

Feeding Practice during Diarrheal Episode among Children Aged between 6 to 23 Months in Nellore District, Andhra Pradesh, South India

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Abstract

Background: Diarrheal disease is one of the primary causes of malnutrition in infants. In developed nations, 30% of pediatric beds are used by infants with diarrheal illnesses. The foundation of the care kit is the fluid replacement, continuous breastfeeding, and the improvement of enough fluid at home during diarrhea outbreaks. This study aimed to assess feeding practice among children aged 6 to 24 months in Nellore District, Andhra Pradesh, South India, during diarrheal episodes. **Methods:** Community-based cross-sectional research design was performed among children aged 6 to 24 months from May to December 2019. To pick the research subjects, a multistage sampling technique was used. Our analysis comprised a total of 661 participants. Data was entered into the Epi details data version 7.2.3.1, exported to statistical software SPSS 20.0, and research software origin pro 8.5. During a diarrheal episode, bivariable and multivariate analyses were conducted to determine factors correlated with feeding habits. During the diarrheal episode, an odds ratio of 95 percent CI was used to assess a statistically relevant correlation between independent variables and feeding practice. **Result:** During diarrheal episodes, the proportion of proper feeding activity was 370 (69.94 percent). Boys were roughly 1.8 times [OR (Odds ratio); 1.87 (95 percent CI=1.20, 2.90)] more likely than girls to obtain improved food and fluid. During the diarrheal episode, mothers with one under-five child were 1.4 times more likely [OR 1.46 (95 percent CI = 0.94, 2.27)] to have adequate feeding experience relative to parents with two or more children under five. During diarrheal episodes, the risk of rising food and fuel was 0.8 times [OR 0.86 (95 percent CI= 0.58, 1.26)] higher for maternal children aged 30-40 years than those aged 20-29 years. During diarrheal episodes, mothers who gain details on feeding habits were 1.4 times [OR 1.42 (95 percent CI=0.93, 2.18)] more likely to raise their child's food and fluid relative to their counterparts. **Conclusion:** In this study, the number of prenatal care visits, gender, and the number of children under 5, maternal age, and mother's feeding activity knowledge were independently correlated with feeding practices during a diarrheal event. Therefore, these determinants should be the subject of aggressive programmed action to reduce infant mortality and morbidity and meet sustainable development goals.

Keywords: Feeding practice, Diarrheal episode, Nellore district

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Introduction

According to the World Health Organisation (WHO) and UNICEF, about 2 billion cases of diarrheal disease occur worldwide each year, and 1.9 million children under the age of 5 die from diarrhea each year, mainly in developed countries [1, 2]. This constitutes 18 percent of all deaths of children under the age of 5, meaning that > 5,000 children die every day as a result of diarrheal diseases. 78 percent of all child deaths from diarrhea occur in the areas of Africa and Southeast Asia. Each infant under the age of 5 suffers an average of 3 episodes of acute diarrhea annually [3, 4]. Oral rehydration salts (ORS) and medicinal adjustments are predicted to have a greater impact on death rates than the occurrence of diarrhea. Interventions such as exclusive breastfeeding (which prevents diarrhea), the continuation of breastfeeding up to 24 months of age, and increased

complementary feeding (by enhanced nutrition), coupled with better sanitation, are projected to impact mortality and morbidity simultaneously [5-7]. Fluid substitution with normal and small feeding, such as breastfeeding, has a strong effect on symptom control and diarrhea healing during diarrhea outbreaks. Studies have shown that in diarrheal episodes, 25 percent, 11 percent, and 31 percent of mothers delay breastfeeding, reduce fluid administration, and do not give anything. Awareness of factors relevant to feeding routines during diarrheal outbreaks is a critical precondition for the creation of diarrheal disease prevention strategies. While several studies have been conducted in the area and different parts of the world, no previous studies have been undertaken to investigate feeding activities during diarrheal episodes in children aged 6 to 24 months. The goal of this study was to classify feeding patterns in children aged 6 to 24 months in Nellore District during diarrheal episodes to devise effective policy and strengthen implementation and intervention strategy to reduce infant mortality and morbidity.

Materials and methods

Study Design and Setting: Cross-sectional community-based research was carried out at Narayana Medical College, Nellore, Andhra Pradesh, India.

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The Community-based cross-sectional research design was carried out among children aged 6 to 24 months from May to December 2019. Both children 6 to 24 months of age and live in the Nellore District.

