



Evaluation of Patients Applying the Pediatric Emergency Department of a Public Hospital

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Abstract

Purpose: This study aimed at evaluating the patients aged between 0-18 who applied to the pediatric emergency department of a public hospital.

Method: The study was carried out retrospectively in the pediatric emergency department of Ağrı Gynecologic and Pediatric Diseases Hospital between the dates of 01.11.2015 and 31.01.2016. A total of 26978 pediatric patients aged between 0-18 who applied to the pediatric emergency department between these dates constituted the research sample. After the necessary consents of the related institution were taken, the research data were gathered via Patient Information Management System (PIMS) and the reports kept by the pediatric emergency department staff. The data collected in the study were analyzed with the software of Microsoft Excel.

Results: Of all the pediatric patients, 55.% of them were male, and it was seen in terms of the age groups that those aged between 2-4 (27.8%), between 5-9 (24.6%) and between 0-1 (21.5%) more frequently applied to the pediatric emergency department. Among all the patients, 39.5% of them were diagnosed as upper respiratory tract infection (URTI), 21.1% of them as acute tonsillitis and 6% of them as abdominal pain, and it was seen that the most frequent application to the department was in January (n=10680). Of all the 26978 patients participating in the study, 18.1% of them (n=4885) were followed in the emergency department observation unit, 2.4% of them (n=660) were hospitalized, 1% of them (n=274) were transferred to another health care center.

Conclusion: In the study, it was found that most of the patients applying to the pediatric emergency department were patients who did not need to apply to an emergency department but needed to apply to centers giving primary care health service and that the healthcare personnel working in the emergency department had to give medical service to a large number of patients.

Key Words: Emergency department, pediatric, nursing

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Introduction

The term 'emergency' is defined as extraordinary situations which occur all of a sudden, endanger one's life or damage the quality of life, and which cannot overcome by the patient's relatives in a short time (1,2). In order to provide emergency healthcare service, the emergency departments of hospitals provide non-stop healthcare services seven days a week. The fact that patients who do not need urgent medical care apply to such emergency departments since these departments provide constant service sometimes hinders the services to be provided for patients in need of urgent medical care (3-5).

The frequency of emergence cases differs depending on the age group, gender, accommodation place and season (6-7). The results of a study revealed that there has been an increase in the number of patients applying to emergency departments of hospitals in USA in the last 20 years and that one-fourth of these patients were children (7). Patients in need of pediatric emergency healthcare suffer from high fever, serious infections, severe ache, dehydration and severe allergic reactions, which all require immediate medical intervention. In addition, these patients are defined as fracture, dislocation, jerk, head trauma, traffic accidents, falling, burns, severe complications of such diseases as "asthma, diabetes, sickle-cell anemia, congenital and/or metabolic disorders", poisoning and biting-stinging (8). In fact, any health problem that suddenly occurs in children causes parents to experience serious anxiety about their children, and without considering whether it is an emergency case or not, they want to

apply to the nearest healthcare center (9) and expect good-quality service (10). However, inappropriate patients' application to an emergency healthcare department not only hinders services to be given to real patients in need of urgent healthcare but also decreases the quality of services and increases the costs (11-12).

In this respect, the nurse, a member of the healthcare personnel in emergency healthcare departments, has the key role in directing unurgent applications to other regular health care centers. The distribution of the diagnoses for the pediatric patients in emergency healthcare departments helps nurses not only determine the health problems in accordance with the development periods of children but also raise parents' awareness of this issue.

For this purpose, the present study was carried out to evaluate the pediatric patients aged between 0-18 who applied to the Pediatric Emergency Department of Ağrı Gynecologic and Pediatric Diseases Hospital.

