



## ACİL SERVİSE TRAVMA NEDENİYLE BAŞVURAN ÇOCUKLARIN CİNSİYET FARKLILIĞI AÇISINDAN DEĞERLENDİRİLMESİ

### EVALUATION OF GENDER DIFFERENCE IN PEDIATRIC TRAUMA PATIENTS ADMITTED TO THE EMERGENCY DEPARTMENT

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#### Öz

**Amaç:** Acil servise başvuran çocuk travma vakalarının önemli bir bölümü önlenabilir nedenlerden kaynaklanmaktadır. Kazalara bağlı yaralanmalar, çocukluk çağındaki ölümlerin en sık nedenidir. Bu çalışmanın amacı acil servise başvuran travmalı pediatrik hastalarda ebeveynlerin demografik özelliklerini ve olguların cinsiyet farklılıklarını incelemektir.

**Materyal ve Metot:** Bir yılı aşkın bir sürede (Nisan 2015 - Mayıs 2016 arasında), çeşitli nedenlerle travma belirtileri (yüksekten düşme, yaralanma, yanık ve trafik kazası ve fiziksel taciz saldırısı) göstererek üçüncü basamak üniversite hastanemize başvuran toplam 502 ardışık pediatrik hasta fiziksel taciz saldırısı bu prospektif klinik çalışmaya alındı.

**Bulgular:** Bu çalışmada erkek/kız oranı 1.52 olarak tespit edildi ( $p=0.868$ ). Yaş ortalamaları ise erkek çocuklarda  $7.74 \pm 4.97$ , kız çocuklarda ise  $7.67 \pm 5.25$  olarak saptandı. Direkt grafilerinde fraktür saptanan olguların cinsiyete göre dağılımları erkekler için %17.2; kızlar için ise %21.1 olarak bulundu ( $p=0.306$ ). Üst ekstremité fraktürlerine, diğer fraktürlere göre çok daha fazla sıklıkta rastlanıldı. Travmaya uğrayan tüm olgular içinde düşme sıklığı %69.3 ile ilk sırada yer aldı. Tüm olgular içinde cinsiyete göre dağılım göz önüne alındığında bu oranlar erkeklerde % 42.4, kızlarda ise % 26.9 olarak bulundu ( $p=0.559$ ). Sırasıyla erkek ve kızlar için, üst ekstremité yaralanmaları için % 19.9 ve % 15.7 ( $p=0.126$ ); baş yaralanmaları için ise % 22.5 ve % 12 ( $p=0.177$ ) olarak saptandı. Vücuttaki yaralanmalar, türlerine göre değerlendirildiğinde, kontüzyon % 60'lık bir grubu oluşturuyordu. Bu yaralanma türünün cinsiyetlere göre tüm olgular içindeki dağılımı, erkeklerde % 36.3 kızlarda ise % 23.7 olarak saptandı ( $p=0.952$ ). Travmaya uğrayan olguların ebeveynlerinin eğitim durumları incelendiğinde en büyük grubu ilkököl mezunu ebeveynler oluşturuyordu. İlkököl mezunu olan annelerin oranı %41.4 ( $p=0.080$ ); babaların ise %37.3 ( $p=0.008$ ) olarak saptandı. Travmaya uğrayan çocukların % 46.0'ı ailelerin birinci çocukları idi. Tüm olguların içerisinde cinsiyetlerine göre değerlendirildiğinde, olguların % 27.3'ünü erkekler, % 18.7'sini ise kız çocuklar oluşturuyordu ( $p=0.657$ ).

**Sonuç:** Çalışmamızda, ülkemizde ve dünyada travmalı çocuk sayısının azaltılabilmesi için bireysel ve toplumsal düzeyde konuya ilişkin bilinçlendirmeye yönelik eğitimlerin artırılmasının yanı sıra güvenli bir çevre kavramının oluşturulabilmesi için gerekli ev içi ve dışı çevresel kazalardan koruyucu önlemlerin alınması konularına olan önem vurgulandı.

