ORIGINAL ARTICLE

FREQUENCY OF DIARRHOEA IN PATIENTS ADMITTED IN PAEDIATRIC UNITS OF AYUB TEACHING HOSPITAL, ABBOTTABAD

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Background: Diarrhoea is stools of decreased consistency and increased volume due to imbalance of secretion and absorption of water and salts in the intestine. It is second leading cause of death in children below five years of age worldwide. Children under five year of age develop on average 2–3 episodes of diarrhoea each year. To focus attention on the prevention and management of diarrhoeal diseases is central to improving child survival. The objectives of the study were to know the frequency of diarrhoea in children admitted in paediatric ward units of Ayub Teaching Hospital and to associate various social-demographic factors with occurrence of diarrhoea. **Method:** A cross sectional study was conducted over span of four months. A sample of 376 patients admitted in the paediatric ward units of Ayub Teaching Hospital Abbottabad, were questioned about diarrhoea using a well formed questionnaire. **Results:** Three hundred and seventy-six patients diarrhoea with mean age of 26.88±36.259 were interviewed with 7.30 mean days of diarrhoea. Out of 376 patients, 219 (58%) were male and 157 (42%) were female. According to the results water source supply for 114 (30.3%) was municipality water, for 76 (20.2%) well, tube well 59 (15.7%), spring 117 (31.1%) Other 10 (2.7%). Two hundred and fifty-eight (68.6%) were breastfed and 118 (31.4%) were non breastfed and 66 (17.6%) children were school going while 310 (82.4%) were non-school going. **Conclusion:** Having a source of clean drinking water significantly decrease the risk of disease. Children not vaccinated against measles and low socioeconomic status have high incidence of diarrhoea. Awareness of factors responsible for diarrhoea in children can significantly decrease the frequency of diarrhoea.

Keywords: Diarrhoea, Ayub Teaching Hospital, children under five years of age

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INTRODUCTION

Diarrhoea is stools of decreased consistency and increased volume due to imbalance of secretion and absorption of water and salts in the intestine. Diarrhoea may be infectious or non-infectious.

Acute diarrhoea is a crucial public health problem, with a relatively slight change in incidence among both children and adults, particularly among under five years of age whose incidence is higher than in adults.[1] Developing countries like Pakistan faces numerous resource constraints, and therefore it is necessary to focus on particular interventions that are cost effective, able to be implemented, and likely to reduce the disease burden attributable to specific risk factors. A study by Esrey *et al*., aimed to find the percentage reductions in diarrhoea expected to result from improvement to water supply, excreta disposal or hygiene behaviours had shown that all the interventions have caused the reduction in diarrhoea levels, with the effect varying between 15–36%, depending upon the intervention.[2] It is a documented fact that diarrhoeal diseases is a major public health problem in children under 5 years of age, especially in developing countries. Even though morbidity caused by diarrhoea is still high, mortality has been decreasing worldwide, mainly because of improved management. There are many pathogens which cause diarrhoea but the most important are Escherichia coli, Rotavirus, Salmonella, Shigella, Campylobacter jejuni, Entamoeba histolytica, and Giardia lamblia.[3–4]

Preventive methods are important to reduce the community burden of diarrhoea. Some of the preventive methods include breastfeeding and complementary feeding, Improving food safety, water, sanitation, and hygiene, Vitamin A, Zinc, Measles immunization etc. In this study, we aimed to determine the prevalence of diarrhoea in paediatrics ward of Ayub Teaching Hospital Abbottabad and socio-demographic factors related to the occurrence of diarrhoea.

MATERIAL AND METHODS

The study was conducted in the paediatric ward of the Ayub teaching hospital Abbottabad. This study was a descriptive cross sectional study and participants of the study were selected by non-probability convenient sampling.

The data was collected via questionnaires, after informed consent. Data was collected regarding the age of the child, number of days of diarrhoea, occupation of the parents and their education, the socioeconomic status of the family, the source of drinking water, the feeding status of

the child whether breast fed or being on bottle feed and most importantly the vaccination status of the child against measles. A total of 376 patients were interviewed. The data collected was analysed using SPSS version 16.

RESULTS

As shown in table-1, a total of 376 children were included in study. Mean age of the children was 26.88 SD±6.259 months with mean weight of 8.98kg SD ±6.81408. Children had mean birth order of 3.02 SD ± 1.851 with average 3.32 children per family. Average income of the family was Rs. 12433 monthly. The mean days for which child had diarrhoea were 7.30 SD SD±4.840. Of the total enrolled children, 58.2% were male while 41.8% were females.

Out of 376 participant's houses, 114 (30.30%) were having municipal water supply, 76 (20.20%) were having well as a water source, 59 (15.70%) were having tube well as a water source, 117 (31.10%) were having spring as water source and 10 (2.70%) were having other sources of water. Out of 376 children, 258 (68.60%) children were breast fed and 118 (31.40%) children were not breast fed. Sixty-six children (17.60%) were school going and 310 (82.40%) were not school going.

