

Assessment of Knowledge and Usage of Oral Rehydration Therapy in Management of Childhood Diarrhea among Mothers of Kambaza town, Kebbi State, Nigeria

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Abstract

Diarrhea is one of the major causes of infant and young children morbidity and mortality globally. It is characterized by passing of more than 3 watery stools within 24hr which is accompanied by loss of body fluids and electrolytes leading dehydration and death if not treated. Therefore, this study was aimed in assessing knowledge and use of Oral Rehydration Therapy (ORT) in the management of childhood diarrhea among mothers. A cross sectional descriptive study was conducted among 103 mothers living in Kambaza metropolis using a questionnaire for quantitative data collection. The data were analyzed using Statistical Package for Social Sciences (SPSS), version 20 and p-value <0.05 was considered statistically significant. The results showed that a significant proportion of respondents were below the age of 36 years (25-35years) with the mean age of 30 ± 0.327 years and most of them (92.2%) were married. 81.6% of the respondents heard knowledge about ORT and majority of them (82.5%) indicated they know to prepare ORS/SSS. The use of ORT in the management of childhood diarrhea was also found to be high (82.5%) among the mothers. A significant portion of the mothers (95.1%) indicated already made ORS sachet was more effective in treating diarrhea than home-made SSS. There is no significant relationship between maternal level education and use of ORT in the management child diarrhea ($p=0.476$). However, a significant relationship exist between maternal knowledge on ORT preparation and its usage for management of childhood diarrhea ($p=0.037$). This study recorded high knowledge and use of ORT for management of childhood diarrhea among mothers of under-five children. Therefore, it recommended that maternal knowledge on use of ORT and its preparation should be encourage.

Keywords: Oral Rehydration Therapy, Knowledge, Utilization, Mothers, Diarrhea, and children.

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INTRODUCTION

Diarrhea is one of the major causes of infant and young children morbidity and mortality globally. It is characterized by passing of more than 3 watery stools within 24hr and usually affect children under the age five in both developed and under developing countries (WHO, 2005; Stephen *et al.*, 2016). Diarrhea account for about 17% of childhood mortality corresponds to 1.8 million child deaths recorded annually are of diarrhea related diseases (Uchendu *et al.*, 2011). This makes diarrhea as the 2nd leading cause of death of under five children the globe and constitute for more than half of the child mortality in Africa (WHO, 2015; Danjuma *et al.*, 2017). In Nigeria about 300, 000 children were recorded annually and majority of the death are of diarrhea related diseases. Therefore,

diarrhea is considered as 3rd leading cause of death of children below the age of five making up to 16% of child mortality recorded annually in the country (Boma and Balafama, 2014). Studies had revealed every episode of diarrhea recorded to be accompanied by deprivation of body's nutritional status and predispose a child to malnutrition and nutritional deficiencies related diseases (Mahor, 2013).

However, it is pertinent to know that diarrhea can be prevented and treated as well if the incident happens. Oral rehydration therapy (ORT) is a medical treatment of childhood diarrhea; it is a solution containing salt and sugar solution. ORT is made to replace the body's fluids lost during diarrhea because the main effect of diarrhea fluid and electrolyte loss resulting in dehydration and even death (Shah *et al.*,

2011; WHO, 2015). ORT consist of two treatment which include oral rehydration solution (ORS) and salt sugar solution (SSS) (WHO,2005). ORS and SSS are liquid solution which play a vital role in retarding and regulating electrolyte imbalance and as well prevent the aforementioned complications and co-morbidities associated with diarrhea and severe dehydration (WHO, 2003; Hahn *et al.*, 2011).

Studies have shown that there is inadequate knowledge on utilization of ORT in the management of childhood diarrhea among the mothers/caregivers in developing (Ahmed *et al.*, 2009). According to previous studies conducted in northern and southern part of Nigeria indicated a wide bridge on knowledge and ORT usage in the management of childhood diarrhea among mothers and caregivers (Abiola *et al.*, 2010; Ogunrinde *et al.*, 2012; Igeand Olubukola, 2013). As such a significant number of mothers in rural areas cannot correctly demonstrate how to prepare homemade ORS which make it unsafe for drinking due high salt or sugar content. Hence, WHO introduce ready to use ORS in sachets. These ready to use are expensive, and not readily available and accessible to individuals especially people in rural communities. Meanwhile home-made ORS has been a main way of treating childhood diarrhea in developing like Nigeria. Therefore, the current study conducted to assess the knowledge and usage of ORT in the management of childhood diarrhea among mothers/caregivers resident in Kambaza metropolis.