**Anahtar Kelimeler:** Travma, Çocuk hasta, Cinsiyet farklılığı, Acil servis.

#### Abstract

**Aim:** A significant proportion of pediatric trauma patients admitted to the emergency department are injured by preventable causes. Accidental injuries are the most common causes of deaths in childhood. The purpose of this study was to analyze the demographic features of the parents and the gender difference of the cases in pediatric patients with trauma admitted to the emergency department (ED).

**Materials and Methods:** Over a 1-year period (April 2015 through May 2016), a total of 502 consecutive paediatric patients who presented to our tertiary-care university hospital ED with symptoms of trauma of various causes (falling from a height, injury, burn, traffic accident and physical abuse assault) were enrolled in this prospective clinical study.

**Results:** In this study, the boy to girl gender ratio was found to be 1.52 ( $p = 0.868$ ). The mean ages were  $7.74 \pm 4.97$  in boys and  $7.67 \pm 5.25$  in girls. 17.2% of the boys and 21.1% of the girls were detected fracture on direct radiographs ( $p=0.306$ ). Upper extremity fractures were encountered more frequently than other fractures. The frequency of falling from a height was the first among all cases of trauma with the rate of 69.3%, 42.4% of which occurred in boys and 26.9% in girls ( $p=0.559$ ). The rates of upper extremity injuries were 19.9% for boys and 15.7% for girls ( $p=0.126$ ). The rates of head injuries were 22.5% for boys and 12% for girls ( $p=0.177$ ). When the type of injury was evaluated, the rate of contusion was 60%, 36.3% of which occurred in boys and 23.7% in girls ( $p=0.952$ ). When the parents of the pediatric trauma patients were classified according to their educational status, the largest group consisted of primary school graduated parents with rates of 41.4% for mothers ( $p=0.080$ ) and 37.3% for fathers ( $p=0.008$ ). 46.0% of the pediatric trauma patients were the first children of their families, 27.3% of which were boys and 18.7% were girls ( $p=0.657$ ).

**Conclusion:** We emphasized the importance of raising awareness about the issue at the individual and community-based level and the necessity of increasing the protective measures for indoor and outdoor accidents in order to be able to create a safe environment so that the pediatric trauma patients can be reduced in our country and in the world.

**Keywords:** Trauma, pediatric patient, gender difference, emergency department

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#### Article History / Makale Geçmişi:

Date Received / Geliş Tarihi: 09.02.2017  
Date Accepted / Kabul Tarihi: 17.03.2017

## INTRODUCTION

Patients who are admitted to the emergency department (ED) are special cases. Pediatric emergencies include more specific circumstances in which necessary initiatives have to be taken in the shortest possible time. One of the most important life-threatening problem in the world is physical trauma. In the United States, the most common cause of death in children under the age of 15 is multiple trauma.<sup>1,2</sup>

A significant proportion of pediatric emergencies are the results of preventable causes. Pediatric emergencies include a wide range of cases involving fall, abuse and neglect, traffic accident, burn, electric shock, drowning, asphyxia, intoxication, suicide attempt, firearm and assault. When the first three reasons are taken into consideration, "pediatric trauma patient" is mentioned. It is very important to take necessary initiatives after a quick evaluation for the pediatric trauma patient.

Thus, in the present study, we attempted to determine the gender difference and the demographic characteristics features in cases with pediatric trauma admitted to our tertiary-care university hospital ED. We also assessed whether the demographic features of the parents in those cases might reflect the frequency of such traumatic events.

