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Knowledge, Reported Practices, and Associated Factors in the Home-Based Management of Diarrhoea among Caregivers of Children Under Five in Muea, Cameroon: A Community-Based Cross-Sectional Study

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Abstract

Background: Diarrhoeal disease remains a major cause of morbidity and mortality among children under five, although it is preventable and treatable. Appropriate home-based management, including oral rehydration solution (ORS), zinc supplementation, continued feeding and breastfeeding, and timely care-seeking, can reduce complications and mortality.

Methods: A community-based cross-sectional study was conducted in Muea, Southwest Region of Cameroon, from January to June 2022. Using convenience sampling, 509 caregivers of children under five were recruited and interviewed using a structured questionnaire. Descriptive statistics summarised categorical variables. Univariable logistic regression was used for initial screening, and variables with p<=0.20 were considered for

multivariable logistic regression. Adjusted odds ratios (aORs) with 95% confidence intervals (CIs) were reported; $p<0.05$ was considered statistically significant.

Results: The mean age of participants was 29.53+/-5.9 years. Of the 509 caregivers, 150 (29.5%) had good knowledge and 108 (21.2%) had good reported practice regarding home-based management of diarrhoea. Female caregivers had higher odds of good knowledge (aOR=1.55, 95% CI: 1.04-2.31, p=0.034) and good reported practice (aOR=1.58, 95% CI: 1.04-2.41, p=0.034). Primary (aOR=0.36, 95% CI: 0.16-0.80, p=0.012) and secondary education (aOR=0.40, 95% CI: 0.20-0.82, p=0.012) were associated with lower odds of good knowledge than tertiary education. Daily cleaning of water-storage containers was associated with higher odds of good knowledge (aOR=4.02, 95% CI: 1.56-10.40, p=0.004), while weekly cleaning was associated with lower odds (aOR=0.27, 95% CI: 0.13-0.55, p<0.001). Open burning of household waste was associated with higher odds of good knowledge than disposal in streams (aOR=7.92, 95% CI: 3.98-15.76, p<0.001). Caregivers reporting no cultural or religious barriers to healthcare seeking had higher odds of good reported practice (aOR=9.29, 95% CI: 2.84-30.41, p<0.001). Good knowledge was associated with higher odds of good reported practice (aOR=1.97, 95% CI: 1.22-3.18, p=0.006).

Conclusion: Caregivers in the Muea Health Area demonstrated low levels of knowledge and appropriate reported practice regarding home-based management of diarrhoea among children under five. Community-based education should emphasise ORS, zinc supplementation, continued feeding and breastfeeding, hygiene, recognition of danger signs, and timely care-seeking.

Keywords: Cameroon; Caregivers; Childhood Diarrhoea; Healthcare-Seeking Behaviour; Home-Based Management; Oral Rehydration Solution; Reported Practices; Under-Five Children.

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INTRODUCTION

Diarrhoea remains one of the most important preventable causes of morbidity and mortality among children under five years of age, particularly in low- and middle-income countries. The World Health Organization (WHO) defines diarrhoea as the passage of three or more loose or liquid stools per day, or more frequent passage than is normal for the individual. Diarrhoeal disease is commonly caused by intestinal infection with bacterial, viral, or parasitic organisms and is usually transmitted through contaminated food, unsafe drinking water, inadequate sanitation, or person-to-person spread associated with poor hygiene [1,2].

Despite being largely preventable and treatable, diarrhoeal disease continues to impose a substantial public-health burden. WHO identifies diarrhoeal disease as the third leading cause of death among children aged 1–59 months, with approximately 443,832 deaths among children under five and nearly 1.7 billion childhood episodes annually [1]. In addition to mortality, diarrhoeal illness contributes to dehydration, malnutrition, impaired growth, repeated healthcare use, financial strain on families, and avoidable pressure on already limited health systems. These consequences are particularly relevant in settings where safe water, sanitation, hygiene infrastructure, and timely access to healthcare remain inconsistent.

