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MAH and BAAK conceived and designed the study. All the authors were involved in the write-up, and statistical analysis; MNI revised the paper.

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Prevalence of Constipation in Children Visiting Hameed Latif Hospital Lahore, Pakistan

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Abstract:

Constipation in children is one of the most common gastrointestinal clinical diseases, with an estimated 14% prevalence. Although constipation exists in all continents, the incidence of children in Asia especially in Pakistan is currently not properly defined. So, this study was planned to study the prevalence of constipation in children at Hameed Latif Hospital Lahore, Pakistan. The total sample size for our study was 228 children which fulfil our inclusion criteria having different conditions of immunization history. Information on different variables was collected from children with the help of a questionnaire. Collected information was analyzed by using SPSS 23 (Statistical Package for the Social Sciences) software with the help of mean, standard deviation, frequency distribution, and chi-square at level of significance of 5%. The results showed that constipation is more common in males (59.6%) than in females (40.4 %). Most cases (70.6%) were found in the 1-5 years age group. The mean weight of children in our study was 23.59 ± 11.17 kg. In health assessment questions different responses were given by the children presenting that they suffer different problems regarding constipation. So need to address this issue to avoid this condition in children. Our study results will be helpful for parents and medical professionals in the management of this condition.



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INTRODUCTION

Constipation is not an infection, it is a sign. Various patients have different symptom perceptions. In certain cases, constipation is found straining (52%), painful to defecate (44%) or unnecessary (34%), or rare (33%) defecation (Kondapalli and Gullapalli, 2018).

Signs may develop for at least two months at least once a week and may have two or more signs: Per week fewer or two defecations per, toileting acquisition one episode at least of incontinence, Stool retention excessive history, Hard or painful bowel movements history of, Fecal mass presence in rectum and Larger diameter stools history that obstruct toilet (Kondapalli and Gullapalli, 2018; Rajindrajith and Devanarayana, 2011). Accompanying symptoms can include irritability, reduced appetite, and early satiety. Following the passage of a large stool, the accompanying symptoms disappear.

In children, constipation accounts for 3% of all visits to primary care providers and 10% to 25% of pediatric gastroenterology appointments. Although certain doctors still find persistent constipation to be a less severe issue that is very critical for the children and the father. The timely and early diagnosis of constipation and its quick management are important to the health and style of the infant. Management delays would only exacerbate the issue and increase the loss of self-esteem of the infant (Kondapalli *et al.*, 2019; Kondapalli and Gullapalli, 2018).

Healthy individuals and patients with multiple predisposing diseases, and functional gastrointestinal disorders. particularly constipation, are important factors of morbidity. Constipation is widely recorded in the general public, contributing to 2.5 million doctor visits annually (Al Nou'mani et al., 2023). A significant public health concern is the elevated incidence levels, economic impacts, and the negative effects on the standard of life and well-being (Kondapalli et al., 2019).

Constipation has recently grown to a large proportion of public health problems, being one

of the most common digestive problems in children. Its etiology, pathophysiology, and prognosis are confused, as are many other behavioral diseases (Rajindrajith and Devanarayana, 2011).

Constipation is a common health problem in the pediatric age group. The worldwide prevalence varies between 0.7 and 29.6%. It accounts for about 3-5% of the office visits in the pediatric outpatient practice and for almost one-fourth of the consults in the pediatric gastroenterology clinics (Khalil and Alkot, 2018). Childhood constipation is a family issue that negatively affects children's physical, social, emotional, and school functioning. Constipation has a significant impact on the use and cost of medical services (Afzal et al., 2011). The habit of stool is variable across the different pediatric age groups and tends to decrease with age. By the age of 4 years, most of the children gain voluntary control of the anal sphincter. Childhood constipation usually involves difficulty in defecation and/or infrequent bowel movements.