Out of 376 patients, 304 (80.90%) were having watery diarrhoea, 42 (11.20%) were having mucoid diarrhoea and 30 (8.00%) were having bloody diarrhoea. We also determined whether the diarrhoea was associated with vomiting or not. Two hundred and thirty-five cases (62.50%) were accompanied by vomiting and 141 (37.50%) did not have it. Measles is a very common childhood affliction in our country. Pneumonia and diarrhoea is an important sequel. Seventy children (18.60%) suffered from measles, 290 (77.10%) did not suffer from measles and 16 (4.30%) were having no knowledge that they had measles or not. Most of the children in our setup are not vaccinated against measles. We found out that 198 children (52.70%) were vaccinated against measles and 178 (47.30%) were not vaccinated against measles. To know about the opinions of guardians regarding ORS as the treatment for diarrhoea we questioned them on this aspect as well. Of the total participants, 265 (70.50%) respondents replied that ORS is helpful in diarrhoea, 45 (12.00%) respondents replied that ORS is not helpful in diarrhoea and 66 (17.60%) respondents were not aware about the significance of ORS in diarrhoea. Out of 376 respondents, 24 (6.40%) replied that by proper hand washing diarrhoea can be prevented, 178 (47.30%) replied that by cleanliness diarrhoea can be prevented, 97 (25.80%) replied that by safe drinking water diarrhoea can be prevented, 17 (4.50%) replied that by proper waste disposal diarrhoea can be prevented and 60 (16.00%) replied that by various other methods diarrhoea can be prevented.

Table-1: Demographic profile

	n	Minimum	Maximum	Mean	SD
Age in Months	376	1	168	26.88	6.259
Weight in kg	376	2.50	36.00	8.9851	6.81408
Birth order of this child	376	1	10	3.32	1.851
Monthly income of family in PKR	376	1000	150000	12433.51	12594.373
Days with diarrhoea	376	0	60	7.30	4.840

Table-2: Gender of the patient

	Frequency	Percent
Male	219	58.2
Female	157	41.8
Total	376	100.0

Table-3: Source of drinking water for house

	Frequency	Percent
Municipal	114	30.3
Supply	76	20.2
Well	59	15.7
Tube well	117	31.1
Spring Other	10	2.7
Total	376	100.0

Table-5: Breastfeeding status of the child

	Frequency	Percent
Yes	258	68.6
No	118	31.4
Total	376	100.0

DISCUSSION

The results found in the present study are in greater extent similar to those reported from other countries where diarrhoeal diseases are recognized as a major cause of morbidity and mortality in children.[5] The male-to-female ratio 1.4:1 of our study is close to that of several studies which reported higher number of male patients as compared to female patients to have suffered from diarrhoea.[6]

Majority of the guardians thought that diarrhoea can be controlled by ORS. The development of oral therapy for the rehydration and maintenance of children with dehydrating diarrhoea has become the worldwide mainstay of national diarrhoeal control programs.[7]

The importance of breastfeeding in the prevention of diarrhoeal diseases cannot be over emphasized. A similar study carried out in Lahore

showed that breast feeding had no strong association with diarrhoea.[8]

The finding that children born earlier in a family were less likely to have cases of disease than children born later may be a reflection of changing patterns of maternal care with successive children. This contrasts with a study carried out in Tanzania, Africa, which showed that children born earlier in the family seemed less likely to be affected with diarrhoea than their older siblings, reflecting the changing patterns of maternal care with increasing number of children.[9]

By having a careful glance at the results it can be comprehended that the children affected with diarrhoea were mostly below three years of age, the mean being 26.88 months and the weights around 9 kilograms . Another study carried out in the rural community of south India demonstrated the prevalence of diarrhoea in different age groups below five. It showed the children in the age group 7–12 months had a prevalence of 40.7%, followed by those between 13–24 months and then 0-6 months.[10]

The study also showed that most of the cases of diarrhoea were associated with the government supply. A similar study carried out in south India mentioned above showed that most of the cases of diarrhoea in children were associated with public water supplies.[11]

As regarding the education of the parents, they were uneducated mostly. The average monthly earnings of the family were around Rs. 12,000. This was consistent with the results obtained about profession of the fathers with 35.9% belonging to the labour class,6.9% farmers and 4.3% unemployed.6.9% were having their own businesses and 10.6% were employed in government service. This clearly reflects the trends of diarrhoea regarding the socioeconomic status. In a study conducted in turkey trying to find the degree of association between socioeconomic status and prevalence of diarrhoea in children, it was established that children with poor household as well as individual status, the prevalence was higher as compared to children with better household conditions.[12]

The diarrhoea in about 80% of children were watery, 11.2% mucoid and 8 % bloody.62.5% cases was associated with profuse vomiting. 77.1% cases had measles and 47% were un-vaccinated. This develops and strengthens the relationship between measles and diarrhoea. Post measles stage is associated with diarrhoea in majority of children because it leads to wasting and weakening of the immune system which predisposes a child to various infections, diarrhoea being one of them. A study was undertaken in south India, which showed a strong association between measles and diarrhoea. Diarrhoea is a frequent and one of the dreaded complications of measles.[13]

About 47.3% had opinion that cleanliness is the main factor through which diarrhoea can be prevented. 25.8% thought that safe drinking water was the sole factor which can prevent diarrhoea while 4.5% thought that proper waste disposal was essential. A number of organizations promote the concept of teaching students about water, sanitation, and hygiene to reduce the risk of disease, enable students to develop good hygienic habits early in life, and give them tools to motivate their parents to improve their hygienic habits.[14]

CONCLUSION

Diarrhoeal diseases are one of the main health problems in Pakistan, as in many low and middle income countries. Clarification of the microorganisms associated with diarrhoea is an essential step toward the implementation of effective primary health care activities against the disease. The present etiological study is also meaningful in that it provides information on the prevalence of diarrhoea in ATH. It is necessary to increase the counselling of children's parents about washing hands with soaps before feeding as an effort to prevent diarrhoea disease. Male children were found to have greater incidence of diarrhoea as compared to females. The findings of this study shows a strong association between source of drinking water and incidence of diarrhoea indicating highest incidence in children using spring water followed by those using municipal supply water, followed by well water, followed by water tube well. In contrast to other studies the incidence of diarrhoea in breastfed children were found to more as compared to those not breastfed.

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