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Perceptions of Parents of Children Admitted to the Emergency Room and of Doctors Regarding the Urgency of Situation and the Factors Affecting Perceptions

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Abstract

Aim: In our study involving children who were presented to the emergency service, we investigated the parents' and physicians' perception of urgency.

Materials and Methods: The study was performed on physicians and on families of pediatric patients who were admitted to the Children's Emergency Department between April 2011 and 2012. Families and Physicians were asked to fill out a questionnaire about the emergency status of their children.

Results: A total of 61.1% of parents (n=1081) who presented their children to the emergency service declared that their children must be seen by a physician in 15 min. Of them, 56.2% (n=994) reported more than 12 h had passed since the complaints of their children started. Only 3.7% of parents (n=67) stated that they visited the emergency department because of a real emergency status. A total of 36.6% of parents (n=647) mentioned that they preferred to visit the emergency service because they work during the day, and 40.6% of parents (n=719) preferred to visit the emergency service because outpatient clinics are crowded during the day. Physicians reported that the examination of 64.2% of patients (n=1137) could be safely postponed to the next day.

Conclusion: The method to provide health services to those patients in real need in the emergency room is to raise awareness in the society. We believe that training courses given at primary healthcare services could reduce inappropriate visits to the emergency service. *(Eurasian J Emerg Med 2015; 14: 183-8)*

Keywords: Emergency service, parental perception, urgency of disease

Introduction

The purpose of the emergency services, regardless of patients' age, sex, application (or consult) type, and ability of pay, is to diagnose and treat their acute life-threatening illnesses. The emergency room (ER) ensures the coordination between other medical disciplines while preventing prior complications (1, 2). In this respect, the ERs constitute the strongest link between health services (3). When examining (or analyzing) the number of presentations to the ER, it has been seen that a large proportion of patients can be treated by health care providers in the outpatient setting as the first step (or primary care) (4).

Currently, presentation to the ER, except for the purpose, has reached substantial levels. The biggest reason of this is the perception of the community about the urgency of the diseases (3). In the study by Prince and Worth (5), it was reported that 35% of parents who brought their children to the ER misperceived the severity of their children's disease. In Turkey, approximately 15 million children are brought to the ER per year (6). According to the American Academy of Emergency Medicine's (ACEP) classification of urgency, only 20% of these if they do not have early and appropriate medical intervention can cause significant damage or death; these cases are called as "very urgent" patients (7).

Perception is a wholesale meaningful and systematic reaction of the organism against objects and events. Perceptions occur as a result of sensations (8). Particularly, parents tend to see their children's illnesses as a serious condition because of the frequency of illness (9). This situation makes parents aggressive, and their perceptions are affected negatively (10, 11). In our study, we compare the perceptions of the parents who brought their children to the ER and those of the doctors who examined these children; in addition, we researched the factors affecting the perception of urgency.

Materials and Methods

Our research was conducted with the participation of a total of 1834 parents who brought their children to the Pediatric ER in Gülhane Military Medical Academy in the determined days between the years 2011 and 2012 and included 18 pediatricians. Our study is a cross-sectional study. Permission had been obtained from the Ethics Committee of Gülhane Military Medical Academy before the start of the study. The questionnaire was improved by the researchers after reviewing the literature. Pre-implementation had been performed for 10 parents to evaluate their intelligibility. The purpose of the study had been described to the parents who

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agreed to participate after making corrections, and the questionnaire was administered face-to-face. Also the pediatricians filled the questionnaire that had been prepared by the researchers in charge.

While determination of the universe of our study, it was decided to be done at a certain rate according to the frequency of the appeals to the ER. Because the visit to the ER varies from date-to-date and month-to-month. The questionnaire was not applied to all patients and not during all days. In the first week, the application date of the questionnaire was the first day of the week; in the second week, the day of application was the second day. That went on the route like this till the last of the study which had last seven weeks in every period in that year. The number of presentations to the ER in the year 2010 was evaluated, and the coefficient of each month was obtained after comparing and rationalizing of the months. The number of presentations in the days of January 2010 was evaluated, and the coefficient of each day was obtained after comparing and rationalizing of these days. According to these data, the daily number of patients was achieved by targeting 10% of the average number of presentations. Forty-nine of 4480 pediatric patients were brought to the ER in the determined 49 study days. The questionnaire was applied to the parents of 1834 child patients. Our sample group consist of 1770 parents who suited rules and filled the questionnaire completely. All 18 physicians working in the pediatric ER filled out the questionnaire.