Fecal incontinence occurs when there is involuntary passage of stool into the underwear or in socially inappropriate places, in children with a developmental age of at least 4 years. In most children, this is caused by underlying constipation and is called retentive fecal incontinence (de la Portilla *et al.*, 2017).

In developed countries, the clinical characteristics of constipation in children have been well described; however, in developing countries, the clinical profile and plan of management are still not very well studied. Some published studies have shown that the problem is very common and usually not managed ideally. The delay in the diagnosis and treatment of constipation leads to significant morbidity due to the persistence of unexplained chronic abdominal pain and poor appetite, in addition to stool incontinence. This usually leads to a prolonged period of laxative therapy (Altamimi, 2014; Coss-Adame and S.C. Rao, 2012; Rajindrajith et al., 2013).

Constipation in children is one of the most common gastrointestinal clinical diseases, with an estimated 14% prevalence. The prevalence of children in adolescents in North and South America is between 10% and 23%, while the prevalence of European children is between 0.7% and 12% (Mugie et al., 2011). In Asia, the incidence is projected to vary from 0.5% to 29.6% in children and teenagers (Vriesman et al., 2020; Zhang et al., 2010). Although constipation exists in all continents, the incidence of children in Asia and Pakistan is currently not properly defined. Many factors help to make the reported prevalence of constipation in children very different. The numerous definitions used in studies to describe functional constipation impede the relation between prevalence estimates.

In Pakistan, the awareness about childhood functional constipation is low and the magnitude of this problem is underestimated. Although not enough epidemiological data are available, we believe that constipation is very common in our society. The objective of our study was to study the prevalence of constipation in children attending the Hameed Latif Hospital Lahore.

MATERIALS AND METHODS

We conducted this study at Hameed Latif Hospital Lahore, Pakistan during 2019 in children aged 1-15 years of both the sex who came for checkup at the pediatric department of the hospital. The nature of the study was descriptive. All children aged 1-15 years were included in the study and children already treated for constipation were excluded from our study. Children with constipation due to organic causes were also excluded from the study.

After getting permission from the ethical committee and institutional review board the study was conducted during the year 2019. The total sample size in our study was 228 children who fulfilled our inclusion and exclusion criteria. The information was collected from children with the help of a questionnaire. The questions were filled by the children's parents. In the demographic information age, gender, and weight were recorded. In constipation immunization history the information was recorded on stool pass in a week, episode of incontinence after the acquisition of toileting skills, history of stool retention posturing, history of painful or hard bowel movements, history of large amounts stool that clogged toilet, stool shape, doctor consultation, doctor dietary advice and doctor advice for rectal or oral laxatives. The collected information was analyzed by using SPSS 23 with mean, standard deviation, and frequency distribution. The chi-square test was also used for the significant association between genders.

RESULTS AND DISCUSSION

The aim of our study was to assess the prevalence of constipation in children attending Hameed Latif Hospital Lahore. The mean age of children in our study was 4.62 ± 2.62 years with a minimum age of 1 year and a maximum age 14 years of children (Table 1) which matches with the results of the study in which the mean age found was 5.52 years (Kondapalli and Gullapalli, 2018) which also similar to the results of study conducted (Kokkonen *et al.*, 2004) where the mean age was 5.5 years. Similarly, the mean weight of children in our study was 23.59 \pm 11.17 kg with a minimum weight of 4 kg and a maximum weight of 55 kg of children.

Table 1. Results of	descriptive	statistics c	of age and	weight.
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	n	Min	Max	Mean	SD	
Age	228	1.00	14.00	4.62	2.62	
Weight	228	4.00	55.00	23.59	11.17	

n: total number of the samples

In our study, we categorize age into three groups one is 1-5 years, the second is 6-10 years and the third is 11-15 years. Out of 228 children 161 (70.6%) were from 1-5 years age group, 57 (25.0%) were from 6-10 years and 10 (4.4%) were from 11-15 years age group. Most of the children in our study were from the age group 1-5 years (Table 2). A study found that during the period of toilet training from 2-4 years of age, the highest occurrence of constipation place, rising in boys prevalence. takes Constipation in the 2-4 year age group (57.4%) was also more prevalent in this sample. In gender out of 228 children, 136 (59.6%) were male and 92 (40.4%) were female. Most of the children in our study were male (Di Lorenzo and Benninga, 2004).

