

Original Research Article

Factors associated with home-based management of diarrhoea in children under 5 years among parents/guardians in the Ndongo community of Buea, South-West Region of Cameroon

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ABSTRACT

Background: Diarrhoea remains a major cause of illness and death among children under-five year of age in sub-Saharan Africa, where home-based care is often the first response and depends heavily on caregivers' knowledge and practices. This study assessed the factors associated with home-based management of childhood diarrhoea among parents and guardians in the Ndongo community of Buea, Cameroon.

Methods: A cross-sectional survey was conducted among 385 participants recruited through snowball sampling. Data were collected using an interviewer-administered questionnaire assessing knowledge and home-management practices, then analyzed using descriptive and multivariate logistic regression statistics.

Results: The mean participant age was 26.21±7.11 years. Overall, 47.0% demonstrated good knowledge, while 45.7% exhibited good practices related to diarrhoea management. Good knowledge was more likely observed among women (aOR=1.112; 95% CI: 1.089-2.874), mothers compared with guardians (aOR=1.339; 95% CI: 1.192-1.798), individuals with tertiary education (aOR=1.388; 95% CI: 1.113-3.302), and those who were employed (aOR=2.108; 95% CI: 1.072-4.145). Good practices were likely reported by participants who attended tertiary education (aOR=1.443; 95% CI: 1.132-4.846), having two to three under-five children (aOR=2.12; 95% CI: 1.272-3.534), and possessing good knowledge (aOR=2.383; 95% CI: 1.551-3.659).

Conclusions: The findings of this study indicate suboptimal levels of knowledge and practices amongst parents and caregivers of under-five children in Ndongo, supporting the need for strengthening caregiver awareness, mainly in the context the ongoing socio-political unrest in Buea, which may further limit access to timely healthcare and reliable information.

Keywords: Diarrhoea, Knowledge, Practices, Under-five children

INTRODUCTION

The WHO defines diarrhoea as the passage of three or more loose of watery stools per day or more frequently than normal for an individual.¹ According to the World

Health Organization, diarrhoea is the second leading cause of death among children under the age of 5 years old, with 1.7 billion diarrhoea cases occurring annually and approximately 525,000 deaths each year worldwide, a burden heavily concentrated in low- and middle-income

countries.² Diarrhoea is frequently present in low-income populations as results of limited access to clean water sources, hygienic conditions and health care. Dehydration due to electrolyte and fluid loss is the main cause of death associated with diarrhoea.³ Bacteria, viruses, and parasites contribute to disease, which can spread through contaminated food, polluted drinking water, or poor hygiene from person to person.⁴ Despite the overall improvement in water quality, sanitation, and hygiene over the decades, diarrhoea remains a significant cause of mortality and morbidity for children under-5 years of age.⁵

In Cameroon, diarrhoea is the main cause of infant morbidity and mortality among children under-5 years after acute respiratory infections. Although efforts have been made to significantly reduce the morbidity and mortality due to diarrhoea, there need to be a progress in case management within communities. However, home-based management of diarrhoea among caregivers of under-five children is often ineffective due to gaps in caregiver knowledge and practices.⁶ In addition to the gaps in knowledge and practices, some evidence has shown that harmful practices such as food restriction, reduced breastfeeding, and the use of traditional and inappropriate medicine, which have unknown effects on the management of diarrhoea at home performed by caregivers, are also believed to be due to a lack of knowledge.⁷

This study sought to determine the factors associated with home-based management of diarrhoea in children under-5 years among parents/guardians in the Ndongo community of Buea, South-West Region of Cameroon.

METHODS

Study design and settings

A community-based cross-sectional study was carried out in the Ndongo community of the Buea Health District (BHD), South-West Region of Cameroon, from January to June 2026. This health district has a total population of 169,746 (2017).

Study population and sampling

This study used a snowball sampling approach to recruit a total of 385 parents/guardians of children under-5 years of age from the Ndongo community of Buea. The sample size was calculated using Cochran's formula.

$$n = \frac{Z^2 p(1 - P)}{e^2}$$

For a z value of 1.96 as the standard normal variate at the 95% confidence level, the error margin is 5% (e), and the prevalence is 50%. A minimum sample size of 384 participants was needed.

Selection criteria

Parents and guardians of children under five years of age residing in the Ndongo community of Buea were eligible for inclusion, whereas those unable to provide informed consent due to cognitive impairment, severe mental illness, or acute distress were excluded.

