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## The Prevalance of Diseases With Diarrhoea Among Children Under Five Years Old in Different Socio–Economical Levels\*

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**Abstract:** This study was carried out on a representative sample consisting of 429 households in Gaziantep. The prevalance of diseases with diarrhoea was found to be 22.9% among children under five years old in the two weeks preceding the survey. It was observed that 51.3% of children with diarrhoea were taken to a medical facility, the mean duration of the diarrhoea was  $4.5 \pm 3.8$  days, and the rate of children with diarrhoea during the preceding 24 hours was 11.8%.

It was also determined that the rate of children with diarrhoea whose intake of

fluids was increased was 65.1%, the ratio of children with diarrhoea treated with ORT (Oral Rehydration Therapy) was 20%, and the ratio of children with diarrhoea given treatment at home was 7.7%.

The Chi–Square test was used in the statistical analysis of data.

The number of recommendations of ORT in health facilities was found to be low in this study.

**Key Words:** Diarrhoea, Children, Prevalance.

### Introduction

Diseases with diarrhoea are some of the most prevalent diseases and most frequent causes of death in childhood around the world. Especially in less developed and devolving countries, including Turkey, these diseases are the most common causes of death in infants and children(1). The main cause of death in children with diarrhoea is dehydration. If dehydration is prevented, the high fatality rate of diseases with diarrhoea can be lowered. Great success has been achieved using ORT, which has been given to prevent dehydration in children with diarrhoea. Its use has increased a lot recently . It has been reported that the deaths of approximately one million children have been prevented each year by the use of ORT in recent years(1-3).

In Turkey, diseases with diarrhoea are also some of the most prevalent diseases and most frequent causes of death in childhood. The rate of diarrhoea has been reported as 1/3 among children hospitalized in pediatric services according to a survey carried out by the Turkish Ministry of Health. It has been reported that diseases with diarrhoea are the third most common cause of death in children aged 0-1 and 1-4 years (4). In a few studies it was found that the prevalance of diseases with

diarrhoea in the southern region of Turkey, including Gaziantep, was higher than that in Turkey as a whole (4,5). Indeed, diseases with diarrhoea are among these diseases which have to be reported (6). However, this evaluation may not reflect the actual prevalance because it is based upon a reporting system, not an active survey.

Consequently, the aim of this study was to determine the real prevalance of diseases with diarrhoea in children under five years old, the percentage of ORT use in treatment, and the approach of mothers to children with diarrhoea in areas classified as being of low and medium socio-economical levels that were considered to be at greater risk.

### Material and Method

This study was carried out in 6 wards, of which 4 were of low socio-economical level and 2 of medium level. For this classification and the estimation of household rates to be selected for these two groups, the data provided by the State Institute of Statistics were used (7). The percentage of households selected from the low socio-economical group was 62.3, and from the medium level it was 37.7 %.

\* This study was presented as a poster presentation in The National Public Health Congress.

Because the prevalence of diseases with diarrhoea among children under five years old was 24.8% in a study carried out in Turkey as a whole, the sampling size was estimated by household. Four hundred and fifty households were selected using a simple random sampling technique, and 429 (95%) of them were surveyed. Sixty three point two percent of the household surveyed were from low socio-economical level groups, and 36.8% of them were from medium socio-economical groups. These were similar to the actual percentages.

Characteristics of the households and the number of children with diarrhoea during the preceding 24 hours and 15 days were determined. Questionnaires were given to married women in each household by final-year medical students .

Defecation with abundant water occurring more than three times a day was defined as diarrhoea. The questionnaire also asked about the approach of the families to the treatment of diarrhoea, and the use of ORT. The members of 21 households found to be away from home on two visits done on different days were not taken into consideration.

All the families received counselling and were given leaflets provided by the local health authority. If there were dehydrated children with diarrhoea, in the families ORT packs were given to the families and training was given for their use.

The analysis of the data obtained was carried out using Chi–Square tests in the Epi Info 5.0 programme.

## Results

It was found that 2179 people were living in 429 houses and the mean of people per house was  $5.08 \pm 2.05$ . The number of children under five years old living in these houses was found to be 331. The average age of these children was  $25.08 \pm 18.25$  months. During the study, cases with diarrhoea were observed in children aged over 4 years in 16 households (3.7%). It was determined that children had died after a disease with diarrhoea in 5.8% of these households.

The percentage of children with diarrhoea under five years old was 22.9% (76 children) in the preceding 15 days and 11.8 % (39 children) in the preceding 24 hours. The mean duration of the diarrhoea was  $4.5 \pm 3.8$  days and , excepting cases in the previous 24 hours, 62.2% of cases with diarrhoea (27 cases) were cured within three days. Only 6.6% of children with diarrhoea displayed blood in their feces.