METHODOLOGY

Study Area

This study was conducted in metropolis of Kambaza town situated in Gwandu local government area of Kebbi State, Nigeria. Kebbi State is located in the North-western part of Nigeria. It lies on latitude 100 N to 130 N, and Longitude 30 E to 60 E. The state

enjoys a tropical type climate, which is generally characterized by two extreme seasons: the hot and cold temperatures. The state is famous for the traditional fishing festival which attracts people from far and near.

Study Population

The current study was a cross sectional descriptive study with population of one hundred and three (103) mothers/caregivers of children under the age of five living in Kambaza metropolis were used for this study.

INCLUSION CRITERIA

Mothers/caregivers of children 6-59 months residing in Kambaza metropolis and willing to participate in the study by signing the consent form.

EXCLUSION CRITERIA

Mothers/caregivers of children <6 months or >59 months.

DATA COLLECTION

A well-structured questionnaire was used to collect data of participant's socio-demographics characteristics, participant's knowledge on ORT, perceived cause of diarrhea, use of ORT in the management of childhood diarrhea.

DATA ANALYSIS

Data were subjected to descriptive statistics through simple frequency distribution table and percentages. Chi-square was used to test the hypothesis using Statistical Package for SocialSciences (SPSS), version 20, 2012 SPSS, Inc, Chicago,IL, USA as a tool for data analysis.

RESULTS AND DISCUSSION

Table-1.0: Socio-demographic variables of the respondents

Variables	Frequency	Percentage (%)
Age of the mother		
15-24years	33	32.0
25-35years	54	52.4
36-45years	13	12.6
>45years	3	2.9
Marital Status		
Married	95	92.2
Divorce/widow	8	7.8
Ethnicity/Tribe		
Hausa	99	96.1
Fulani	4	3.9
Religion		
Islam	103	100
Christianity	0.0	0.0
Others	0.0	0.0
Age of child		
<1year	43	41.7
1-2years	32	31.1

Variables	Frequency	Percentage (%)
3-4years	23	22.3
5years	5	4.9
Number of children <5yrs		
1 child	75	72.8
2 children	28	27.2
>2 children	0.0	0.0

The table above showed the demographic characteristics of the respondents during the survey. The result showed the age range of mothers from 15 to 45 years with mean and standard deviation of 30 and 2.37SD. More than half of the participants (52.4%) belongs to 25 to 35 age group. Similarly, majority of the

respondents (92.2%) were married and all were Muslim. Hausa was the largest tribe/ethnic (96.1%) group of the participants followed by few (3.9%) fulani's. The highest number of the respondents (72.8%) has only 1 child under the age of five while 27.2% of mothers have 2 children under-five.

