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Awareness of Mothers about Diarrhea; A Cross Sectional Comparative Study Focusing on Consciousness of Diarrhea among Different Socioeconomic Classes in Pakistan

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Abstract

Objective: The objective of this study was to access the knowledge of mothers belonging to low and middle socio economic groupsconcerning diarrheal disease in Pakistan.

Methodology: This was an observational, comparative study done for three months using convenient sampling technique. The mothers of the admitted children in paediatric wards or coming to the paediatric OPD of Sheikh Zayed Hospital, Lahore having at least one child under the age of 5 years and the presenting complaint of the child was diarrhea were included in the study.The duration of study was from 19 April 2015 to 28 July 2015. The calculated sample size was 268.The mothers who did not give consent were excluded from the study.The demographics data includedage of the child, sex, number of sibling, residence (urban / rural), education and profession of father and mother and socioeconomic status. The family having monthly income between ten to twenty thousand rupees in a month was classified to have low socioeconomic status and with twenty to thirty thousand as middle socioeconomic status. They were divided into equal groups according to the socio economic status having 138 mothers in each group. Awareness about diarrhea and its causes, signs of dehydration, importance and preparation of ORS were also documented. Data was analyzed through SPSS version 20. Chi square test was used to evaluate the significance.

Results: In total of 268 mothers the mean age of their children that belong to low socioeconomic class was 2.2±1.34 years, and mean weight recorded was 11.7±3.93kg while those that belong to middle socioeconomic class it was 2.4±1.53 years and 12.9±4.33 kg. Our study showed that 81(60.4%) of mothers in group A prefer ORS to give their child, 25(18.7%) give boiled rice, 28(20.9%) prefer to give other soft diet to their children. However, mothers from group B, 90(67%) prefer to give ORS, 25(18.7%) give boiled rice while 19(14.2%) mother prefer to give other soft diet. The adequate level of knowledge regarding ORS was found to be present in 123(91.8%) in group A and 134(100%) in group B, with a significant p-value of 0.001. However it was found that the knowledge about the causes of diarrhea was similar in both the groups.

Conclusion: This study concluded that knowledge about control of diarrheal disease is quite unappreciative especially in mothers of low socioeconomic group. Poverty, illiteracy, improper sanitation facilities, unhygienic practices and use of impure water is dragging the health indicators down and increasing the burden of diarrheal diseases on health resources.

Keywords: Awareness of Mothers; Diarrhea;

Introduction

Globally, diarrhea is a one of the main cause of morbidity and mortality among all age groups [1]. Diarrhea could be stated as the passage of loose or watery stools. The World Health Organization (WHO) describes a case of diarrhea as the passage of three or more loose or watery stools per day. However, abnormality from the usual pattern of child should arouse some fear irrespective of the definite quantity of stools or their water content [2]. According to the World Health Organization (WHO) and UNICEF, globally every year diarrhea affects 2 billion people and every year 1.9 million children younger than 5 years of age die from diarrhea mostly in developing countries [3]. Around 25,000 deaths occur annually in Pakistan because of diarrhea and is rated as the main cause of death in children [4]. In Pakistan approximately 1,100 children of less than 5 years die every day because of diarrhea and diseases related to water, sanitation and hygiene [5]. Diarrheal ailment could involve acute watery diarrhea, invasive (bloody) diarrhea, or chronic diarrhea (persistent greater or equal to fourteen days). This classification facilitates the approach to management of childhood diarrhea. Maximum patients of acute diarrhea in evolving countries are because of infectious gastroenteritis. The etiologies of childhood diarrhea depend upon the type of diarrhea. Acute watery diarrhea is because of rotavirus in new-born and young kids; in older children, it is most often due to Escherichia coli [6]. Severe diarrhea in childhood can caused malnutrition, impaired cognitive development and growth failure which are more common in developing countries. However, the changes in personal hygiene, sanitation and water supply during the past three decades have decreased the mortality in developing countries [3,7]. Diarrhea exerts the economic burden on health services leading to as one-third of total pediatric admissions in hospitals [8]. Although the programs sponsored by World Health Organization (WHO) have played significant role in decreasing mortality rates but in children younger than 5 years the incidence of diarrhea disease remains high [9]. The mortality of diarrhea is because of fluid loss leading to sever dehydration [10]. Morbidity and mortality of diarrheal disease can be reduced with oral rehydrating solution (ORS) at appropriate time [11]. There are various programs conducting throughout the world like WHO diarrheal control program whose main objective is to delivered the appropriate knowledge regarding diarrheal disease and the use of ORS [12].