Appropriate home-based management is central to reducing complications from childhood diarrhoea. In many communities, caregivers are the first to recognise symptoms, initiate treatment, decide whether feeding and breastfeeding should continue, administer fluids or oral rehydration solution (ORS), and determine when medical care should be sought. Recommended measures include prompt use of ORS, continued feeding and breastfeeding, zinc supplementation for 10–14 days, adequate fluid replacement, recognition of danger signs, and timely referral when symptoms worsen or dehydration is suspected [1,6,7]. Preventive practices, including safe water handling, appropriate disposal of faeces, food hygiene, and handwashing with soap, are also essential components of diarrhoeal disease prevention and control [1,8].

However, effective home-based management depends not only on availability of interventions but also on caregivers' knowledge, beliefs, health literacy, household resources, and access to health information. Misconceptions about diarrhoea, inappropriate discontinuation of breastfeeding, limited awareness of ORS and zinc, delayed healthcare seeking, and reliance on antibiotics or traditional remedies may reduce the effectiveness of home care and increase the risk of dehydration and other complications [7,9,10]. These issues are especially important in rural or semi-rural communities, where health education opportunities, formal healthcare access, and water, sanitation and hygiene services may be limited.

In Cameroon, childhood diarrhoea remains a relevant public-health concern, with burden and risk factors varying across regions and communities [4]. Local evidence is needed to understand how caregivers manage diarrhoeal episodes at home and which social, educational, environmental, and healthcare-access factors are associated with appropriate knowledge and reported practice. Such evidence can support community-specific health education, strengthen primary healthcare counselling, and guide interventions aimed at improving early management of childhood diarrhoea.

Objective

This study aimed to assess knowledge, reported practices, and factors associated with home-based management of diarrhoea among caregivers of children under five in Muea, Southwest Region of Cameroon.

METHODS

Study Design and Setting

A community-based cross-sectional study was conducted in Muea Community, Southwest Region of Cameroon, from January to June 2022. Muea Health Area is a predominantly rural setting located in Fako Division, approximately 10 km north of Buea. The community comprises 14 quarters and includes both indigenous Bakweri residents and migrant populations. Subsistence farming represents an important livelihood activity in the area. The region has an equatorial climate, with temperatures generally ranging from approximately 20°C to 28°C. Limited access to safe water, sanitation, and hygiene services in parts of the community represents an important contextual factor for diarrhoeal disease transmission and home-based management practices.

The study was designed and reported as an observational cross-sectional study, in accordance with the principles of the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement.

Study Population

The study population consisted of parents or caregivers of children under five years of age residing in Muea Community during the study period. Eligible participants were adults aged 18 years or older who lived in the same household as at least one child under five years and who provided written informed consent to participate.

Caregivers who were unable to communicate adequately during the interview, who were acutely ill at the time of data collection, or who submitted incomplete questionnaires were excluded. To reduce the risk of duplicate participation, only one caregiver was recruited per household. At enrolment, participants were also asked whether they had previously completed the questionnaire.

Sample Size and Sampling Procedure

The minimum sample size was calculated using Cochran's formula, assuming a 95% confidence level, a 5% margin of error, and an expected prevalence of 23.8% based on previous literature. This yielded a minimum required sample size of 279 participants.

Recruitment continued throughout the prespecified data-collection period in order to maximise the precision of the estimates. A total of 565 eligible caregivers were approached; 56 declined participation and 509 completed the questionnaire, corresponding to a response rate of 90.1%.

A convenience sampling approach was used. Caregivers who met the eligibility criteria and were available during the data-collection period were invited to participate. Because the study used non-probability sampling, the findings should be interpreted as reflecting the sampled caregivers rather than as fully representative of all caregivers in Muea or the wider Southwest Region of Cameroon.

Table 1. Eligibility Criteria for Study Participants.

Criterion	Description
Inclusion criteria	Parents/caregivers aged 18 years and older, with at least one child under five years living in the same household, residing in Muea Community, and providing written informed consent to participate.
Exclusion criteria	Parents/caregivers who were ill, unable to communicate adequately during the interview, or who submitted incomplete questionnaires.

Data Collection Tool

Data were collected using a structured interviewer-administered questionnaire created in Google Forms. The questionnaire was developed by the research team on the basis of the study objectives and a review of the literature on childhood diarrhoea, caregiver knowledge, oral rehydration therapy, zinc supplementation, continued feeding, breastfeeding, hygiene, and healthcare-seeking behaviour.