## MATERIAL AND METHODS

In our study, 502 children under the age of 18 who were admitted to the emergency department with complaints of trauma between 01 April 2015 and 01 May 2016 were

examined prospectively for their characteristics of trauma and demography. Namik Kemal University Non-Interventional Clinical Research Ethics Committee approved the study. The weight, height, age, and gender information of the cases were recorded. After immediate evaluation and the necessary attempts were made, informed consent of the parents were taken. According to the prepared questionnaire, the patients were analyzed for whether computerized tomography or direct radiography was taken, the localization of the fracture and / or findings and results in tomography, distribution of trauma according to its characteristics and the injured body regions, classification of the injuries according to their types. The parents were questioned about their educational and working states, smoking, alcohol intake and the place of their child in the family order. The results were evaluated statistically.

## Statistical analyses

In the analysis of the data, PASW® Statistics 18 for Windows statistical package program was used. The normal distribution of the variables was evaluated by the Shapiro-Wilk test. Variance Analysis (ANOVA) was used to determine whether there was a difference between the groups for the normal distribution, and Tukey test was used for the subgroup comparison.

Kruskall Wallis was used to determine whether there was a difference between the groups with no normal distribution, and Mann-Whitney U test was used to compare the subgroups. The values of the variables are given as frequency, percentage,  $\bar{X}$   $\pm$  sd or median (min-

max).  $p < 0.05$  was accepted as statistical significance value.

### Results

In our study, 502 children under the age of 18 who were admitted to the emergency department with complaints of trauma between April 2015 - May 2016 were evaluated for their characteristics of trauma and demography. The male / female ratio was found to be 1.52 ( $p=0.868$ ). The mean ages were  $7.74 \pm 4.97$  in boys (n:303) and  $7.67 \pm 5.25$  in girls (n:199). While the mean age of mothers of boys was  $34.16 \pm 6.71$ , that of girls was  $33.84 \pm 7.04$  ( $p=0.616$ ). While the mean age of fathers of boys was  $38.26 \pm 7.11$ , that of girls was  $37.92 \pm 7.74$  ( $p=0.619$ ). Pediatric trauma patients were frequently the first or second children of the family. When statistically evaluated, the values were  $1.88 \pm 1.05$  for boys and  $1.75 \pm 0.88$  for girls ( $p=0.152$ ). Body mass indices [weight (kg) / height (m<sup>2</sup>)] were  $30.52 \pm 19.58$  for boys (n:302) and  $29.70 \pm 18.69$  for girls (n:191) ( $p=0.647$ ). When the income levels of the families were evaluated, the per capita income were  $540.78 \pm 397.89$  Turkish Liras (TL) for the families of the boys and  $544.68 \pm 332.88$  TL for the families of the girls ( $p=0.921$ ).

107 boys (21.3%) and 66 girls (13.1%) of 502 pediatric trauma patients were not indicated to undergo direct X-ray radiography ( $p=0.620$ ). Direct radiographs were indicated in 329 (65.6%) of 502 pediatric trauma patients including 196 (64.7%) boys and 133 (43.9%) girls. 71.4% (n:235) of the radiographs were evaluated as normal. 61.3% (n:144) of the normal radiographs were of boys and 38.7% (n:91) of that were of girls. Fractures were detected in the direct radiographs of 94 (18.7%) pediatric trauma patients. 17.2% (n:52) (52/303) of the boys and 21.1% (42/199) of the girls had fractures in their radiographs ( $p=0.306$ ). Upper extremity fractures were encountered more frequently than other fractures. Evaluation of the localizations of the fractures were classified in Table 1.

Thirty-three children with head trauma had an indication of cranial computerized tomography (CCT). This rate was 0.07% among all pediatric trauma patients. According to the results of CCT reports, 29 cases were evaluated as normal, and 4 cases including 2 boys and 2 girls were evaluated as intracranial hematoma. The results of CCT reports were shown in Table 2.