Data collection

Data were collected using an interviewer-administered questionnaire built using the Google form. Pre-testing was performed among 10 parents or guardians to ensure validity and reliability. The questionnaire was then administered in English to collect data. The questionnaire has three sections: socio-demographics, knowledge and self-reported practices of the home-based management of diarrhoea. To determine knowledge of home-based management of diarrhoea, a score of 1 was assigned to each correct response, while 0 was assigned to each incorrect response. Overall, 7 questions were used, and a cut-off point of 5 was considered good knowledge following the bloom criteria.⁸ For practices, 5 questions were used, and a cut-off point of 3 was considered good practices following the Bloom's criteria.⁸

Data management and analysis

The questionnaire was double-checked for consistency and completeness. The data were entered into Microsoft Excel 2015 and cleaned. The cleaned data were then analysed using the Statistical Package for Social Sciences (SPSS version 26). Descriptive statistics are presented as frequencies and percentages. The chi-square test of independence was used to test associations, and logistic regression analysis was used to determine predictors of good knowledge and practices in the home-based management of diarrhoea. The predictors to be included in the multivariate logistic regression model were as follows. First, a chi square test of independence was conducted, and variables with p values ≤ 0.2 were considered eligible for the multivariate model to avoid the premature elimination of potential confounders. A multivariate logistic regression model was then developed to select variables manually, and $p < 0.05$ was used to determine the final predictors of the outcome. Odds ratio (OR) estimates and confidence intervals (95% CI) with p values < 0.05 were considered significant.

RESULTS

Socio-demographic characteristics of the study participants

Among the 385 participants (mean age 26.2 ± 7.1 years), most were within the age range of 18-22 years (137; 35.6%), the majority were female (281; 73.0%), and most were single (296; 76.9%). The most common relationship with the child was the guardian (228; 59.2%); most were Christians (365; 94.8%), and most had a tertiary level of education (191; 49.6%). The majority were self-employed

(180; 46.8%). Most households had one child under five years (258; 67.0%), and the most common monthly

household income bracket was 50,000-100,000 XAF (181; 47.0%) (Table 1).

Table 1: Socio-demographic characteristics of the study participants.

Variables	Categories	Frequency	Percentage (%)
Age category (years)	18-22	137	35.6
	23-27	123	31.9
	28-32	66	17.1
	>33	59	15.3
	Total	385	100
Sex	Female	281	73
	Male	104	27
	Total	385	100
Marital status	Divorced/widowed	6	1.6
	Married	83	21.6
	Single	296	76.9
	Total	385	100
Relationship to child	Father	29	7.5
	Guardian	228	59.2
	Mother	128	33.2
	Total	385	100
Religion	Christian	365	94.8
	Islam	20	5.2
	Total	385	100
Level of education	Primary	48	12.5
	Secondary	146	37.9
	Tertiary	191	49.6
	Total	385	100
Occupation	Employed	59	15.3
	Self-employed	180	46.8
	Unemployed	146	37.9
	Total	385	100
Number of under-5 years children currently living in household	1	258	67
	2-3	103	26.8
	>3	24	6.2
	Total	385	100
Monthly household income (XAF)	<50,000	136	35.3
	50,000-100,000	181	47
	101,000-200,000	36	9.4
	>200,000	32	8.3
	Total	385	100

Knowledge of home-based management of diarrhoea

On the basis of the knowledge assessment, all 385 participants (100%) had heard of diarrhoea. The most common correct description was passing loose or watery stools three or more times per day (129; 33.5%). The leading cause of diarrhoea was contaminated food or water (148; 38.4%), and the most frequently reported symptom was frequent watery stools alone (127; 33.0%). With respect to transmission, most identified contaminated food or water as the route (306; 79.5%). The preferred prevention method was handwashing with soap combined with the use of safe drinking water (203;

52.7%). Most had heard of oral rehydration solution (ORS) (251; 65.2%), and among those, the majority knew the correct preparation method (189; 75.3%) and identified the main purpose as replacing lost fluids and salts (174; 69.3%). Most participants said that treatment should start immediately once a child has diarrhoea (205; 53%), and the most recognized danger was dehydration (234; 60.8%) (Table 2).

Among the 385 participants who were sampled, 181 (47.0%) of the parent/guardians had good knowledge of home-based management of diarrhoea among children under-5 years of age (Figure 1).