The questionnaire included three main sections:

1. sociodemographic characteristics of caregivers;
2. environmental and healthcare-access characteristics;
3. knowledge and reported practices related to home-based management of diarrhoea in children under five.

The instrument was administered in English. When necessary, verbal translation into Cameroonian Pidgin English was provided by trained research assistants to improve comprehension. The questionnaire was reviewed by experts in public health and child health for face and content validity. It was then pretested among

caregivers in a neighbouring community not included in the final study sample. After pretesting, minor modifications were made to improve clarity, wording, and flow.

Research assistants received standardised training on the study objectives, eligibility criteria, informed consent process, interview procedures, confidentiality, and consistent administration of the questionnaire.

Measurement of Knowledge

Knowledge of home-based management of diarrhoea was assessed using 10 questions. The items covered definition of diarrhoea, causes, symptoms, routes of transmission, prevention, previous training, breastfeeding during diarrhoea, awareness of oral rehydration solution, preparation of home-made sugar-salt solution, and ORS administration.

Each item had one predefined correct response. Correct responses were scored as 1 point, while incorrect responses were scored as 0. The total knowledge score therefore ranged from 0 to 10. Based on modified Bloom's cut-off criteria, participants scoring 6–10 points were classified as having good knowledge, while those scoring 0–5 points were classified as having poor knowledge.

Because the question on preparation referred to a home-made sugar-salt solution, this was distinguished from commercially prepared ORS sachets in the presentation of the results.

Measurement of Reported Practice

Reported practice regarding home-based management of diarrhoea was assessed using six questions. These items addressed usual home-management actions, treatment usually given to a child with diarrhoea, foods given during diarrhoeal episodes, foods avoided during diarrhoeal episodes, timing of healthcare seeking, and handwashing practices.

Each item had one predefined response classified as appropriate according to recommended home-management principles. Appropriate responses were scored as 1 point and inappropriate responses as 0. The total reported-practice score ranged from 0 to 6. Participants scoring 4–6 points were classified as having good reported practice, while those scoring 0–3 points were classified as having poor reported practice.

The practice questions assessed usual reported behaviours rather than direct observation of actual practice. Therefore, the outcome was defined as "reported practice" rather than observed practice.

Data Quality Control

Completed questionnaires were reviewed for completeness before inclusion in the final dataset. Incomplete questionnaires were excluded from analysis. Data were coded to preserve participant anonymity and then checked for consistency before analysis. Data cleaning was performed in Microsoft Excel 2016 before importation into IBM SPSS Statistics version 26.

Statistical Analysis

Categorical variables were summarised using frequencies and percentages. The main outcomes were good knowledge and good reported practice, both coded as binary variables.

Univariable binary logistic regression was first performed to explore associations between explanatory variables and each outcome. Variables with $p \leq 0.20$ in univariable analysis were considered for inclusion in the multivariable logistic-regression models. This threshold was used only as a screening criterion for model building.

Two multivariable binary logistic-regression models were then constructed: one for factors associated with good knowledge and one for factors associated with good reported practice. Results are presented as adjusted odds ratios (aORs) with 95% confidence intervals (CIs). Reference categories were specified for all categorical variables. Statistical significance was set at $p<0.05$.

Because of the cross-sectional design, all findings were interpreted as associations. No causal inference was made.

Ethical Aspects

The study protocol was approved by the Institutional Review Board of the Faculty of Health Sciences, University of Buea. Administrative authorisation was obtained from the Regional Delegation of Public Health, Southwest Region, and permission was obtained from the Chief of Muea Community.

All participants received information about the study aims, voluntary participation, confidentiality, and their right to withdraw at any time. Written informed consent was obtained before enrolment.

RESULTS

Sociodemographic Characteristics of the Study Population

The study included 509 caregivers. Most participants were aged 21-30 years (65.2%), 76.0% were female, 42.2% were married, and 92.3% identified as Christian. Secondary education was the most frequently reported educational level (35.0%). Most participants (62.1%) reported a monthly income of 50,000-100,000 FCFA, and 44.6% had one or two children (Table 2).

Table 2. Sociodemographic Characteristics of Study Participants.

