



Applied nutritional investigation

The use of oral rehydration salt in managing children under 5 y old with diarrhea in the Gambia: Knowledge, attitude, and practice

Famara Sillah M.Sc.^{a,b}, Hsin-Jung Ho M.Sc.^a, Jane C-J. Chao Ph.D.^{a,c,d,*}^aSchool of Nutrition and Health Sciences, College of Public Health and Nutrition, Taipei Medical University, Taipei, Taiwan^bMinistry of Health and Social Welfare, Quadrangle, Banjul, The Gambia, West Africa^cMaster Program in Global Health and Development, College of Public Health and Nutrition, Taipei Medical University, Taipei, Taiwan^dNutrition Research Center, Taipei Medical University Hospital, Taipei, Taiwan

ARTICLE INFO

Article history:

Received 15 January 2013

Accepted 20 May 2013

Keywords:

Childhood diarrhea
 Oral rehydration solution
 Knowledge
 Attitude
 Practice
 Mothers

ABSTRACT

Objective: Diarrhea is a leading cause of mortality in children under the age of 5 y in developing countries. To our knowledge, no other studies have investigated the management of diarrhea in the Gambia. The aim of this study was to assess maternal knowledge, attitude, and practice in the causes, prevention, and management of diarrhea in children under the age of 5 y in the Gambia. **Methods:** Four hundred mothers with children who have diarrhea and are under the age of 5 y were randomly recruited. Data were collected using structured questionnaires, including demographic information, knowledge about diarrhea, attitude toward the management of diarrhea, and practice for the prevention and management of diarrhea. χ^2 and Student's *t* tests were used for the descriptive and quantitative analysis, respectively. Simple and multiple linear regressions were used to determine the association between the variables. A *P*-value < 0.05 was considered statistically significant.

Results: The mean of maternal knowledge (K), attitude (A), practice (P), and knowledge–attitude–practice sum (KAP) scores were 14.4, 6.3, 13.2, and 33.9, respectively. The mean of knowledge scores were significantly higher in mothers who responded positively for germs (13.4 versus 12.6) and dirty hands (13.7 versus 13.0) as causes of diarrhea. Mothers with education had significantly higher knowledge (14.7 versus 14.2) and attitude scores (6.6 versus 6.1) in management of diarrhea. However, the study found a low use rate (4%) of oral rehydration solution in practice. Multiple linear regression analysis revealed that maternal age was positively associated with practice ($\beta = 0.061$) and KAP scores ($\beta = 0.102$). The number of children in the family was positively correlated with attitude scores ($\beta = 0.408$). Socioeconomic status was positively associated with attitude ($\beta = 0.549$), practice ($\beta = 0.841$), and KAP scores ($\beta = 1.887$).

Conclusions: The mothers have high knowledge scores in the management of diarrhea; however, use of oral rehydration solution is low among children with diarrhea under the age of 5 y in the Gambia. Higher maternal age and socioeconomic status are correlated with higher practice and KAP scores.

© 2013 Elsevier Inc. All rights reserved.

Introduction

Diarrhea, caused by a variety of bacterial, viral, and parasitic organisms, is a symptom of gastrointestinal infection, which can be spread through contaminated food or drinking water, or from person to person due to poor hygiene [1]. Severe diarrhea leads to fluid loss, and may be life threatening, particularly in young children and individuals who are malnourished or have impaired

immunity. Diarrhea is one of the major causes of mortality in children under the age of 5 y old, and 1 billion diarrhea episodes and 3 million to 5 million deaths from diarrhea occur in the world each year [2,3]. Diarrhea has been reported as a leading cause of death among children in developing countries. The prevalence and mortality of diarrhea were 3 billion to 5 billion cases and 5 million to 10 million deaths, respectively, each year in Africa, Asia, and Latin America between 1977 and 1978, where an estimated 1.3 billion episodes and 4 million deaths occur each year in children under the age of 5 y [4]. The incidence of diarrhea in children (ages 0–59 mo) declined from 3.4 episodes per

* Corresponding author. Tel.: +886-2-2736-1661; fax: +886 2 2737 3112.
 E-mail address: chenjui@tmu.edu.tw (J. C.-J. Chao).

child per year in 1990 to 2.9 in 2010 in low- and middle-income countries in six World Health Organization regions (Africa, the Americas, Eastern Mediterranean, Europe, South East Asia, and Western Pacific) [5]. The average prevalence of diarrhea was 12% among 244 children ages 6 to 35 mo with a mean of 2.4 to 2.9 episodes per child in an urban community of the Gambia [6].

Age, nutritional status, and the treatment of diarrhea are some of the critical factors affecting the prevalence and mortality of diarrhea in young children. The incidence of diarrhea peaks in the first 2 y and declines thereafter [7]. The treatment of diarrhea with oral rehydration solution is beneficial in preventing dehydration and death of young children [8–10]. The use of oral rehydration solution was associated with a 25% reduction in unscheduled follow-up visits for acute diarrhea in children under the age of 5 y [11].

Diarrhea leads to weight loss in infants. Diarrhea reduced weight by 15.4 g/d in infants ages 7 to 12 mo in an urban community of the Gambia [12]. The previous study also revealed that the reduction of weight due to diarrhea in weaning infants was four times more frequent than in exclusively breast-fed infants (-14.4 ± 2.9 versus -3.6 ± 3.5 g/d; $P < 0.01$), and diarrhea had no significant effect on growth in exclusively breast-fed infants, suggesting that breastfeeding prevents weight loss caused by diarrhea in infants. No study has explored the management of diarrhea, which is the major public health problem in the Gambia among children who are the most vulnerable to diarrhea. Therefore, this study investigated oral rehydration therapy by mothers managing children under the age of 5 y with diarrhea in the Gambia.