In health assessment questions different responses were given by the children. In how many times babies pass stool in a week 5 (2.2%) babies pass stool once in a week, 151 (66.2%) babies pass stool twice in a week and 72 (31.6%) babies pass stool thrice in a week. Most of the children in our study pass stool twice a week. After the acquisition of toileting skills 186 (81.6%) babies have no episode of incontinence and 42 (18.4%) babies have yes episode of incontinence (Table 2).

Our results showed that 126 (55.3%) babies have a history of stool retention posturing and 102 (44.7%) have no history of stool retention posturing (Table 2). In our study, most of the children have a history of stool retention. A study found that 58.4% of children with constipation had a history of retentive behavior in the form of abnormal posturing (Kondapalli and Gullapalli, 2018).

In our study, boys found more retentive behavior (30.3%) than females (25.0%) (Table 2). In a study, withholding behavior was seen in 27.4%, which is significantly less than that of our study (Khanna *et al.*, 2010). A previous study found retentive behavior to be more common in boys similar to ours (Wald *et al.*, 2009). In painful or hard bowel movements 140 (61.4%) babies have a history of painful or hard bowel movements and 88 (38.6%) have no history of

painful or hard bowel movements (Table 2). Most of the children have a history of painful or hard bowel movements. In a previous study, the bowel movement per week was 2.8% and was comparable to ours (Khanna *et al.*, 2010).

In a large amount of stool that clogs the toilet out of 228 babies, 161 (70.6%) have a history and 67 (29.4%) have no history. In stool shape out of 228 babies, 79 (34.6%) have pallet shape, 62 (27.2%) have small piece shape and 87 (38.2%) have banana shape (Table 2).

Throughout this study, 43% of children with moderate male domination (n=98) were present with fecal soiling (Table 2). In a report, fecal soiling was 30.8% (Khanna *et al.*, 2010). Fecal soiling was more common in children (Wald *et al.*, 2009). Fecal soiling, which was very large compared to our research, was found in 84% of children identified (Voskuijl *et al.*, 2004). The predominance of fecal soiling in clinical constipation was also higher (Kokkonen *et al.*, 2004).

Our results showed that 148 (64.9%) babies had no doctor consultation in the past about stool problems and 80 (35.1%) had a doctor consultation in the past about stool problems. In our study, most of the children had no doctor consultation in the past about stool problems. In question, the doctor had done any tests 158 (69.3%) babies said yes, and 70 (30.7%) babies said no (Table 2).

In dietary advice 162 (71.1%) babies received dietary advice and 66 (28.9%) babies did not receive dietary advice. In advice of oral or rectal laxatives, 165 (72.4%) received advice and 63 (27.6%) did not receive advice (Table 2).

When we compare the results of immunization history within the gender by chi-square the results showed similar results in males and females. The p-value calculated by using the chi-square test of all the questions is nonsignificant as the p-value is greater than the level of significance as shown in table 3.

Study variables	Frequency	Percent	
	1-5	161	70.6
Age Group	6-10	57	25.0
	11-15	10	4.4
Conder	Male	136	59.6
	Female	92	40.4
	Once	5	2.2
How many times baby pass stool in a week?	Twice	151	66.2
	Thrice	72	31.6
Is there any episode of incontinence after the acquisition of	No	186	81.6
toileting skills?	Yes	42	18.4
Is there any Hx of stool retention, posturing?	No	102	44.7
	Yes	126	55.3
Is there any Hx of painful or hard bowel movements?	No	88	38.6
	Yes	140	61.4
Is there any Hx of large amount of stool that you may clog	No	67	29.4
the toilet?	Yes	161	70.6
	Pallets	79	34.6
What is the stool shape?	Small Pieces	62	27.2
	Banana Shape	87	38.2
Do you have any doctor consultation in past about stool problem?	No	148	64.9
	Yes	80	35.1
Does the doctor had done any tests?	No	70	30.7
	Yes	158	69.3
	No	66	28.9
Ally dictary advice given:	Yes	162	71.1
	No	63	27.6
Does the doctor advise any oral or rectal laxatives?	Yes	165	72.4