Characteristic	Category	n (%)
Age group (years)		
	<20	17 (3.3)
	21-30	332 (65.2)
	31-40	132 (25.9)
	>40	28 (5.5)
Sex		
	Female	387 (76.0)
	Male	122 (24.0)
Marital status		
	Cohabiting	107 (21.0)
	Married	215 (42.2)
	Single	187 (36.7)
Religion		
	Christian	470 (92.3)
	Islam	39 (7.7)
Level of education		
	No formal education	77 (15.1)
	Primary	164 (32.2)

Characteristic	Category	n (%)
	Secondary	178 (35.0)
	Tertiary	90 (17.7)
Monthly income (FCFA)		
	<50,000	136 (26.7)
	50,000-100,000	316 (62.1)
	>100,000	57 (11.2)
Number of children		
	1-2	227 (44.6)
	3-5	225 (44.2)
	>5	57 (11.2)

Environmental and Health-Seeking Characteristics of Caregivers

Most caregivers (93.5%) reported that cultural or religious beliefs did not discourage healthcare seeking. Pit latrines were the most commonly reported method of stool disposal (80.4%), while wells or springs were the most common source of drinking water (44.6%). Water-storage containers were most often cleaned once per week (48.5%). Disposal of household waste in the bush was reported by 74.7% of participants. Overall, 62.9% reported that long distance did not affect their access to healthcare services (Table 3).

Table 3. Environmental and Health-Seeking Characteristics of Caregivers.

Characteristic	Category	n (%)
Cultural or religious beliefs discouraging the seeking of healthcare services		
	No	476 (93.5)
	Yes	33 (6.5)
Stool disposal method		
	Flush toilet	100 (19.6)
	Pit latrine	409 (80.4)
Source of drinking water		
	Borehole	53 (10.4)
	Mineral water	30 (5.9)
	Stream	199 (39.1)
	Well/Spring	227 (44.6)
Cleaning of water-storage containers		

Characteristic	Category	n (%)
	Once per day	35 (6.9)
	Once per month	144 (28.3)
	Once per week	247 (48.5)
	When dirty	83 (16.3)
Method of disposing household waste		
	In the bush	380 (74.7)
	Open burning	73 (14.3)
	Stream	56 (11.0)
Long distance affects access to healthcare services		
	No	320 (62.9)
	Yes	189 (37.1)

Knowledge of Home-Based Management of Diarrhoea

Only 34 caregivers (6.7%) selected the definition of diarrhoea as passage of three or more loose stools per day. Handwashing with soap and water was the most frequently selected preventive measure (52.3%). Important knowledge gaps were identified: 70.5% reported that breastfeeding should be stopped during diarrhoea, and among caregivers who had heard of ORS, 71.0% indicated that ORS should be given only after the child had vomited (Table 4).

Table 4. Knowledge of Home-Based Management of Diarrhoea.

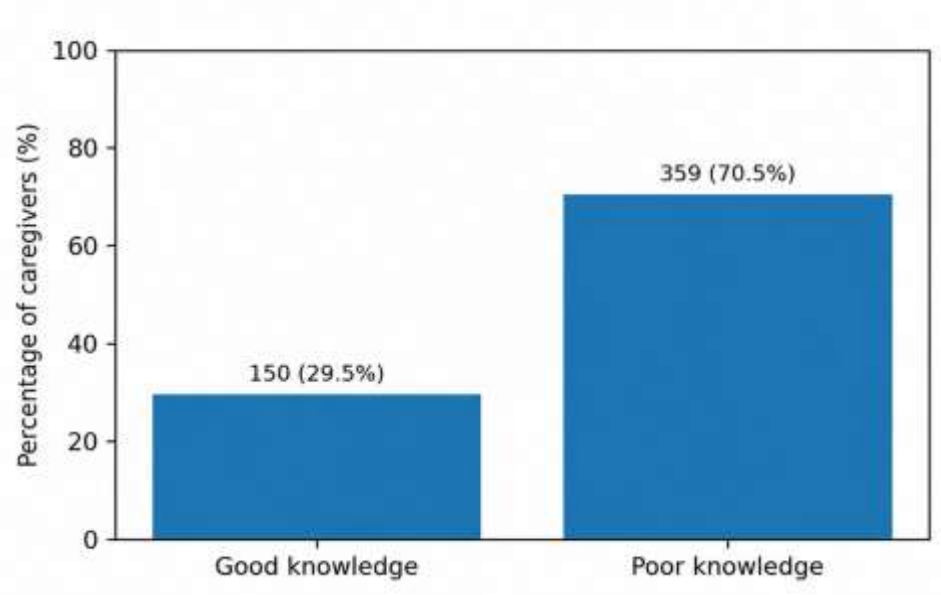
Knowledge item	Response	n (%)
Definition of diarrhoea		
	Passage of three or more loose stools per day	34 (6.7)
	Poor hygiene causes diarrhoea among children under five years	315 (61.9)
	A condition characterised by vomiting and fever	160 (31.4)
Cause of diarrhoea in children		
	Bacterial infection	78 (15.3)
	Consuming unboiled drinking water	268 (52.7)
	Poor hygiene	124 (24.4)
	Teething	39 (7.7)
Symptoms of diarrhoea in children		