**Table 1:** Evaluation of the localizations of the fractures.

Localization of the fracture	Boys	Ratio of the cases	Ratio of the gender	Girls	Ratio of the cases	Ratio of the gender	Total	Ratio of the cases	Ratio of the gender	p
Mandible	8	1.6	2.6	5	1.0	2.5	13	2.6	2.6	0.280
Clavicle	0	0.0	0.0	3	0.6	1.5	3	0.6	0.6	
Hand	9	1.8	3.0	7	1.4	3.5	16	3.2	3.2	
Upper extremity	26	5.2	8.6	24	4.8	12.1	50	10.0	10.0	
Lower extremity	9	1.8	3.0	3	0.6	1.5	12	2.4	2.4	
Total	52	60.4	100.0	42	39.6	100.0	94	100.0	100.0	

**Table 2:** Evaluation of the cases according to the CCT findings.

CCT	Boys	Ratio of the cases	Ratio of the gender	Girls	Ratio of the cases	Ratio of the gender	Total	Ratio of the cases	Ratio of the gender	p
Normal	22	4.4	7.3	7	1.4	3.5	29	5.8	5.8	0.198
ICH*	2	0.4	0.7	2	0.4	1.0	4	0.8	0.8	
Total	24	60.4	100.0	9	39.6	100.0	33	100.0	100.0	

\*ICH : Intracranial hemorrhage

The frequency of falls in all cases of trauma was the first with a rate of 69.3%. These rates were found as 42.4% for boys and 26.9% for

12% for the girls (p=0.177). Distribution of the injured body parts by gender was shown in Table 4.

**Table 3:** Evaluation of the cases according to the type of trauma.

Type of Trauma	Boys	Ratio of the cases	Ratio of the gender	Girls	Ratio of the cases	Ratio of the gender	Total	Ratio of the cases	Ratio of the gender	p
Fall	213	42.4	70.3	135	26.9	67.8	348	69.3	69.3	0.529
Injury	63	12.5	20.8	48	9.6	24.1	111	22.1	22.1	
Burn	12	2.4	4.0	6	1.2	3.0	18	3.6	3.6	
Traffic Accident	6	1.2	2.0	7	1.4	3.5	13	2.6	2.6	
Physical Abuse	9	1.8	3.0	3	0.6	1.5	12	2.4	2.4	
Total	303	60.4	100.0	199	39.6	100.0	502	100.0	100.0	

girls (p=0.559). Distribution of cases according to the type of trauma was shown in Table 3.

When the injured body regions were assessed, upper extremities were the most affected by the rate of 35.7% and head was effected by the rate of 34.5%. Distribution of upper

When evaluated according to the type of the injury, contusion was the first by the ratio of 60%. Distribution of contusion in all cases according to gender showed the rates of 36.3% for boys and 23.7% for girls (p=0.952). Distribution of the injured parts of the body according to gender was shown in Table 5.

**Table 4:** Evaluation of the distribution of the injured body parts of the cases.

Injured parts of the body	Boys	Ratio of the cases	Ratio of the gender	Girls	Ratio of the cases	Ratio of the gender	Total	Ratio of the cases	Ratio of the gender	p
Head (H)	113	22.5	37.3	60	12.0	30.2	173	34.5	34.5	0.120
Trunk (T)	10	2.0	3.3	3	0.6	1.5	13	2.6	2.6	
Upper Extremity (U)	100	19.9	33.0	79	15.7	39.7	179	35.7	35.7	
Lower Extremity (L)	70	13.9	23.1	49	9.8	24.6	119	23.7	23.7	
H + T + U + L	9	1.8	3.0	4	0.8	2.0	13	2.6	2.6	
Other	1	0.2	0.3	4	0.8	2.0	5	1.0	1.0	
Total	303	60.4	100	199	39.6	100	502	100	100	

extremity injuries in all cases according to gender showed the rates of 19.9% for the boys and 15.7% for the girls (p=0.126). Head injuries showed the rates of 22.5% for the boys and

When the mothers of the pediatric trauma patients were evaluated for their educational states, the largest group consisted of primary school graduated mothers. The rate of primary