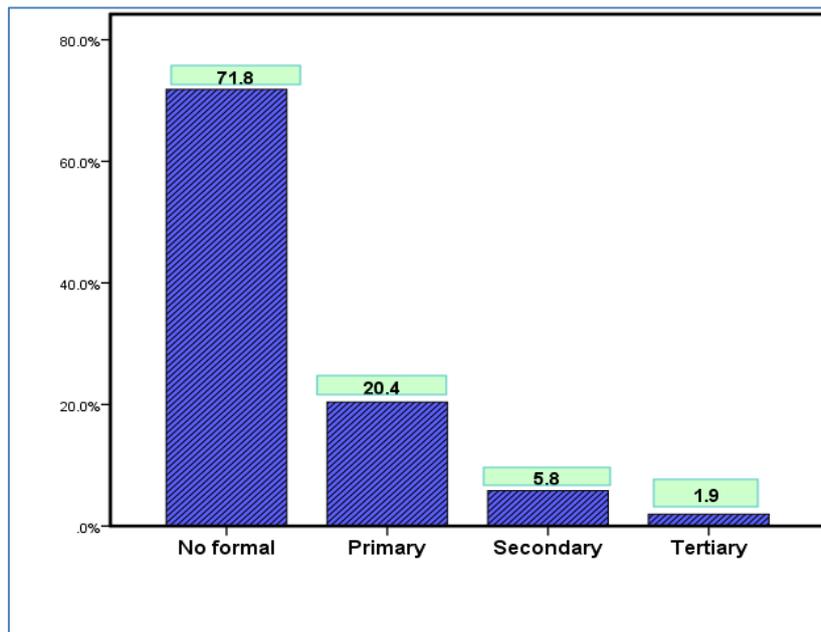


Fig-1.0: Educational Status of the Mother/Caregiver

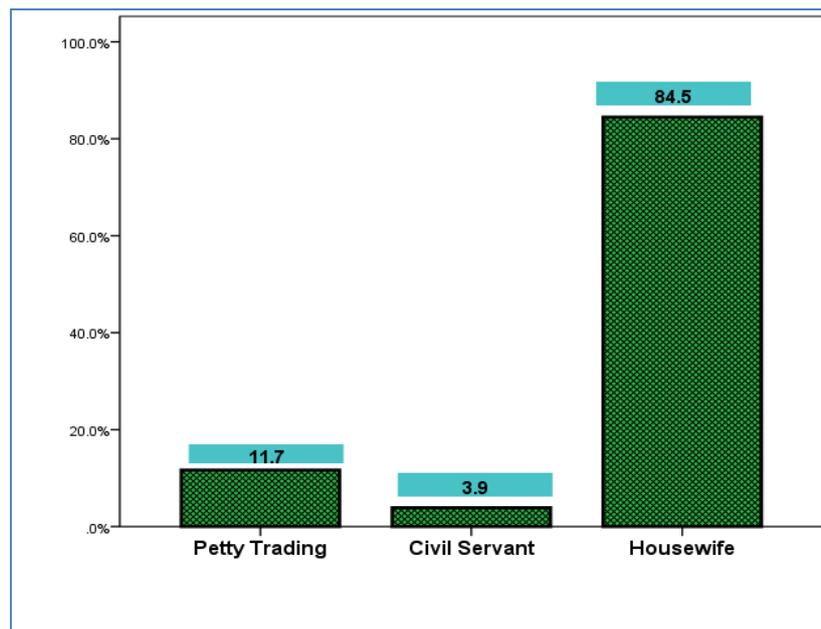


Fig-2.0: Occupation of the Mother/Caregiver

Figure 1 and 2 showed that majority of mothers have no formal education and most of them are

house wife (84.5%), 11.7% of them were petty traders and few (3.9%) were civil servants

Table-2.0: Respondents knowledge on ORT

Factor	Frequency	Percentage (%)
Did you heard about ORT?		
Yes	84	81.6
No	19	18.4
What is your Source		
Health care	87	84.5
Media	8	7.8
Friends/Neighborhood	8	7.8
What type of ORT did you know?		
ORS	96	93.2
SSS	6	5.8
Others	1	1.0
Do you know how to prepare ORS/SSS?		
Yes	85	82.5
No	18	17.5
Do you use ORT for management of childhood diarrhea?		
Yes	85	82.5
No	18	17.5
Do you think its effective		
Yes	98	95.1
No	5	4.9

High awareness about ORT was recorded among the respondents in this survey. About 81.6% heard about ORT and 84.5% indicted health care facility as their source of information. WHO

recommended sachet ORS was the type of ORT known by the mothers and also majority of them recommend it as an effective treatment of childhood diarrhea.

Table-3.0: Information on child diarrhea

Variable	Frequency	Percentage (%)
Did your child ever had diarrhea?		
Yes	90	87.4
No	13	12.6
Did you Use ORT for treatment?		
Yes	92	89.3
No	11	10.7
If yes, where did you use it		
Home	83	90.3
Health care facility	9	9.7
which type of ORT did you use?		
ORS	95	89.3
SSS	5	8.7
Others	3	1.9
Do you think the solution works		
Yes	95	92.2
No	8	7.8
Suggest Ways of improving ORT utilization		
Should be given free	77	74.8
Made easily accessible	19	18.4
If purchase, should be cheap	7	6.8

Table indicated information on diarrhea by children and means of treatment adopted. Most of the mothers indicated that their child had diarrhea prior to survey period. 89.3% of them use ORT whenever their children have diarrhea and mostly used already prepared sachet ORS as a treatment. Higher proportion

of the respondents (92.2%) revealed that ORT is effective in treatment of childhood diarrhea. However, majority (74.8%) of respondents indicate given ORT treatment free to the mother as the way of improving its utilization.

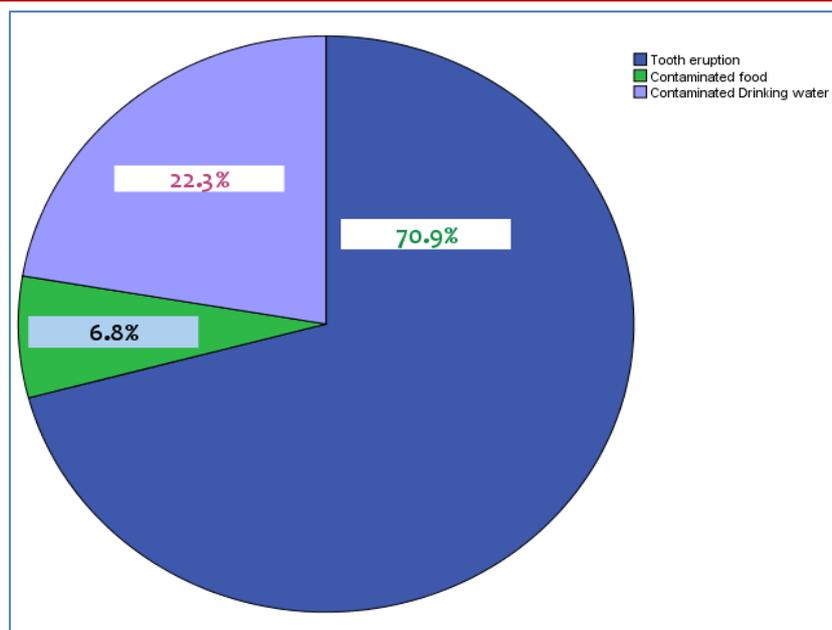


Fig-3.0: Perceived caused of diarrhea by the respondents

The figure above showed the perceived cause of diarrhea by the respondents. 70.9% of the mothers were having the perception that tooth eruption was the major cause of diarrhea by their children. While

