



Determinants of homecare practices in the management of Diarrhea among mothers of under five children in Benin City

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Abstract

Introduction: Diarrhoea is a major cause of morbidity and mortality amongst under five children particularly in Nigeria. Proper home based management of children is critical in the survival of children with diarrhoea.

Methodology: This was a cross-sectional hospital based study conducted amongst mothers of children receiving immunization in a secondary health facility in Benin City. It involved the administration of pre-tested questionnaires to the mothers. Data obtained were arranged into tables and analysed using the statistical package for social sciences (SPSS Version 20). Chi-square was used to determine the relationship between qualitative variables. P values < 0.05 was set as the level of significance.

Results: A total of 200 mothers were recruited for the study. 156(76.1%) of the respondents had good home care practices in the management of diarrhoea. 75(48.1%) of the respondents who had good knowledge of diarrhoea had good home care practices. Respondents with tertiary and secondary levels of education were found to be more likely to have good home care practices (odds ratio of 1.030 and 2.184 respectively).

Conclusion: This study showed that there was a high percentage of respondents with good home care practices in the management of diarrhoea.

Keywords: Diarrhoea, home-care practices, mortality, management

Introduction

Diarrhoea is one of the foremost causes of morbidity and mortality in under five children, particularly in developing countries ^[1]. It is defined by the World Health Organization as the passage of 3 or more loose/liquid stools per day, or an increased frequency in the passage of stool greater than that which is normal for the particular child ^[2]. Rota virus is by far the commonest cause of diarrhoea, although other bacteria, viral and parasitic agents have also been implicated in the aetiology of diarrhoea ^[3]. In 2016, it was estimated that 8% of deaths in under five children globally were as a result of diarrhoea disease ^[1]. This was equivalent to over 1300 children dying daily or about 480,000 children dying yearly ^[2]. This is more than the annual cumulative deaths of malaria, HIV and measles ^[5]. The 2018 Demographic and Health Survey conducted in Nigeria puts the national prevalence of diarrhoea amongst under five children at an estimated value of 18% ^[6]. Thus, one can conveniently agree that diarrhoea is a major public health menace in Nigerian children. During diarrhoea, there is loss of intestinal fluid, derangement in electrolyte, nutritional deficiencies, and ultimately death if these are not rapidly recognized and managed ^[7-8].

Diarrhoea diseases in children can be prevented by a host of measures. Some of these are improved environmental and water hygiene, hand washing, good feeding and weaning practices (including exclusive breastfeeding), proper disposal of sewage, etc ^[9-11]. Furthermore, the morbidity and mortality from diarrhoea diseases can be significantly reduced by proper home management practices.

Some of these include the administration of ORS and zinc to children with diarrhoea, continued feeding, early recognition of danger signs and presentation to a health facility for further care if home management fails or if child deteriorates [12].

Proper home-based management of diarrhoea is then critical in the survival of children with diarrhea, since most times, diarrhoea is managed by caregivers at home [13, 14]. However, adherence to applying the basic principles in the home based management of diarrhoea amongst mothers and caregivers would largely be determined by their knowledge and acceptance of these methods [15]. Some of these factors that have been significantly associated with the knowledge and acceptance of accurate methods of home management of diarrhoea in studies reported in Nigeria include maternal age, educational status and socio-economic class [16, 17].

No study has assessed the determinants of home care practices of diarrhoea amongst caregivers of underfive children in our facility. This study therefore fills this knowledge gap and is thus expected to be an invaluable tool in health care planning in our environment.

Methodology

This was a cross-sectional hospital-based study conducted amongst mothers of children receiving immunization at the infant well-fare clinic in Edo Specialist hospital, Benin City. Edo Specialist hospital is a multi-specialist, secondary health centre located around Sapele road axis (a central part of the city). It offers specialized care in paediatrics, obstetrics, surgery and internal medicine.

The infant well-fare clinic holds once a week and is under the supervision of a consultant paediatrician, assisted by trained nurses, community health extension workers and medical officers.

Two hundred mothers (200) who voluntarily gave consent were recruited for the study, which was done between December 2021 and August 2022.

Structured, pre-tested observer administered questionnaires were administered to the mothers to assess their practices during periods of diarrhoea. Good practice was scored as 1 and poor practice was scored as 0. The total scores were then graded in percentage to determine the level of good practice per respondent.

All data received were tabulated and analyzed using the statistical software for the social sciences (SPSS Version 20). Chi-Square was used to assess the relationship between qualitative variables. The level of statistical significance was

set of $p < 0.05$.