Materials and methods

Participants

The number of participants was determined by 5% to 10% of the average number of outpatients visiting the clinic in 1 mo. All participants were the mothers who are the primary caregivers and had at least one child under the age of 5 y who had experienced diarrhea at least once before or at the visit to the clinic. Those who could not communicate through reading, writing, or speaking were excluded from the study. There were 400 mothers who met the selection criteria; they were randomly recruited out of 5000 outpatients who visited the Department of Polyclinic at Royal Victoria Teaching Hospital in Banjul, the Gambia in 1 mo by the researcher. This study was approved by the Royal Victoria Teaching Hospital ethical committee and conducted in accordance with the guidelines. Considering limited reading and writing ability of the participants (267 versus 133 for those with and without the ability to read and write), a verbal consent was obtained from all participants before the study.

Data collection

The questionnaires were used to determine the knowledge, attitude, and practice of the mothers in managing children with diarrhea. One well-trained researcher collected data using structured questionnaires including demographic information (14 questions), knowledge in the causes, diagnosis, and symptoms of diarrhea (19 questions), attitude for feeding children with diarrhea (6 questions), and practice for the prevention and management of diarrhea by oral rehydration solution (11 questions). The researcher developed the questionnaires, and the three nutritionists assessed the validity of the questionnaires to verify the content validity. After revising the contents of the questionnaires according to the suggestions and comments of the nutritionists, the reliability of the questionnaires was evaluated by the consistency test. Test and retest surveys were conducted in 20 mothers after 2 wk by the same researcher, and 90% consistency between test and retest surveys was observed in this study. Questionnaires were administered to 400 participants by interview in the Department of Polyclinic at Royal Victoria Teaching Hospital from July to August 2011. Participants in the study were voluntary and free to withdraw. The researcher checked all the questionnaires to ensure that none was missing for further analysis.

Data analysis

The researcher scored the questionnaires to evaluate the mothers' knowledge, attitude, and practices. Answers to questions were graded as correct, partially correct (when there are more than one correct answers), and wrong, and scored as 2, 1, and 0, respectively. The full scores of knowledge, attitude, and practice are 18, 12, and 22, respectively. The scores of all the questions in each part were summed to give the total score as a weighted index score for the level of knowledge, attitude, and practice in terms of managing diarrhea among children under the age of 5 y. The KAP score is the sum of knowledge (K), attitude (A), and practice (P) scores. The tertiles of knowledge, attitude, and practice scores are defined as low, medium, and high, respectively.

Literacy is defined as the ability to read and write, and illiteracy indicates inability to read and write. Socioeconomic status (SES) was determined using the social classification criteria developed previously [13], and comprised of five social classes in which classes I and II are the elites, class III is the middle class, and classes IV and V are the lowest class in accordance with the scoring system based on mother's education and father's occupation.

Statistical analysis

All statistical analysis was performed using SAS (Statistical Analysis System, version 9.3, SAS Institute Inc., Cary, NC, USA). χ^2 test was used for the descriptive analysis. Student's *t* test was used to determine the differences between the groups who responded no or yes in the same cause of diarrhea and between the groups with or without education in the management of diarrhea. Simple and multiple linear regressions were used to explore the association between the variables. Pearson's correlation coefficient (*r*) and regression coefficient (β) were calculated using simple and multiple linear regression models, respectively. A *P*-value < 0.05 was considered statistically significant.

Results

Table 1 demonstrates the demographic characteristics of the 400 mothers (ages 15–47 y) who completed the questionnaires. The literacy rate of the mothers was 66.7%, and 13.5%, 42%, and 8.8% of mothers had primary, secondary, and tertiary education, respectively, whereas 35.7% mothers had no or nonformal education. Most children (60%) were between the ages of 0 and 12 mo, whereas 15.5% and 24.5% of children were between 13 and 24 mo and older than 24 mo, respectively. The majority of mothers (98.3%) reported low (21%) or middle (77.3%) income, and only 1.7% reported high income. Most mothers (56.8%) were stay-at-home moms, whereas 25.3% and 9% of mothers were traders or government-employed, respectively. The occupations of the rest (9%) of the mothers were maid, food vendor, and hair braider. Of the mothers, 83.7% and 16.3% had extended and nuclear family systems, respectively. The religion of the mothers was 96.3% Islam and 3.7% Christianity.

The majority of participants ($n = 346$, 86.5%) defined diarrhea as frequent passage of watery stool (data not shown), and 37 (9.3%) mothers indicated diarrhea as an increase in stool frequency and liquidity. Less than 5% of mothers defined diarrhea as the presence of blood or mucus in stool ($n = 11$, 2.7%) or the presence of weakness and lethargy in children ($n = 6$, 1.5%).

Table 2 indicates maternal knowledge in the causes of diarrhea. The majority of the mothers indicated germs (72%) as a cause of diarrhea. Only a few mothers indicated cultural practices (31.7%), dirty hands (27%), prolonged breastfeeding (11.3%), pregnancy or early weaning (7%), and colostrum (1.3%) as causes of diarrhea. Most mothers who identified cultural practices as a cause of diarrhea indicated that diarrhea occurred in children during teething and when parents had early sexual behavior while breastfeeding. The mean of knowledge scores was significantly higher in the mothers who responded positively for germs (13.4 versus 12.6; $P = 0.0019$) and dirty hands (13.7 versus 13; $P = 0.0100$) as the causes of diarrhea compared with those who responded negatively. The means of knowledge scores for colostrum, pregnancy or early weaning, cultural

Download English Version:

<https://daneshyari.com/en/article/6090005>

Download Persian Version:

<https://daneshyari.com/article/6090005>

[Daneshyari.com](https://daneshyari.com)