Table 2: Knowledge of home-based management of diarrhoea.

Variables	Categories	Frequency	Percentage (%)
Heard of diarrhoea description of diarrhoea	Yes	385	100
	Dont know	24	6.2
	Passing loose stools	112	29.1
	Passing loose or watery stools; passing stool three (3) or more times in a day	129	33.5
	Passing loose stool three (3) or more times in a day	93	24.2
	Stomach pain only	8	2.1
	Vomiting only	19	4.9
	Total	385	100
Causes of diarrhoea in children	Contaminated food or water	148	38.4
	Contaminated food or water; poor hygiene (germs, bacteria, viruses)	84	21.8
	Eating certain foods (e.g. sugary or fatty foods)	52	13.5
	Poor hygiene (germs, bacteria, viruses)	85	22.1
	Teething	16	4.2
	Total	385	100
Symptoms of diarrhoea in children	Abdominal pain	14	3.6
	Frequent watery stools	127	33
	Frequent watery stools; abdominal pain	43	11.2
	Frequent watery stools; fever	24	6.2
	Frequent watery stools; fever; abdominal pain	16	4.2
	Frequent watery stools; vomiting	69	17.9
	Frequent watery stools; Vomiting; Abdominal pain	32	8.3
	Frequent watery stools; vomiting; fever	25	6.5
	Frequent watery stools; vomiting; fever; abdominal pain	11	2.9
	Vomiting	16	4.2
	Vomiting; abdominal pain	8	2.1
	Total	385	100
How diarrhoea is transmitted	Contaminated food or water	306	79.5
	Contaminated surfaces/objects	18	4.7
	Do not know	18	4.7
	Person-to-person contact	15	3.9
	All of the above	28	7.3
	Total	385	100
Method of preventing diarrhoea in children	Handwashing with soap	30	7.8
	Handwashing with soap; use of safe drinking water	203	52.7
	Proper food preparation and storage	56	14.5
	Use of antibiotics for prevention	26	6.8
	Use of safe drinking water	70	18.2
	Total	385	100
Breastfeeding when a child has diarrhoea	Do not know	90	23.4
	No	118	30.6
	Yes	177	46
	Total	385	100
Heard of Oral Rehydration Solution (ORS)	No	134	34.8
	Yes	251	65.2
	Total	385	100
If yes, how is ORS correctly prepared	Mix 6 level teaspoons of sugar + ½ teaspoon salt in 1 litre of clean water	189	75.3
	Mix sugar and salt without measurement	14	5.6
	Mix sugar and water	48	19.1
	Total	251	100

Continued.

Variables	Categories	Frequency	Percentage (%)
Main purpose of ORS	To kill germs	14	5.6
	To replace lost fluids and salts	174	69.3
	To stop diarrhoea immediately	63	25.1
	Total	251	100
When to start treatment once a child has diarrhoea?	After 24 hours	77	20
	Do not know	46	11.9
	Immediately	204	53
	Only if fever develops	58	15.1
	Total	385	100
Dangers of diarrhoea in children	Death	62	16.1
	Dehydration	234	60.8
	Dehydration; death	9	2.3
	Dehydration; fever	11	2.9
	Do not know	19	4.9
	Fever	15	3.9
	Malnutrition	35	9.1
	Total	385	100

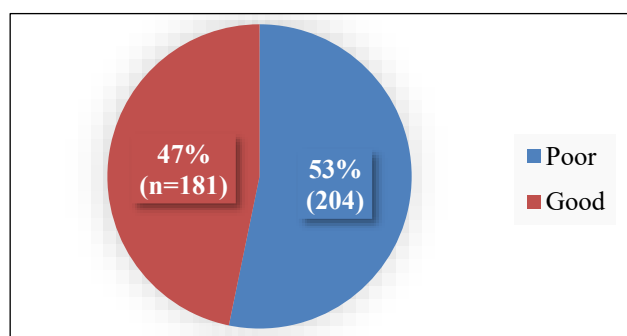


Figure 1: Overall knowledge on home-based management of diarrhoea.

Factors associated with overall knowledge on home-based management of diarrhoea

A chi-square test for independence revealed three sociodemographic factors significantly associated with overall knowledge of home-based management of diarrhoea among caregivers. Marital status ($\chi^2=8.765$; $p=0.012$), relationship to the child ($\chi^2=22.483$, $p<0.001$), and occupation ($\chi^2=9.276$; $p=0.015$) each demonstrated statistically significant relationships. When a cut-off of <0.2 was used for the multivariate analysis, sex and level of education were considered significant (Table 3).