Knowledge item	Response	n (%)
	Abdominal pains	82 (16.1)
	Body rashes	63 (12.4)
	Fever	77 (15.1)
	Frequent passing of watery stool	202 (39.7)
	Vomiting	85 (16.7)
Ways diarrhoea can be transmitted		
	All of the above (contaminated food/water, surfaces, and person-to-person transmission)	52 (10.2)
	Contaminated food and water	147 (28.9)
	Contaminated surfaces and objects	126 (24.8)
	Person-to-person contact	184 (36.1)
Prevention of diarrhoea in children		
	Ensure proper handwashing with soap and water	266 (52.3)
	Provide clean and safe drinking water	166 (32.6)
	Cook food thoroughly and store it properly	66 (13.0)
	Use antibiotics to prevent diarrhoea	11 (2.2)
Received training on home management of diarrhoea		
	Yes	62 (12.2)
	No	447 (87.8)
Continue breastfeeding a child who has diarrhoea		
	Yes	150 (29.5)
	No	359 (70.5)
Ever heard of ORS		
	Yes	303 (59.5)
	No	206 (40.5)
If yes: preparation of a home-made sugar-salt solution (n=303)		
	Home-made solution is prepared by mixing 6 level teaspoons of sugar with 1/2 teaspoon salt in 1 L water	31 (10.2)
	Home-made solution is prepared by mixing sugar and salt	42 (13.9)

Knowledge item	Response	n (%)
	Home-made solution is prepared by mixing sugar and water	32 (10.6)
	Home-made solution is prepared by mixing water, sugar, and salt	198 (65.3)
ORS administration to the child (n=303)		
	Give 1-2 teaspoons of ORS every 1-2 minutes	47 (15.5)
	Give ORS only after the child has vomited	215 (71.0)
	Give the entire packet of ORS at once	33 (10.9)
	Whenever she feels thirsty	8 (2.6)

Note: Unless otherwise indicated, the denominator is 509 caregivers. ORS = oral rehydration solution.

Figure 1. Knowledge of home-based management of diarrhoea.



Of the 509 participants, 150 (29.5%) were classified as having good knowledge of home-based management of diarrhoea.

Factors Associated with Good Knowledge of Home-Based Management of Diarrhoea

In the multivariable model, female caregivers had higher odds of good knowledge than male caregivers (aOR=1.55, 95% CI: 1.04-2.31, p=0.034). Cohabiting caregivers had lower odds of good knowledge than married caregivers (aOR=0.48, 95% CI: 0.24-0.96, p=0.036). Primary (aOR=0.36, 95% CI: 0.16-0.80, p=0.012) and secondary education (aOR=0.40, 95% CI: 0.20-0.82, p=0.012) were associated with lower odds of good knowledge than tertiary education. Daily cleaning of water-storage containers was associated with higher odds of good knowledge (aOR=4.02, 95% CI: 1.56-10.40, p=0.004), whereas weekly cleaning was associated with lower odds (aOR=0.27, 95% CI: 0.13-0.55, p<0.001) compared with cleaning only when dirty. Open burning of household waste was associated with higher odds of good knowledge than disposal in streams (aOR=7.92, 95%

CI: 3.98-15.76, p<0.001). Caregivers who reported that distance did not affect access to healthcare had higher odds of good knowledge (aOR=4.20, 95% CI: 2.41-7.32, p<0.001) (Table 5).

