

Pediatric Cases That Composed Temporary Legal Report; Whom? When?

Geçici Adli Rapor Düzenlenen Pediatrik Olgular; Kime? Ne zaman?

Yasemin Çetinel¹, Betül Güllalp², Özlem Karagün², Özmen Örel², Tülay Deniz Seçkin², Hasan Aldinç², Sibel Benli²

¹Department of Family Medicine, Faculty of Medicine, Başkent University, Ankara, Turkey

²Department of Emergency Medicine, Faculty of Medicine, Başkent University, Ankara, Turkey

Abstract

Objective: Reports to legal authorities must be made for a variety of patients who present to emergency departments (EDs). This study summarises paediatric cases reported with a temporary legal form from our ED and reviews the literature on this topic with reasons and possibilities.

Material and Methods: Charts were reviewed of all patients presenting to the university ED up to 18 years of age who were declared to hospital police as a legal case between January 1, 2008 and December 31, 2009. Demographic and clinical details were recorded. SPSS version 12 was used for statistical analysis.

Results: During the study period, 889 paediatric cases (mean age 8±5 years, 58% male) were referred to the hospital police as cases requiring legal action. The categories of injuries/events to patients due to the chief complaint were as follows: poisonings in 28% (n=255), falls in 23% (n=208), and traffic accidents in 16% (n=144). Over half (55%) of patients were discharged home while 45% were admitted: 13% to paediatric surgery, 8% to neurosurgery, and 7% to paediatrics.

Conclusion: Patients who were admitted to the emergency service due to falls could be reported to the legal authorities by doctors as a result of a suspicion of child abuse, neglect or any kind of physical violence instead of simple reasons due to the findings of the patients. It was observed that patients who had no significant physical findings or a history could not be reported.

(JAEM 2013; 12: 113-7)

Key words: Emergency medicine, legal report, paediatrics

Özet

Amaç: Acil servislere (AS) başvuran çeşitli hastaların adli makamlara rapor edilmesi gerekmektedir. Bu çalışma, acil servisimizden geçici adli rapor yazılan çocuk olguları özetlemekte ve bu konuda nedenler ve olasılıklar ile literatürü gözden geçirmektedir.

Gereç ve Yöntemler: 1 Ocak 2008 ile 31 Aralık 2009 arasında üniversite AS'de adli olgu olarak hastane polisine bildirilen 18 yaşa dek tüm hastaların bilgileri değerlendirilmiştir. Demografik ve klinik bilgiler kaydedildi. İstatistiksel analiz için SPSS 12 kullanıldı.

Bulgular: Çalışma süresinde 889 çocuk olgu (ortalama yaş 8±5 yaş, %58 erkek) adli durum gerektiren olgular olarak hastane polisine iletili. Hastaların ilk şikayetlerine göre yaralanma/olayın kategorizasyonunda %28 (n=255) zehirlenmeler, %23 (n=208) düşmeler, %16 (n=144) trafik kazaları idi. Hastaların %45'ine; %13 çocuk cerrahi, %8 beyin cerrahi ve %7 çocuk hastalıklarına yatış verilirken, yarısından çoğu (%55) taburcu edildi.

Sonuç: Düşmelere bağlı AS'e başvuran hastalar, hastaların bulguları ile ilgili basit nedenlere karşın çocuk suistimali, ihmali ya da herhangi bir fiziksel şiddet şüphesiyle doktorlar tarafından adli yetkililere rapor edildiler. Belirgin fizik bulgu ya da öyküsü olmayan hastaların rapor edilemediği izlendi.

(JAEM 2013; 12: 113-7)

Anahtar kelimeler: Acil tıp, adli rapor, pediatri

Introduction

Medical professionals in a variety of are responsible for reporting cases to authorities, as required by law. These reporting systems help to ensure a safe society by notifying social services and law enforcement authorities of the patient, and identify the events that may lead to harm to a person.