Trauma patients' parents, parents who were not well educated and who could not fill out the questionnaire, chronic patients' parents, parents using anxiety drugs, and resuscitated patients' parents were not involved in our study so that our data could not be affected from patients' excessive anxiety.

Parents' sociodemographic characteristics, children's health condition before being brought to the ER, and the time of complaints about illness and interventions were asked in our questionnaire. In addition, the causes of parents visit to the ER were investigated. In our study, the urgencies of children were classified according to the criteria of "Centers for Disease Control and Prevention (CDC)" of the USA. They were grouped as follows: "Very Urgent," who need intervention before 15 min; "Urgent," who need intervention between 15 min and 60 min; and "Semi-urgent," who need intervention between 1 h and 2 h (7).

Statistical analysis

The data was installed on the computer after collection and was evaluated by the Statistical Package for the Social Sciences 16.00 program (SPSS Inc. Chicago, IL, USA). For the analysis of the data, numbers, percentage, and mean as well as standard deviation values were used. For continuous variables and discrete variables, t test and chi-square test were used, respectively, for comparison of the data. Backward likelihood ratio logistic regression analysis was conducted to identify the factors affecting urgency. A p value of <0.05 was considered to be statistically significant.

Results

The mean age of parents was 33.5±6.4 years, and 78.4% (n=1388) of the parents were women and 21.6% (n=382) were men. According to the time of appeal, 11% (n=194) of parents visited the ER during office hours. The most common presentations were done in the winter months, 41% (n=726) (Table 1).

To learn the perception of urgency, the question "In how much time your child should be seen by a physician?" was answered as "In the first 15 min" by 61.1% (n=1081) of parents (Table 2).

The question "Due to which circumstances would you prefer ER?" was answered as "Illness occurring after office (work) hours" by 42.4% (n=1219) of parents. A total of 68.9% (n=1219) of the doctors most often thought that parents brought their children to the ER because of crowded outpatient clinics during the day. One of the most frequent reason because of which parents choose the ER is that "ER is more quick with regard to examination and laboratory procedures and less time consuming with regard to waiting in hospital" (Table 3 and 4).

A total of 72.4% (n=1281) of participants stated that they had not consulted anybody regarding their child's illness. There was not a doctor who always follows 71.4% (n=1263) of parents' children in routine. A total of 57.5% (n=1017) of parents brought their children

Table 1. Sociodemographic characteristics of parents

Demographic parameters		n	%
Gender	Female	1388	78.4
	Male	382	21.6
Time of application to ER	Worktime	194	11
	Except worktime	1576	89
Seasons	Winter	726	41
	Spring	405	22.9
	Summer	234	13.2
	Autumn	405	22.9
Relationship	Mother–Father	1651	93.3
	Grandfather–Grandmother	50	2.8
	Relative	61	3.4
	Babysitter	8	0.5
Education level	Primary School	231	13.1
	Secondary School	332	18.1
	High School	709	40.1
	College	498	28.1
Age groups	19–29	459	25.9
	30–39	1060	59.9
	40–49	202	11.4
	50–59	46	2.6
	60–69	3	0.2

Table 2. Parental and doctors' perception of urgency

In how much time your child should be seen by a physician?	Participants		Doctors		p
	n	%	n	%	
First 15 min	1081	61.1	76	4.3	<0.001
15–60 min	494	27.9	12	0.7	
1–2 h	94	4.1	261	14.7	
2–12 h	47	2.7	135	7.6	
12–24 h	22	1.2	149	8.4	
Can wait until the day after	32	3	1137	64.2	

to the ER without any intervention; 14.1% (n=249) of the parents visited the ER for the first time in the past year because of their child's illness. A total of 30.2% (n=534) of the parents thought that a personal physician's clinic is the best location for the care of their children's illness.