22.3% of them show drinking contaminated water to be the main cause of diarrhea. Only few 6.8% agree eating unhygienic or contaminated food cause diarrhea.

Table-4.0: Cross tabulation of mothers educational status and use of ORS

Educational status of mother	Do you use ORT for management of childhood diarrhea		Total	χ^2	df	P-value
	Yes	No				
No formal	60	14	74	2.497	3	0.476
Primary	19	2	21			
Secondary	5	1	6			
Tertiary	1	1	2			
Total	85	18	103			

Table 4 showed that hypothesis testing between the factors, respondent’s educational attainment did not significantly influence the use of ORT in diarrhea management ($p=0.476$). However,

respondent’s knowledge on ORT preparation has a significant influence ($p=0.037$) on use of ORT in the management of childhood diarrhea (Table 5.0).

Table-5.0: Cross tabulation of knowledge on ORT preparation and use of ORT

Do you know how to prepare ORS/SSS?	Do you use ORT for management of childhood diarrhea		Total	χ^2	df	P-value
	Yes	No				
Yes	72	16	88	4.013	2	0.037
No	12	3	15			
Total	84	19	103			

DISCUSSION

The socio-demographic characteristic of this study revealed that majority of age group of the mothers were between 25 to 35 which showed that most them were below 36 years. This corroborate with the previous studies conducted in Kingston Jamaica and Northeast part of Nigeria (Bachrach and Gardner, 2002; Danjumma *et al.*, 2017). Also similarity exit between this study and previous studies conducted in Northeast

and Southern part of Nigeria (Stephen *et al.*, 2016; Agbolade Dipeolu and Ajuwon, 2015) on marital status, ethnicity and religion among the respondents. However, this study recorded lower values of educational attainment (Secondary and Tertiary) than that of Uwaezuoke *et al.* (2002) and Adimora *et al.* (2011), difference in level of education observed this studies indicated that the current study was conducted in rural area where girl child education is not well encourage.

Majority of the respondents have knowledge on use of ORT in the management of childhood diarrhea and most of them heard about ORT at two health care facilities in the community. While few of them heard about ORT on mass media, henceforth a lot of media sensitization on use of ORT for management of diarrhea in children. On the basis of these findings on respondents' knowledge about ORT, this study shares similarities with previous studies conducted within and outside Nigeria (Uwaezuoke *et al.*, 2002; Mustapha *et al.*, 2008; Mukhtar *et al.*, 2011; Tobin *et al.*, 2014). Similarities of these studies indicated that diarrhea is a disease of public health importance affecting under-five children in developing countries where these studies were conducted and mothers attempted use of ORT to treat their child's diarrhea.

Use of already made sachet ORS in home management of diarrhea was found to be a working and effective treatment than home-made SSS and traditional native treatment as reported by a higher proportion of the mothers. This study reported higher use of ORS by the mothers than previous studies carried out in Ethiopia, Burkina Faso and Nigeria (Digreet *et al.*, 2016; Danjumma *et al.*, 2017; Misgna *et al.*, 2019). However, this study has a similar proportion of respondents utilizing ORS as home treatment of diarrhea with Stephen *et al.*, (2016). Similarities and disparities mentioned between the current study and the aforementioned previous studies could be due to differences in ORT awareness by the mothers. Also, some factors such as easy access to health care facilities, religion and socio-cultural could be the reason.

This study showed that maternal level of education did not significantly influence the use of ORT in the management of childhood diarrhea. However, this study found that use of ORT in management of diarrhea to be significantly influenced by maternal knowledge on ORT preparation. Previous studies also found a relationship between knowledge on ORT preparation and its utilization in the management of diarrhea (Shan *et al.*, 2011; Danjumma *et al.*, 2017).

CONCLUSION

This study has shown high level information on ORT and its utilization in the management of diarrhea among mothers of children under-five of Kambaza community. However, there is still a need for improvement on ORT availability and practice use of ORT among the mothers. Therefore, improving maternal education on diarrhea and its consequences are of paramount importance in the development of ORT utilization among the local communities.

Conflict of Interest

The Authors declare no conflict of interest.

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