In Turkey, these documents are not sent directly to the Directorate of Health; instead, they are given directly to the hospital police. As a

result, the public prosecutor and forensics unit make the final decision on possible further legal action. Definite legal reports are issued by the forensics unit, while temporary legal reports written in the emergency service are retained to define and report significant issues due to external reasons such as trauma or suspicion of abuse and neglect, regardless of the actual cause reported. When the systems are considered, the issuance of a temporary legal report in case of any kind of harm or possibility of harm is a managerial function under the initiative and responsibility of the physician, who is limited to patient his-

The abstract was presented as a poster at the 1st Emergency Medicine and Family Medicine Congress, 2010.

Correspondence to / Yazışma Adresi: Betül Güllalp, Department of Emergency Medicine, Faculty of Medicine, Başkent University, Ankara, Turkey
Phone: +90 533 519 44 05 e.mail: docbetul@yahoo.com

Received / Geliş Tarihi: 26.01.2013 **Accepted / Kabul Tarihi:** 05.05.2013 **Available Online Date / Çevrimiçi Yayın Tarihi:** 17.07.2013

©Copyright 2013 by Emergency Physicians Association of Turkey - Available online at www.akademikaciltip.com

©Telif Hakkı 2013 Acil Tıp Uzmanları Derneği - Makale metnine www.akademikaciltip.com web sayfasından ulaşılabilir.

doi:10.5152/jaem.2013.033



tory and indefinite physical examination findings (1, 2). The present study aimed to determine the characteristics of paediatric patients in our clinic for whom temporary legal reports were issued and to discuss possible methods and reasons for this situation.

Material and Methods

A chart review was performed of patients up to the age of 18 listed in our legal case logbook who presented to our ED in Adana from January 1, 2008 to December 31, 2009. There was no ethical committee application. This study did not require patient consent. The criteria for reporting a case was the fulfilment of the formal temporary forensic forms by the physician in ED. It is completely at the physician's discretion to report the findings and the history of the child.

Patient charts were obtained from the medical records department and the following information was extracted by two researchers: patient age, sex, complaint, time of presentation, physical examination findings, and outcome of the case. The complaint of the patient and the relatives was the chief complaint reported on arrival. The result of the case was the final status of the patient in ED.

Statistical analysis

Data were analysed using SPSS 12 software. Categorical data were analysed using the chi-square test. Results with p values less than 0.05 were considered statistically significant.

Results

During the study period, our ED had 81,814 visits by patients up to 18 years old, of which 889 (1.1%) were referred to the hospital police, according to the logbook. The mean age of the reported cases was 8.2 ± 5.4 years (range 1-18 years) and 58% were male ($p=0.0001$).

When the patients were evaluated according to the first complaint, poisoning accounted for 28.41% ($n=255$), falling was the cause of 23.38% ($n=208$), traffic injuries were 16.19% ($n=144$), falling from height (≥ 2 m) accounted for 7.5% ($n=67$), burns were the cause of 5.2% ($n=46$), cutting or penetrative injuries were 4.5% ($n=40$), being struck was 3.25% ($n=30$), falling from a bicycle was 2.25% ($n=20$), crushing by a heavy object accounted for 1.12% ($n=10$), electrical injury was 0.9% ($n=8$), foreign body accounted for 0.56% ($n=5$), gun-

shots were 0.45% ($n=4$), drowning was 0.44% ($n=4$), genital trauma was 0.44% ($n=4$), being struck during paediatric pregnancy was 0.22% ($n=2$), and unknown paediatric pregnancy was 0.11% ($n=1$); other causes were also reported.

When the time period of admissions was evaluated, 6.4% ($n=57$) were admitted during the hours of 24:00 to 08:00, 40.1% ($n=356$) between 08:00 and 16:00, and 53.5% ($n=476$) between 16:00 and 24:00. When the largest complaint groups (poisoning, falling, traffic injury, falling from height, burning, penetration-cutting injury) were stratified according to the 8 hour time periods, poisoning was the most common complaint between 08:00 and 16:00 and 24:00 and 08:00 ($n=18$, $n=149$), whereas falling was the most complaint between 08:00 and 16:00 ($n=99$) ($p=0.015$).

Among traffic injury patients, 58.3% ($n=84$) were pedestrians, 11.8% ($n=17$) were inside vehicles, and 29.9% ($n=43$) were unclassified traffic injuries. The relation between patient sex and admission months is shown in Figure 1.

