



Diarrhea Treatment Behaviour among Mothers of Under-five Children Attending Primary Health Care Clinic in Ibadan, Oyo State, Nigeria

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Authors' contributions

This work was carried out in collaboration between all authors. Author COA designed the study, designed the questionnaire in collaboration with author OO and wrote the first draft of the manuscript in collaboration with author JOK. Author JOK managed the literature searches. Field work was done by authors COA and OO. All authors read and approved the final manuscript.

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ABSTRACT

Aims: Diarrhoea is a leading cause of mortality and morbidity among children under the age of five years. This study assessed diarrhea treatment behaviour among mothers of under-five attending Ibadan north local government Primary Health Care clinic, Oyo state.

Study Design: The survey design was adopted for the study. Primary data was collected from the participants.

Place and Duration of Study: The study was conducted in Ibadan north local government Primary Health Care clinic, Oyo state, Nigeria in 2015.

Methodology: A structured questionnaire was used to gather data from 370 women randomly selected for the study. Data gathered included socio-demographic, knowledge, treatment behavior, home preparation and use of oral rehydration solution (ORS). Analysis of data was done using descriptive statistics and results presented in frequency tables. The statistical package for social sciences (SPSS version 17) was used for all analyses.

Results: Results obtained from the study showed that the majority of the women were traders

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(35%), Christians (54%), between the ages of 20 and 30 (61%), married (67%) with children below 3 years of age (54%) and indicated that they have had previous births (51%). Most of the respondents had up to secondary education (75%) and indicated that they experience diarrhoea episodes with their children frequently (55%). almost all the women (98%) have heard of diarrhoea and the major source of information was the health workers. Knowledge analysis showed that the respondents have inadequate knowledge regarding causes and prevention measures for diarrhoea. However, 87% of the mothers knew that watery stool is a sign of diarrhea in children and 62% agreed that they gave their children ORS to drink each time they have episodes of diarrhoea. The most common treatment behaviour among the respondents (92% of respondents) was seeking medical attention from hospital during persistent diarrhoeal episode. Further results showed that respondents have inadequate knowledge of preparation and administration of ORS.

Conclusion: In conclusion this research showed that there is still a knowledge gap as regards preventive healthcare behaviour in the study area. The need for corroborative post-natal child healthcare education to strengthen the efforts of the healthcare service providers in fighting diarrhoea is thus recommended.

Keywords: Diarrhoea; mothers of under-five; treatment behavior; Nigeria.

1. INTRODUCTION

Diarrhoea is the second leading cause of mortality and morbidity among children under the age of five years. It is second to pneumonia, which together with diarrhea account for almost 40 percent of all Child mortality across the globe every year [1].

Diarrhoea is a condition that involves the frequent passing of loose or watery stools. It is the opposite of constipation and can have many causes, which may be infectious or non-infectious. It's usually due to consumption of drinking water contaminated with bacteria, undercooked meat and eggs or inadequate kitchen hygiene and so on. It is therefore an infection related to hygiene. Eighty eight percent (88%) of all diarrhea diseases cases have been attributed to poor sanitation, poor hygiene and unsafe drinking water [2].

Under-five mortality rate in Nigeria is as high as 183 per 1000 children and infant mortality rate in rural Nigeria have been found to be exceptionally higher in areas with poor hygiene and poor sanitation among other factors [2], a common phenomena in Ibadan where this study was conducted. Park [3] posited that out of the annual 3 million infant births in Nigeria, approximately 170,000 results in deaths that have associated with poor knowledge and management practices of childhood diarrhoea. Like the case in other developing countries, mothers often manage diarrhoea cases at home using traditional approaches [4]. Most children with diarrhoea are not taken to the healthcare centres or hospital and some are not even treated at all. Even

though managing diarrhoea at home is quite common among rural mothers, however, their level of knowledge of the use of appropriate first aid treatment such as the universal oral rehydration solution (ORS) is still poor [5]. Recent study showed that most Nigerian mothers had poor understanding of what causes diarrhoea and only 9.9% used ORS in treatment of diarrhoea [6].