Table 3: Factors associated with knowledge on home-based management of diarrhoea.

Variables	Categories	Overall knowledge			X^2	P value
		Good, N (%)	Poor, N (%)	Total, N (%)		
Age category (years)	>33	31 (52.5)	28 (47.5)	59 (100)	4.431	0.219
	18-22	55 (40.1)	82 (59.9)	137 (100)		
	23-27	60 (48.8)	63 (51.2)	123 (100)		
	28-32	35 (53.0)	31 (47.0)	66 (100)		
	Total	181 (47.0)	204 (53.0)	385 (100)		
Sex	Female	138 (49.1)	143 (50.9)	281 (100)	1.837	0.175
	Male	43 (41.3)	61 (58.7)	104 (100)		
	Total	181 (47.0)	204 (53.0)	385 (100)		
Marital status	Divorced/widowed	5 (83.3)	1 (16.7)	6 (100)	8.765	0.012
	Married	48 (57.8)	35 (42.2)	83 (100)		
	Single	128 (43.2)	168 (56.8)	296 (100)		
	Total	181 (47.0)	204 (53.0)	385 (100)		
Relationship to child	Father	12 (41.4)	17 (58.6)	29 (100)	22.483	<0.001
	Guardian	87 (38.2)	141 (61.8)	228 (100)		
	Mother	82 (64.1)	46 (35.9)	128 (100)		
	Total	181 (47.0)	204 (53.0)	385 (100)		
Religion	Christian	170 (46.6)	195 (53.4)	365 (100)	0.54	0.462
	Islam	11 (55.0)	9 (45.0)	20 (100)		
	Total	181 (47.0)	204 (53.0)	385 (100)		

Continued.

		Overall knowledge			X ²	P value
Variables	Categories	Good, N (%)	Poor, N (%)	Total, N (%)		
Level of education	Primary	24 (50.0)	24 (50.0)	48 (100)	0.247	0.184
	Secondary	67 (45.9)	79 (54.1)	146 (100)		
	Tertiary	90 (47.1)	101 (52.9)	191 (100)		
	Total	181 (47.0)	204 (53.0)	385 (100)		
Occupation	Employed	38 (64.4)	21 (35.6)	59 (100)	9.276	0.015
	Self-employed	83 (46.1)	97 (53.9)	180 (100)		
	Unemployed	60 (41.1)	86 (58.9)	146 (100)		
	Total	181 (47.0)	204 (53.0)	385 (100)		
Number of under-5 children	>3	12 (50.0)	12 (50.0)	24 (100)	0.871	0.647
	1	117 (45.3)	141 (54.7)	258 (100)		
	2-3	52 (50.5)	51 (49.5)	103 (100)		
	Total	181 (47.0)	204 (53.0)	385 (100)		
Monthly household income (cfa)	<50,000	58 (42.6)	78 (57.4)	136 (100)	1.823	0.611
	>200,000	16 (50.0)	16 (50.0)	32 (100)		
	101,000-200,000	19 (52.8)	17 (47.2)	36 (100)		
	50,000-100,000	88 (48.6)	93 (51.4)	181 (100)		
	Total	181 (47.0)	204 (53.0)	385 (100)		

In the multivariate logistic regression model, compared with male sex, female sex was associated with greater odds of having good knowledge (aOR=1.112; 95% CI: 1.089-2.874; p=0.021). Mothers had higher odds of having good knowledge than guardians did (aOR=1.339; 95% CI: 1.192-1.798; p=0.014). Compared with those

with primary education, participants with tertiary education had higher odds (aOR=1.388; 95% CI: 1.113-3.302; p=0.049). Additionally, compared with unemployed participants, employed individuals had more than double the odds of having good knowledge (aOR=2.108; 95% CI: 1.072-4.145; p=0.031) (Table 4).

Table 4: Multivariate analysis of the factors associated with knowledge of home-based management of diarrhoea.