During the study period, 47.8% ($n=425$) of patient admissions were in 2008 and 52.2% ($n=464$) in 2009. The proportion of patients discharged from the ED was 55% ($n=489$). The highest rates of hospitalisation in wards were 13.05% paediatric surgery ($n=116$), 8.2% neurosurgery ($n=71$), 6.8% paediatrics ($n=61$), 5.85% ($n=52$) anaesthesia intensive care, and 2.92% ($n=26$) orthopaedics.

When sex was compared with the most common complaints on arrival, male patients were dominant ($p=0.001$). In the six largest complaint groups, the ratio of males that were discharged from ED was higher than that of females ($p=0.0001$).

When hospitalisation wards and months were compared, the highest number of patients was recorded during May for neurosurgery ($n=15$), in August for paediatric surgery ($n=21$), and in November for reanimation ($n=10$) and the burns unit ($n=5$). The highest proportion of patients was discharged from the ED during October.

When the most common complaints were examined according to patient age categories (0-3, 4-6, 7-12, 13-14, and 15 years and over), the highest proportion of complaints were due to penetration-cut injuries (15.5%) in patients aged 15 years and over ($n=23$), falling (35.7%) in those aged 7-12 years ($n=66$), traffic injury (37.8%) in patients aged 7-12 years ($n=70$), falling from height (14.8%) in 0-3 year olds ($n=25$), poisoning (42%) in 4-6 year olds ($n=71$), and burning (12%) in those aged 0-3 years ($n=23$) ($p=0.0001$).

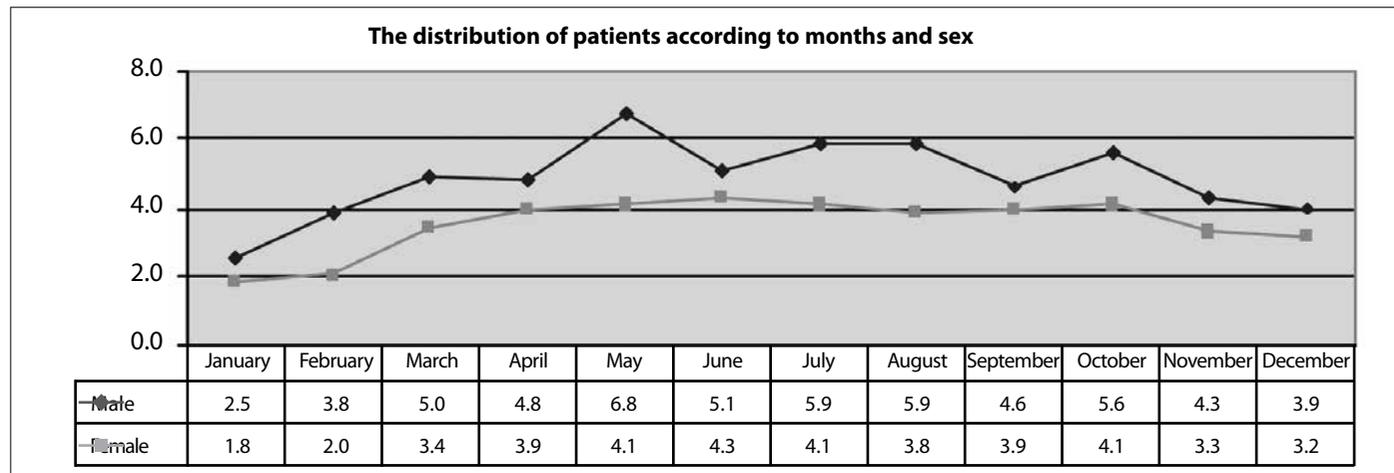


Figure 1. Month of presentation and gender of children registered in the legal case logbook of our emergency department over a two-year period

A child could have an injury in more than one category. Findings of physical examination of patients are shown in Figure 2.

Discussion

In a recent study of paediatric legal cases admitted to emergency services, 2.3% were reported, with a mean age of 8.91 ± 5.08 years (1). In our study, 1.1% of patients were reported with a mean patient age of 8.2 ± 5.4 years; this was consistent with the literature. Hon et al. (2) found that the median age of traffic accident, fall or burn cases in paediatric patients in an intensive care unit was 9.7 (8 ± 11) years, 7.6 (3.3 ± 9.6) years, and 1.6 (0.9 ± 3) years, respectively.