Results

Table 1: Home care practices for treatment of Diarrhoea among respondents

Variable	Yes Frequency (%)	No Frequency (%)
Practices		
Stop breastfeeding	59 (28.8)	146 (71.2)
Continue breastfeeding	170 (82.9)	35 (17.1)
Give ORS	152 (74.1)	53 (25.9)
Give drugs to stop stooling	125 (61.0)	80 (39.0)
Give antibiotics	81 (39.5)	124 (60.5)
Go to the hospital if danger signs persist	188 (91.7)	17 (8.3)

Majority 170 (82.9%), 152 (74.1%) and 188 (91.7%) of respondents continued breastfeeding, gave ORS and went to the hospital when danger signs persisted respectively. While slightly above one-quarter 59 (28.8%) of respondents stopped breastfeeding, nearly two-third 125 (61.0%) gave drugs to stop stooling. Only less than half 81 (39.5%) of respondents gave antibiotics.

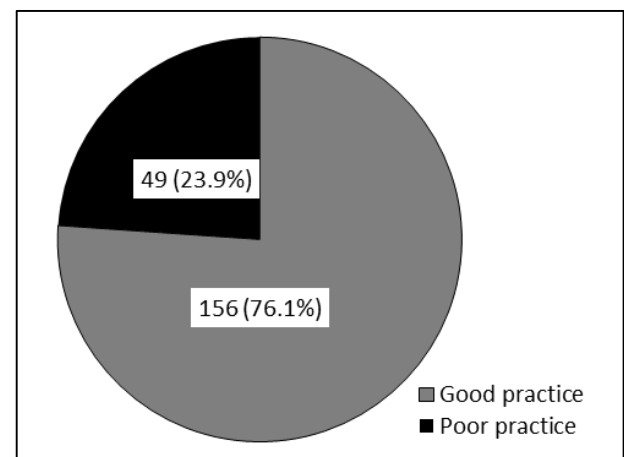


Fig 1: Home care practices for Diarrhoea treatment among respondents

Majority 156 (76.1%) of respondents had good home care practices on treatment of diarrhoea.

Table 2: Association between home care practice and knowledge of Diarrhoea among respondents

Variable	Overall practice		Test statistics	p-value
	Good practice (n = 156) Frequency (%)	Poor practice (n = 49) Frequency (%)		
	Knowledge			
Good knowledge	75 (48.1)	11 (22.4)		
Poor knowledge	81 (51.9)	38 (77.6)	$\chi^2 = 10.057$	0.002

A higher proportion 75 (48.1%) of respondents with good knowledge of diarrhoea had good home care practices compared to 11 (22.4%) with poor home care practice. Also, a greater proportion 38 (77.6%) of respondents with poor

home care practices had poor knowledge compared to 11 (22.4%) with good knowledge. This association between knowledge and home care practice was statistically significant ($p = 0.002$).

Table 3: Association between practice and socio-demographic Characteristics of respondents

Variable	Overall Practice		Test statistics	p-value
	Good practice (n = 156) Frequency (%)	Poor practice (n = 49) Frequency (%)		
Age group (years)				
< 30	63 (40.4)	18 (36.7)		
30 – 39	75 (48.1)	26 (53.1)		
40 – 49	17 (10.9)	5 (10.2)		
50 and above	1 (0.6)	0 (0.0)	$\chi^2 = 0.645$	0.886
Marital status				
Married	130 (83.3)	44 (89.8)		
Single	12 (7.7)	3 (6.1)		
Divorced	11 (7.1)	2 (4.1)		
Widowed	3 (1.9)	0 (0.0)	Fischer's Exact = 1.009	0.827
Religion				
Christianity	138 (88.5)	46 (93.9)		
Islam	15 (9.6)	3 (6.1)		
Others*	3 (1.9)	0 (0.0)	Fischer's Exact = 0.907	0.633
Ethnicity				
Benin	81 (51.9)	30 (61.2)		
Esan/Etsako	33 (21.2)	8 (16.3)		
Urhobo/Isoko/Ijaw	14 (9.0)	2 (4.1)		
Yoruba	12 (7.7)	2 (4.1)		
Igbo	8 (5.1)	4 (8.2)		
Others**	8 (5.1)	3 (6.1)	Fischer's Exact = 3.377	0.647
Level of education				
Primary	25 (16.0)	11 (22.4)		
Secondary	33 (21.2)	7 (14.3)		
Tertiary	98 (62.8)	31 (63.3)	$\chi^2 = 1.779$	0.411
Occupational Skill Level				
Skill Level 0	19 (12.2)	8 (16.3)		
Skill Level 1	6 (3.8)	4 (8.2)		
Skill Level 2	85 (54.5)	21 (42.8)		
Skill Level 3	30 (19.2)	12 (24.5)		
Skill Level 4	16 (10.3)	4 (8.2)	$\chi^2 = 3.558$	0.469

Others*: African traditional religion, Atheist. Others**: Tiv, Ghanian, French, Hausa, Fulani, Ukwani

A greater proportion 75 (48.1%) and 26 (53.1%) of respondents with good and poor practices respectively were within age 30 – 39 years ($p = 0.886$). Also, majority 130 (83.3%) and 138 (88.9%) of respondents who had good homecare practices were married and Christians respectively. Similar trend was observed for those with poor practices. This was however not statistically significant ($p = 0.827$ and 0.633 respectively).