		95% CI			P value
Variables	Categories	aOR.	Lower	Upper	
Sex	Female	1.112	1.089	2.874	0.021
	Male	1	-	-	-
Marital status	Divorced/widowed	3.321	0.358	30.821	0.291
	Single	0.846	0.443	1.614	0.612
	Married	1	-	-	-
Relationship to child	Father	0.924	0.165	2.087	0.074
	Mother	1.339	1.192	1.798	0.014
	Guardian	1	-	-	-
Level of education	Tertiary	1.388	1.113	3.302	0.049
	Secondary	1.167	0.834	5.56	0.291
	Primary	1	-	-	-
Occupation	Employed	2.108	1.072	4.145	0.031
	Self-employed	1.001	0.615	1.629	0.996
	Unemployed	1	-	-	-

Self-reported practices-on-the-home-based management of diarrhoea

Among the 385 participants, the most common action taken when a child had diarrhoea was the use of antibiotics (104; 27.0%), although the majority reported that their child had not experienced diarrhoea during the past 12 months (232; 60.3%). Oral rehydration solution was most frequently given first (169; 43.9%), and the most common food given during diarrhoea was a normal

family diet (130; 33.8%). With respect to foods to avoid, the largest proportion did not know (124; 32.2%). Most participants sought medical care immediately (173; 44.9%), and the most frequent handwashing practices was after using the toilet, before preparing food, and before feeding a child (136; 35.3%). The majority reported that the cost of treatment did not affect their decision to seek care (260; 67.5%) (Table 5 and 6). Among the 385 participants who were sampled, 176 (45.7%) of the parents/guardians reported good practices for home-based management of diarrhoea (Figure 2).

Table 5: Practices of home-based management of diarrhoea.

Variables	Categories	Frequency	Percentage (%)
Actions to take when a child has diarrhoea	Continue breastfeeding; give extra fluids (water, soups)	15	3.9
	Continue breastfeeding; use traditional remedies	7	1.8
	Do nothing	12	3.1
	Give antibiotics	104	27
	Give antibiotics; use traditional remedies	14	3.6
	Give extra fluids (water, soups); give antibiotics; use traditional remedies	34	8.8
	Give ORS	78	20.3
	Give ORS; continue breastfeeding	14	3.6
	Give ORS; continue breastfeeding; give extra fluids (water, soups)	9	2.3
	Give ORS; continue breastfeeding; give normal/balanced diet	18	4.7
	Give ORS; give antibiotics	37	9.6
	Give ORS; give extra fluids (water, soups)	12	3.1
	Use traditional remedies	31	8.1
	Total	385	100
Has your child had diarrhoea in the past 12 months	No	232	60.3
	Yes	153	39.7
	Total	385	100
What treatment do you usually give first	Antibiotics	125	32.5
	No treatment	30	7.8
	ORS	169	43.9
	Traditional remedies	61	15.8
	Total	385	100
Foods during diarrhoea	Banana	118	30.6
	Banana; Rice	27	7
	Normal family diet	130	33.8
	Porridge	55	14.3
	Rice	41	10.6
	Spicy or fatty foods	14	3.6
	Total	385	100

Table 6: Practices of home-based management of diarrhoea.

Variables	Categories	Frequency	Percentage (%)
Foods to avoid during diarrhoea	Do not know	124	32.2
	Fried/spicy foods	92	23.9
	Fried/spicy foods; heavy/oily foods	37	9.6
	Heavy/oily foods	67	17.4
	No restrictions	65	16.9
	Total	385	100
When do you seek medical care	After 24 hours	54	14
	Do not seek care	16	4.2
	Immediately	173	44.9
	Only if symptoms worsen	142	36.9
	Total	385	100
When do you wash your hands with soap	After using the toilet	70	18.2
	After using the toilet; before feeding a child	14	3.6
	After using the toilet; before preparing food	23	6
	After using the toilet; before preparing food; after cleaning a child	15	3.9
	After using the toilet; before preparing food;	136	35.3

Continued.

Variables	Categories	Frequency	Percentage (%)
	before feeding a child		
	After using the toilet; before preparing food; before feeding a child; after cleaning a child	97	25.2
	Before feeding a child	14	3.6
	Before preparing food	16	4.2
	Total	385	100
Cost of treatment affecting decision to seek care	No	260	67.5
	Yes	125	32.5
	Total	385	100

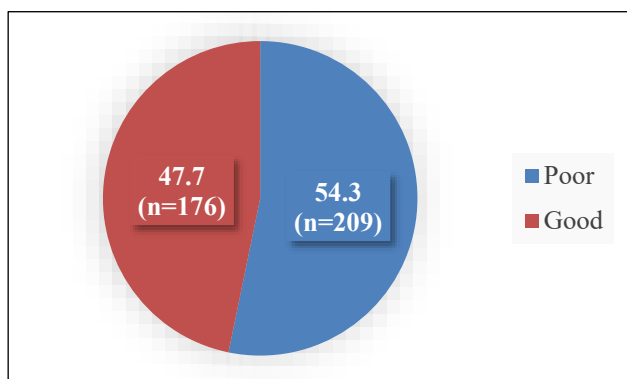


Figure 2: Practices of the home-based management of diarrhoea.