Although, the federal government has contributed appreciable resources towards the reduction of the disease in Nigeria, the health seeking behaviour of the mothers of children below five is still poor and mortality from diarrhea disease is still high [7,8].

Recent study conducted in Ibadan, Nigeria showed that despite the fact that majority of the women surveyed reported that they were aware of ORS and knew how to make it, less than half of the them used ORS at home to treat diarrhoea cases [9]. The knowledge and perception of mothers about the seriousness of diarrhoea, as with other diseases, is an important precursor for their seeking appropriate healthcare for their sick children.

This study was conducted to assess the diarrhea treatment seeking behaviour among mothers of under-five attending Ibadan north local government primary health care clinic, Oyo state, Nigeria.

2. METHODOLOGY

The study specifically targeted women with children below five (5) years old attending the

primary healthcare centre in Ibadan north local government area, south-west of Nigeria. Ibadan is considered as one of the largest cities in Nigeria. Agriculture is the main occupation of the people of Ibadan and the women are either directly involved with cultivation or marketing agricultural produce. The climate in the state favours the cultivation of crops like maize, yam, cassava, millet, rice, plantains, cocoa, palm produce, cashew and so on. Ibadan north local government area has an area of 18 km² and a population of about 330,399 [10]. Following Yamane [11], the sample size was calculated from a population of 5000 women with under-five children in the study area (monitoring & evaluation unit in Ibadan north east local government):

$$n = N / 1 + \{N (e^2)\} \tag{1}$$

Where: n=minimum sample size, N=total number of population (which was 5000 for this study) and e=level of precision (e=0.05) which is constant. Thus, the estimated minimum sample size was 370 respondents however, a total of 400 mothers were randomly sampled, through balloting, to take care of poor responses.

Data collection was done using structured questionnaire. Information gathered included demographic, respondents' perception, knowledge level, treatment seeking behaviour and practices. Furthermore, the questionnaire was validated and subjected to reliability test using the Cronbach's Alpha test. Result of the test showed that the average Cronbach's Alpha value for all the constructs in the instrument was 0.78 which clearly indicated that the instrument was reliable. Data collected were analyzed using the statistical package for social sciences (SPSS version 17.0). Both descriptive and inferential statistics were employed to present results for the study. The consent of all the participant was sought prior to data collection and ethical clearance was obtained from Olabisi Onabanjo University teaching Hospital in Ogun state.

3. RESULTS AND DISCUSSION

Respondents' personal attributes analyzed included age of mother and child, marital status, level of educational, occupation class, religion and frequency of diarrhoeal cases (how often their children have had diarrhoeal episode). Results as presented in Table 1 showed that most of the respondents were between 20 and 30 years old (61%) and mostly married (67%).

Table 1. Distribution of respondents by their personal characteristics

Variables	Frequency	Percentage %
Age:		
20 – 30	225	60.8
31 – 40	125	33.8
>40	20	5.4
Occupation:		
Civil servants	113	30.5
Housewives	93	25.1
Traders	128	34.6
Students	36	9.8
Religion:		
Christianity	201	54.3
Islam	169	45.7
Educational level:		
Primary	114	30.8
Secondary	165	44.6
Tertiary	91	24.6
Marital status:		
Married	246	66.5
Child's age in years:		
1	91	24.6
2	110	29.8
3	101	27.3
4	68	18.4
Had previous births: Yes	188	50.8
Frequency of diarrhoea cases with my under-five children:		
Seldom	48	13.0
Moderate	120	32.4
Very frequent	202	54.6

Source: computed from field survey data (2015)

By implication, most of these women, being young, are expected to be new to child bearing and nursing, however, further result showed that 51 percent of the women have had previous births. This shows the likely existence of early marriage and child bearing in the study area. Most of respondents had relatively good level of education with majority having secondary education and above (69%). The nexus between education and health seeking behaviour has been detailed in previous studies [12,13]. Thus their level of education is expected to influence their search for knowledge regarding diarrhoeal infection and utilization of first aid therapy such as the use of oral rehydration solution (ORS). Most of the women are either traders (35%) or civil servants (31%) This implies that most of these women may not necessarily depend on their husbands for household financial sustenance and immediate care for their

children, especially during emergencies. As at the time of data collection, some 54 percent of the respondents had children below 3 years of age.

