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Study on profile of diarrhoea cases reporting to RHTC of Katihar Medical College, Katihar

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Abstract
Introduction: Diarrhoea is responsible for 13% of under – 5 age deaths in India. The incidence of 3.2 episodes per children per year makes it major public health problem. Understanding the causation of diarrhoea and vulnerable groups will be helpful in proper planning of prevention strategies. Hence, this study was aimed at finding the profile of diarrhoea cases between 0-5 year's age reporting to RHTC of Katihar Medical College.
Methodology: The present study was descriptive and hospital based in nature. Caretaker of 511 under-5 age children selected by systematic random technique were interviewed using pre-tested proforma. Clinical and lab examination was done to find cause and clinical profile.
Results: Mother's illiteracy, nuclear family, kaccha house and lack of sanitary latrine were associated with higher chances of diarrhoea. E. coli was predominant pathogen and hookworm was more among parasitic infections.

Keywords: Diarrhoea, Profile, under-5 children, Katihar

Introduction
Diarrhoea is one of the important causes of under-5 mortality worldwide amounting to 1.7 billion cases annually. It is also the leading cause of undernutrition [1]. The incidence and prevalence of diarrhoea is associated with immunization and nutritional status of children. Malnutrition creates a vicious cycle leading to increasing nutritional deficiencies, impaired immune function and greater susceptibility to infection [2].
India has made remarkable progress in reducing Under-5 mortality made possible due to introduction of programs like UIP, control of diarrheal diseases and acute respiratory infection. Still, the proportional mortality accounted by diarrheal diseases still remains high [3]. 50% - 60% cases are of bacterial (Enteropathogenic E. coli 25%, C. jejuni 18%, Salmonella and Shigella 5% each), 35% of viral (15% - 25% rotavirus) origin, and in many the cause is unidentified or mixed [4]. Proper understanding of causation and pattern of diarrhoea helps the clinician in better management of cases. Formal study regarding profile of diarrhoea cases and causative organism has not been done in this part of Bihar. Hence this study was undertaken to explore the same.

Aims & objectives
The present study was aimed to find out the common causes of diarrhoeal diseases in children (0-5 years) in rural area of Katihar and the associated socio-demographic factors.

Material & Methods
The present study was descriptive cross-sectional in nature, carried out in the Rural Training Health Centre, Hajipur, Katihar between the year 2011-12. Study subjects included children up to five years of age having history of active diarrhoea in the preceding two weeks. Children visiting the hospital and not belonging to the area covered by RTHC Hajipur and seriously ill children were excluded from the study.
Sutariya *et al* (2011) identified causative organism in 11.8% cases [5]. Using 20% relative precision, the sample size was calculated as below-
Sample size = z^2 X p X q / d^2= 511. A total of 511 under-5 age children were studied. If non-response was there, next available child was selected. Every third child was selected till the required sample size was obtained.
The data collection included personal interview with the respondents using semi-structured pre-tested questionnaire containing open and closed ended questions. Detailed information was collected regarding history of diarrhea, clinical examination, laboratory investigations as well as socio-demographic profile of respondents and feeding practices being followed.
The data was coded and entered in Microsoft Excel 2007, cleaned and analyzed by using SPSS version 16.0. Categorical variables were summarised as percentage while continuous variables were presented as Mean ± SD. Approval of ethical committee was taken. Informed consent was taken from the respondents and they were ensured about confidentiality.

Results & Discussion
The present study was conducted among 511 children reporting to RTHC, Hajipur with diarrhoea. Average age of children was 24.3 ± 17.9 months. 57.7% children were males, 33.1% belonged to socio-economic class 5, 84.7% belonged to nuclear family and 76.1% had illiterate mothers. Profile of children with diarrhoea is depicted in table-1.

