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Knowledge, Perceptions and Management of Childhood Diarrhoea Among Caregivers of Under-Five Children in Calabar Municipality, Cross River State, NIGERIA

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[0161] Abstract
Introduction: *Worldwide, diarrhoea claims the life of around 443,832 under-five children every year and most occurring in South Asia and Sub-Saharan Africa. The aim of this study is to determine the knowledge, perceptions and management of childhood diarrhoea among caregivers of under-five children in Calabar Municipality, Cross River State, Nigeria.* ***Materials and Methods:*** *The study adopted a cross-sectional descriptive design with a sample size of 387 and a multistage sampling technique was used to select respondents. Semi-structured questionnaire was used to collect information on the knowledge, perceptions and management of childhood diarrhoea among caregivers of under-five children. The data were analysed using statistical package for social sciences (SPSS) version 27and p-value < 0.05 was significant.* ***Results:*** *Out of the 387 respondents, majority 337(87.1%) were females. A total of 147(38.0%) respondents were between the ages of 26 to 36 years. Also, 53.0% had good knowledge level, 82.9% had positive perceptions towards childhood diarrhoea, 61.8% use oral rehydration solution while 5.2% use zinc tablet in management of diarrhoea. There was statistically significant relationship between knowledge level and socio-demographic characteristics (age, level of education and occupation) of the respondents.* ***Conclusion:*** *There was good knowledge and positive perception of under-five diarrhoea disease among caregiver in the area. But zinc tablet was poorly used in the management. Therefore, health education on the proper management of childhood diarrhoea should be reinforced in the study area.*
Keywords*:* Childhood diarrhoea, perceptions, practices, treatment.

Introduction

The significance of a good healthcare delivery system cannot be overrated. This is because it ensures that preventable deaths such as diarrhoea deaths do not occur. It promotes health and provides information on how to prevent illness as well as curative services. A robust healthcare delivery system also attracts medical tourism, allied businesses and creates jobs for medical personnel. It reduces the rate of maternal and infant mortality. (Opara, et al, 2024). Diarrhoea is the passage of loose watery stools occurring three or more times in a 24-hour period which involves an increase in frequency and change in consistency of stool, and it affects people of all ages (WHO, 2024; Ali, 2019). Diarrhoea disease is the third leading cause of death in children under 5 years old and is responsible for killing around 443,832 children every year with most of the deaths occurring among children living in South Asia and sub-Saharan Africa (WHO, 2024). In Nigeria, diarrhea accounts for over 16% childhood mortality and an estimated 150,000 death annually among under-five children (UNIECF, 2010; Komomo et al, 2020). Oral rehydration solution (ORS) and oral zinc tablet are the cornerstone in the treatment of diarrhoea, in order to prevent diarrhoea-

related mortality in developing countries but there has been little progress towards this trend in the last decade (UNICEF/WHO, 2009; Adimora et al., 2018).

The development and growth of infants and young children depends not only on the availability of food and health services but also on the patterns of health seeking behaviour of the caregivers (UNICEF, 2015). The knowledge of oral rehydration solution (ORS) and zinc Supplementation in the treatment for childhood diarrhoea is lacking among many caregivers (Adimora et al., 2018). This lack of knowledge and understanding can lead to delays in seeking treatment and an increased risk of death. Hence, this study aims to determine the knowledge, perceptions and management of childhood diarrhoea among caregivers, of under-five children in Calabar Municipality L.G.A Cross River State, Nigeria.

Materials and Methods:

The study was conducted in Calabar municipality Local Government Area (LGA), one of the eighteen (18) local government Areas in Cross River State, Nigeria. It has ten council wards with its administrative headquarters in the city of Calabar and covers a total area of 142 Square kilometres and lies between latitude 5°0'59.88 "N (5.016633) North and Longitude 8°21'49.01"E East. It has a population projected at 279,800 in 2022 from the 2006 national population census. (NPC, 2022). Christianity is the widely practiced religion in the LGA while the Efik, Qua, and English languages are Commonly Spoken in the area.