Respondents' knowledge regarding diarrhoeal infection and treatment were assessed and results presented in Table 2. Levels of knowledge regarding cause, symptoms, treatment of diarrhea were measured following the Ashur [14] measurement scale. According to Ashur, proportion or score less than 40 percent correct response should be taken as indicator of low level of knowledge, 40 – 59 percent is considered average and 60 – 80 per cent is considered high, while over 80 per cent is regarded as very high level of knowledge.

Results in Table 2 showed almost all the women (98%) have heard of diarrhoea and the major source of information was the health workers. The result showed that the women had average knowledge level (mean score for correct response = 55%) for knowledge about symptoms of diarrhoea, however, most of the women did not know that convulsion and blood in stool are symptoms of diarrhoea. Respondents' level of knowledge regarding general causes of diarrhoea was low (mean score for correct response = 37%) even though most of them knew that drinking unclean water (73%) and poor personal and environmental hygiene (81%) can cause diarrhoea. Respondents' level of knowledge regarding appropriate treatment intervention was high (mean score for correct

Table 2. Distribution of respondents by knowledge of diarrhoeal infection and treatment

Knowledge variables	Frequency*	Percentage %
Ever heard of diarrhoea	363	98.1
Source of information:		
Health workers	163	44.0
TV/Radio	81	21.8
Friends and family	78	21.1
Print media	56	15.1
No response	7	1.9
Signs/ symptoms of diarrhea:		
Loss of appetite	77	60.7
Fever	250	67.6
Watery or loose stool	321	86.8
Vomiting	274	74.1
Blood in stool	83	22.4
Convulsion	61	16.4
Mean score = 54.7%		
Causes of diarrhoea:		
Contaminated food	173	46.8
Malnutrition	97	26.2
Drinking Unclean water	270	73.0
Poor personal and environmental hygiene	300	81.1
Mean score = 36.8%		
Appropriate first aid/treatment intervention:		
Avoid Use of local herb/concoction	281	76.0
Use of ORS	230	62.2
Avoid Self medication with anti-diarrhoeal drugs	270	73.0
Mean score = 70.4%		
Appropriate preventive measures:		
Hand washing with soap	100	27.0
Access to safe drinking-water	208	56.2
Exclusive Breastfeeding for first 6 months of life	51	13.8
Rotavirus Immunization	60	16.2
Good personal and food hygiene	269	72.7
Mean score = 37.2%		

Source: computed from field survey data (2015) *multiple response

response = 70%). Some 62 percent of the women knew that the use of ORS can treat or minimize the symptoms of diarrhoea. Respondents' level of knowledge regarding appropriate preventive measures for diarrhoea was low (mean score for correct response = 37%). Their low knowledge was particularly with respect to regular hand washing with soap (27%), exclusive breast feeding for first 6 months of infant's life (14%) and taking their children for immunization (16%). Similar results showing poor knowledge of Nigerian mothers regarding cause, symptoms and preventive measures for childhood diseases, despite the literacy level of these caregivers, have been reported by previous studies [6,15-17].

3.1 Respondents' Diarrhoea Treatment Behaviour

Result of respondents' diarrhoea treatment behaviour is presented in Table 3. Generally, most of the respondents exhibited relatively good treatment behaviour for all the variables examined except the use of garri water (local flakes from cassava which also serves as good rehydration solution when soaked in water) as alternative for ORS during diarrhoea episode. The most common treatment behaviour among the respondents (92% of respondents) was seeking medical attention from hospital during persistent diarrhoeal episode. It is interesting to note that 77 percent of the respondent claimed to breastfeed their babies exclusively during diarrhoeal episode even though only 14 percent

use exclusive breastfeeding for prevention (Table 2). This shows that there is still a knowledge gap as regards preventive healthcare behaviour in the study area. This opinion is corroborated by the findings of Aigbokhaode et al. [8].