Also not statistically significant ($p = 0.411$), the level of good practices increased with increasing level of education with respondents who had tertiary level of education accounting for the highest proportion 98 (62.8%) of those with good knowledge.

Respondents whose occupation were within skill level 2 had the highest proportions 85 (54.5%) and 21 (42.8%) with good and poor practices respectively. ($p = 0.469$).

Table 4: Logistic regression model for the determinants of practice of Diarrhoea

Predictors	B (regression co-efficient)	Odds ratio	95% CI for OR		p-value
			Lower	Upper	
Age	0.012	1.012	0.951	1.076	0.706
Marital status					
Married	-0.160	0.852	0.194	3.736	0.832
Divorced	0.110	1.116	0.128	9.749	0.921
Widowed	19.421	00001	00001	00001	0.999
Single*	1				
Religion					

Islam	0.627	1.873	0.476	7.364	0.369
Others	20.247	00001	00001	00001	0.999
Christianity*	1				
Level of education					
Tertiary	0.030	1.030	0.409	2.593	0.950
Secondary	0.781	2.184	0.644	7.408	0.210
Primary*					
Occupational skill level	0.220	1.246	0.865	1.795	0.237
Knowledge					
Good knowledge	1.171	3.226	1.515	6.866	0.002
Poor knowledge*	1				

*Reference category, $R^2 = 17.0\% - 26.0\%$, CI= Confidence Interval

The variable in the model accounted for between 17.0% – 26.0% of the variation observed in the outcome variable (Good practice). With increasing age, the likelihood of having good home care practice increased by 0.012. This was more likely by an odds ratio of 1.012 when compared with respondents with poor practices. This was not statistically significant. ($p = 0.706$). Marital status and religion did not show any significant influence on the likelihood of having good practice.

Respondents with tertiary and secondary levels of education were found to be 1.030 and 2.184 respectively more likely to have good practices compared to those with primary level of education. This was however not statistically significant. ($p = 0.950$ and 0.210 for tertiary and secondary level of education respectively). The likelihood of good practices was found to also increase by 0.220 with increasing occupational skill level. This was more likely by an odds ratio of 1.246 when compared to those with poor knowledge. This was also not statistically significant ($p = 0.237$).

Knowledge was noticed to have a statistical significant influence on the likelihood of having good practice as respondents with good knowledge were 3.226 more likely to practice good home care treatment compared to those with poor knowledge ($p = 0.002$, CI = 1.515 – 6.866).

Discussion

This study assessed the home care practices of mothers of children attending immunization clinic in a facility in Benin City during periods of diarrhoea.

About three-quarter of the respondents had good home care practices in the treatment of diarrhoea. The possible reason for this high proportion of respondents with good home practices could have been the nature of the population studied, as the study was conducted amongst mothers of wards receiving immunizations, since health education on prevention and home management of diarrhoea is a regular activity in the immunization clinic.

The proportion of mothers with good home care practice in the management of diarrhoea was far greater than that reported in India and Iraq [18, 19]. This difference might be due to differences in level of awareness between subjects in these study groups compared to those in our index study. It is however consistent with study conducted in Karachi where

75.5% Of respondents had good practice of diarrhoea management [20]. This apparent similarity might be due to the fact that both studies were conducted amongst mothers in hospital setting.

A significantly higher proportion of respondents with good knowledge of diarrhoea had good home care practices. Similar finding was reported in a study done in Ethiopia [21]. Better knowledge of the causes and management of diarrhoea is more likely to place the care giver in a better position regarding the management of diarrhoea.

Respondents with secondary and tertiary level of education were more likely to have better home care practices than those with primary level / no formal education. Similar findings were reported in studies in India and Ethiopia [22, 23]. The possible explanation for this is that a higher educational level helps the respondents to understand better how to manage diarrhoea as well as other necessary actions to take and avoid during diarrhoea episodes.

Education is a vital tool that improves health seeking behavior an practice. Knowledge improvement that comes with better quality education improves child rearing practices and healthcare [24, 25].

With increasing age, the likelihood of having better home care practices increased slightly. Ghasemi et al reported similar findings in a study done in Iran. [26] This may be because older mothers are more likely to be more experienced in the management of diarrhoea compared to younger mothers. They are also more likely to have better hygiene and feeding practices [27].

Finally, although not statistically significant, the likelihood of having good home care practices was higher with increasing occupational skill level. Individuals with higher skill levels are also likely to be more educated, have better financial empowerment and are likely to promptly seek good interventions during diarrhoea [28].

This study was limited by its retrospective nature and the associated recall bias amongst the mothers of children sampled.

Conclusion

Diarrhoea is still a major morbidity concern in our environment. Although there are good home care practices

amongst mothers in our environment which is commendable, more needs to be done to increase the level of awareness amongst mothers in order to improve the overall morbidity statistics form diarrhoea.

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