Procedure for Sample Size Calculation and Screening: The sample size was estimated using Epi information version 7.2.3.1 statistical software by estimating the predicted proportion of mothers who increase their children's food and fluid during a diarrheal episode, which is 39.4 percent with 95 percent confidence level, 5 percent accuracy, 5 percent non-response rate and 2 design effect, and 678 final sample sizes. A multistage method of sampling was used. Then, depending on the number of children, the overall sample size was assigned proportionally to the chosen Nellore municipality (NM). As a screening frame, a list of households with children aged 6 to 24 months who had diarrheal episodes two weeks before data collection was used. The basic random sampling process (computer-generated) was then used to pick the participants in the study from each chosen NM. If two or more qualifying children were identified in the same home, so random selection was made for one of them.

Processing of data and analysis: Pretested standardized questionnaire was used to gather data, created by reading various literature. Initially, the questionnaire was prepared in English, translated into the local language (Telugu), and then retranslated to verify accuracy by another person. The instrument was tested outside of the NM analysis in 5 percent of the sample area. Using standardized questionnaires, data were collected through face-to-face interviews with mothers/caregivers. After two days of study, seventeen students (MBBS, Bachelor of Medicine and Bachelor of Surgery) took part in data collection. Filled out questionnaires were reviewed regularly by

the co-author for their completeness, then modified, encoded, entered by Epi details data version 7.2.3.1, and exported for review to SPSS 20.0 statistical software and pro 8.5 root software. Descriptive figures were carried out after cleaning up the data for anomalies and missing values. And bivariate regression was performed to define the relationship with all the explanatory variables. In the bivariate analysis, variables with a p-value of less than 0.5 were used in a step-by-step, multivariable logistic regression method. To assess the correlation between increased food and fluid during diarrheal episodes and independent variables, odds ratios (95 percent confidence intervals) were determined. In this analysis, diarrhea was measured as the passage of three or more loose stools over a period regarded by the mother/care provider as diarrhea, and appropriate feeding practice during the diarrheal episode increased food and fluid, measured by four comparative questions regarding feeding practice during the diarrheal episode (breastfeeding frequency before and during the disease, breastfeeding frequency before and during the disease, amount of feeding habits during the diarrheal episode). If the responses of a mother involve an increase of about 75 percent of the overall questions during the infection, the infant is deemed to have sufficient nutrition during the diarrheal episode (i.e. elevated food and fluid).

Result

A total of 529 participants with a response rate of 98.23 percent were included in the study. 412(77.88 percent) and housewives in profession 372(70.53 percent) were Protestant in religion, the majority of mothers. Nearly all of the respondent mothers were married to 524(99.05 percent) and almost one-fourth of them had two under-five children in the 131(24.76) household.

Table 1: Socio-demographic characteristics for the parents

Variable	Number	Percentage
Sex		
Male	232	43.85
Female	297	56.14
Age in month		
6 - 12	201	37.10
12 - 18	232	43.85
18 - 24	96	18.15
Number of under 5-year children		
One	398	75.24
Two	131	24.76
Religion		
Protestant	412	77.88
Orthodox	117	22.12
Maternal age in the year		
20 - 29	372	70.32
30 - 39	157	29.68
Marital status		
Married	524	99.05
Single	-	-
Divorced	03	0.57
Widowed	02	0.38
Maternal occupation		
Government worker	96	18.15
Student	61	11.53
Housewife	372	70.32
Maternal educational status		
Illiterate	121	22.87
literate	408	77.12

During the pregnancy of the index boy, all mothers of the study participants attended the health facility for antenatal treatment and all study participants began vaccinating. 468 (88.47 percent), collected details regarding feeding activity during diarrheal episode 391 (73.91 percent), requested medical attention during the illness 423 (79.97 percent), and raised food and fluid during diarrheal episode 389 (73.53 percent) (Table 2). Mothers of most research participants delivered their children at health facilities

Table 2: Health-related aspect of the sample group population

Variable	Number	Percentage
Place of delivery		
Health institution	468	88.47
Home	61	11.53
Have Information about feeding practice during the diarrheal episode		
Yes	391	73.91
No	138	26.09
Frequency of diarrhea in the last one month		
1 time	289	54.63
2 time	152	28.73
3 time	88	16.64
Seek medical care during the illness		
Yes	423	79.97
No	106	20.03
Number of ANC follow-ups		
< 4 times	147	27.79
≥ 4 times	382	72.21
Immunization status		
Completed	448	84.69
Up-to-date	81	15.31
Feeding practice during the diarrheal episode		
Increase food & fluid	389	73.53
Not increase food & fluid	140	26.47