In the same retrospective analysis, the male:female ratio was 2:1 (2); in our study, males were dominant and accounted for 58% of cases; in the literature, it was reported that males accounted for 66.3% of paediatric cases reported to the hospital police (1). The same study reported that males were correlated with forensic paediatric patient admissions due to trauma ($p=0.001$) (1).

It was found that the highest number of hospital admittances occurred in summer (36.6%), particularly during June (16.9%) (1). In our study also, the highest number of patients (29%, $n=257$) presented during the summer. The months with the highest number of reported cases were May (10.8%, $n=96$) and July (9.9%, $n=88$). It was found that the highest number of legal reports on male patients were produced during May (6.8%, $n=60$), compared with June (4.3%, $n=38$) among females. Among the same groups, no significant relationship was found between the distribution of patient admittances and months and seasons ($p=0.510$ and $p=0.707$, respectively) (1).

As for the final status of the patients, instead of hospital discharge from the emergency service, females had higher hospitalisation rates when compared to males ($p=0.0001$).

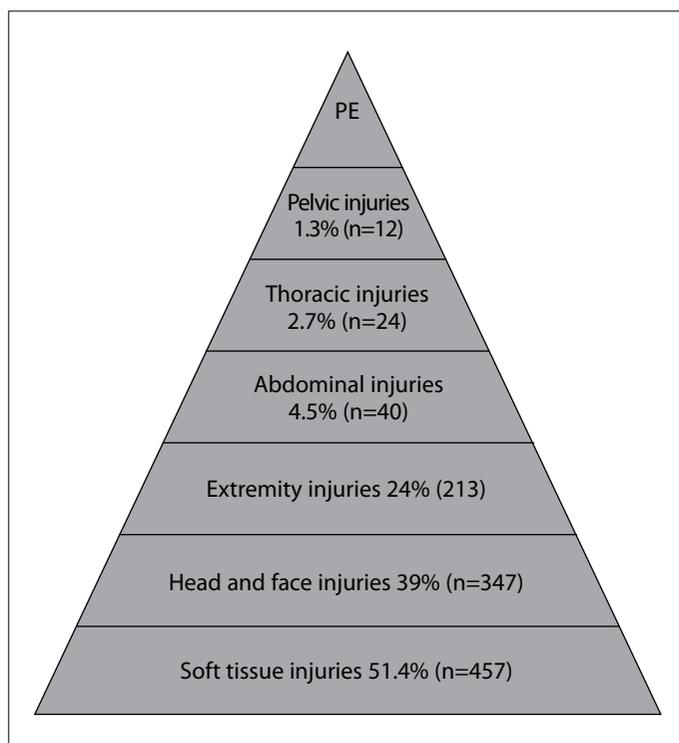


Figure 2. Physical exam (PE) findings of children registered in the legal case logbook of our emergency department over a two-year period

In 8-hour shifts, the most common causes of referral showed variations. Poisoning cases were significantly higher at times between 00:00 and 08:00, fall cases were significantly higher between 08:00 and 16:00, while admissions due to traffic accidents were significantly higher during night shifts (3). It was found that 58.3% ($n=84$) of traffic accident cases involved accidents outside the vehicle, 11.8% ($n=17$) involved accidents inside the vehicle, and 29.9% ($n=43$) involved other traffic accidents. Since 14.58% ($n=21$) were reported only as traffic accidents, the ratio of injuries outside the car might be higher. Hon et al. (2) investigated admissions to a paediatric intensive care unit and reported that trauma and poisoning cases constituted 57% of intensive care patients, followed by traffic accidents, falls and burn cases. Hon et al. (2) reported that 74% of traffic accidents involved pedestrians. A one-year questionnaire study of children younger than 15 years analysed injuries or accidents caused by children; according to the Fatality Review Program (ACFRP), a study carried out between 1995 and 1999 indicated that 29% of paediatric deaths were preventable. This level reached 91% for potentially preventable cases of mortality due to unexpected injuries (3). Mortality rate in pedestrian accidents between 15:00 and 19:00 among children aged 16 years and younger was 36% (4). Sever et al. (1) categorised paediatric legal cases as traumatic and non-traumatic and reported that traffic accidents were the most frequent cause in the trauma group (32.5%), followed by falls from a height (16.9%) and penetrating sharp tools (6.8%), while accidental drug ingestion was the most frequent cause in the non-trauma group.