Table 5. Multivariable Logistic Regression Analysis of Factors Associated with Good Knowledge of Home-Based Management of Diarrhoea.

Characteristic	Category	aOR (95% CI)	p-value
Sex	Female	1.55 (1.041-2.312)	0.034
	Male	1.00	Reference
Marital status	Cohabiting	0.48 (0.244-0.955)	0.036
	Single	1.08 (0.647-1.809)	0.765
	Married	1.00	Reference
Religion	Christian	1.01 (0.406-2.528)	0.978
	Islam	1.00	Reference
Level of education	No formal education	0.42 (0.077-2.287)	0.316
	Primary	0.36 (0.158-0.799)	0.012
	Secondary	0.40 (0.197-0.820)	0.012
	Tertiary	1.00	Reference
Source of drinking water	Borehole	0.64 (0.321-1.282)	0.213
	Mineral water	1.89 (0.645-5.596)	0.245
	Stream	0.94 (0.302-2.924)	0.916
	Well/Spring	1.00	Reference
Frequency of cleaning water-storage containers	Once per day	4.02 (1.555-10.396)	0.004
	Once per month	1.14 (0.551-2.356)	0.725
	Once per week	0.27 (0.132-0.555)	<0.001
	When dirty	1.00	Reference
Method of disposing household waste	In the bush	1.42 (0.628-3.214)	0.399
	Open burning	7.92 (3.98-15.76)	<0.001
	Stream	1.00	Reference

Characteristic	Category	aOR (95% CI)	p-value
Long distance affecting access to healthcare	No	4.20 (2.405-7.318)	<0.001
	Yes	1.00	Reference

Note: aOR = adjusted odds ratio; CI = confidence interval. Reference categories are shown as 1.00.

Reported Practices in the Home-Based Management of Diarrhoea

The most frequently reported home-management response was to provide plenty of fluids and a balanced diet (73.1%). When asked about treatment usually given to a child with diarrhoea, 36.0% reported giving no treatment, 34.6% reported traditional herbs, 19.4% reported antibiotics, and 10.0% reported ORS. Spicy food was the most frequently reported food given during diarrhoeal episodes (52.8%). Most caregivers (65.2%) reported that they would seek medical help only if symptoms worsened. Handwashing after using the toilet was reported by 58.5% (Table 6).

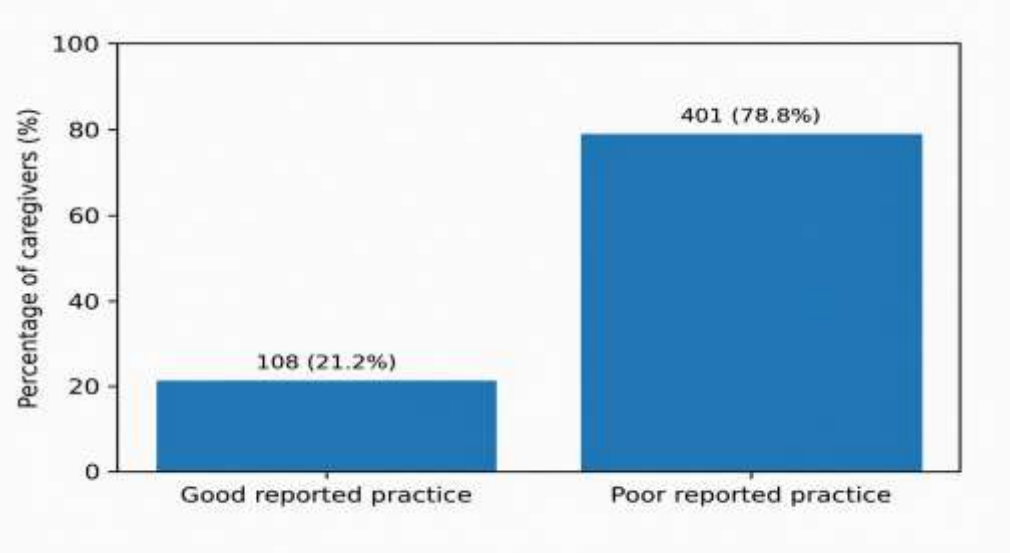
Table 6. Reported Practices in the Home-Based Management of Diarrhoea.