**Table 5:** Evaluation of the distribution of the injured parts of the body.

Type of Injury	Boys	Ratio of the cases	Ratio of the gender	Girls	Ratio of the cases	Ratio of the gender	Total	Ratio of the cases	Ratio of the gender	p
Contusion	182	36.3	60.1	119	23.7	59.8	301	60.0	60.00	0.789
Laceration	52	10.4	17.2	32	6.4	16.1	84	16.7	16.7	
Fracture	38	7.6	12.5	27	5.4	13.6	65	12.9	12.9	
ITH	0	0.0	0.0	0	0.0	0.0	0	0.0	0	
IAH	0	0	0	1	0.2	0.5	1	0.2	0.2	
C+L+F	31	6.2	10.2	20	4.0	10.1	51	10.2	10.2	
<b>Total</b>	<b>303</b>	<b>60.4</b>	<b>100</b>	<b>199</b>	<b>39.6</b>	<b>100</b>	<b>502</b>	<b>100</b>	<b>100</b>	

ITH: Intrathorachal hemorrhage, IAH: Intraabdominal hemorrhage, C+L+F: Contusion, laceration and fracture

school graduated mothers in all cases was 41.4%. The distribution of this ratio according to gender showed the rates of 26.9% for boys and 14.5% for girls ( $p=0.080$ ). Educational states of the mothers of the pediatric trauma cases were shown in Table 6.

for girls ( $p=0.008$ ). Educational states of the fathers of the pediatric trauma patients were shown in Table 7.

When the working states of the mothers were evaluated, 44.0% of the mothers of the boys

**Table 6:** Evaluation of the educational states of the mothers of the pediatric trauma cases.

Educational state of the mother	Boys	Ratio of the cases	Ratio of the gender	Girls	Ratio of the cases	Ratio of the gender	Total	Ratio of the cases	Ratio of the gender	p
Illiterate	21	4.2	6.9	21	4.2	10.6	42	8.4	8.4	0.395
Literate	10	2.0	3.3	5	1.0	2.5	15	3.0	3.0	
Primary School	135	26.9	44.6	73	14.5	36.7	208	41.4	41.4	
Secondary School	35	7.0	11.6	22	4.4	11.1	57	11.4	11.4	
High School	66	13.1	21.8	48	9.6	24.1	114	22.7	22.7	
University	36	7.2	11.9	30	6.0	15.1	66	13.1	13.1	
<b>Total</b>	<b>303</b>	<b>60.4</b>	<b>100</b>	<b>199</b>	<b>39.6</b>	<b>100</b>	<b>502</b>	<b>100</b>	<b>100</b>	

When the fathers of the pediatric trauma patients were evaluated for their educational states, the largest group consisted of primary school graduates. The rate of primary school graduated fathers in all cases was 37.3%. Distribution of this ratio according to gender showed the rates of 25.7% for boys and 11.6%

and 28.3% of that of the girls were found to be housewives. The frequency of mothers who are housewives was 72.3% in all cases ( $p=0.651$ ). The working states of the mothers were shown in Table 8.

**Table 7:** Evaluation of the educational states of the fathers of the pediatric trauma cases

Educational state of the father	Boys	Ratio of the cases	Ratio of the gender	Girls	Ratio of the cases	Ratio of the gender	Total	Ratio of the cases	Ratio of the gender	p
Illiterate	10	2.0	3.3	11	2.2	5.5	21	4.2	4.2	0,05
Literate	6	1.2	2.0	4	0.8	2.0	10	2.0	2.0	
Primary School	129	25.7	42.6	58	11.6	29.1	187	37.3	37.3	
Secondary School	46	9.2	15.2	27	5.4	13.6	73	14.5	14.5	
High School	69	13.7	22.8	64	12.7	32.2	133	26.5	26.5	
University	43	8.6	14.2	35	7.0	17.6	78	15.5	15.5	
<b>Total</b>	<b>303</b>	<b>60.4</b>	<b>100</b>	<b>199</b>	<b>39.6</b>	<b>100</b>	<b>502</b>	<b>100</b>	<b>100</b>	

When the working states of the fathers were evaluated, 92.4% of the fathers of the boys and 92.5% of that of the girls had a job

and 26.3% for mothers of girls (p=0.697). Distribution of the mothers according to their smoking states were given in Table 10.