The clinics that received the most in-patients were the anaesthesia intensive care unit (10.3%), the paediatric clinic (9.9%), and paediatric surgery (8.6%) (1). In comparison, 45% of our patients were admitted, with 13.05% to paediatric surgery and 8.2% to neurosurgery.

Ivarsson et al. (5) evaluated body injury area and injury scores in paediatric pedestrian injuries and reported that, in children with AIS 2+injuries, the highest level of injuries occurred in the head-neck region and that the largest age group (60%) reporting these types of injuries was between 1 and 3 years. In the same scoring group, it was found that head-neck and lower extremity injuries constituted 50% of injuries in the 13-15 years age group. Among children with medium and higher degrees of injuries sustained in pedestrian accidents, the most common injuries occurred in the head and neck area (1). In another study that included all paediatric cases reported to the police, 34.4% of patients were considered to have isolated local trauma according to AIS after the first examination. The most common areas showing trauma were found to be the head and neck (12.1%), followed by lower extremities (8.8%) and the torso (7.8%) (1). The most common type of injury in our patients was soft tissue injury (51.4%). It was observed that head-face injuries were more common (39%) than extremity injuries (24%). A total of 22% of the patients were found to have multiple traumas upon first examination according to AIS. No spinal findings were reported in our legal reports.

Another possible group is abused children that were mostly admitted to emergency services with a non-real chief complaint due to secondary reasons such as injury, fear of the abuser and deterioration of the general condition of the child; however, there were no cases found in this study. It is believed that the proportion of children who were reported to be in this group is very low. Many children might be admitted to emergency services with different complaints (6-8). Hos-

pital admissions due to falls could be caused by common accidents; however, they might also involve child abuse. Child abuse includes all kinds of physical and verbal violence, sexual harassment and negligence, commonly exerted by the relatives of a child. It was reported that these sub-groups were generally present in combination (8-10). Important indications of potential child abuse include: multiple forearm fractures, multiple posterior rib fractures, metaphyseal fractures, retinal haemorrhage, multiple ecchymoses in less frequently monitored areas, haemorrhage or burns in the form of an object, wounds at different healing stages, hand or bite marks, inadequate care of wounds, and circular burns (6, 11, 12). Silverman et al. (13) found that 20% of high school girls had experienced physical and/or sexual violence at some point. Other studies reported that body trauma was found in only 22% of sexually abused patients, while genital trauma was found only in 12%. The most common body trauma findings included contusion, abrasion, laceration, linear lesions, burns and bites (6, 11). The most frequent injuries accompanying sexual abuse patients were located at the extremities, head-neck, back, chest and abdomen, respectively (14). In a study of child abuse including a total of 16 children (11 female, 5 male), Tahiroğlu et al. (15) reported that 81.3% of the cases were as a result of sexual abuse, 18.8% were negligence, 6.3% were physical abuse and 6.3% were emotional abuse. The literature contains studies on child abuse published by forensics departments and child psychiatry clinics. However, a review of the literature found no study which was able to distinguish child abuse in patients admitted to the emergency department due to falls.