The study adopted a cross-sectional descriptive design carried out among caregivers of under five children in Calabar municipality L.GA. The sample size was calculated with the formula as stated below:

$$n = \frac{Z^2Pq}{d^2}$$

Where; n = the desire sample size Z = the alpha level of confidence interval at 95% which is 1.96
P = is the proportion of caregivers who have good knowledge level on childhood diarrhoea in Nigeria is 59.2% (Momoh et al., 2022) q = proportion of non- occurrence (1-0.592) = 0.408
d = precision of 5% (0.05)

$$n = \frac{1.96^2 X\ 0.592\ X\ 0.408}{(0.05)^2}$$

n = 371.08 = 371. To account for non- response rate (NRR), the sample size will be increased by 10% (0.1)

$$\text{Sample size (n)} = \frac{n}{1- NRR} = \frac{371}{1- 0.1}$$

n= 412.22 ≅ 412. However, 387 participants were included in the study.

A multistage sampling technique was employed, involving stratified sampling by wards, streets, and house hold, with random sampling used at each stratum. Semi-structured questionnaires (pretested among caregivers of under-five children in Calabar South LGA, a neighbouring LGA) were used for data collection (Ezeh et al, 2019). The questionnaire comprised items assessing knowledge, perception, and preventive practices related to diarrhoea disease among the caregivers. To evaluate participants' knowledge levels, six specific questions were included: whether the respondent had ever heard of diarrhoea and diarrhoea among under-five, the source of information, its description, the consistency of stool and danger signs of diarrhoea. Based on the modified Bloom's cut off (Ashebir *et al.*, 2022), a respondent whose mean score was between 0-3 was considered to possess "Poor knowledge", those who had an estimated mean score 4-6, were regarded as having "good knowledge".

Perception of respondents were based on a 5-items in the questionnaire that assessed respondents' the expected minimum and maximum total perception scores were 1 and 10 respectively. Categorising into two groups, the total score of each respondent were divided into two (1-5=negative and 6-10 positive perception). Data were analysed using SPSS version 27.0, with a significance level set at $p \leq 0.05$.

Results:

Socio-demographic characteristics of respondents: Majority of the respondents 337(87.1%) were female while 50(12.9%) were male. A total of 147(38.0%) respondents were between the ages of 26 to 36 years while 119(30.7%) respondents had obtained HND/B.Sc. educational qualification. Likewise, 246(63.6%) respondents were married, 326(84.2%) Christians and 110(28.4%) were employed (Table 1).

Table 1: SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Variable	Frequency (n=387)	Percent (%)
Gender		
Male	50	12.9
Female	337	87.1
Age		
15 − 25	68	17.6
26 − 36	147	38.0
37 − 47	135	34.9
Above 47 years	37	9.6
Education Qualification		
FSLC	65	16.8
SSCE	79	20.4
OND	68	17.6
HND/B.Sc.	119	30.7
M. Sc.	17	4.4
Ph.D.	26	6.7
Others	13	3.4
Marital Status		
Single	122	31.5
Married	246	63.6
Divorce	11	2.8
Widow/Widower	8	2.1
Religion		
Christianity	326	84.2
Islam	46	11.9
Traditional	11	2.8
Pegan	4	1.0
Occupation		
Employed	110	28.4
Unemployed	56	14.5
Civil Servant	91	23.5
Self employed	38	9.8
Business Woman	92	23.8

Source: Authors fieldwork (2025)

Table 2: KNOWLEDGE OF CHILDHOOD DIARRHOEA AMONG RESPONDENTS:

Variable	Frequency (n=387)	Percent (%)
Ever heard of **diarrhoea**		
Yes	171	44.2
No	216	55.8
Know about diarrhoea among under five children		
Yes	331	85.5
No	56	14.5
Source of information about diarrhoea		

TV	11	2.8
Radio	8	2.1
Social media	49	12.7
From the Hospital	313	80.9
I don't know	6	1.6
Descriptions of diarrhoea		
Running stomach that causes baby to pass watery stool more than 3 times a day	203	52.5
Stomach ulcer	2	.5
Eating too much that cause vomiting	157	40.6
Don't know	25	6.5
The consistency of the stool of an under five children with diarrhoea		
Loose and Watery	188	48.6
Black in colour	7	1.8
Yellow in colour	147	38.0
Hard Stool	2	.5
Melon soup	8	2.1
Don't know	35	9.0
Danger signs of diarrhoea		
Bad Nutrition	37	9.6
Dehydration	189	48.8
Death	11	2.8
don't know	150	38.8

Source: Authors fieldwork (2025)

Table 3: KNOWLEDGE LEVEL OF RESPONDENTS ON CHILDHOOD DIARRHOEA

Knowledge Level	**Frequency**	**Percentage (%)**
Good	205	53.0
Poor	182	47.0
Total	**387**	**100.0**

Source: Authors fieldwork (2025)

Table 4: Perceptions towards childhood diarrhoea.