Material and Methods

The study was carried out retrospectively in the pediatric emergency department of Ağrı Gynecologic and Pediatric Diseases Hospital between the dates of 01.11.2015 and 31.01.2016. All the pediatric patients aged between 0-18 who applied to the pediatric emergency department between these dates constituted the research universe, and the pediatric patients who were diagnosed in accordance with the codes of the system of International Classification of Disease-10 (ICD-10) formed the research sample. Since the trauma cases were not followed



in pediatric emergency departments, such trauma cases were not included in the study. Data regarding the ages, gender, diagnoses and number of pediatric patients were collected via the records kept with the software of Patient Information Management System (PIMS). The data regarding the number of daily applications, the number of pediatric patients observed and the number of pediatric patients who were hospitalized or transferred to other regular healthcare centers were obtained via the emergency department reports. All the data gathered were examined using the software of Microsoft Excel. The values were represented by numbers and percentages. For the present study, the necessary consents were taken from the related institution (Number: 494, date: 28.01.2016).

Results

A total of 26978 pediatric patients aged between 0-18 who applied to the pediatric emergency department of Ağrı Gynecologic and Pediatric Diseases Hospital between the dates of 01.11.2015 and 31.01.2016. Of all the patients, 55.3% of them were male, and 44.7% of them were female. For the female patients, the average age was 6.5, while it was 6.1 for the male patients. When the distribution of the patients with respect to their age groups was examined, it was seen that the pediatric patients aged between 2-4 (27.8%), between 5-9 (24.6%) and between 0-1 (21.5%) more frequently applied to the pediatric emergency department (Table 1).

Table 1. Diagnostic features of pediatric patients applying to the pediatric emergency department

		Number	%
Gender	Male	14928	55.3
	Female	12050	44.7
Age	0-1	5810	21.5
	2-4	7512	27.8
	5-9	6630	24.6
	10-14	3881	14.4
	15-18	3145	11.7



In the study, it was seen that the diagnoses for the pediatric patients applying to the pediatric emergency department included upper respiratory tract infection (URTI)

(39.5%), acute tonsillitis (21.1%), abdominal pain (6%), cough (5.7%) and gastroenteritis-colitis (5.6%), respectively (Figure 1).

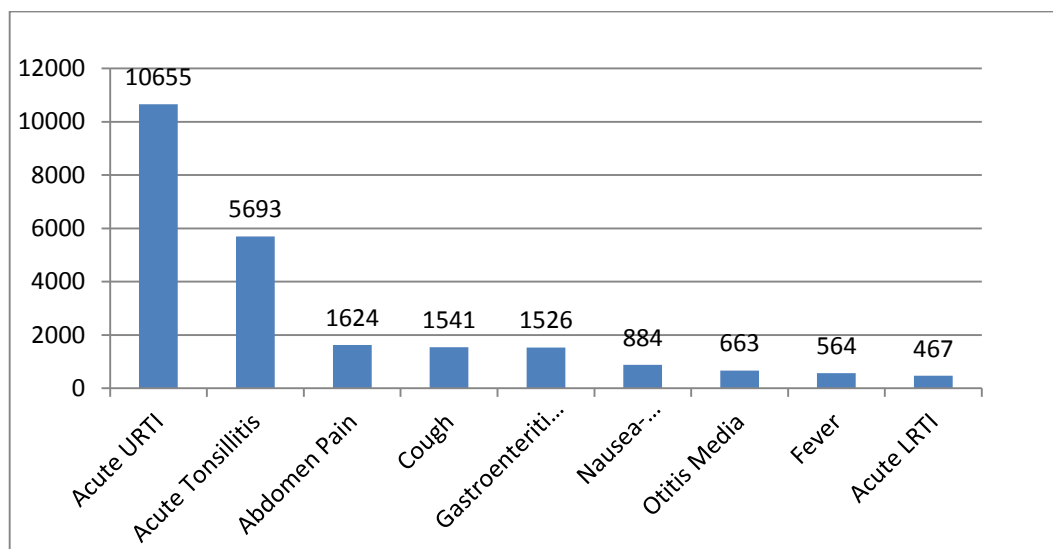


Figure 1. Distribution of the pediatric patients applying to the pediatric emergency department according to the diagnoses.

