Research Paper Medical Science

Diarrhoeal Prevalance among Children in the First Three years of Life

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ABSTRACT

AIM:
To estimate the prevalence of diarrhoea among children in the first three years of life in a rural area.
METHODOLOGY:
195 Children in the first three years of life residing in the rural area were randomly selected and got informed consent. The operational definition for the study was any children who have or had diarrohea in the preceding 2 weeks taken as a case of acute diarrohea.
REULTS:
The prevalence of acute diarrhoea was found to be 12.8% among children in the first 3 years of life. The prevalence of acute diarrhoea among male and female children is not statistically significant (P>0.05). Children between 6-24 months had the highest prevalence of acute diarrhoea (18.3%).
CONCLUSION:
The prevalence of acute diarrhoea in the first three years of life was found to be 12.8%. Hand washing with soap before feeding the child plays an important role for preventing diarrhoea.

Keywords : Acute diarrhoea, children, prevalence

INTRODUCTION:
The problems facing the heath personnel in the developing world are vast and are no where more evident than in the field of child care [1] One of the main health problems encountered in the child population is acute diarrohea. Acute diarrohea is the leading cause of mortality among children in the first three years of life [2]. Diarrhoea also causes malnutrition and can make worse because nutrients are lost from the body during diarrhoea. Children with severe malnutrition and diarrhoea have high mortality rates. The community has not been explained of the risk that severely malnourished children with diarrhoea have an increased risk of death [3]. The diarrhoeal disease is predominantly a problem of the first three years of life. Moderate to severe diarrhoea accounts for nearly 25-30% of the total admissions in this age group while considering hospital admissions, diarrhoea accounts for nearly 18-20% of total admissions. So it is important to study the prevalence of diarrhoea among children in the first three years of life in a rural area of Tamilnadu.

MATERIALS AND METHODS:
This cross sectional study was done in mugalivakkam village of kancheepuram district and the study was done from 01.01.2012 to 31.05.2013 . Children in the first three years of life residing in the area were selected. Simple random sampling method was used for selecting the children. The minimum sample size for the study was determined by using 15% of prevalence of acute diarrhoea among children in the first three years of life with an alpha error of 5% & absolute precision 5% and was found to be 195.All the children were selected randomly and a brief introduction was given to the parents regarding the study purpose. The informed consent was obtained orally and the information was collected by structured questionnaire. Details about the environmental factors like excreta disposal, source of water supply and garbage disposal were studied. The data entry and analysis were done using SPSS-16 software. Prevalence of acute diarrhoea and 95% confidence interval were estimated. Odds ratio was calculated to determine the association between acute diarrhoea and risk factors. The operational definition for the study was any child who have (or) had diarrohea in preceding 2 weeks taken as a case of acute diarrhoea.

REULTS:
195 children under 3 years were selected by simple random sampling method. Among the selected children, 50.8% were males & 49.2% were females. Majority of the children were belong to 25 to 30 months and followed by 13 to18 months. Details given in TABLE-1.

Based on Prasad classification, the socio economic status of the children was studied. About 33.3% of children were in the middle class, i.e. class III. Details given in TABLE-2.

PREVALANCE OF ACUTE DIARRHOEA:
Among 195 children studied, 25 children had diarrhoea during the time of interview and the prevalence was found to be 12.8% .Details given in TABLE-3.About 18.3% of the children had diarrhoea in the age group 6-24 months, followed by 9.6% in the children aged 24-36 months.

Among the male children studied 14.1% of children had acute diarrhoea. Among the female children selected 11.5% of children had acute diarrhoea. Details given in TABLE-3.

DIARRHOEAL RISK FACTORS:
Details about certain environmental risk factors for acute diarrhoea were studied. Some important risk factors like personal

hygiene of the respondent, excreta disposal and source of drinking water supply were studied. Personal hygiene was classified as satisfactory and not satisfactory by their habits like hand washing with soap before preparing food and feeding the children. The Personal hygiene was satisfactory in 41% of the respondents. Among those having poor personal hygiene the risk of acute diarrhoea was 4.2 times higher. Similarly houses with public water supply have 3.5 times higher risk of diarrhoea. Those houses had insanitary method of disposal of excreta also had high risk of acute diarrhoea (OR=4.7).All the risks were found to be statistically significant. Details given in Table no-4.