High-dose drug poisoning cases might occur by accident or may also be due to child abuse. In child abuse cases involving poisoning, the fact that the patients are admitted to hospital with non-specific complaints might mislead the physicians. It was reported that convulsion emesis, hypoxia, hyponatremia and coma developed in child patients who were subjected to forced water poisoning (16). Sever et al. (1) reported that poisoning cases constituted 27.4% of paediatric legal cases. In our study, poisoning cases constituted 28.41% of our patients, which is consistent with the literature. Andiran et al. (17) investigated patients under the age of 17 who were admitted to emergency services due to poisoning and reported that the mean age of the patients was 5.96 ± 4.87 years. Among the inpatients, the paediatric surgery service had the highest number of cases (39.2%, $n=60$) due to corrosive substance intake. Huang et al. (18) reported that the ratio of female:male patients was 2:1 in caustic/corrosive poisoning cases and that 63% of the patients were under the age of 3. The study by Andiran et al. (17) on poisoning cases revealed that the mortality level was 0.4%; 52.3% of the cases were males under the age of 10 while 79% of the cases were females under the age of 10. It was reported that hospital admission due to poisoning was highest during May and that the highest number of hospital admissions occurred during the spring season ($p=0.001$). A total of 63.4% of the patients were hospitalised in other departments besides the emergency service (17). In the group that included poisoning cases, 40% ($n=102$) were discharged from hospital after receiving advice. It was reported that 78% of poisoning cases occurred by accident and that 73% of patients were under the age of 5. Poisoning represented 67% of suicide patients over the age of 10. It was found that drugs were the most frequent form of deliberate self-administered poisoning (57.7%), followed by the intake of caustic/corrosive substances (16.8%), and carbon-monoxide (9.4%) (17). In our study, however, 60% ($n=153$) of the cases were treated by hospitalisation.

Article 280 of the Turkish Penal Code covers the liability to report, and stipulates that it is imperative to report the situation to authorised bodies in cases with a suspicion of a crime. Based on this article, legal reports are mostly made in cases with indications of hospitalisation to the emergency service or trauma, poisoning or suspicious cases; patients who had no indication of hospitalisation but had minor findings might be included in the larger group that could be missed (19). It is not sufficient to report only suspicious major findings to the police. It might be beneficial to refer patients with no specific findings and for whom legal suspicion arises to a relevant branch; additionally, referral to psychiatry should be performed in elective cases, while legal applications should be made for patients admitted to the emergency service due to any complaint with no significant finding in cooperation with the psychiatry clinic. Establishing a system of tracking the number and causes of child admissions to emergency services will help in identifying missed cases. Injury due to negligence is difficult to identify in the emergency department, and can be easily missed.

The Child Abuse Recognition Experience Study (CARES) identified fatal abuse cases that were not reported (20). The reporting of a suspicion of child abuse could be initiated by pre-hospital ambulance teams; however, 69% of them were unaware of their responsibility (21).

In our study, 23.38% of cases were admitted to the emergency service due to falls, which is higher than the figures reported in the literature. It had been previously reported that these cases are missed due to a lack of awareness among the physicians, an expectation of no mistreatment by the relatives, a lack of attention and hospital staff noticing only very significant findings. However, the biggest risk occurs when physicians believe the stories told by those who accompany paediatric patients with a good outward general condition and minor injuries to emergency service, which is a crowded and fast-paced working environment (6-9, 11). A child abuse team, which often consists of a forensics specialist, a pedagogue, a paediatrician, a paediatric surgeon, a gynaecologist, a radiologist, an optometrist, dentists and social services specialists, should also include an emergency medicine specialist.

Conclusion

In this study there were many unexpected cases reported to the police by physicians where the chief complaint was falls. Retrospective evaluation of cases for which legal reporting was supposed to be done, however the possible ones without significant findings we overlooked within the ED is not known. There is needed for guidelines, clinical algorithms, a treatment pathway or new processes to be composed for ED physicians to report possible legal cases to the police.

Conflict of Interest

No conflict of interest was declared by the authors.

Peer-review: Externally peer-reviewed.

Author Contributions

Concept - B.G., Y.Ç.; Design - Y.Ç., B.G.; Supervision - S.B.; Data Collection and/or Processing - Ö.Ö., T.D.S.; Analysis and/or Interpretation - B.G.; Literature Review - B.G., H.A., Ö.K.; Writer - Y.Ç., B.G.; Critical Review - S.B.

Çıkar Çatışması

Yazarlar herhangi bir çıkar çatışması bildirmemişlerdir.

Hakem değerlendirmesi: Dış bağımsız.

Yazar Katkıları

Fikir - B.G., Y.Ç.; Tasarım - Y.Ç., B.G.; Denetleme - S.B.; Veri toplanması ve/veya işleme - Ö.Ö., T.D.S.; Analiz ve/veya yorum - B.G.; Literatür taraması - B.G., H.A., Ö.K.; Yazıyı yazan - Y.Ç., B.G.; Eleştirel İnceleme - S.B.