**Table 8:** Evaluation of the working states of the mothers of the cases.

Working state of the mother	Boys	Ratio of the cases	Ratio of the gender	Girls	Ratio of the cases	Ratio of the gender	Total	Ratio of the cases	Ratio of the gender	p
Has a job	82	16.3	27.0	57	11.4	28.6	139	27.8	27.8	0.651
Has no job	221	44.0	72.9	142	28.3	71.4	363	72.3	72.3	
<b>Total</b>	<b>303</b>	<b>60.4</b>	<b>100</b>	<b>199</b>	<b>39.5</b>	<b>100</b>	<b>502</b>	<b>100</b>	<b>100</b>	

(p=0.833). The frequency of fathers working in any job was 92.4% in all cases. The working states of the fathers were shown in Table 9.

56.8% of the fathers of the cases were smoking. Distribution of smoking state of the fathers among all cases according to gender

**Table 9:** Evaluation of the working states of the fathers of the cases.

Working state of the father	Boys	Ratio of the cases	Ratio of the gender	Girls	Ratio of the cases	Ratio of the gender	Total	Ratio of the cases	Ratio of the gender	p
Has a job	280	55.8	92.4	184	36.7	92.5	464	92.4	92.4	0.83
Has no job	23	4.6	7.6	15	3.0	7.5	38	7.6	7.6	
<b>Total</b>	<b>303</b>	<b>60.4</b>	<b>100</b>	<b>199</b>	<b>39.6</b>	<b>100</b>	<b>502</b>	<b>100</b>	<b>100</b>	

65.5% of the mothers of the cases were not smoking. Distribution of smoking states of the mothers among all cases according to gender showed the rates of 39.2% for mothers of boys

showed the rates of 34.9% for fathers of boys and 21.9% for fathers of girls (p=0.748). Distribution of the fathers according to their smoking states were given in Table 11.

**Table 10:** Evaluation of the mothers according to their smoking states.

Smoking state of the mother	Boys	Ratio of the cases	Ratio of the gender	Girls	Ratio of the cases	Ratio of the gender	Total	Ratio of the cases	Ratio of the gender	p
Smoker	106	21.1	34.7	67	33.7	13.3	173	34.3	34.3	0.697
Non-smoker	197	39.2	65	132	26.3	66.3	329	65.5	65.5	
<b>Total</b>	<b>303</b>	<b>60.4</b>	<b>100</b>	<b>199</b>	<b>39.6</b>	<b>100</b>	<b>502</b>	<b>100</b>	<b>100</b>	

97.6% of the mothers of the cases did not intake alcohol. Distribution of alcohol intake state of the mothers among all cases according to gender showed the rates of

When the places of the children in the family order were assessed, the largest group consisted of the first children. 46.0% of the pediatric trauma patients were the first children

**Table 11:** Evaluation of the fathers according to their smoking states.

Smoking State of the Father	Boys	Ratio of the cases	Ratio of the gender	Girls	Ratio of the cases	Ratio of the gender	Total	Ratio of the cases	Ratio of the gender	p
Smoker	179	34.9	57.8	114	21.9	55.3	293	56.8	56.8	0.748
Non-smoker	124	24.7	40.9	85	16.9	42.7	209	41.6	41.6	
Total	303	60.4	100	199	39.6	100	502	100	100	

58.6% for mothers of boys and 39% for mothers of girls (p=0.500). Distribution of the mothers according to their alcohol intake states were given in Table 12.

of their families. 27.3% of the cases were boys and 18.7% were girls among all cases (p=0.657). Distribution of the pediatric trauma patients according to their place in the family order was shown in Table 14.