Table 2. Results of the frequency distribution of study variables.

CONCLUSION

The main aim of our study was to study the prevalence of constipation in children attending Hameed Latif Hospital Lahore. We concluded in our study that in constipation immunization history the results of our study showed that on stool pass in a week, episode of incontinence after the acquisition of toileting skills, history of stool retention posturing, history of painful or hard bowel movements, history of large amount stool that clogged toilet, stool shape, doctor consultation, doctor dietary advice and doctor advice for rectal or oral laxatives, all children had different problems regarding constipation so need address these issues so that avoid this condition. Our study will be helpful for parents and medical professionals in the management of this condition.

Study questions		Gender		Total	n-value	
		Male	Female	Total	p-value	
How many times baby pass stool in a	Once	5 (2.2 %)	0 (0.0 %)	5 (2.2 %)		
week?	Twice	90 (39.5 %)	61 (26.8 %)	151 (66.2 %)	0.165	
	Thrice	41 (18.0 %)	31 (13.6 %)	72 (31.6 %)		
Is there any episode of incontinence	No	110 (48.2 %)	76 (33.3 %)	186 (81.6 %)	0.741	
after the acquisition of toileting skills?	Yes	26 (11.4 %)	16 (7.0 %)	42 (18.4 %)	0.741	
Is there any Hx of stool retention, posturing?	No	67 (29.4 %)	35 (15.4 %)	102 (44.7 %)	0.005	
	Yes	69 (30.3 %)	57 (25.0 %)	126 (55.3 %)	0.095	
Is there any Hx of painful or hard bowel	No	50 (21.9 %)	38 (16.7 %)	88 (38.6 %)	0.490	
movements?	Yes	86 (37.7 %)	54 (23.7 %)	140 (61.4 %)	0.430	
Is there any Hx of large amount of stool	No	38 (16.7 %)	29 (12.7 %)	67 (29.4 %)	0.56	
that you may clog the toilet?	Yes	98 (43.0 %)	63 (27.6 %)	161 (70.6 %)	0.56	
What is the stool shape?	Pallets	46 (20.2 %)	33 (14.5 %)	79 (34.6 %)		
	Small Pieces	38 (16.7 %)	24 (10.5 %)	62 (27.2 %)	0.934	
	Banana Shape	52 (22.8 %)	35 (15.4 %)	87 (38.2 %)		
Do you have any doctor consultation in	No	93 (40.8 %)	55 (24.1 %)	148 (64.9 %)	0.400	
past about stool problem?	Yes	43 (18.9 %)	37 (16.2 %)	80 (35.1 %)	0.182	
Does the doctor had done any tests?	No	48 (21.1 %)	22 (9.6 %)	70 (30.7 %)	0.000	
	Yes	88 (38.6 %)	70 (30.7 %)	158 (69.3 %)	0.068	
Any dietary advice given?	No	41 (18.0 %)	25 (11.0 %)	66 (28.9 %)	0.627	
	Yes	95 (41.7 %)	67 (29.4 %)	162 (71.1 %)	0.027	
Does the doctor advise any oral or	No	36 (15.8 %)	27 (11.8 %)	63 (27.6 %)	0.004	
rectal laxatives?	Yes	100 (43.9 %)	65 (28.5 %)	165 (72.4 %)	0.034	

Table 3. Chi-square results of study questions with respect to gender.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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