DISCUSSION:

The prevalence of acute diarrhoea in the present study was found to be 12.8%. The prevalence of acute diarrhoea was very high to 18.3% in the age group 6-24 months, followed by 9.6% in the age group 25-36 months. This is due to the introduction of weaning foods to most of the children [4]. The prevalence of acute diarrhoea was only 3.4% in the age group 0-6 months. This reflects the exclusive breast feeding offered by the mothers [5].

The prevalence of acute diarrhoea was estimated in the national family health survey in 1992 among children 4 years was 12.9 % [6] & the prevalence of acute diarrhoea among children under 3 years estimated by NFHS II in 1999 was 14% [7]. The prevalence of acute diarrhoea was 9% estimated by NFHS III in the year 2005-2006 [8].

The prevalence of acute diarrhoea in the present study was found to be 12.8% & similar to the prevalence of NFHS I, II. When compared to NFHS III, the prevalence of acute diarrohea was little high. This is because of seasonal variation and may be due to sample variation.

The prevalence of acute diarrohea from DLHS 2 in the year 2002-2003 was found to be 13% [9] and DLHS 3 in the year 2007-2008 was 12% [10] similar findings were observed in the present study which reinforces the statement that the prevalence of acute diarrhoea may vary from time to time and place to place [11]. The prevalence of acute diarrhoea was high among the children in the age group 6-24 months because most of the children exposed to environmental conditions as it start crawling and walking in addition to the introduction of weaning food [12].

The prevalence of acute diarrhoea among male children was found to be 14.1% as compared to the female children their prevalence was little high because the prevalence of acute diarrhoea among the female children was found to be 11.5%. The difference in the prevalence is not statistically significant. Similar findings were seen in NFHS & DLHS studies and also statistically significant.

The risk of diarrhoea was 4.2 times more among the respondents having unsatisfactory personal hygiene the 95% confidence interval was 1.3 -15.3 &they are statistically significant. Similarly the risk of acute diarrhoea was 4.7 times higher among respondents adopting insanitary excreta disposal methods as compared to sanitary ways of disposal. The risk factor water supply and the association of acute diarrhoea was studied and found that it was 3.5 times higher among public sources of water supply and also statistically significant

KEY MESSAGES:

The prevalence of acute diarrhoea among children in the first three years of life was found to be 12.8% and the prevalence of acute diarrhoea was very high among children in the age group 6-24 months. Hand washing with soap before feeding the child plays an important role for preventing diarrhoea among children.

TABLE-I
AGE AND SEX DISTRIBUTION OF CHILDREN

Age in months	Males		Females		Total
	n	%	n	%	
0-6	14	7.2	15	7.7	29
7-12	14	7.2	16	8.2	30
13-18	19	9.7	17	8.7	36
19-24	14	7.2	13	6.7	27
25-30	20	10.3	18	9.2	38
31-36	18	9.2	17	8.7	35
Total	99	50.8	96	49.2	195

TABLE II:
Socio economic status of children

Class	Male	Female	Total (%)
I	15	10	25 (12.8)
II	20	25	45 (23.1)
III	35	30	65 (33.3)
IV	20	16	36(18.5)
V	9	15	24(12.3)
Total	99	96	195

TABLE III:
PREVALANCE OF DIARRHOEA BY AGE AND SEX

Age in months	Diarrhoea in male children		Diarrhoea in female children		Total
	Yes	No	Yes	No	
0-6	1	13	0	15	29
6-24	9	38	8	38	93
25-36	4	34	3	32	73
Total	14	85	11	85	195

TABLE IV
ACUTE DIARRHOEA AND RISK FACTORS

	Diarrhoea		Odds ratio	95% CI	P value
	Yes	No			
Personal hygiene					
unsatisfactory	21	94	4.2	1.3-15.3	<0.01
satisfactory	4	76			
Excreta disposal					
In sanitary	22	103	4.7	1.29-20.8	<0.001
sanitary	3	67			
Water supply					
Public	20	91	3.5	1.6-11.1	<0.5
private	5	79			

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