Factors associated with practices on home-based management of diarrhoea

A chi-square test for independence revealed two factors significantly associated with the overall practices of

home-based management of diarrhoea. The number of children under five in the household was significantly associated ($\chi^2=6.780$, $p=0.034$). Additionally, overall knowledge of home-based diarrhoea management was significantly associated with practices ($\chi^2=14.005$; $p<0.001$). When a cut-off of $p<0.2$ was used for the multivariate analysis, the level of education, occupation and monthly household income were considered significant (Table 7). In the multivariate logistic regression model, compared with those with primary education, participants with tertiary education were more likely to have good practices (aOR=1.443; 95% CI: 1.132-4.846; $p=0.037$). With respect to the number of children under five years of age, those with 2-3 children were more than double the odds of good practices relative to households with one child (aOR=2.12; 95% CI: 1.272-3.534; $p=0.004$). Additionally, compared with those with poor knowledge, individuals with good overall knowledge of home-based diarrhoea management had nearly 2.4 times greater odds of good practices (aOR=2.383; 95% CI: 1.551-3.659; $p<0.001$) (Table 8).

Table 7: Practices of the home-based management of diarrhoea.

Variables	Categories	Good, N (%)	Poor, N (%)	Total, N (%)	X ²	P value
Age (years)	>33	27 (45.8)	32 (54.2)	59 (100)	1.086	0.781
	18-22	58 (42.3)	79 (57.7)	137 (100)		
	23-27	59 (48.0)	64 (52.0)	123 (100)		
	28-32	32 (48.5)	34 (51.5)	66 (100)		
	Total	176 (45.7)	209 (54.3)	385 (100)		
Sex	Female	128 (45.6)	153 (54.4)	281 (100)	0.011	0.516
	Male	48 (46.2)	56 (53.8)	104 (100)		
	Total	176 (45.7)	209 (54.3)	385 (100)		
Marital status	Divorced/widowed	2 (33.3)	4 (66.7)	6 (100)	1.319	0.517
	Married	42 (50.6)	41 (49.4)	83 (100)		
	Single	132 (44.6)	164 (55.4)	296 (100)		
	Total	176 (45.7)	209 (54.3)	385 (100)		
Relationship to child	Father	14 (48.3)	15 (51.7)	29 (100)	2.324	0.313
	Guardian	97 (42.5)	131 (57.5)	228 (100)		
	Mother	65 (50.8)	63 (49.2)	128 (100)		
	Total	176 (45.7)	209 (54.3)	385 (100)		
Religion	Christian	165 (45.2)	200 (54.8)	365 (100)	0.733	0.392
	Islam	11 (55.0)	9 (45.0)	20 (100)		
	Total	176 (45.7)	209 (54.3)	385 (100)		

Continued.

Variables	Categories	Good, N (%)	Poor, N (%)	Total, N (%)	X ²	P value
Level of education	Primary	27 (56.3)	21 (43.8)	48 (100)	3.462	0.177
	Secondary	60 (41.1)	86 (58.9)	146 (100)		
	Tertiary	89 (46.6)	102 (53.4)	191 (100)		
	Total	176 (45.7)	209 (54.3)	385 (100)		
Occupation	Employed	24 (40.7)	35 (59.3)	59 (100)	2.556	0.199
	Self-employed	90 (50.0)	90 (50.0)	180 (100)		
	Unemployed	62 (42.5)	84 (57.5)	146 (100)		
	Total	176 (45.7)	209 (54.3)	385 (100)		
Number of under-5 children	>3	13 (54.2)	11 (45.8)	24 (100)	6.78	0.034
	1	127 (49.2)	131 (50.8)	258 (100)		
	2-3	36 (35.0)	67 (65.0)	103 (100)		
	Total	176 (45.7)	209 (54.3)	385 (100)		
Monthly household income(cfa)	<50,000	63 (46.3)	73 (53.7)	136 (100)	2.951	0.179
	>200,000	19 (59.4)	13 (40.6)	32 (100)		
	101,000-200,000	16 (44.4)	20 (55.6)	36 (100)		
	50,000-100,000	78 (43.1)	103 (56.9)	181 (100)		
	Total	176 (45.7)	209 (54.3)	385 (100)		
Overall knowledge	Good	101 (55.8)	80 (44.2)	181 (100)	14.005	<0.001
	Poor	75 (36.8)	129 (63.2)	204 (100)		
	Total	176 (45.7)	209 (54.3)	385 (100)		