ANC=Antenatal care

Diarrheal Influences Associated with Diet Practice:As advised, the proportion of those who raised food and fluid in the diarrheal episode was 370 (69.94 percent). Boy kids were around 1.8 times more likely than girls to get elevated food and fluid than [OR (Odds Ratio); 1.87 (95 percent CI=1.20, 2.90)]. Moms who have one child under five is 1.4 times [OR 1.46 (95 percent CI = 0.94, 2.27)] more likely to have adequate dietary preparation during diarrheal episodes

than those who have two or more children under five. Growing the risk of food and fluid during diarrheal outbreaks was 0.8 times [OR 0.86 (95 percent CI= 0.58, 1.26)] higher for children 30-40 years of maternal age than those 20-29 years of age. During diarrheal events, mothers who collected details on feeding habits were 1.4 times [OR 1.42 (95 percent CI=0.93, 2.18)] more likely to raise their children's food and fluid relative to their peers (Table 3).

Table 3: Diet predictors during a diarrheal episode

Variable	Increase food and fluid		Odds ratio (95% CI)	P-value
	Yes;(col%)	No; (col %)		
Sex				
Male	196 (47.00)	36(32.17)	1.87 (1.20, 2.90)	0.05
Female	121 (53.00)	76 (67.86)		
Number of under 5 children				
1	306 (77.08)	92 (69.70)	1.46 (0.94, 2.27)	0.10
2	91 (22.92)	40 (30.30)		
Maternal age				
20 - 29	219 (69.09)	153 (72.17)	0.86 (0.58, 1.26)	0.5
30 - 40	98 (30.91)	59 (27.83)		
Get information about feeding practice				
Yes	292 (75.84)	99 (68.75)	1.42 (0.93, 2.18)	0.10
No	93 (24.16)	45 (31.25)		
Number of ANC follow-ups				
Less than four times	87 (22.14)	55 (41.98)	0.39 (0.26, 0.60)	0.01
Four and more times	306 (77.86)	76 (58.02)		
Maternal education				
Illiterate	101 (23.93)	20 (18.69)	1.37 (0.80, 2.33)	0.10
literate	321 (76.07)	87 (81.31)		

Discussion

The goal of this research was to use a cross-sectional sample design to classify feeding activities during diarrheal episodes among children aged between 6 and 24 months. Thus, these results are that the reality of boy preference in developed countries has a large impact on child care practice, similar findings were obtained in concept as mothers of study participants who have boys is 1.8 times more likely than mothers of study participants who have girls to increase food and fluid during the diarrheal event. Researchers also found evidence that during the diarrheal episode, a high proportion of

boys obtain elevated food and fluid [10, 11]. During the diarrheal episode, mothers with one child under five were 1.4 times more likely [OR 1.46 (95 % CI = 0.94, 2.27)] to have proper feeding experience than parents with two or more children under five [12]. This may be attributed to the fact that the care provided to children declines as the number of children under the age of five grows in the household, creating strains on family finances, which leads to delays in treatment [13].

As maternal age rises, by maturity, sensitivity to health knowledge, and child care education gets easier. This research found

that children aged 30–40 years and older were 2.46 times more likely to have elevated food and fluid relative to children aged 20–29 years from mothers. This is incongruent with an Iran study [14]. This may be due to ethnic differences. Mothers obtaining information is 1.4 times more likely than their peers to increase food and fluid during diarrheal episodes than their peers. This is attributed to the fact that information has become an entry point for awareness growth. Increased health facilities exposure improves data related to health promotion and prevention. Those mothers with four and more ANC follow-ups were 0.3 times more likely than those who pursued ANC fewer than four times to raise food and fluid. The level of maternal education also influences the method of feeding during the diarrheal episode. The chances of growing food and liquids, respectively, were 1.3 mothers attending literates. This is consistent with research carried out in Burkina Faso [15] but inconsistent with a study carried out in Ethiopia [16].

Conclusion

In this study educational status, number of antenatal care visits, infant sex, number of children under 5, maternal age, and feeding practice details were separately correlated with good feeding practice during the diarrheal episode. Intensifying intervention programmers and investors working on child health should also concentrate on these determinants to reduce infant mortality and morbidity and meet targets of sustainable growth.

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