The distribution of children under five years old according to different factors was considered to be significant. The prevalence of diseases characterised by diarrhoea is given in Table 1.

The percentage of children with diarrhoea in children aged between 36 and 59 months was significantly lower than in other age groups ( $p < 0.05$ ).

The incidence of diarrhoea in children living in families which had no social security was significantly higher than in the other group ( $p < 0.05$ ).

The distribution of children with diarrhoea in the previous 15 days according to family characteristics and the use of ORT is shown in Table 2. It was observed that 67.1 % of mothers whose children had become ill with diarrhoea in the previous 15 days had increased the amount of water and liquid in the diets of their children. Twenty-three point seven percent of them had not increased this amount, and 9.2 % of them had either decreased the amount or had done nothing.

Twenty-nine of the children who were ill with diarrhoea were still in the breastfeeding period. Twenty-four of these children's mothers (82.7%) stated that they had not changed their breastfeeding habits after the diarrhoea started, 3 of them (10.3%) stated that they had increased breastfeeding, and 2 of them (7.0%) stated that they had given up breastfeeding completely.

Fifty-one percent of children with diarrhoea in the previous 15 days were taken to a medical facility by their family for treatment. Of this treatment, 51.3% took place in hospitals, 25.6 % with private doctors and in private clinics, and 15.4 % in health centres. The majority of this treatment (61.5%) was carried out within the first two days of the start of the illness.

Eighty-five percent of children with diarrhoea in the previous 15 days were treated for their diarrhoea. Forty percent of them were treated without recourse to a medical facility. The distribution of treatments according to the place of treatment is given in Table 3. Eighty-three percent were given liquids such as tea, butter milk and fruit juices, 52% were treated with antibiotics, and 27.5% of them were treated with ORT. Thirty-three percent of the children who were treated at a medical facility received ORT and 74% received antibiotics.

Of the 18 families who used ORT, 6 families obtained ORT packs from health centres, 6 from pharmacies, 1 from hospital, 1 from a private physician, and 3 prepared them at home.

Table 1. The Percentage of Children Under Five Years of Age With Diarrhoea According To Various Characteristics.

		Diarrhoea (+)		Diarrhoea (-)		Total		p
		Number	%	Number	%	Number	%	
Child's age (month)*	0-11	29	29.6	69	70.4	98	100.0	p<0.05
	12-23	15	28.8	37	71.2	52	100.0	
	24-35	14	24.1	44	75.9	58	100.0	
	36-47	9	13.4	58	86.6	67	100.0	
	48-59	9	16.1	47	83.9	56	100.0	
* 36-59 month age groups were combined for statistical analysis								
Socio-economic Level	Low	58	25.1	173	74.9	231	100.0	p>0.05
	Medium	18	18.0	82	82.0	100	100.0	
Father's Education	No educ./Pri.incomp.	9	31.0	20	69.0	29	100.0	p>0.05
	Pri comp./ Sec.incomp	46	21.2	170	78.8	216	100.0	
	Sec.comp./ +	21	24.4	65	75.6	86	100.0	
Mother's Education	No educ./Pri.incomp.	25	26.0	71	34.0	96	100.0	p>0.05
	Pri comp./ Sec.incomp	39	21.1	146	78.9	185	100.0	
	Sec.comp./ +	12	24.0	38	76.0	50	100.0	
Mother's age	≤25	37	25.5	108	74.5	145	100.0	p>0.05
	26-35	27	18.2	121	81.8	148	100.0	
	≥36	12	31.5	26	68.5	38	100.0	
Number of people who living in each house	≤4	37	27.0	100	73.0	137	100.0	p>0.05
	5≥	39	20.1	155	79.9	194	100.0	
Social security	Absent	44	28.0	112	71.8	156	100.0	p<0.05
	Present	32	18.3	143	81.7	175	100.0	
TOTAL		76	22.9	255	77.1	331	100.0	

## Discussion

In this study, it was determined that the percentage of children with diarrhoea in the 15 days preceding the survey was 22.9 % in June and July in Gaziantep. In various other studies, it was determined that the prevalence of diarrhoea was between 16% and 32% (8-10). In a study carried out on Turkey as a whole, the prevalence of diarrhoea in the preceding 15 days in children under five years old was 24.8%. This figure was 22.7% in urban areas. These findings are similar to those of the present study.

In this study, the rate of children with diarrhoea in the previous 24 hours was found to be 11.7%. It was

estimated to be 11.2% in Turkey as a whole, and 9.1% in urban areas (5).

It was observed that cases with diarrhoea were more prevalent in children between 0 and 36 months than in other age groups, which is similar to the findings of other studies carried out in Turkey (5-8). This may be due to inadequate transition from breastfeeding to additional foods and insufficient hygiene in child feeding.