On the basis of accurate understanding of prevailing knowledge and awareness of community, effective health education can be provided. The objective of our study was to accesses the knowledge of mothers belonging to two different socio economic groups (low and middle socio economic groups) regarding diarrheal disease. Therefore, for successful implementation of control activities in the management of diarrheal diseases in children of five years of age, the information of awareness of mothers is essential.

Material and Methods

The study design was cross sectional comparative study with non-probability convenient sampling technique. The study was conducted in Sheikh Zayed Hospital, Lahore. Prior permission was obtained from hospital concerned authorities to conduct the study. Verbal and the written consent were taken from selected mothers with confidentially of data. The duration of study was from 19 April 2015 to 28 July 2015. The calculated sample size was 268. Sample size was estimated using WHO software. It was calculated under the assumption that the proportion of mother appropriately treating their children with acute diarrhea was 55% (p = 0.55) with an expected 5% margin of error and 90% confidence interval. The mothers of the admitted children in paediatric wards or coming to the paediatric OPD of Sheikh Zayed Hospital, Lahore having at least one child under the age of 5 years and the presenting complaint of the child was diarrhea were included in the study. The mothers of children who did not give consent for participation in the study were excluded from the study. Mothers were interviewed by structured Performa. The demographics data include age of the child, sex, number of sibling, residence (urban / rural), education and profession of father and mother and socioeconomic status. The family having monthly income of between ten to twenty thousand rupees in a month was classified to have low socioeconomic status and with twenty to thirty thousand as middle socioeconomic status. They were divided into equal groups according to the socio economic status having 138 mothers in each group. The question regarding diarrhea were asked from mothers including definition of diarrhea, signs of dehydration, when they visit doctor to seek treatment, food offer during diarrhea, either they educate their children regarding hand washing or not and the causes and consequences of diarrhea. The awareness about preparation and importance of ORS was also documented.

Data Analysis

Data was entered and analyzed through SPSS version 20. Quantitative data like age was presented by mean and standard deviation while qualitative data like Study group, education and socioeconomic status were presented by frequency and percentages. Chi square test was used to evaluate the significance. P-value of less than or equal to 0.05 was taken as substantial.

Results

In total of 268 mothers the mean age of their children that belong to low socioeconomic class was 2.2±1.34 years, and mean weight recorded was 11.7±3.93 kg while those that belong to middle socioeconomic class it was 2.4±1.53 years and 12.9±4.33 kg .The gender of children in group A was male in 105 (78.4%) and female in 29 (21.6%) while in group B males were 114 (85.1%), and females were 20 (14.9%). Number of sibling of age range 0-4 years in group A was 101 (75.3%) % and in group B was 105 (78.3%) while from 5-8 y in group A was 33 (24.6%) and in group B was 29 (21.6%).The education of mothers from group A was primary in 52 (38.8%), metric in 67 (50%), intermediate in 12 (9%) and graduation in (2.2%), whereas from group B primary in 10 (7.5%), metric in 19 (14.2%), intermediate in 40 (29.9%), graduation in 48 (35.8%), higher education in 17

(12.7%).The education of father from group A was primary in 14 (10.4%), metric in 50 (37.3%), intermediate in 70 (52.2%) while from group B it was primary in 7 (5.2%), metric in 14 (10.4%), intermediate in 34 (25.4%), graduation in 59 (44%), higher in 20 (14.9%). 103 (76.9%) mothers were housewives, 28 (20.9%) were maids and only 3 (2.2%) were doing private job like teaching from group A, while from group B 82 (61.2%) mothers were housewives, 7 (5.2%) were maids and 45 (32.6%) were private job. The fathers belonging to low socioeconomic group, 72 (53.7%) were doing private job, 41 (30.5%) were shopkeepers, 21 (15.6%) were jobless. Among fathers belonging to middle socioeconomic group 87 (65%) were doing private job, shopkeepers were about 36 (26.8%), 5 (3.7%) were jobless while only 6 (4.5%) were government employee (Table 1).

