

Original Research Article

Knowledge on home management of diarrhea among caregivers of children below five years with diarrhea in Ngandu Location, Nyeri County, Kenya

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ABSTRACT

Background: To prevent dehydration and malnutrition in children with diarrhea, it is important they get good management at home. The caregivers should commence home remedies immediately before they seek medical advice. This study assessed the level of knowledge on home management of diarrhea among caregivers of children below five years with diarrhea.

Methods: This research applied descriptive cross-sectional study design. The current study was a household survey targeting caregivers of children below five years with diarrhea. The Cochran's sample size formula was used to calculate a sample size of 345 respondents. Purposive sampling was used to recruit respondents in the study. The study employed a researcher-administered semi-structured questionnaire and use of a checklist. Descriptive statistics and chi-square tests were used in the analysis.

Results: The study found that slightly above half 52.2% (n=180) of the respondents had low knowledge on management of diarrhea. There was a significant relationship ($\chi^2=4.044$, df=1, $p<0.044$) between respondent's level of education and knowledge of home management of diarrhea. Cross tabulation showed that 60.2% of those who had low education also had low knowledge.

Conclusions: The study concluded that the level of knowledge on home management of diarrhea among caregivers of children below five years with diarrhea was low. Level of education was a significant predictor of knowledge whereby low knowledge was associated with low education. The study recommends enhanced education of mothers on home management of diarrhea by nurses.

Keywords: Diarrhea, Home Management of diarrhea, Knowledge of home management of diarrhea

INTRODUCTION

Diarrhea is defined as when a child passes three or more loose or liquid stools within 24 hours, and this may be passed more regular than what normally the child does.¹ Symptoms related to diarrhea include loose and watery stools, and it may be accompanied by other symptoms, including abdominal pain and cramps, weight loss and fever. Passage of loose stools has been big health issue and this indicates signs and symptoms of bowels

infection. Diarrhea can be predisposed by several causative agents including viruses, bacteria, and parasites. Passage of loose watery stools in children below five years can be caused by Rotavirus. Other risk factors include poor personal hygiene, when food is prepared in unclean environment or stored in unhygienic conditions and use of unclean domestic water, which may get contamination during storage or handling.² Diarrhea remains the major contributing factor to childhood illness and death in children below five years in third world

nations. In both third world countries and developed nations the cause of diarrhea in children remains multifactorial ranging from infectious causes, unhygienic practices to poor nutritional and dietary habits.³

In the world, it is estimated that about 40 per cent of all child's deaths who are less than five years are related to pneumonia and diarrhea problems. In Sub-Saharan Africa, diarrhea disease remains the second cause of morbidity and mortality of children.⁴ Diarrhea disease accounted for 4.6 billion cases and 1.16 million deaths in Africa in the year 2014 of which more than 50% were from low income countries and most of the cases were children under 5 years.⁵ Generally, acute respiratory conditions, diarrhea, malaria, inflammation of the meninges opportunistic infections and measles are the leading causes of loss of lives in under five years' children.⁶ In Kenya, diarrhea is a community health concern since it is leading to many loss of lives among the young children. Every year around 73,700 children below the age of five pass away due to diarrhea disease compared to the pneumonia related cases ranging up to 920,000 deaths.⁷ In 2016, up to 11,000 deaths occurred due to pneumonia, followed by diarrhea disease cases. In Kenya, this is around 20% of all the reported deaths cases among less than five years' children.⁸

Home based cure is the right approach in management of passage of stools that are very loose and frequent. This is due to the fact that diarrhea will start when the child is at home, the child will be taken to the hospital for treatment and even after going back home the very loose and frequent motions may persist.⁹ To prevent dehydration and malnutrition from occurring it is important that children get good management at home. The caregivers who are well informed on home remedies should commence it immediately even before they seek any medical advice. The "early home remedies" given will prevent dehydration and nutritional problems from occurring. For the children with episodes of diarrhea, the care givers are encouraged to continue feeding them as usual and also give extra fluids. By performing these practices dehydration will be prevented and there will be a reduction in the adverse effects of diarrhea on the nutritional status of the young one. Study notes that increased fluid intake with continued feeding is one of the indicators of appropriate management to decrease childhood death due to diarrheal disease since the 1980s.¹⁰

Information and practices of the guardians on the home remedies of diarrhea is a key element in the management of diarrhea in a child so as to intervene early and thereby avoiding complications. The knowledge and practices of on the early interventions of passage very loose and frequent stools motions at home is important in the prevention of diarrhea related complications.¹¹ The caregivers' primary information about diarrhea is influenced by various factors for example the level of

education, other exposures in diarrhea management and also the caretakers background.¹²

Despite the health worker's efforts to educate mothers and caregivers on prevention and management of diarrhea and on improving quality of life for children attending paediatric outpatient clinic (POPC) and Integrated Management of Childhood Illness (IMCI) programs, at Karatina Sub County Hospital (KSCH) there had been increasing trends in the number of children presenting in the clinics with diarrhea and related complications including dehydration. Similarly, there had been increase in number of children who were brought to the health facility after complications of diarrhea due to delayed seeking of health care services. The reports from routine program monitoring suggested that more than 75% of children admitted for treatment in the facility presented with diarrhea and most of them had severe dehydration. Between the months of August and October 2018, seventy-three children were admitted with severe dehydration. The data showed that majority of these cases are from Ngandu location in Kirimukuyu Ward. This was a clear indication that the care provided at home prior to hospital presentation was inappropriate as the state of a child with acute diarrhea at first presentation to a health facility is highly dependent on the care provided at home.