**Table 12:** Evaluation of the alcohol intake states of the mothers.

Alcohol Intake State of the Mother	Boys	Ratio of the cases	Ratio of the gender	Girls	Ratio of the cases	Ratio of the gender	Total	Ratio of the cases	Ratio of the gender	p
Drinker	9	1.8	2.9	3	0.6	1.5	12	2.4	2.4	0.500
Non-drinker	294	58.6	97.0	196	39.0	98.5	490	97.6	97.6	
Total	303	60.4	100	199	39.6	100	502	100	100	

84.9% of the fathers of the cases did not drink alcohol. Distribution of alcohol intake state of the fathers among all cases according to gender showed the rates of 50.8% for fathers

In our study, the gender, trauma type and detailed demographic data of all the pediatric trauma patients were determined prospectively and all the findings were examined and evaluated as a whole.

**Table 13:** Evaluation of the alcohol intake states of the fathers.

Alcohol intake state of the father	Boys	Ratio of the cases	Ratio of the gender	Girls	Ratio of the cases	Ratio of the gender	Total	Ratio of the cases	Ratio of the gender	p
Drinker	48	9.6	15.8	28	5.6	14.1	76	15.1	15.1	0.625
Non-drinker	255	50.8	84.2	171	34.1	85.9	426	84.9	84.9	
Total	303	60.4	100	199	39.6	100	502	100	100	

of boys and 34.1% for fathers of girls (p=0.625). Distribution of the fathers according to their alcohol intake states are given in Table 13.

**DISCUSSION**

When the results of our study were evaluated, the following were found: 1- There was a marked increase in the frequency of trauma in both genders due to changes in environmental

**Table 14:** Evaluation of the distribution of the pediatric trauma patients according to their place in the family order.

Place of the child in the family order	Boys	Ratio of the cases	Ratio of the gender	Girls	Ratio of the cases	Ratio of the gender	Total	Ratio of the cases	Ratio of the gender	p
First	137	27.3	45.2	94	18.7	47.2	231	46.0	46.0	0.519
Second	102	20.3	33.7	74	14.7	37.2	176	35.1	35.1	
Third	40	8.0	13.2	23	4.6	11.6	63	12.5	12.5	
Fourth	14	2.8	4.6	5	1.0	2.5	19	3.0	3.8	
Fifth	8	1.6	2.6	3	0.6	1.5	11	2.2	2.2	
Sixth and over	2	0.4	0.7	0	0.0	0.0	2	0.4	0.4	
<b>Total</b>	<b>303</b>	<b>60.4</b>	<b>100</b>	<b>199</b>	<b>39.6</b>	<b>100</b>	<b>502</b>	<b>100</b>	<b>100</b>	

4- The injuries of the upper part of the body and upper extremity, particularly in the form of contusions, were more frequently seen because of their distance to the floor during the fall, 5- Educational state of the father was an important demographic factor and 6- Pediatric trauma patients were generally the first children of the families because of lack of adequate experience in child-bearing.

According to the January 28, 2015 dated report of Turkish Statistical Institute, the population of Turkey was reported as 77.695.904 in 2014. The rate of the residents in provincial and district centers was 91.8%, and the rate of people living in towns and villages was 8.2%. The rate of children in the age group of 0-14 was reported as 24.3% (18,862,430) and that of 0-18 years was reported as 29.4% (22,838,482). According to these results, three out of every 10 people in our country are children under 18 years old. It is also determined that approximately nine out of every 10 individuals in our country live in provincial and district centers. Considering the special circumstances of the childhood, it can be considered that children constitute a significant proportion of cases, especially at least 30% of the cases who were admitted to the emergency services in the province centers.<sup>3</sup>