Table 2 presents the distribution of the most frequent diseases with respect to the age group and gender. When the distribution of the most frequent diseases with respect to age and gender was examined, it was seen that URTI was most frequent in males (17.8%) and females (14%) aged between 2-4; that acute tonsillitis was most frequent in males

(18.4%) and females (13%) aged between 2-4; that abdominal pain was most frequent in males (15.1%) and females (15.6%) aged between 5-9; that cough was most frequent in males (25.2%) and females (15.4%) aged between 2-4; that gastroenteritis-colitis was most frequent in males (21.6%) and females (14%) aged between 2-4 (Table 2).



Table 2. Distribution of the most frequent diseases diagnosed in the pediatric emergency department with respect to age groups and gender

		DIAGNOSES		CODES		AND		DIAGNOSTICS			
AGE GROUPS	GENDE R	J06 ACUTE URTI		J03 ACUTE TONSILLITIS		R10.4 ABDOMINAL PAIN		R05 COUGH		K52 GASTROENTERITIS COLITIS	
		N	%	N	%	N	%	N	%	N	%
0-1 AGE	FEMALE	715	6.7	202	3.6	55	3.4	132	8.6	154	10.1
	MALE	946	8.9	375	6.6	75	4.6	157	10.2	205	13.4
2-4 AGE	FEMALE	1492	14	741	13	103	6.3	238	15.4	214	14
	MALE	1897	17.8	1048	18.4	150	9.2	388	25.2	330	21.6
5-9 AGE	FEMALE	1270	11.9	728	12.7	253	15.6	194	12.6	141	9.2
	MALE	1682	15.8	995	17.5	245	15.1	220	14.2	192	12.6
10-14 AGE	FEMALE	690	6.5	427	7.5	233	14.3	53	3.4	91	6
	MALE	864	8.1	507	9	174	10.7	98	6.4	82	5.4
15-18 AGE	FEMALE	491	4.6	327	5.7	228	14.1	20	1.3	61	4
	MALE	608	5.7	343	6	108	6.7	41	2.7	56	3.7
TOTAL		10655	100	5693	100	1624	100	1541	100	1526	100

When the number of applications to the pediatric emergency department was examined with respect to the months, the most frequent applications were found to be in January (n=10680), December (n=8507) and November (n=7791). Of all the 26978 pediatric

patients involved in the study, 18.1% of them (n=4885) were followed in the observation unit, 2.4% of them (n=660) were hospitalized, and 1% of them (n=274) were transferred to another healthcare center (Table 3).

Table 3. Distribution of the patients examined in the pediatric emergency department, those followed in the observation unit in the department, those hospitalized and those transferred to another healthcare center with respect to the months

Months	Number of patients examined in the pediatric emergency department	Number of patients followed in the observation unit	Number of patients hospitalized in pediatric services	Number of patients transferred to another healthcare center
November	7791	703	219	113
December	8507	1629	204	119
January	10680	2553	237	42
TOTAL	26978	4885 (%18.1)	660 (%2.4)	274 (%1)



Discussion

A total of 26078 pediatric patients applied to the pediatric emergency department between the dates of 01.11.2015 - 31.01.2016. Similar to the results reported by Anil and colleagues (13), those obtained in the present study demonstrated that the emergency department staff provided health services for quite a large number of patients. Among the reasons for such a high number of patients applying emergency departments of hospitals includes getting health services urgently, getting injection services in emergency departments, getting immediate treatment, benefitting from rapid medical examination (14-16) and parents' being at work in working hours.

In the present study, similar to other studies, it was found that 55.3% of the patients were male and 44.7% of them were female (13,17-21). The average age of the female patients was 6.5, while it was 6.1 for the male patients. This finding is also consistent with the results of a study conducted by Derinöz and colleagues (21).