METHODS

This research applied descriptive cross-sectional study design. The study involved quantitative techniques of data collection and analysis. This research was conducted at Ngandu Location. This is a rural settlement located in Kirimukuyu division, Mathira west sub county in Nyeri county. The current study was a household survey targeting mothers of children below five years with diarrhea. Sampling frame was 3414 which is the estimated total population for under five children in Ngandu location as per the Mathira West Sub-county health office records. The Cochran's Sample Size Formula was used to calculate a sample size of 384. Since the total population is less than 10,000, a finite correction formula was applied to arrive at a sample of 345 respondents. Purposive sampling technique was used to recruit respondents in the study.

Inclusion criteria

The study included caregivers of children with diarrhea who were below five years, caregivers aged 18 years and above and those who provided informed consent.

Exclusion criteria

Exclusion criteria of the study were caregivers with children below five years who were mentally ill and those who failed to provide informed consent.

The study employed the use of a researcher- administered semi-structured and use of a checklist. Knowledge was

established by looking into the information the caregivers had on diarrhea, home management and nutrition and feeding. Knowledge was assessed by a series of 13 questions. Respondents who had correct answers in 5 or more of the indicators of knowledge were classified as having “high” knowledge while those who got 4 or less correct less were classified as having “low” knowledge.

The study period was from August 2019 to December, 2019. Collected data was checked for errors of omission or commission and then entered into a computer using SPSS Version 23 software. Descriptive statistics and chi-square tests were employed in analysis.

RESULTS

The study comprised a total of 345 mothers of children below five years with diarrhea in Ngandu location in Nyeri County. This represents a 100% response rate. Results showed that the vast majority 90.2% (n=311) of respondents were aged below 40 years whereby 41.2% (n=142) were aged between 21 and 30 years while 39.1% (n=135) were aged between 31 and 40 years. On marital status, the findings showed that majority 62.9% (n=217) were married. On education, findings showed that slightly above half 50.4% (n=174) of the respondents had acquired secondary education while 27% (n=93) had acquired primary education as their highest level of education. On occupation, the findings showed that slightly less than half 47.2% (n=163) of the respondents were self-employed, 18.8% (n=65) were farmers and 16.2% (n=56) were in white-collar jobs (Table 1).

Table 1: Socio-demographic characteristics of respondents.

Characteristic	Category	Frequency (n=345)	%
Age (years)	<20	34	9.9
	21-30	142	41.2
	31-40	135	39.1
	>41	34	9.9
Marital status	Single	95	27.5
	Married	217	62.9
	Divorced/separated	33	9.6
Education	None	14	4.1
	Primary	93	27.0
	Secondary	174	50.4
	College	59	17.1
	University	5	1.4
Occupation	Farming	65	18.8
	Housewife	44	12.8
	Self-employed	163	47.2
	Full-time employed	56	16.2
	Others	17	4.9

Respondents in the study were asked to indicate the causes of diarrhea in children. Slightly above half 53.6% (n=184) indicated that diarrhea was caused by consuming unboiled water. The findings showed that 23.6% (n=81) and 21.6% (n=74) cited teething and sucking dirty fingers as causes respectively (Table 2).

Table 2: Knowledge on causes of diarrhea.

Response	Frequency	%
Excessive breastfeeding	4	1.2
Consuming unboiled water	184	53.6
Teething	81	23.6
Sucking dirty fingers	74	21.6
Total	343	100.0

Respondents in the study were asked to indicate the symptoms of diarrhea in children that they were aware of. Findings showed that majority 64.3% (n=222) indicated frequent passing of watery stool. The findings also showed that 53% (n=183) cited fever, 46.1% (n=159) indicated vomiting while 40.9% (n=141) indicated abdominal pains as symptoms of diarrhea in children (Table 3).

Table 3: Knowledge on diarrhea symptoms.

Response	Frequency	%
Fever	183	53.0
Frequent passing of watery stool	222	64.3
Body rashes	29	8.4
Vomiting	159	46.1
Abdominal pains	141	40.9
Excessive crying	131	38.0

Respondents in the study were asked to name ways one can manage diarrhea of a child at home. Findings showed that 28.1% (n=97) indicated they use ORS. A small percentage 19.7% (n=68) indicated boiling water while 18.8% (n=65) indicated giving water to the child. However, 6.1% (n=21) indicated that they did not know how to manage diarrhea (Table 4).

Table 4: Knowledge on home management of diarrhea.