Table 1: General Analysis (n= 288)

Variables		Group A (n=134)	Group B (n=134)
Age(years)		2.2±1.34	2.4±1.53
Present weight of child (kg)		11.7±3.93	12.9±4.33
Gender	Male	105 (78.4%)	114 (85.1%)
	Female	29 (21.6%)	20 (14.9%)
No. of siblings	0-4	101 (75.3%)	105 (78.3%)
	5-8	33 (24.6%)	29 (21.6%)
Education of mother	Primary	52 (38.8%)	10 (7.5%)
	Matric	67 (50%)	19 (14.2%)
	Inter	12 (9%)	40 (29.9%)
	Graduation	3 (2.2%)	48 (35.8%)
	Higher	0	17 (12.7%)
Education of father	Primary	14 (10.4%)	7 (5.2%)
	Matric	50 (37.3%)	14 (10.4%)
	Inter	70 (52.2%)	34 (25.4%)
	Graduation	0	59 (44%)
	Higher	0	20 (14.9%)
Profession of Mother	house wife	103 (76.9%)	82 (61.2%)
	maid	28 (20.9%)	7 (5.2%)
	Private Job/Teacher	3 (2.2%)	45 (32.6%)
Profession of Father	Private Job	72 (53.7%)	87 (65%)
	Business/Shop	41 (30.5%)	36 (26.8%)
	Jobless	21 (15.6%)	5 (3.7%)
	Govt. Job	0	6 (4.5%)

Out of the 134 mothers belonging to group A, 64 (47.8%) quoted diarrhea as watery stools, 45 (33.6%) as increased frequency of stools and 25 (18.7%) mothers were unaware. While, out of 134 mothers from group B, 75 (56%) stated diarrhea is watery stools, 31 (23%) as increased frequency of stools and 28 (20.9%) mothers were unaware. Mothers from group A have satisfactory knowledge about signs of dehydration as 61 (45.5%) answered sunken eyes, thirsty and dry skin quoted by 49 (36.6%) and 24 (17.9%) mother had no idea about it. Similarly, 48 (35.8%) mothers from group B reported sunken eyes, 59 (44%) thirsty and dry skin and 27 (20.1%) had no awareness about it. An enormous number of mothers ,71 (53%) from group A said that they should visit the doctor immediately when their child have diarrhea, 51 (38.1%) reported within 48 hours of illness, only 12 (9%) mothers do not visit. Likewise, from group B 45 (33.6%) mother were aware that they should visit immediately, 59 (44%) visit within 48 hours and 30 (22.4%) do not visit. Our study showed that 81 (60.4%) of mothers in group A prefer ORS to give their child, 25 (18.7%) give boiled rice, 28 (20.9%) prefer to give other soft diet to their children. However, mothers from group B, 90 (67%) prefer to give ORS, 25 (18.7%) give boiled rice while 19 (14.2%) mother prefer to give other soft diet. The adequate level of knowledge regarding ORS was found to be present in 123 (91.8%) in group A and 134 (100%) in group B, with a significant p-value of 0.001. Mothers that showed adequate level of knowledge regarding preparation of ORS were 107 (79.9%) from group A and from group B they were 100 (74.6%). 103 (76.9%) from group A and 102 (76.1%) from group B educate their children about frequent hand washing (Table 2).

Table 2: Accessing Knowledge Regarding Diarrhea (n= 288)

Comparison of Knowledge with Socio economic Status (n=268)				
Variables		**Group A**	**Group B**	**P-value**
Do you know what is diarrhea	**Watery stool**	64 (47.8%)	75 (56%)	0.164
	Increase Frequency	45 (33.6%)	31 (23.1%)	
	Don't Know	25 (18.7%)	28 (20.9%)	
Do you know what are the signs of dehydration	**Sunken Eyes**	61 (45.5%)	48 (35.8%)	0.729
	Thirsty and dry skin	49 (36.6%)	59 (44%)	
	Don't Know	24 (17.9%)	27 (20.1%)	
Do you visit the doctor when your child is having episode of diarrhea	**Immediately**	71 (53%)	45 (33.6%)	0.265
	Within 48 Hours	51 (38.1%)	59 (44%)	
	Don't Visit	12 (9%)	30 (22.4%)	
Which diet do you offer during diarrhea	**ORS**	81 (60.4%)	90 (67.2%)	0.08
	Khichri only	25 (18.7%)	25 (18.7%)	
	(Banana, Borage, Khichri)	28 (20.9%)	19 (14.2%)	
Do you educate your child to wash his or her hands frequently	**Yes most often time**	103(76.9%)	102 (76.1%)	0.855
	Sometimes	31 (23.1%)	32 (23.9%)	
Do you know what is ORS	**Yes**	123 (91.8%)	131(97.7%)	0.001
	No	11 (8.2%)	3(2.3%)	