Table 1: showing profile of diarrhoea cases

Characteristics	Groups	No.	(%)
Age (in months)	0-6	67	13.1
	7-12	126	24.6
	13-24	124	24.2
	25-36	53	10.3
	37-48	70	13.6
	49-60	71	13.8
Sex	Male	295	57.7
	Female	216	42.3
SES	1	27	5.28
	2	98	19.1
	3	142	27.7
	4	75	14.6
	5	169	33.1
Type of house	Kuccha	492	96.3
	Pucca	19	3.7
Type of latrine	Sanitary	22	4.3
	Insanitary	489	95.7
Mother's education	Illiterate	389	76.1
	Literate	64	12.5
	Primary	13	2.54
	Middle and above	45	8.8
Father's occupation	Farmer	79	15.4
	Unskilled labour	247	48.3
	Skilled labour	39	7.63
	Business	146	28.57
Type of family	Nuclear	433	84.7
	Joint	78	15.3
Exclusive Breastfeeding (0-6 months)	Yes	21	31.1
	No	46	68.9
Continuing breast feeding (<2 years)	Yes	178	56.2
	No	139	43.8
Immunization status	Fully Immunized	37	7.24
	Partially immunized	474	92.76
Nature of stool	Watery	457	89.4
	Mucoid	33	6.5
	Greenish	19	3.7
	Bloody	2	0.4
Presence of parasites	E. histolytica	4	0.8
	Hook worm	16	3.1
	Round worm	18	3.5
Presence of bacteria	E. coli	31	6.1
	Klebsiella	1	0.2
	Proteus	6	1.2
	Pseudomonas	4	0.8
	Salmonella	8	1.6
	Shigella	16	3.1

In the present study, 57.8% children were males. Sudarshan *et al* [6] also found that males were affected more (61.6%) as compared to females (38.4%). Similar trend was seen by Nagabushana *et al* [7] (Males-61.1%), Ramanaiah *et al* [8] (males- 52.5%), Ansari *et al* [9] (males-64.2%) and Naruka *et al* [10] (Males-65%). This may be because of outdoor habits of male children. Most of the children were in age group 7-24 months (48.8%) as also seen by Ramanaih *et al* [8] (55.5%), Ramakrishnan *et al* [11] (32%), Ansari *et al* [9] (69.9%) and Naruka *et al* [10] (66%). This is the age of introduction of complementary feeding and improper feeding practices may lead to infection and malnutrition, thus predisposing children to higher risk of diarrhoea. Most of the children belonged to lower socioeconomic class (33.1%), similar to the findings of Nagabushana *et al* [7] (54.1%) and Ramanaiah *et al* [8] (82%) which may be associated with poor living conditions and illiteracy as well as lack of hygiene. Kuccha house was seen in 96.3% cases while insanitary larine was present in 95.7% cases. Ramakrishnan *et al* [11] also observed similar findings. 76.1% mothers were illiterate in this study. Ramanaiah *et al* [8] found that 46% mothers were illiterate while Ramakrishnan *et al* [11] found only 4% mothers to be illiterate. Maternal education and awareness has significant and proven benefits in reducing the chances of diarrhoea. 84.7% children belonged to nuclear family as also seen by Watson *et al* [12]. 31.1% of children less than six months of age were being exclusively breastfed while56.2% children up to 2 years of age were continuing breastfeeding. Ramanaiah *et al* [8] found that 40% children were exclusively breastfed while 43% have been weaned. Ramakrishnan *et al* [11] found exclusive breastfeeding rate to be 26.5% while Naruka *et al* [10]. Found it to be 32.5%. Breastfeeding has been known since long to protect against

diarrhoea because of its anti-infective properties and providing proper amount of nutrients in easily digestible form. In 89.4% cases, the stool was watery. Nagabushana *et al* [7] found watery stool in 95.9% cases while Naruka *et al* [10] found it to be 83%. Major parasites observed were round worm (3.5%), hook worm (3.1%) and E. histolytica (0.8%). The predominant bacteria were E. coli (6.1%) and Shigella (3.1%). Ansari *et al* [9] found that E. histolytica were 6.7% followed by Giardia lamblia 3.4%, H. nana 0.7% and Cyclospora cayetanensis and A. lumbricoides each constituting 0.6%. Naruka *et al* [10] found hook worm in 11% cases, round worm in 8% and Giardia in 0.5%.

Conclusion

It is seen that the trend of diarrhoea is similar in this place as compared to others and has not changed much over time despite introduction of many control measures. Community based preventive strategies will be more effective in controlling the disease. Doctors treating diarrhoea cases must be aware of this condition.

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