Response	Frequency	%
Giving water	65	18.8
ORS	97	28.1
Boiling water	68	19.7
Washing hands	51	14.8
General hygiene	43	12.5
Don't know	21	6.1
Total	345	100.0

Respondents in the study were asked to indicate what foods one should give to a child who is suffering from

diarrhea. Slightly above half 53.9% (n=186) indicated that a child should be given solid foods while 19.7% (n=68) indicated boiled foods. Results showed that 15.4% (n=53) indicated that all foods should be given. Respondents in the study were asked to indicate what type of foods one should not give to a child who is suffering from diarrhea. Slightly less than half 42.6% (n=147) indicated fatty foods, 22.9% (n=79) said milk while 18% (n=62) indicated fluids. Respondents in the study were also asked to indicate whether one should continue breastfeeding a child who is having diarrhea. Findings in Table 5, showed that majority 79.4% (n=274) of the respondents indicated that one should continue breastfeeding a child who is having diarrhea (Table 5).

Table 5: Knowledge of foods to give in management of diarrhea.

Aspect of nutrition	Category	Frequency	%
Knowledge on foods to give in management of diarrhea	All foods	53	15.4
	Solid foods	186	53.9
	Boiled foods	68	19.7
	Breastfeeding	12	3.5
	Others	8	2.3
	Don't know	18	5.2
Knowledge on foods not to give in management of diarrhea	Total	345	100.0
	Fatty foods	147	42.6
	Milk	79	22.9
	Fluids	62	18.0
	None	23	6.7
	Others	20	5.8
Knowledge on breastfeeding in management of diarrhea	Don't know	14	4.1
	Total	345	100.0
	Yes	274	79.4
	No	52	15.1
Knowledge on management of diarrhea	Don't know	19	5.5
	Total	345	100.0

Respondents who had correct answered in 5 or more of the indicators of knowledge were classified as having "high" knowledge while those who got 4 or less correct responses were classified as having "low" knowledge. Findings showed that slightly above half 52.2% (n=180) had low knowledge on management of diarrhea (Table 6).

Table 6: Summary of respondents' knowledge.

Response	Frequency	%
High knowledge	180	52.2
Low knowledge	165	47.8
Total	345	100

Chi-square tests were conducted between individual factors comprising the age, level of education, marital status and socio-economic status and knowledge of home management of diarrhea. Results showed that there was a significant relationship ($\chi^2=4.044$, $df=1$, $p<0.044$)

between respondent's level of education and knowledge of home management of diarrhea. Cross tabulation showed that 60.2% of those who had low education also had low knowledge (Table 7).

Table 7: Chi-square results between individual factors and knowledge.

Variable	Chi-square (χ^2)	Degrees of freedom (df)	Significance (p)
Age	0.810	1	0.368
Level of education	4.044	1	0.044***
Marital status	0.523	1	0.469
Socio-economic status	1.222	1	0.269

***Significant at 95% CI

DISCUSSION

The study sought to assess the level of knowledge on home management of diarrhea among caregivers of children below five years with diarrhea in Ngandu location in Nyeri County. The study found that that slightly above half 52.2% (n=180) of the respondents had low knowledge on management of diarrhea. The findings showed that 23.6% (n=81) and 21.6% (n=74) cited teething and sucking dirty fingers as causes of diarrhea respectively. Respondents also showed poor knowledge in home management of diarrhea especially in preparation of ORS. The low knowledge can be attributed to the low level of education among the respondents and the lack of training on home management of diarrhea among caregivers. The vast majority 84.6% (n=292) of respondents in the study indicated that they had not received training on home management of diarrhea of child at a home

This finding is in agreement with the study which found that only a few of the mothers had good knowledge, over half of mothers had average knowledge and rest had poor knowledge.¹³ This finding is however, in disagreement with findings that found that majority of women had correct knowledge on the signs of diarrhea; sunken eyes and weakness/lethargic were the most mentioned sign.¹⁴ The finding is in disagreement with findings of the study which found that majority of Nepalese mothers had more understanding on ORS as well as its beneficial effects in the correction of fluid volume deficit secondary to diarrhea.¹⁵ The finding is also in disagreement with findings of the study which found that the vast majority had heard of ORS, with majority mothers with adequate knowledge about ORS, its preparation and administration.

CONCLUSION

The study concludes that the level of knowledge on home management of diarrhea among caregivers of children

below five years with diarrhea in Ngandu location in Nyeri County was low. The low knowledge was demonstrated by majority of respondents' lack of awareness of causes of diarrhea and its symptoms. Although majority of respondents were aware that diarrhea is preventable and could be managed at home, most of them did not know how to go about managing diarrhea in their child when it occurred. The biggest lacuna in knowledge was in ORS where majority for respondents were unaware regarding to what it is, preparation and administration.

Going by the findings of the study, it is clear that there is need for enhanced health education on diarrhea and home management of diarrhea among mothers. The study recommends enhanced education of mothers on home management of diarrhea by nurses. This can be done at the MCH and IMCI clinics among caregivers who should be sensitized on the seriousness of diarrhea and the importance of home management of diarrhea. On-the job training for staff should be enhanced to sensitize health workers on the importance of teaching mothers home management of diarrhea.

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