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ORIGINAL ARTICLE

Prevalence and Risk Factors of Acute Diarrhea in Children Under Five Years of Age in Urban Slums of Bahawalpur

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ABSTRACT

Aim: To find out the prevalence and risk factors of acute diarrhea in children between six months to five years of age.
Methodology: It is cross-sectional analytical study conducted in urban slums of Bahawalpur from January to December 2019. Approval from institutional ethical review committee was obtained. Sample size was 324 with 95% level of confidence, 5% margin of error and 31.1% expected population proportion. Tibba Badar sher and Bhatta # 2,3 were two slum areas of Bahawalpur city selected by simple random method. In two slum areas, 324 children aged six months to five years were selected by systematic random sampling on household basis in proportionate way i.e. 271 from Tibba Badar Sher and 53 from Bhatta No. 2,3. Data was collected by using structured questionnaire and for data analysis SPSS version 22 was used. **Results:** Prevalence of diarrhea in children under 5 years of age, living in urban slums was 38.9%. Diarrhea was more common in children whose mothers were working women and mothers not practiced hand washing before feeding child.
Conclusion: Diarrhea was common in children whose mothers were not washing their hands before feeding and also among children not vaccinated against measles and rotavirus.
Key words: Diarrhea, Rota virus, Hand washing, Vaccination

INTRODUCTION

Diarrhea is one of the leading childhood illnesses. It is common under the age of five years. Worldwide, about 2195 children died of diarrhea on daily basis. This is greater than deaths due to combined infections with AIDS, malaria and measles. Globally, out of nine children, one child died of diarrhea. The second common cause of death in children in less than five years of age is diarrhea[1].

Mostly, diarrhea results from unsafe drinking water, poor sanitation and poor hygienic measures. Due to this, infections like E. coli and rotavirus are common agents that are responsible for moderate to severe diarrhea in peoples living below poverty line[2]. Food when cooked or stored in poor hygienic conditions might cause diarrhea. The leading cause of diarrhea in children under five years of age is rotavirus and responsible for more than one third of hospitalizations[3].

The objective of the study was to find out the prevalence and risk factors of acute diarrhea in children between six months to five years of age.

METHODOLOGY

In urban slums of Bahawalpur City this cross-sectional analytical study was conducted from January, 2019 to December, 2019. The sample size was 324 with 95% level of confidence, 5% margin of error and 31.1% anticipated population proportion (Prevalence of diarrhea). Approval from institutional ethical review committee was obtained. Cases were included with H/O three or more loose or watery stools in 24 hours in the past 2 weeks before data collection. Tibba Badar Sher and Bhatta No. 2,3 were two slum areas selected by simple random sampling in Bahawalpur City with household population of 2250 and 436 respectively. 324 children between six months to 5 years of age were selected on household basis in proportionate manner i.e. 271 from Tibba Badar Sher and 53 from Bhatta No. 2,3. All houses were numbered and first household was selected by simple random sampling and then every 8th house in Tibba Badar sher and Bhatta No. 2,3 was taken till the completion of cases. If any house was locked, the next house was taken, similarly if, no child under five year of age in selected house, the next house was taken. Data was collected by using questionnaire. SPSS version 22 was used for data entry and analysis.

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RESULTS

The detail of results is given in tables 1,2,3. Total 324 children fulfilling the inclusion criteria were enrolled in the study. Prevalence of diarrhea in children below five years of age living in urban slums of Bahawalpur city was 38.9%.

Table 1: Prevalence of Diarrhea among children in last two weeks

Diarrhea in last 14 days	n	%age
Yes	126	38.9%
No	198	61.1%
Total	324	100%

Table 2: Socio demographic profile of the mother

Socio demographic characteristics	Diarrhea last 2 weeks	No Diarrhea last 2 weeks	p value
Age of mother			
<25 years	85 (67.5%)	47 (23.7%)	<0.01
≥25 years	41 (32.5%)	151 (76.3%)	

Education of mother			
No education	63(50%)	30 (15.1%)	
Upto primary	21(16.6%)	42 (21.2%)	
Upto middle	17(13.5%)	18 (9.1%)	<0.01
Matriculation	10 (7.9%)	26 (13.1%)	
Intermediate	09 (7.1%)	69 (34.8%)	
Graduation and above	06 (4.7%)	13 (6.6%)	
Working status			
Housewife	52(41.3%)	113 (57.1%)	<0.01
Working female	74(58.7%)	85 (42.9%)	
Source of Drinking water			
Pump	79(62.7%)	33 (16.7%)	<0.01
Filter water	34(27%)	146 (73.7%)	
Boiled water	13(10.3%)	19 (9.6%)	
Hand washing before feeding			<0.01
Yes	49(38.9%)	133 (67.2%)	
No	77(61.1%)	65 (32.8%)	

Table 3: Children characteristics with diarrhea

Variables	**Diarrhea last 2 weeks**	**No Diarrhea last 2 weeks**	**p value**
Age			
6-12 months	71 (56.3%)	42 (21.2%)	<0.01
1-2 years	30 (23.8%)	59 (29.7%)	
>2 years	25 (19.8%)	97 (48.9%)	
Measles vaccination			
Yes	97 (76.9%)	173(87.3%)	<0.01
No	29 (23.1%)	25 (12.6%)	
Rotavirus vaccination			
Yes	69 (54.7%)	152(76.7%)	<0.01
No	57 (45.2%)	46 (23.3%)	
Vitamin A supplement			
Yes	32 (25.3%)	97 (48.9%)	<0.01
No	94 (74.6%)	101(51.1%)	
Breastfeeding			
Yes	67 (53.1%)	82 (41.5%)	0.03
No	59 (46.8%)	116(58.5%)	
Bottle feeding			
Yes	95 (75.4%)	38 (19.2%)	<0.01
No	31 (24.6%)	160(80.8%)	

DISCUSSION

The prevalence of diarrhea was found to be 38.9% which is consistent with findings of study conducted in Northern Ethiopia in which 35.6% children under 5 years of age had diarrhea during last two weeks[4]. On the other hand, prevalence of diarrhea found in our study is lower than study conducted in Bangladesh in which 44.5% children suffered from diarrhea in last two weeks[5]. These differences may be due to personal hygienic measures of mother.

In our study, diarrhea is common among children under the age of five years whose mothers/caretaker is less educated as compared to the mothers with more educational level. The maternal educational level was significantly associated with diarrhea in children ($p<0.01$). These findings are consistent with findings of other studies in which diarrhea was more in children whose mothers had low educational level[6,7].

In our study, diarrhea was common among children whose mothers did not wash their hands before feeding as compared to children whose mothers did wash their hands before feeding and difference was statistically highly significant ($p<0.01$). These findings are consistent with results of study conducted by Ayele A et al[8] in which hand washing before feeding children decrease the risk of diarrhea.

Regarding vaccination, diarrhea is reduced in vaccinated children in our study. These findings are in agreement with the results of study conducted by Bawankule R et al[9] in which risk of diarrhea is reduced in children who are vaccinated against measles. Burnett E et al[10] also revealed that with the introduction of rotavirus vaccines in children there is reduction in morbidity and mortalities due to diarrhea.

CONCLUSION

The prevalence of diarrhea among children under the age of five years in slum areas was high. The diarrhea was significantly higher in children whose mother or caregiver was not washing their hands before feeding and also among children who are not vaccinated against measles and rotavirus.

Conflict of interest: Nil

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