3.2 Preparation and Utilization/ Administration of ORS

Respondents were further assessed based on their ability to correctly prepare and administer ORS to their children. Results in Table 4 showed that 42 percent of the respondents claimed to have moderate knowledge of how to prepare ORS. Further evaluation showed that respondents had only average knowledge for ORS preparation practices (mean score for correct response = 47%) which agreed with their self assessment. Also, only 36 percent of the respondents claimed that they can prepare and have previously administered ORS before. Further evaluation showed that respondents general knowledge of ORS administration practices is inadequate (mean score for correct response = 45%). Despite the fact that most antenatal education incorporates training of mothers on correct preparation and administration of ORS, most of them still exhibit poor knowledge of correct preparation and administration of ORS. This may be because they have not embraced the seriousness of diarrhoea as a deadly disease. This result is consistent with the findings of MacDonald, Moralejo and Mathews [18] and Osonwa, Eko and Ema, [19].

Table 3. Distribution of respondents by general diarrhoea treatment behaviour

Variables	Frequency*	Percentage %
I give my child ORS to drink each time he/she has an episode of diarrhoea [†]	230	62.2
I give my child herbal concoction to drink when I notice he/she has diarrhoea	89	24.1
I give my child garri water when he/she has diarrhoea [†]	44	11.9
I breastfeed my child exclusively when he/she has diarrhoea [†]	284	76.8
I take my child to the hospital when he/she has persistent diarrhoea [†]	340	91.9
I give my child antibiotics when he/she has diarrhoea	64	17.3
I feed my child with extra food during recovery stage from diarrhoeal infection [†]	316	85.4

Source: computed from field survey data (2015)

[†]correct response;*multiple responses

Table 4. Distribution of respondents by correct preparation and utilization/administration of ORS

Variables	Frequency	Percentage %
Perceived knowledge of how to prepare ORS		
Adequate	126	34.1
Moderate	155	41.9
Not sure	89	24.0
Evaluation of ORS preparation practices*		
Necessary to wash hands with soap and treated/boiled water before commencing	167	45.1
The content mix for ORS is 0.5 teaspoon salt, 6 level teaspoons sugar and 1 liter clean/pure water	130	35.1
Using WHO prepared sachet, put 1 sachet to 1 liter clean/pure water	222	60.0
		Mean score = 46.7%
Self assessed utilization of ORS		
I have prepared and used it before	133	35.9
I have used it before but was not the one that prepared it	96	26.0
I have not used it before but can prepare it	52	14.1
I have not used it before and cannot prepare it	89	24.0
Evaluation of ORS administration practices*		
Administration should begin at the first sign of diarrhea	222	50.0
Under-2 children should be given maximum half cup of ORS following each loose defecation while older children full cup	118	32.0
Breastfeeding should continue while administering ORS	211	57.0
Give half liter of ORS per day to babies and toddlers who have diarrhea and 1 liter of ORS drink per day to children 2-5	178	48.1
ORS should not be administered after 24 hours of preparation	134	36.2
		Mean score = 44.7%

Source: computed from field survey data (2015)

*multiple responses

4. CONCLUSION AND RECOMMENDATION

This study assessed the diarrhea treatment behaviour among mothers of under-five children attending primary health care clinic in Ibadan, south west Nigeria. Diarrhoea is a major cause of childhood-related morbidity and mortality in Nigeria especially among rural and semi-urban citizens. The use of ORS has been recommended by the World Health Organisation and UNICEF (to be used successfully at home) in the treatment of diarrhoea in children. However, our study discovered a gap between mothers' knowledge of diarrhoea and treatment seeking behaviour. Also, our findings showed that mothers lack adequate knowledge of ORS preparation and utilization. The need for corroborative post-natal child healthcare education to strengthen the efforts of the healthcare service provider in fighting diarrhoea is thus recommended. Furthermore, health workers need to educate mothers on the benefits of using ORS in the management of diarrhoea in

children. Further studies can be design interventions that could impact positively in enlightening mothers to stem incidence of diarrhea in Nigeria.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. UNICEF /WHO. Integrated Management of Childhood Illness Information, Division of Child and Adolescent Health and Development, United Nations Children's Fund (UNICEF)/World Health Organization (WHO); 2009.
2. WHO. World Health Organization's (WHO) recommendations on the management of diarrhoea and pneumonia in HIV-infected infants and children. Report of the departments of child and adolescent health and development (CAH) and HIV/AIDS, WHO publication, Geneva. 2010;3-14.