Our study recorded the knowledge of mothers regarding causes of diarrhea and fount that from group A and B, 62 (46%) and 64 (47%) mothers respectively consider use of contaminated water as a cause of diarrhea. 29 (22%) and 24 (18%) mothers of group A and B respectively consider teething as a cause of diarrhea while equal number of mothers that is 32 (24%) of mothers of both group believe that diarrhea is because of eating mud by their children. 3 (2%) and 2 (1%) mothers of group A and B respectively suppose evil eye to be the cause of diarrhea while 7 (5%) and 12 (9%) mothers of group A and B respectively do not know the cause of diarrhea (Figure 1).

Our study recorded the knowledge of mothers regarding consequences of diarrhea in the mothers of groups A as lethargy, loss of weight, unconsciousness and death in 65 (49%), 42 (31%), 20 (15%) and 7 (5%) respectively. Similarly it was noted to be 47 (35%), 56 (43%), 27 (20%) and 4 (3%) respectively in the mothers categorized in group B (Figure 2).

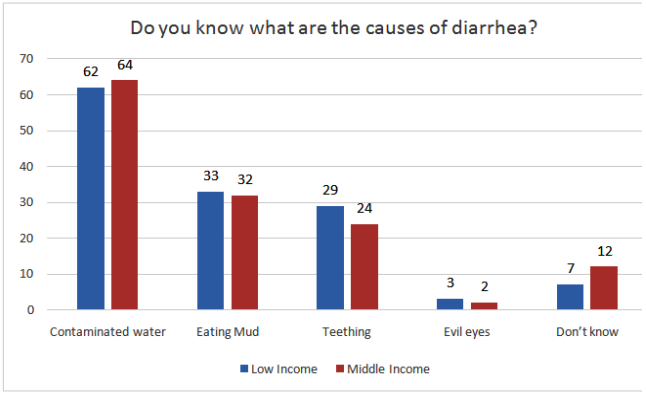

Figure 1: Causes Of Diarrhea (n=288)

Discussion

The development of a country primary health care is very important. The proper treatment of child by following the instructions advised by doctor and practicing of oral rehydration therapy is possible if mother is educated. The previous studies revealed that literacy rate of mothers was higher in urban areas than the rural areas [13,14]. While our study showed that the education of mothers from group A (low socio economic group) was primary in 38.8%, matric in 50%, intermediate in 9%, graduation in 2.2% and from group B(middle socioeconomic group): primary in 7.5%, matric in 14.2%, intermediate in 29.9%, graduation in 35.8%, higher in 12.7%. This showed the marked difference in the educational status of the mothers in group B.

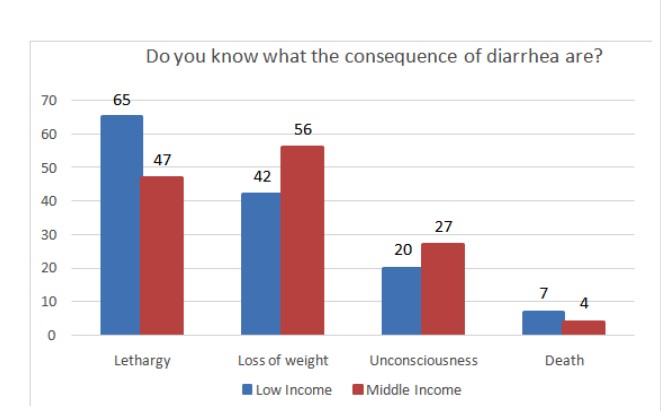

Figure 2: Showing the awareness about Consequences of Diarrhea (n= 288)