Variables	Frequency (n = 387)	Percentage (%)
What do you think causes diarrhoea among under-five children		
Germs	212	54.8
Worms	143	37.0
witch craft	3	.8
Baby being premature	5	1.3
Don't know	24	6.2
When my child has diarrhea		
Hospital	137	35.4
Chemist	64	16.5
health centre	107	27.6
Traditional healer's	11	2.8

I treat by myself	63	16.3
Church to prayer house	5	1.3
Stop breastfeeding, if child has diarrhea		
Yes	26	6.7
No	361	93.3
Stopped giving food and water when my child has diarrhoea		
Yes	12	3.1
No	375	96.9
Diarrhoea is transmitted by		
Eating too much	132	34.1
Food soiled with germs	97	25.1
Shaking people	24	6.2
Unhygienic practices of caregivers	53	13.7
Contaminated food and water	57	14.7
Don't know	24	6.2

Source: Authors fieldwork (2025)

Table 5: PERCEPTION LEVELS OF RESPONDENTS TOWARDS CHILDHOOD DIARRHOEA

Perception Level	Frequency	Percentage (%)
Positive	321	82.9
Negative	66	17.1
Total	**387**	**100.0**

Source: Authors fieldwork (2025)

Table 6: MANAGEMENT OF CHILDHOOD DIARRHOEA

Variables	Frequency (N = 387)	Percentage (%)
What you do when your child has diarrhea		
I use weak cereal Solution (Rice Water)	13	3.4
Food Salt Solution	56	14.5
Oral Rehydration Syrup	239	61.8
Zinc Supplementation	20	5.2
Continues Breast feeding and giving of food	59	15.2
Can prepare Oral Rehydration Solution properly		
Yes	238	61.5
No	149	38.5
The adequate container size (bottle)		
1 Litre	175	45.2
Full Big Coke	123	31.8
Small Eva	89	23.0
Correct quantity of sugar		

5 cubes	153	39.5
6 cubes	68	17.6
7 cubes	94	24.3
8 cubes	72	18.6
Correct quantity of salt		
1 level teaspoonful	230	59.4
2 level teaspoons	80	20.7
3 full spoons	77	19.9
Type of water used		
Cooled boiled water	219	56.6
Hot water	88	22.7
Cold water	80	20.7
Time to commence Oral rehydration Solution for a Child with diarrhea		
On the first day	191	49.4
after two days	110	28.4
after three days	86	22.2
Length of time Oral rehydration solution should stay before being discarded*		
6 hours	64	16.5
12 hours	104	26.9
24 hours	159	41.1
Don't know	60	15.5

Source: Authors fieldwork (2025)

Table 7: RELATIONSHIP BETWEEN KNOWLEDGE LEVEL AND SOCIO-DEMOGRAPHIC CHARACTERISTICS

	Knowledge level			
Variable	Poor knowledge	Good knowledge	χ^2	**p-value**
Gender				
Male	27(54.0%)	23(46.0%)		
Female	155(46.0%)	182(54.0%)	1.120	0.290
Age				
15 − 25	38(55.9%)	30(44.1%)		
26 − 36	76(51.7%)	71(48.3%)		
37 − 47	50(37.0%)	85(63.0%)		
Above 47 years	18(48.6%)	19(51.4%)	8.877	*0.031
Education Qualification				
FSLC	54(83.1%)	11(16.9%)		
SSCE	44(55.7%)	35(44.3%)		
OND	38(55.9%)	30(44.1%)	Fisher's Exact	
HND/B.Sc.	32(26.9%)	87(73.1%)		
M. Sc.	0(0.0%)	17(100.0%)		
Ph.D.	5(19.2%)	21(80.8%)	83.530	**<0.001
Others	9(69.2%)	4(30.8%)		
Marital Status				
Single	64(52.5%)	58(47.5%)		
Married	108(43.9%)	138(56.1%)	6.884	0.076
Divorce	8(72.7%)	3(27.3%)		
Widow/Widower	2(25.0%)	6(75.0%)		