3. Park K. Park's textbook of preventive and social medicine. India: Ms Banarsidas Bhanot Publishers; 2009.
4. Jintrawet U, Harrigan RC. Beliefs of mothers in Asian countries and among Hmong in the United States about the causes, treatments and outcomes of acute illnesses: An integrated review of the literature. *Issues Compr Pediatr Nurs*. 2003;26(2):77-88.
5. Ogunrinde OG, Raji T, Owolabi OA, Anigo KM. Knowledge, attitude and practice of home management of childhood diarrhoea among caregivers of under-5 children with diarrhoeal disease in Northwestern Nigeria. *J Trop Pediatr*; 2011. Available:<http://tropej.oxfordjournals.org>
6. Adimora GN, Ikefuna AN, Ilechukwu G. Home management of childhood diarrhea: Need to intensify campaign. *Niger J Clin Pract*. 2011;14(2):237-41. [Pub Med]
7. National Population Commission (NPC) [Nigeria] and ICF International. Nigeria Demographic and Health Survey 2013. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF International; 2014.
8. Aigbokhaode AQ, Isah EC, Isara AR. Health seeking behaviour among caregivers of under five children in Edo State, Nigeria (Original research). *South East Asia Journal of Public Health*; 2015.
9. Ajuwon AJ, Agbolade MO, Dipeolu IO. Knowledge and use of oral rehydration therapy among mothers of under-five children in a military barrack in Ibadan, Nigeria. *African Journal of Biomedical Research*. 2015;18(1):237-248.
10. National Bureau of Statistics (NBS). Annual report and national statistics, Nigeria; 2009.
11. Yamane, Taro. Elementary sampling theory. Englewood Cliffs, N.J.: Prentice-Hall; 1967.
12. Babalola DA, Olarewaju M, Omeonu PE, Adefelu AO, Okeowo R. Assessing the adoption of Roll Back Malaria Programme (RBMP) among women farmers in Ikorodu local government area of Lagos State. *Canadian Journal of Pure and Applied Science*. SENRA Academic Publishers, British Columbia. 2013;7(2):2375-2379.
13. Omeonu PE, Babalola DA, Agbede OC. Qualitative analysis of adolescents' sexual behaviour in Ogun State, Nigeria: Implication for HIV/AIDS Policy. *Journal of Biology, Agriculture and Healthcare*. 2014; 4(24):162-166.
14. Ashur SS. An evaluation plan for the development of updating of nutrition curriculum at upper elementary and preparatory levels in Jordan. *IVES/UNESCO International Conference in Nutrition Education NE (Oxford)*. 1977; 207(2):67-74.
15. Akande TM, Owoyemi A, Owoyemi JO. Healthcare-seeking behaviour in Anyigba, north-central, Nigeria. *Res J Med Science*. 2009;3:47-51.
16. Agu AP, Nwojiji JO. Childhood malaria: Mothers' perception and treatment-seeking behaviour in a community in Ebonyi State, South East Nigeria. *J Community Med Prim Health Care*. 2005;17:45-50.
17. Ige KO, Nwachukwu CC. Health care seeking behaviour among market traders in Ibarapa central local government, Nigeria. *Int J Health*. 2009;9:1-13.
18. MacDonald SE, Moralejo DG, Mathews MK. Correct preparation and administration of oral rehydration solution: Essential for safe and effective home treatment of diarrhoea in Indonesia. *Int. Q Community Health educ*. 2006;24(3):205-14.
19. Osonwa Kalu O, Eko Jimmy E, Ema S. Utilization of oral rehydration therapy in the management of diarrhea in children among nursing mothers in Odukpani local government area of cross River State, Nigeria. *American Journal of Public Health Research*. 2016;4(1):28-37. Available:<http://pubs.sciepub.com>

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