According to the CDC criteria, 19.7% (n=349) of the children were in the group of "Urgent." Having a doctor who follows the children's health and a physician and/or a medical staff for consultation leads to a significant increase in terms of real urgencies (p<0.001). Making an intervention before bringing the children to the ER is significantly high in the "urgent" group (p<0.001) (Table 5).

There was a significant positive moderate correlation between the seasons and the group that was identified as urgent by the doctors (r=0.386, p<0.001). There was a moderate and positive correlation between the urgency situation and the number of regular health check-ups of the children (r=0.347, p<0.001). A strong positive correlation was found between the urgency situation and the education level of parents (r=0.950, p<0.001) (Table 6).

Table 3. Comparison of parental reasons for visiting the ER

		Urgent		Non-urgent		
Parental reasons for visiting the ER		**n**	**%**	**n**	**%**	**p***
Becoming sick outside office hours	No	291	83.4	1312	92.3	0.01
	Yes	58	16.6	109	7.7	
Overcrowded daytime outpatient clinic	No	272	77.9	279	19.6	0.01
	Yes	77	22.1	1142	80.4	
Working couples	No	171	49	1145	80.6	0.01
	Yes	178	51	276	19.4	
Not accepting money for emergency services	No	345	98.9	1291	90.9	0.01
	Yes	4	1.1	130	9.1	
Coming without appointment	No	294	84.2	709	49.9	0.01
	Yes	55	15.8	712	50.1	
Better medical service in ERs	No	320	91.7	1268	89.2	0.17
	Yes	29	8.3	153	10.8	
Others	No	241	69.1	1356	95.4	0.01
	Yes	108	30.9	65	4.6	

*Chi-square test; ER: emergency room

Table 4. Comparison of patients' reasons for visiting the ER

		Urgent		Non urgent		
		n	**%**	**n**	**%**	**p***
Becoming sick outside office hours	No	291	83.4	1312	92.3	0.01
	Yes	58	16.6	109	7.7	
Overcrowded daytime outpatient clinic	No	272	77.9	279	19.6	0.01
	Yes	77	22.1	1142	80.4	
Working couples	No	171	49	1145	80.6	0.01
	Yes	178	51	276	19.4	
Not accepting money for emergency services	No	345	98.9	1291	90.9	0.01
	Yes	4	1.1	130	9.1	
Coming without appointment	No	294	84.2	709	49.9	0.01
	Yes	55	15.8	712	50.1	
Better medical service in ERs	No	320	91.7	1268	89.2	0.17
	Yes	29	8.3	153	10.8	
Others	No	241	69.1	1356	95.4	0.01
	Yes	108	30.9	65	4.6	

*Chi-Square test; ER: emergency room

Table 5. Comparison of groups in terms of having a doctor who controls the child frequently and a doctor and/or a medical stuff to consult and intervention

	Urgent		Non-urgent		
	n	%	n	%	p*
Frequently controlling doctor					
No	126	36.1	1137	80.0	0.001
Yes	223	63.9	284	20.0	
Did you make an intervention?					
No	142	40.7	875	61.6	0.001
Yes	207	59.3	546	38.4	
Consulting a medical stuff					
No	169	48.4	1228	86.4	0.001
Yes	180	51.6	193	13.6	
Consulting a doctor					
No	188	53.9	1283	90.3	0.001
Yes	161	46.1	138	9.7	
Number of presentations to the ER in a year					
1	80	22.9	169	11.9	0.001
2	174	49.9	239	16.8	
3	21	6	309	21.7	
4	11	3.2	150	10.6	
>5	63	18.1	554	39	
What is the best location for the care of your child's illness?					
ER	94	26.9	654	46	0.001
District clinic on duty	9	2.6	63	4.4	
Private doctor	169	48.4	365	25.7	
Private hospital	77	22.1	339	23.9	

*Chi-square test; ER: emergency room

Discussion

Pediatric emergency medical service is an important part of emergency services. At present, health care managements have been making great efforts to provide effective pediatric emergency services. However, the results are not as successful as expected. One of the most important reasons for this is the false perception of urgency as well as inappropriate presentations to the ER (2-7). On one hand, non-emergency patients prevent real emergency patients from being treated; on the other hand, the workload reduces the quality of service in the ER (3-6).