The percentage of children with diarrhoea (28%) in families with no social security was significantly higher than in families with social security.

In this study, it was established that 67.1% of mothers had given increased amounts of water and liquid

Table 2. Liquid Feeding Practices During Illness With Diarrhoea According To Various Characteristics.

		Receiving increased fluids		Receiving same amount of fluid		Total		p
		Number	%	Number	%	Number	%	
Socio-economic Level	Low	36	62.1	22	37.9	58	100.0	p>0.05
	Medium	15	83.3	3	16.7	18	100.0	
Father's Education	Pri.incomp.	7	77.8	2	22.2	9	100.0	p>0.05
	Pri comp./ +	44	65.6	23	34.4	67	100.0	
Mother's Education	Pri.incomp.	14	56.0	11	44.0	25	100.0	p>0.05
	Pri comp./ +	37	72.5	14	27.5	51	100.0	
Mother's Age	≤25	27	73.0	10	27.0	37	100.0	p>0.05
	26-35	14	51.8	13	48.2	27	100.0	
	≥36	10	83.3	2	16.7	12	100.0	
Number of people who living in each house	≤4	26	70.3	11	29.7	37	100.0	p>0.05
	5≥	25	64.1	14	35.9	39	100.0	
Social security	Present	30	68.2	14	31.8	44	100.0	p>0.05
	Absent	21	65.6	11	34.4	32	100.0	
TOTAL		51	67.1	25	32.9	76	100.0	

Table 3. Treatments of Children Under Five Years of Age Who Had Got Treatment For Their Diarrhoea In The Two Weeks Preceding The Survey.

	Families who went to a medical facility for diarrhoea (n=39)		Families who did not go to a medical facility for diarrhoea (n=26)		TOTAL (n=65)	
	Number	%	Number	%	Number	%
Recommended tea, Fruit, etc.	38	97.4	16	61.4	54	83.0
Receiving antidiarrhoeal drugs	38	97.4	16	61.4	54	83.0
Receiving antibiotics drugs	29	74.3	5	19.2	34	52.3
Receiving ORT	13	33.3	5	19.2	18	27.7
TOTAL	39	100.0	26	100.0	65	100.0

in the diets of their children, which was higher than that indicated by some other studies in Turkey (5,8). Ninety-three point one percent of mothers who were breastfeeding carried on breastfeeding. This was similar to the other studies (5,8).

The percentage of cases which received attention at a medical facility for diseases with diarrhoea was 51.3% in the present study. Hospitals, and private doctors and clinics were the most common, followed by health centres (15.4%). It is significant that most of the cases

that could be treated at home or at primary health-care facilities went to hospitals and only 15.4 % were treated at health centre. In the present study, 85% of mothers administered some treatment themselves. Thirty-five percent of the treatments were administered without any professional advice. Fourteen percent of children with diarrhoea did not undergo any treatment. The number of children treated was found to be higher in Gaziantep than in other parts of Turkey.

The level of ORT given to children with diarrhoea was 27.8% in this study. ORT was given to 33.3% of children who were treated at a medical facility. Health centres gave the highest level of ORT treatment (46.1%) . In various studies, the use of ORT for diarrhoea varied between 25% and 57% (8-12). When a comparison was made with these studies, it was seen that the level of ORT use for diarrhoea was low in Gaziantep.

Although it has been proved that ORT decreases the mortality rate of diarrhoea, it is a cause for concern that it is used in only 1/3 of diarrhoea cases. It is striking that the use of ORT has not become widespread, even in cases treated at medical facilities. The use of ORT in only one case in hospitals, where half of the cases received treatment, shows the low levels of ORT use in hospitals.

Antidiarrhoeal drugs, which should not be prescribed for diseases with diarrhoea, were used in 83% of cases. Antibiotics, which are recommended only for a limited number of diseases with diarrhoea (shigellosis, cholera etc.) were used in 52.3% of cases. This highlights the incorrect and unnecessary treatment of diarrhoea (13).

The most important components of the prevention of diseases with diarrhoea are : giving clean water and food to children, education about sanitation, the widespread use of ORT and a suitable approach to a child who is suffering from diarrhoea. All available means of health education must be used by medical staff and counselling should be made available, especially in the home and at primary health-care facilities.

The low level of use of ORT in diseases with diarrhoea, even at medical facilities is a great problem that must be solved. Education on ORT should be given to medical staff, especially those who work at health centres and in pediatric services. The routine use of ORT would prevent the use of unnecessary drugs and prevent deaths from diseases with diarrhoea, reducing the cost of treatment. Therefore, encouragement of ORT use as standard must be the priority in the treatment of diseases with diarrhoea.

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