Practice item	Response	n (%)
Ways to manage diarrhoea in a child at home		
	Give plenty of fluids and provide a balanced diet	372 (73.1)
	Give ORS and continue breastfeeding	53 (10.4)
	Use traditional herbs	49 (9.6)
	Administer antibiotics	35 (6.9)
Treatment usually given to a child with diarrhoea		
	No treatment	183 (36.0)
	Traditional herbs	176 (34.6)
	Antibiotics	99 (19.4)
	ORS	51 (10.0)
Foods given to a child experiencing diarrhoea		
	Spicy food	269 (52.8)
	Banana	97 (19.1)
	Rice	54 (10.6)
	Plantain	53 (10.4)
	Garri	19 (3.7)
	Beans	17 (3.3)

Practice item	Response	n (%)
Foods not given to a child experiencing diarrhoea		
	Toast	211 (41.5)
	Fried egg with sauce	193 (37.9)
	Garri	47 (9.2)
	Spicy fried chicken	32 (6.3)
	Vegetables	26 (5.1)
When to seek medical help		
	Only if symptoms worsen	332 (65.2)
	After 24 hours of home management	80 (15.7)
	Never seek medical help	68 (13.4)
	Immediately after symptoms appear	29 (5.7)
Timing of handwashing		
	After visiting the toilet	298 (58.5)
	Before preparing meals	142 (27.9)
	Always	43 (8.4)
	After cleaning the baby	26 (5.1)

Note: ORS = oral rehydration solution. Responses reflect usual reported practice and were not directly observed.

Figure 2. Reported practice in the home-based management of diarrhoea.



Of the 509 participants, 108 (21.2%) were classified as having good reported practice in the home-based management of diarrhoea.

Factors Associated with Good Reported Practice in Home-Based Management of Diarrhoea

In the multivariable model, female caregivers had higher odds of good reported practice than male caregivers (aOR=1.58, 95% CI: 1.04-2.41, p=0.034). Caregivers reporting no cultural or religious beliefs that discouraged healthcare seeking had higher odds of good reported practice than those reporting such barriers (aOR=9.29, 95% CI: 2.84-30.41, p<0.001). Use of a flush toilet for disposal of a child's stool was associated with higher odds of good reported practice than use of a pit latrine (aOR=1.85, 95% CI: 1.11-3.12, p=0.021). Caregivers who reported that distance did not affect healthcare access had higher odds of good reported practice (aOR=1.51, 95% CI: 1.14-2.00, p=0.004). Good knowledge was also associated with good reported practice (aOR=1.97, 95% CI: 1.22-3.18, p=0.006) (Table 7).

Table 7. Multivariable Logistic Regression Analysis of Factors Associated with Good Reported Practice in Home-Based Management of Diarrhoea.

Characteristic	Category	aOR (95% CI)	p-value
Sex	Female	1.58 (1.043-2.411)	0.034
	Male	1.00	Reference
Cultural/religious beliefs discouraging healthcare seeking	No	9.29 (2.838-30.411)	<0.001
	Yes	1.00	Reference
Method of disposing child's stool	Flush toilet	1.85 (1.105-3.122)	0.021
	Pit latrine	1.00	Reference
Frequency of cleaning water-storage containers	Once per day	1.33 (0.554-3.194)	0.523
	Once per month	0.57 (0.284-1.148)	0.116
	Once per week	0.72 (0.387-1.344)	0.303
	When dirty	1.00	Reference
Long distance affecting access to healthcare	No	1.51 (1.141-2.001)	0.004
	Yes	1.00	Reference
Knowledge	Good	1.97 (1.217-3.177)	0.006
	Poor	1.00	Reference

Note: aOR = adjusted odds ratio; CI = confidence interval. Reference categories are shown as 1.00.