There are many reasons for the parents to visit emergency services on their own instead of primary health care units. The reasons are as follows: parents' wrong perceptions of urgency, receiving health care services instantly and quickly, benefiting from laboratory facilities rapidly, and belief that the ERs are better equipped and are efficient health care units. However, on the basis of the above mentioned reasons, it is undeniable that parents' education is lacking (3-6).

In our study, we did not find a significant difference in terms of gender between the urgent and non-urgent patients. Gill et al. (12) found that presentations to the pediatric ER are on an equal level in terms of gender. This result was similar to that of our study.

In the study by Kalidindi et al. (13), it was reported that when the educational levels of parents who were admitted to the ER increases, the reality of the urgency increases. Baker (14) had reached similar conclusions with regard to the educational status and emergency cases. In our study, most of the presentations to the ER were by parents who were high school graduates. In addition, parents of children who were really considered to be emergency cases were more likely to be in the group of college degree. This status shows that when the education level increases, presentations to the ER are made more accurately.

Burnett and Grover (15) indicated in their study that regular health check-ups on children would decrease the number of applicants to the ER. In our study, only 28.6% of parents went to a physician for check-up. The number of urgency cases of children, who are continuously monitored by a physician, was higher as expected. This case is notable to demonstrate the importance of regular health check-ups. Primary health care units has an important place in terms of easy accessibility and for providing ongoing maintenance services (16, 17). "The Goalkeeper" family physicians recognize, diagnose, and refer the patients; by diagnosing the diseases at an early stage, they reduce the rate of unnecessary presentations to the ER (16, 17).

Table 6. Statistical correlation in the perception of urgency

Comparison of parameters		r	p
Urgent*	Seasons	0.386	0.01
Urgent*	In how much time your child should be seen by a physician?	0.264	0.01
Urgent*	Number of visiting the doctor for follow-ups in a year	0.347	0.01
Urgent*	Education level	0.950	0.01
Urgent*	Number of presentations to ER in a year	−0.256	0.01
Urgent*	Consulting a doctor	0.371	0.01
Urgent*	Outpatient clinics being overcrowded in the daytime	−0.501	0.01
Urgent*	Elapsed time during the start of complaints	−0.588	0.01
Seasons	In how much time your child should be seen by a physician?	0.203	0.01
Seasons	Number of visiting the doctor for follow-ups in a year	0.917	0.01
Seasons	Education level	0.310	0.01
Seasons	Number of presentations to ER in a year	0.303	0.01
Seasons	Consulting a doctor	0.491	0.01
Seasons	Outpatient clinics being overcrowded in the daytime	−0.335	0.01
Seasons	Elapsed time during the start of complaints	−0.273	0.01
In how much time your child should be seen by a physician?	Number of visiting the doctor for follow-ups in a year	0.209	0.01
In how much time your child should be seen by a physician?	Education level	0.154	0.01
In how much time your child should be seen by a physician?	Number of presentations to ER in a year	−0.276	0.01
In how much time your child should be seen by a physician?	Consulting a doctor	0.237	0.01
In how much time your child should be seen by a physician?	Outpatient clinics being overcrowded in the daytime	−0.201	0.01
In how much time your child should be seen by a physician?	Elapsed time during the start of complaints	−0.179	0.01
Number of visiting the doctor for follow-ups in a year	Education level	0.347	0.01
Number of visiting the doctor for follow-ups in a year	Number of presentations to ER in a year	−0.275	0.01
Number of visiting the doctor for follow-ups in a year	Consulting a doctor	0.424	0.01
Number of visiting the doctor for follow-ups in a year	Outpatient clinics being overcrowded in the daytime	−0.332	0.01
Number of visiting the doctor for follow-ups in a year	Elapsed time during the start of complaints	−0.228	0.01
Education level	Number of presentations to ER in a year	−0.875	0.01
Education level	Consulting a doctor	0.197	0.01
Education level	Outpatient clinics being overcrowded in the daytime	−0.166	0.01
Education level	Elapsed time during the start of complaints	−0.149	0.01
Number of presentations to ER in a year	Consulting a doctor	−0.329	0.01
Number of presentations to ER in a year	Outpatient clinics being overcrowded in the daytime	0.189	0.01
Number of presentations to ER in a year	Elapsed time during the start of complaints	0.223	0.01
Consulting a doctor	Outpatient clinics being overcrowded in the daytime	−0.316	0.01
Consulting a doctor	Elapsed time during the start of complaints	−0.135	0.01
Overcrowded daytime outpatient clinic	Elapsed time during the start of complaints	0.396	0.01