Religion				
Christianity	151(46.3%)	175(53.7%)	0.493	0.921
Islam	23(50.0%)	23(50.0%)		
Traditional	6(54.5%)	5(45.5%)		
Pegan	2(50.0%)	2(50.0%)		
Occupation				
Employed	28(25.5%)	82(74.5%)	χ^2	
Unemployed	36(64.3%)	20(35.7%)	33.448	**<0.01
Civil servant	49(53.8%)	42(46.2%)		
Self employed	16(42.1%)	22(57.9%)		
Business Woman	53(57.6%)	39(42.4%)		

***Significant p<0.05**

Discussion:

This study found a good level of knowledge among caregivers of under-five children on childhood diarrhoea in Calabar Municipal local government area of Cross River State, Nigeria. This was similar to the result obtained by Momoh *et al.*, (2022) in Lagos, Nigeria and Mekonnen et al (2018) in Gambella Region, Ethiopia, on mother's knowledge, attitude and practice in the prevention and home management of diarrhoea diseases among children under five years. This good knowledge level identified in this study could be explained by the age, educational level and occupation of the respondents in the study area. Majority of the respondents were younger age, had secondary or tertiary education and were gainfully employed, these factors were significantly associated to the good knowledge level. Similar findings have been reported on the effects of age and educational level on knowledge of common public health conditions among young children in Calabar, Nigeria (Uzomba et al 2020).

Respondents in this study showed positive perception towards childhood diarrhoea. Majority identified that diarrhoea among under-five children were caused by germs, they took their wards to hospital, health centres or patent medicine stores for treatment, did not stop breastfeeding but continued giving food and water to their children having diarrhoea. This agrees with the study by Digre et al, (2016) carried out in Burkina Faso among young children having diarrhoea disease indicating positive perceptions of caregivers and attitudes towards childhood diarrhoea. However, Babalola *et al.*, (2018) in assessment of caregivers' perceptions of causes and treatment of fever and diarrhoea among under-five children should a negative perception which was attributed to teething, dirty environment and feeding bottles. There is need to educate caregivers on the causes of diarrhoea, and appropriate treatment measures.

The findings from the study shows that most respondents give oral rehydration solution when their children had diarrhoea and can prepare it properly. This shows a good proportion have good management practices on the use of ORS for childhood diarrhoea. This agrees with previous similar studies within and outside Nigeria (Mustapha et al, 2008; Adimora et al, 2011; Ahmed et al, 2009). These studies indicated diarrhoea as a disease of public health importance affecting under-five children in developing countries where these studies were conducted, and mothers attempted use of ORS. Surprisingly, very few mothers (5.2%) add tablet zinc in the treatment of diarrhoea in their under-five children in this study. This could be due to inadequate health education among the caregivers on the current treatment of diarrhoea disease. Zinc supplementation has been shown to reduce the duration and severity of diarrhoea, and to prevent subsequent episodes and it is important for cellular growth, cellular differentiation and metabolism (WHO, 2009). Similar finding of poor home management with reference to the use of zinc was seen in a cross- sectional study in Ethiopia (Fufa et al, 2019).

Also, majority of respondents in this study started treatment for diarrhea within 24 hours after the onset of the diarrhoea with ORS. This shows good illness behaviour and attitude towards the management

of diarrhoea. It will help in quick recovery and reduce complications of dehydration, electrolyte imbalance and death (Nsa et al, 2020). However, Babalola *et al.*, (2018) in assessment of caregivers' perceptions of causes and treatment of fever and diarrhoea among under-five children found poor illness behavior among the respondents as most waited at least one day after the onset of symptoms before taking any action. Choice of treatment was mostly influenced by health education messages received from health workers and mass media (Uzomba et al, 2021)

In conclusion, there was good knowledge and perception of under-five diarrhoea disease among caregiver in the area. However, some aspects of the management like the use of zinc tablet were poorly used. Hence, Health education on the proper management of childhood diarrhoea should be reinforced in the study area.

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