Table 8: Multivariate analysis of the factors associated with practices in home-based management of diarrhoea.

Variable	Category	95% CI			P value
		aOR.	Lower	Upper	
Level of education	Tertiary	1.443	1.132	4.846	0.037
	Secondary	1.115	0.751	2.135	0.155
	Primary	1	-	-	-
Occupation	Employed	1.726	1.371	5.428	0.354
	Self-employed	1.339	0.827	2.169	0.235
	Unemployed	1	-	-	-
Number of under-5 years children currently living in household	>3	1.834	0.698	4.817	0.218
	2-3.	2.12	1.272	3.534	0.004
	1	1	-	-	-
Monthly household income(cfa)	50,000-100,000	1.145	0.703	1.867	0.587
	> 200,000	2.114	0.928	4.815	0.075
	101,000 - 200,000	1.146	0.536	2.451	0.726
	< 50,000	1	-	-	-
Overall knowledge	Good	2.383	1.551	3.659	<0.001
	Poor	1	-	-	-

DISCUSSION

The results of this study revealed that 47.0% of parents/guardians had good knowledge of home-based diarrhoea management, while 45.7% reported good practices. Multivariate logistic regression analysis revealed sex, relationship to the child, tertiary education, and employment status as significant predictors of good knowledge. With respect to good practices, having a tertiary education, having two to three children under five in the household, and having good overall knowledge of diarrhoea management emerged as significant predictors.

Knowledge of home-based management of diarrhoea

The finding of low knowledge among parents/guardians in the Ndongo community (47.0%) about home-based management of diarrhoea is a large gap that could have direct implications for child health outcomes. This proportion is comparable with the results of other studies conducted in Cameroon. In the Nkwen Medicalized Health Center of the North West Region, Asoh reported that 60% of mothers had poor knowledge of the home management of diarrhoea (40% had good knowledge), which is similar to the results of the present study, in which 47.0% good knowledge was recorded.⁹ Similarly, a

mixed-method study among community health workers (CHWs) in the Fako Division revealed that 57.5% of CHWs had poor knowledge of childhood diarrhoea management, suggesting that there is an even low level of knowledge among frontline health workers.¹⁰ Another study in an urban informal settlement in northern Ghana revealed that 64.5% of mothers had good knowledge of diarrhoea prevention and home management.¹¹ The difference could be due to the differences in the health education outreach, literacy, and mass media messaging that took place in the two settings. A survey conducted in Rwanda revealed that 55.6% of mothers had poor knowledge.¹² In Lagos, Nigeria, Roberts and colleagues reported that only 41.3% of mothers had good knowledge about the home management of diarrhoea, which is slightly less than the Ndongo results.¹³

Practices of home-based management of diarrhoea

Only 45.7% of parents/guardians had good home-based management practices, as this percentage was slightly lower than the knowledge level. Asoh reported that only 29% of mothers used ORS/zinc tablets as recommended by the WHO in Nkwen, while the rest used drugs and traditional medicine.⁹ This is significantly lower than the 45.7% good practices reported in Ndongo. The difference could be due to variations in the study population (hospital-based versus community-based), the type of practices measured, and the possible effect of the study area's proximity to Buea, which has relatively better health infrastructure. Even at the higher level of practices seen in Ndongo, however, the level of practices is far short of the level of coverage required to meet diarrhoea-related mortality reduction targets. In Ethiopia, Desta et al reported that only 37.6% of the participants had good practices, which was lower than the current finding.⁵ The methodological and socioeconomic differences that are typical in cross-country comparisons in sub-Saharan Africa may explain the lower proportion of good practices in the study of Desta et al.⁵

Factors associated with knowledge and practices of home-based diarrhoea management