DISCUSSION

This study assessed caregivers' knowledge, reported practices, and associated factors in the home-based management of diarrhoea among children under five in Muea, Southwest Region of Cameroon. Only 29.5% of participants were classified as having good knowledge and 21.2% as having good reported practice, indicating important gaps in recommended home management.

These proportions were lower than pooled estimates reported in a recent East African systematic review and meta-analysis, in which good knowledge and good practice were estimated at 52.62% and 37.44%, respectively [12]. Differences may reflect contextual factors such as access to health education, community health services, socioeconomic resources, and local health beliefs [12,13]. Female caregivers had higher odds of both good knowledge and good reported practice. Similar findings have been reported in other African settings, where women commonly assume a greater share of day-to-day childcare and may consequently have more frequent exposure to child-health information and practical caregiving experience [5,14]. Cohabiting caregivers had lower odds of good knowledge than married caregivers; however, this association should not be interpreted causally.

The association between marital status and knowledge may reflect unmeasured household, socioeconomic, or information-access factors. Because of the cross-sectional design, the study cannot determine whether marital status itself influences knowledge. Shared decision-making, social support, or differential contact with health services are possible explanations that require further investigation.

Educational level was also associated with knowledge: caregivers with primary or secondary education had lower odds of good knowledge than those with tertiary education. This finding is consistent with studies from sub-Saharan Africa showing associations between education, health literacy, and knowledge of recommended diarrhoea management [5,15,16]. Nevertheless, the present study supports an association rather than a direct causal effect of education.

Household hygiene-related variables were also associated with knowledge. Daily cleaning of water-storage containers was associated with higher odds of good knowledge, whereas weekly cleaning was associated with lower odds compared with cleaning only when dirty. These findings should be interpreted cautiously because both knowledge and reported household practices may be influenced by broader socioeconomic and environmental factors [17]. Open burning of household waste was also associated with higher odds of good knowledge than disposal in streams. This unexpected association should not be interpreted as evidence that open burning is a desirable sanitation practice. Open burning can itself create environmental and health hazards, and the observed association may reflect residual confounding, contextual socioeconomic differences, or characteristics of the reference group rather than a beneficial effect of burning waste [18,19].

Caregivers who reported that long distance did not affect access to healthcare had higher odds of both good knowledge and good reported practice. This finding suggests an association between geographical access to health services and home-based diarrhoea management. Easier access may increase opportunities to receive counselling and health education, although causal inference is not possible in this cross-sectional study [20].

Caregivers with good knowledge had higher odds of good reported practice than those with poor knowledge. Because knowledge and practice were measured at the same time, the study cannot establish that greater knowledge caused better practice. The association is nevertheless consistent with evidence linking caregiver knowledge with recommended measures such as continued feeding, oral rehydration therapy, and zinc supplementation [6,12]. Taken together, the findings support community-specific educational interventions in

Muea focusing on ORS, zinc, continued feeding and breastfeeding, hygiene, recognition of danger signs, and timely healthcare seeking.

Strengths and Limitations

This community-based study provides context-specific evidence from 509 caregivers in Muea and examines both knowledge and reported practice using multivariable logistic regression. The study also reports response rate, sampling procedures, scoring criteria, and ethical approvals in greater detail.

Several limitations should be considered. Convenience sampling limits representativeness and generalisability beyond the sampled population. The cross-sectional design precludes causal inference. Practices were self-reported rather than directly observed and may therefore be affected by social desirability or reporting bias. Although the questionnaire underwent expert review and pretesting, a formal psychometric reliability coefficient was not reported. In addition, the use of predefined cut-offs to dichotomise knowledge and practice may reduce information and should be considered when interpreting the regression results.

CONCLUSIONS

This study identified substantial gaps in caregivers' knowledge and reported home-management practices for childhood diarrhoea in the Muea Health Area. Community-based health education should reinforce evidence-based management, including ORS, zinc supplementation, continued feeding and breastfeeding, appropriate hygiene, recognition of danger signs, and timely care-seeking. Interventions should also consider barriers related to healthcare access and local social and cultural contexts.

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Informed Consent Statement: All participants received information about the purpose of the study and provided written informed consent before enrolment. Participation was voluntary, and participants could withdraw at any time without penalty.

Data Availability Statement: The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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