment of diarrhoea with 85% respondents who agreed that myth and misconceptions about diarrhoea in under five children is one of the factors, 73% mentioned non availability of adequate portable safe and clean water, 75% also disagreed that they prevent diarrhoea by washing hands and food utensils and using good water to prepare food, 65% don't have water system toilet in the house, 63% mentioned that they only need to give malaria herbs to the child having diarrhea to stop. The result showed that 82% of respondents don't know where to get ORT while 63% also mentioned that their house is far from the health centre.

## DISCUSSION OF FINDINGS

The summary of the findings shows that, the majority of the respondents 43 (43%) were between ages 25-34 years, and the majority of the respondents were married. It is a Christian dominated society with less than average of women completing secondary school and very few had tertiary education. They are mostly traders and artisans; only a few are civil servants. Three hypotheses were tested and the first shows that there is no significant relationship between age and knowledge of mothers on ORT. (T-value = 0.476; df =99, p>0.05). The null hypothesis was accepted. This means that the mothers' age does not influence their knowledge about ORT.

Majority of the respondents disagreed that ORT is a method used to treat a child with malaria, majority agreed that ORT provides solution to children with diarrhoea, they further mentioned that Oral rehydration therapy (ORT) is the first choice in diarrheal disease control efforts while a large percentage of the respondents disagreed that ORT is used to rehydrate a child from dehydration. The result also showed the majority of the respondents who mentioned that ORT is a method used to prevent insect bite in children, most of the respondents also mentioned that ORT is administered once a day, they further agreed that ORT is administered using just one teaspoon and ORT can be stored for 30 days. This showed a low knowledge level among the respondents in this study.

This study finding agrees with the study of Fontana, (2014) who stated that 56% of mothers identified ORS, while 39.7% stated that drugs were the best treatment. Variability was significant, with 90.5% of respondents in urban answering correctly and only 28.9% responding correctly in rural. The higher level of knowledge among urban residents was attributed to prior information campaigns conducted in the area and their age did not influence their knowledge of ORS.

The second hypothesis shows that there is no significant relationship between knowledge and use of Oral Rehydration Therapy among mothers. The result stated that T-value = 0.412; df =99, p>0.05 The null hypothesis was thereby accepted. This means that the mothers 'knowledge does not affect the use of ORT. Despite the knowledge displayed by some of the mothers they are not using ORT.

The result also showed level of knowledge of mothers on the usefulness of ORT in the treatment of diarrhoea with majority who agreed that ORT is really not effective in their children, some agreed that ORT is very effective in the treatment of diarrhoea, some also disagreed that ORT is just another means to exploit the poor while most of the respondents agreed that ORT is not as effective as the sugar/salt solution they prepare at home. The result also showed that some of the respondents disagreed that ORT is the best treatment for diarrhoea disease, most of them agreed that ORT replaces the lost water from the child, some disagreed that ORT replaces lost electrolytes, some also agreed that ORT makes diarrhoea to stop while a large number disagreed that ORT makes diarrhoea worse. This shows poor knowledge on the usefulness of ORT in the treatment of diarrhoea.

The findings are in agreement with Macdonald (2014) who reported a significant gap between utilization and knowledge. He stated that 91% of mothers knew about ORS, only 57% believe it is the best way to prevent diarrheal dehydration. Actual use of ORS solutions is even lower than knowledge. Only 34.7% of mothers gave ORS solution to their infants during their last episode of diarrhoea. Other responses included antibiotics (11%), other pills or syrups (9.2%), and home remedies (6.8%). These results supported the findings of previous studies in Pakistan which have found that practice of ORT has consistently lagged behind knowledge.

The result further revealed the factors influencing the use of ORS in the treatment of diarrhea with majority who agreed that myth and misconceptions about diarrhoea in under five children is one of the factors, they mentioned non availability of adequate portable safe and clean water, however most of them also disagreed that they prevent diarrhoea by washing hands and food utensils and using good water to prepare food, some of the respondents don't have water system toilet in the house while most of the respondents only give malaria herbs to the child having diarrhoea to stop. The result showed that the majority of the respondents don't know where to get ORT while some also mentioned that their house is far from the health centre. This is against the study of Fontana, (2014), he mentioned that when he asked respondents about the best treatment for childhood diarrhoea (knowledge of treatment for diarrhoea), 56% of mothers identified ORS, while 39.7% stated that drugs were the best treatment. Variability was significant, with 90.5% of respondents in urban answering correctly and only 28.9% responding correctly in rural. This also corroborate UNICEF and WHO (2015) stating that factors underlying increased risk of diarrhoea morbidity and mortality are: low socio-economic status; poor personal and domestic hygiene; low family income; living in a crowded room and earthen floor; lower maternal education; lack of breastfeeding; malnutrition-increases severity and duration, also some studies recently (Sudan and Mexico) have suggested that malnutrition increases the risk of frequent diarrhoeal episodes.

### **Implications of the Study**

The implication of this study is that the majority of the women have poor knowledge and low use of ORT for diarrhoea treatment, while the majority of the respondents lack knowledge on the current use and administration of ORS. The study also revealed that respondents have a poor practice pattern of diarrhoea treatment with ORS. Diarrhoea is a major cause of morbidity and mortality among infants and children worldwide. In developing countries, diarrhoeal disease accounts for an estimated 17.5 -- 21% of all deaths in children under the age 5 years, equivalent to 1.5 million deaths per year (Boschi-Pinto, 2008). Of all child deaths from diarrhoea, 78% occur in the African and South-East Asian regions, (UNAIDS, 2007; Boschi-Pinto, 2008). Hence, lack of practice of ORS in the treatment of diarrhoea among women will contribute or increase the rate of infant mortality in developing countries.

### **CONCLUSION**

It can be revealed from the results of this study, effective program on the use of ORS for diarrhoea is crucial and looking inward to examine the poor knowledge on the current measures in place for the use of ORS and poor practice of ORS use among mothers of under five years old children, such can reduce the rate of diarrhoea epidemic in Nigeria. When knowledge is increased and practice is encouraged by finding solutions to knowledge on the current use of ORS and poor practice of diarrhoea treatment with ORS, there will be reduction in diarrhea epidemics in Nigeria.

## RECOMMENDATIONS

Based on the conclusions drawn from this study, the following recommendations were made:

**Nursing Mothers:** Health care providers should reinforce caregiver knowledge about diarrhea in areas such as prevention, ORS solution use, and when and where to seek care using the media and through face-to-face communication.

**Health Care Providers:** Health care providers should ensure sustained availability of ORS at the public health facilities in adequate amounts to meet not only the current but also future needs by requisitioning ORS commodity in time and in adequate quantities. Health Workers should encourage women or under children on the use of ORS for diarrhoea treatment. Mass mobilization of the public on the importance of the use of ORS for diarrhoea treatment.

**Government:** Sensitization campaign should be made to the community members with the involvement of the non-governmental organizations, (NGOs), National Orientation Agency (NOA), community leaders, religious leaders and media houses. Governments at local and state level should partner to create more awareness at the grass root, and the partnership should involve faith based organizations and traditional leaders. All the three levels of government: federal, state and Local Government should integrate Free Health Services for children with diarrhoea in Nigeria.

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