Compared with men, women were more likely to have good knowledge of home-based management of diarrhoea, as they are mainly responsible for childcare, including the management of childhood illnesses. Women are more likely to visit health facilities for antenatal, postnatal and child welfare clinic visits, where they are provided health education on diarrhoea management.¹⁴ Women also tend to be more likely to be involved in women's groups and community health activities for health information.¹⁵ Other sub-Saharan African studies have also indicated that compared with males, females have more knowledge about how to manage childhood illness.¹¹ Mothers were more likely than other guardians were to have good knowledge. Mothers are generally more exposed to health education messages during pregnancy and postpartum care and gain experiential

knowledge from the repeated management of episodes of childhood diarrhoea.¹⁶ Other guardians, especially grandmothers, may have traditional knowledge that is potentially in conflict with evidence-based recommendations.¹⁰ In Cameroon, grandmothers are likely to strongly influence child-rearing practices and may discourage the use of ORS, as they believe that it weakens the child or extends the duration of diarrhoea.¹⁰

The odds of good knowledge were significantly greater among participants with a tertiary education than among those with a primary education. This finding is consistent with a study conducted in Douala by Essomba et al, which revealed that the overall knowledge and use of ORS in diarrhoea was inadequate and that level of education was a significant factor in ORS awareness and correct preparation.¹⁷ In Ghana, those who had attained tertiary education were significantly more likely to have good knowledge.¹¹ One study in Lahore, Pakistan, revealed that maternal awareness of ORS and zinc use for diarrhoea was significantly correlated with the level of education and socioeconomic status of the mothers.¹⁸ The educated participants have better literacy skills, which allows them to read and understand health education materials, medication labels and instructions on how to prepare ORSs. They are more likely to attend education sessions in health facilities, understand the information presented, and remember information over time. Additionally, parents who are educated are more likely to seek information from other sources, such as mass media, the internet, and social networks, which will strengthen their knowledge base.¹⁹ The odds for good knowledge were more than double for employed participants than for unemployed participants. This finding aligned with a systematic review of the management of childhood diarrhoea in sub-Saharan Africa, which revealed that maternal employment was associated with improved care seeking and ORS use, suggesting that economic resources help to increase access to health information and services.²⁰ Socioeconomic factors such as household income and employment status were found to be barriers to ORS use, with the knowledge of caregivers being lower among unemployed individuals in a study conducted in Douala.¹⁷

Those with a tertiary education were more likely to have good practices than those with a primary education were. In another study in Douala, it was concluded that increased education among mothers was correlated with better health-seeking practices for children with diarrhoea, such as using ORS and referring children when necessary.¹⁷ In Ethiopia, the educational level of the mother was identified as one of the main factors influencing the use of ORS.²¹ Households with two to three children under-5 years had more than twice the odds of good practices than households with one child under-5 years. The experience effect reflects the importance of experiential learning in the development of health practices. When caregivers care for more than one young child, they have repeated chances to practice and refine

their management skills, learn from their mistakes, and establish effective routines.¹¹ The same study in Ghana revealed that multiparity was linked to good knowledge (odds ratio of 4.01) and therefore good practices.¹¹ This finding could also be due to repeated interactions with the health system, which are more likely to have occurred in households with more than one young child who received health education about how to manage childhood illnesses. Immunization visits, growth monitoring visits and visits for sick children are all opportunities to deliver and reinforce health messages to caregivers. Those with good overall knowledge of home-based diarrhoea management were nearly 2.4 times more likely to practices good management than those with poor knowledge were. This finding was similar to that of another study conducted by Ozongwu et al in LMICs, which revealed a strong association between knowledge of ORT preparation and correct use of ORT.²²

CONCLUSION

The findings of this study show that the level of knowledge and practices of home-based management of diarrhoea among parents/guardians in the Ndongo community is low, with 47.0% having good knowledge and 45.7% having good practices. Female sex, relationship to the child, tertiary education and employment status were significant predictors of good knowledge, whereas having 2-3 children under-5 years of age and having good knowledge were significant predictors of good practices. The findings indicate the need for scaling-up health education interventions for all caregivers, especially those with low levels of education and unemployment. To mitigate the burden of childhood diarrhoea and associated mortality in the community, resilient and innovative approaches to health promotion are needed in the context of the ongoing sociopolitical crisis in the southwestern region of Cameroon.

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