It is a vital issue to take the necessary interventions after evaluating the patient in the shortest possible time for emergency cases. Multiple trauma cases remain in the first place among these emergencies. The reactions of children to illnesses, injuries, and diagnostic - therapeutic attempts also significantly differ from adults. These differences are more important especially in pediatric trauma patients. The difference of the anatomical, physiological, biochemical, physiopathological and psychological structure between children and adults changes with age. This difference is needed to be evaluated in an optimum way so that a pediatric trauma patient can be assessed in the highest level of quality. As much as 80% of the childhood deaths are caused by emergency medical problems.<sup>4,6</sup> Accidental injuries are the most common cause of childhood deaths according to the reports of international reliable centers.<sup>2,7</sup> Nearly half of childhood deaths are due to trauma. Unfortunately, permanent disabilities occur in 12 children per every child who die after a trauma.<sup>8</sup>

In the evaluation of the pediatric trauma patient in the ED, empathy-based approach to the child and the family is very valuable for a rapid triage. A rapid inspection should be followed by



an immediate and complete physical examination. In the triage, pediatric trauma patients are classified according to the following: a) Level-1/very urgent: Major trauma including multiple organ trauma, b) Level-2/emergency: Severe trauma including head trauma which may require surgical intervention, c) Level-3/immediately: Middle-level trauma including sprain and fracture which can be associated with head trauma, d) Level-4/semi-urgent: Minor head trauma, moderate laceration, abrasions and injuries, e) Level-5/not urgent: Minor trauma, abrasion, laceration, tendinitis, contusion and vaccination reactions.<sup>9</sup>

When trauma cases were evaluated according to the gender, male sex appears to be a risk factor. In many studies conducted in Turkey and the others, it was observed that boys were more exposed to accidents than girls.<sup>10,13</sup>

In a study conducted in our country in 2016, the proportion of judicial cases of boys (61.9%) who admitted to the ED was found significantly higher than that of girls (38.1%).<sup>14</sup>

In our study, we also found that the proportion of boys was markedly but not statistically significantly higher than the girls. The gender ratio of boys to girls was 1.52 ( $p=0.868$ ). These results were interpreted as a consequence of more active and interested character of the boys.

In the same study, mean age of referral was reported to be  $8.77 \pm 4.99$  years. Similarly, the mean ages were  $7.74 \pm 4.97$  in boys ( $n= 303$ ) and  $7.67 \pm 5.25$  in girls ( $n= 199$ ) in our study. These results were interpreted as that the age of

starting school increases the risk of experiencing a trauma as a result of dramatical change to a more active lifestyle. who admitted to the ED was found significantly higher than that of girls (38.1%).<sup>14</sup>

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In the same study, the rates of boys in cases of physical abuse and perforator-cutter injuries were reported to be 75% and 93%, respectively.<sup>14</sup> In our study, significant male sex dominance was also detected in cases of falls, injuries and burns. Studies in our country reported the frequency of physical abuse between 6.1% and 19%.<sup>15,16</sup>

In our study, the rate of physical abuse was also found to be significant in male sex, although it was 2.4%. Observed low values in our study were thought to be the result of a reflection of the high level of development in the region where the study was conducted.

Rate of fall was markedly higher in boys with the value of 69.3% in our study. In studies conducted in our country, rates of fall were reported between 6.9 to 16.9%.<sup>10,17</sup>

Because Tekirdag is a developed city compared to the other places in the region, it was considered that as a consequence of lesser occurrence of physical abuse-related traumas, fall-related traumas can be seen more. In our study, primary school graduated parents were more than the others. Pediatric trauma patients were often the first children of their families.

### Conclusions

In the extensive literature survey, we did not find a detailed study including the demographic characteristics of the families of pediatric trauma patients conducted especially in Turkey and other countries. In this respect, our study is a valuable research reflecting the demographic characteristics of an industrial and educated region in the European part of Turkey. As a result, taking awareness-raising initiatives to increase the level of education of parents, planning more effective measures against accidents indoor and outdoor, and providing a better understanding of the concept of safe environment may further reduce the number of pediatric trauma patients.

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