When the distribution of the patients was examined with respect to the age groups, it was seen that those aged between 2-4 (27.8%), between 5-9 (24.6%) and between 0-1 (21.5%) more frequently applied to the pediatric emergency department. In another study, Anil and colleagues (13) reported that mostly pediatric patients aged between 1 month and 6 years applied to pediatric emergency departments.

The most frequent diagnoses for the pediatric patients applying the emergency department included upper respiratory tract infection (URTI) (39.5%) and acute tonsillitis (21.1%). This result could have

been attributed to the winter season when this study was conducted. According to the results of a study carried out by Ayvaz and colleagues (19), the most frequent reason for applying an emergency health department was URTI for female patients (27%) and male patients (25.8%). In another study, Boran and colleagues (20) also found that the most frequent diagnosis was URTI with a rate of 55.7% for pediatric patients applying an emergency health department. Öztürk and colleagues (22), in their study examining the medical diagnoses for children with fever taken to emergency departments, reported that 25% of them were URTI and 17.9% of them were gastrointestinal infections. When the studies conducted abroad are examined, it was seen that Leduc and colleagues (23), in their study examining the diagnoses for hospitalization, reported the respiratory system diseases to rank first. In another study, Scholer and colleagues (24) found that the most frequent reason for applying the emergency department for pediatric patients with abdominal pain was URTI with a rate of 18.6% and/or acute otitis media. In other studies carried out by Giacolone and colleagues (25) and by Alpern and colleagues (26), it was revealed that respiratory system diseases suffered by pediatric patients constituted the most frequent reason for applying emergency.

In the present study, when the distribution of the diseases was examined with respect to age and gender, it was seen that URTI and acute tonsillitis were diagnosed mostly frequently for males (17.8% and 18.4%) and females (14% and 13%) aged between 2-4. In one study, Ayvaz and colleagues (19) reported URTI (30%) to be the most frequent diagnosis for



the pediatric patients aged between 1-4, while Anil and colleagues (13) reported the most frequent diagnoses as acute URTI for those aged between 1-24 months and as acute tonsillitis for those older than two years old. According to reports by CDC 2006, the most frequent diagnoses for the children aged between 1-12 who applied to emergency health departments in USA in 2004 were acute otitis media and URTI (7.6% and 6.5%, respectively) (17).

When the numbers of applications were examined with respect to months, it was seen that the most frequent applications were in January. This finding is similar to other research findings reported in related literature (13, 21).

Of all the patients applying to the pediatric emergency department, 18.1% were followed in the observation unit; 2.4% of them were hospitalized; and 1% of them were transferred to another healthcare center. Anil and colleagues (13), in their study, found that 10% of the patients applying to the pediatric emergency department were followed in the observation unit. In another study conducted by Derinöz and colleagues, (21) it was revealed that 2.8% of the patients were hospitalized in pediatric services of hospitals, while Boran and colleagues (20), in their study, reported that 3.5% of the patients were hospitalized in the pediatric services of hospitals. Keskin and colleagues (18) found that the rate of transferring the pediatric patients to another healthcare centered was 1%. All these results are parallel to those obtained in the present study.

In this study, when the most frequent reasons for applying to the pediatric emergency department and the

diagnoses in these departments were examined, it was seen that a great majority of the patients were not actually in need of any emergency healthcare and that most of them were patients who could have received treatment in regular polyclinics. In related literature, there are a number of studies on inappropriate use of emergency health departments by patients (13, 20, 27, 28). When patients who do not need any emergency healthcare apply to an emergency health department leads to several problems such as overcrowded hospitals, waste of longer time for treatment, delays in providing healthcare services for patients who really need emergency healthcare or for those who have serious illnesses, increased dissatisfaction with the healthcare services provided in emergency departments, increased cost of treatment, poor quality of healthcare services, serious problems with security, and decreased productivity of the emergency department staff (14, 27, 29).

Consequently, in order to decrease inappropriate use of pediatric emergency departments and to provide better-quality emergency healthcare services, the public should be made conscious by organizing training activities to inform mothers about pediatric diseases and related precautions to be taken against these diseases.

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