Existing literature showed that 86.7% and 75% of the mothers living in urban and rural regions respectively had reasonable information about diarrhea [14]. Results of another study specified that knowledge of the most of women (64.3%) concerning diarrhea and nutrition was modest and there were only 3.7% had reasonable information [15]. Another study documented the awareness in mothers regarding features of dehydration, 26% mothers were aware about sunken eye as the only clinical feature and 40% mothers reported unclear signs whereas 35% answered two features including thirst and dry skin and there were 80% Mothers who knew about the preparation of ORS [16]. In one of the study the knowledge about increase fluid intake during diarrhea was noted and it was found that 81% and 49% mothers of urban and rural areas respectively were aware about it. As revealed by the study these fluids (ORS and other fluids) were locally acceptable. So, the child can be treated at home if mothers are educated. Their study also showed that 92% and 90% mothers from urban and rural areas had knowledge regarding ORS solution [13]. In our study, it was revealed that, among mothers belonging to low socioeconomic group 47.8% documented diarrhea as watery stools, 33.6% as increase frequency of stools and 18.7% mother did not know about it. While, mothers from middle socioeconomic group stated diarrhea is watery stools by 56% of mothers, increased frequency by 23% and 20.9% mother were unaware. Mothers from group A have acceptable knowledge about signs of dehydration, 45.5% said sunken eyes, thirsty and dry skin quoted by 36.6% and 17.9% mother had no idea about it. Similarly, 48% mothers from group B declared sunken eyes, 44% said thirsty and dry skin and 20.1% had no idea about it. An enormous number of mothers 71% from group A said that they visit the doctor immediately when their child have diarrhea, 38.1% visit within 48 hours of illness, only 9% mothers do not visit. Likewise, from group B 45% mother visit immediately, 44% visit within 48 hours and 22.4% do visit doctor. Our study showed that 60.4% of mothers group A prefer ORS to give their child, 18.7% give khichri, 20.9% prefer to give other soft diet to their children. However, mothers from group B, 67.2% prefer to give ORS, 18.7% give khichri while 14.2% mother prefer to give other soft diet. Our study shows Statistics that in both the groups the adequate level of knowledge regarding ORS was found to be present in 91.8% in group A, 100% in group B, with a significant p-value of 0.001. Mothers that showed adequate level of knowledge regarding preparation of ORS were from group A 79.9% and from group B 74.6%. Our research also recorded that 76.9% from group A and 76.1% from group B educate their children about frequent hand washing with a insignificant p-value 0.08.

One of the study recorded that those children were more prone to have diarrheal disease who are using well or river water and hand pump [17]. Our study documented that the source of water used to drink and cook was tap water by 11.2% and by storage tank by 88.8% from group A, and in group B tap water used by 10.4% whereas 89.9% used from storage tank. It was found that 91.8% of mothers from group A use water from tap and only 8.2% used boil water to drink and for cooking purpose.

One of the study documented that the morbidity and mortality of diarrheal disease was dependent on multiple factors like female literacy, poor sanitation, inadequate health services, poor hygiene, poverty and the lack of breast feeding [18]. Another study showed that because of diarrhea and diseases stemming because of poor hygiene, impure water usage and improper sanitation techniques 1100 children under 5 years lose life daily [19]. Another study documented that from 200 cases, mother's knowledge concerning the causes of diarrhea; eating mud (14%), contaminated water (17%), teething (10%) [20]. Our study recorded the knowledge of mothers regarding causes of diarrhea that from group A and B, 62% and 64% mothers respectively consider use of contaminated water as a cause of diarrhea. 29% and 24% mothers of group A and B respectively consider teething as a cause of diarrhea while equal number of mothers that is 32% of mothers of both group believe that diarrhea is because of eating mud by their children. 3% and 2% mothers of group A and B respectively suppose evil eye to be the cause of diarrhea while 7% and 12% mothers of group A and B respectively do not know the cause of diarrhea.

The qualitative approach of our study has warranted that we have considered the awareness of extensive range of mothers from lower and middle socioeconomic classes in Pakistan. However, the study might not be immune from subjective and observer bias. Creating the awareness of the diarrhea among the different classes of mothers would be revealing and beneficial to regulate the prevention of diarrhea at initial level.

Conclusions

It can be concluded that knowledge of mothers regarding control of diarrheal disease is quite unappreciative especially in mothers of low socio economic groups. Poverty, illiteracy, improper sanitation facilities, unhygienic practice and use of impure water is reducing the quality of health. Therefore, with the help of awareness programs, radio transitions and health care camps case management of diarrheal disease at preliminary level can be improved.

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