*Classification according to the urgency situation of patients by pediatricians; ER: emergency room

In the study by Yurdakok (18), it was seen that, child health monitoring (follow-up) decreases the child mortality and ER visits of families as well as increases the prevention of diseases and morbidity. In our study, having a doctor who monitors the child frequently and a doctor and/or a medical stuff for consultation result in a statistical significant increase in terms of real urgencies ($p<0.001$). We suggest that, if the number of children under regular monitoring increases, the visits to the ER for the correct reason will also increase.

Ayvaz et al. (19), in a study regarding examination of the characteristics of pediatric patients brought to the ER, showed that the parents consult people around them before coming to the ER. In our study, we detected that 72.4% (n=1281) of parents did not consult anybody before coming to the ER.

In our study, 42.5% of parents stated that they had a medical attention before coming to the ER. These medical attentions are as follows: using antipyretics, shower mind, and consulting a health personnel. Performing simple medical interventions before admission to the ER can provide significant benefits. Well-educated parents try to perform the first intervention on their own and perceived the ER as the second reference point. Thus, for raising the awareness of the families, the most important role is played by the family doctors.

There are different results in the literature about the rate of real urgency of the patients who visited the ER. Civaner et al. (20) found that 53.3% of the patients who were admitted to the ER of the state hospital were identified as an actual urgency. In the study by Atabek et al. (21), this ratio is 52%. CDC identifies the urgency rate of presentation as 45.2%. However, Gürsoy et al. (22) indicate that among patients presented to the ER, 80.8% were outpatients; the proportion of patients reported as an actual urgency is 20%. In our study, this ratio was determined to be 19.7%. This difference in rates may be because of differences in urgency assessment criteria.

In the study by Ayvaz et al. (21), the rate of families who came to the ER because the outpatient clinics were crowded was 3.2%. In our study, 40.6% of parents stated that outpatient clinic were crowded during the day. According to the literature, this percentage is very high. In the group of urgent patients,' most parents declared that their reason for visiting the ER was because of their work. This difference can be explained because a majority of the parents of our group were working.

Another attraction point that was most commonly mentioned by 25% of the participants is quick examination and analysis in the ER. When we asked similar questions to doctors who examined the patients, they stated that the most common reason of presentation to the ER is the overcrowding in outpatient clinics.

Study limitations

Our study is a single-center study. The education and the sociocultural characteristics of a vast majority of parents who brought their children to our ER are homogenous. The perception regarding the ER visits of parents of low education level could be different. This may influence some of the results in our study. There is no triage system in the pediatric ER that we worked at. This could also increase the workload of the ER. In addition, it could be better if we compare between the number of presentations to the primary care family doctors who monitor the children continuously and the number of presentations to the ER.

Conclusion

It is seen that, pediatric ERs provide outpatient clinic services rather than emergency service. The reason for this situation is parents' false perception of urgency. This misperception may be eliminated or decreased by increasing parental awareness of this situation, dissemination of primary health care system, and configuration of the triage systems in pediatric ERs like other ERs.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Gülhane Military Medical Academy.

Informed Consent: Written informed consent was obtained from patient who participated in this study.

Peer-review: Externally peer-reviewed.

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