References

1. Sever M, Saz EU, Koşargelir M. An evaluation of the pediatric medico-legal admissions to a tertiary hospital emergency department. *Ulus Travma Acil Cerrahi Derg* 2010; 16: 260-7.
2. Hon KL, Leung TF, Cheung KL, Nip SY, Ng J, Fok TF, et al. Severe childhood injuries and poisoning in a densely populated city: where do they occur and what type? *J Crit Care* 2010; 25: 7-12. [CrossRef]
3. Rimsza ME, Schackner RA, Bowen KA, Marshall W. Can child deaths be prevented? The Arizona Child Fatality Review Program experience. *Pediatrics* 2002; 110: 110-1. [CrossRef]
4. National highway traffic safety administration. Traffic safety facts. 2007 data: pedestrians.washington,DC:national traffic highway safety administration; 2008. US department of transportation publication no.hs 810-994.
5. Ivarsson B J, Crandall J R, Okamoto M. Influence of age-related stature on the frequency of body region injury and overall injury severity in child pedestrian casualties. *Traffic Inj Prev* 2006; 7: 290-8. [CrossRef]
6. Kara B, Biçer Ü, Gökalp AS. Child abuse. *Çocuk Sağlığı ve Hastalıkları Dergisi* 2004; 47: 140-51.
7. Santucci K A, Hsiao AL. Advances in clinical forensic medicine. *Curr Opin Pediatr* 2003; 15: 304-8. [CrossRef]
8. Sedlak AJ, Broadhurst DD. Executive summary, in *The Third National Incidence Study of Child Abuse and Neglect*. Washington DC, National Center on Child Abuse and Neglect, 1996.
9. Çekin N. Forensic medicine management in child negligence and abuse. <http://tpk.turkpediatri.org.tr/kongre2009/pdf/23.pdf>.
10. Thackeray JD, Hibbard R, Dowd MD; Committee on Child Abuse and Neglect; Committee on Injury, Violence, and Poison Prevention. Intimate partner violence: the role of the pediatrician. *Pediatrics* 2010; 125: 1094-100. [CrossRef]
11. Vogeley E, Pierce MC, Bertocci G. Experience with wood lamp illumination and digital photography in the documentation of bruises on human skin. *Arch Pediatr Adolesc Med* 2002; 156: 265-8. [CrossRef]
12. Pressel DM. Evaluation of physical abuse in children. *Am Fam Physician* 2000; 61: 3057-64.
13. Silverman JG, Raj A, Mucci LA, Hathaway JE. Dating violence against adolescent girls and associated substance use, unhealthy weight control, sexual risk behavior, pregnancy, and suicidality. *JAMA* 2001; 286: 572-9. [CrossRef]
14. Gray-Eurom K, Seaberg DC, Wears RL. The prosecution of sexual assault cases: correlation with forensic evidence. *Ann Emerg Med* 2002; 39: 39-46. [CrossRef]
15. Tahiroglu AY, Avcı A, Çekin N. Child abuse, mental health and necessity of legal notice. *Anadolu Psikiyatri Dergisi* 2008; 9: 1-7.
16. Arieff AI, Kronlund BA. Fatal child abuse by forced water intoxication. *Pediatrics* 1999; 103: 1292-5. [CrossRef]
17. Andiran N, Sarıkayalar F. Pattern of acute poisonings in childhood in Ankara: what has changed in twenty years? *Turk J Pediatr* 2004; 46: 147-52.
18. Huang YC, Ni YH, Lai HS, Chang MH. Corrosive esophagitis in children. *Pediatr Surg Int* 2004; 20: 207-10. [CrossRef]
19. <http://www.turkhukuksitesi.com>. Türk ceza kanunu madde 280. 2010.
20. Berkowitz CD. Child abuse recognition and reporting: supports and resources for changing the paradigm. *Pediatrics* 2008; 122: 10-2. [CrossRef]
21. King BR, Baker MD, Ludwig S. Reporting of child abuse by prehospital personnel. *Prehosp Disaster Med* 1993; 8: 67-8.