

# Forensic medical evaluation of patients admitted to the emergency department due to the occupational accidents

Kenan Asıldağ<sup>1</sup>, Murat Akbaba<sup>1</sup>, Mediha Annaç<sup>2</sup>

<sup>1</sup>Department of Forensic Medicine, Gaziantep University School of Medicine, Gaziantep, Turkey

<sup>2</sup>Department of Public Health, Gaziantep University School of Medicine, Gaziantep, Turkey

## ABSTRACT

**Objective:** This study aimed to emphasize the importance of occupational accidents and contribute to the data of our country by forensic medical evaluation of patients admitted to the emergency department.

**Methods:** All 567 patients admitted to the Gaziantep University Hospital Emergency Department in 2013–2014 were examined based on their sociodemographic characteristics, types of accidents, injury zones, properties of forensic reports, duration of temporary disability, whether patients have health insurance, and whether the accident is life-threatening.

**Results:** Five hundred and fifty-three (97.5%) patients were males and 14 (2.5%) were females. Accidents were frequently seen in the age group 25–34 (36.2%). Temporary forensic report was held to the 62.6% of the cases. Patients with life-threatening injuries accounted for 6.3% and injuries that were not resolved with simple medical intervention accounted for 57.5%. The most common mechanism for injury was penetrating sharp-object injury with a rate of 25% and fall from height (20%) followed it. Isolated upper extremity injuries were the most common injuries (48.2%). The number of patients discharged after treatment in the emergency service was 393 (68.1%). The overall mortality rate due to occupational accident was 1.2%. The majority of deaths occurred by falling from height (71.4%).

**Conclusion:** Detailed analysis of emergency data would help us understand the real causes of occupational injuries and prevent these accidents by taking simple precautions.

**Keywords:** Emergency department, forensic medicine, occupational injury

## INTRODUCTION

According to the International Labor Organization (ILO), a work accident is an unexpected and unplanned incident involving all kinds of work-related acts of violence that cause injury, illness or death to one or more employees. Work accidents include injuries sustained by workers during travel, transport or due to traffic accidents while engaged in economic activity outside the workplace or at the workplace, or while doing work given by the employer (1). According to the Law No. 6331 on Occupational Health and Safety, work accidents are incidents causing death or compromising corporal integrity, spiritually or physically, at the workplace or during execution of a task at the workplace (2).

Without question, victims of occupational accidents which are regarded as forensic cases, first go to emergency services. Occupational accidents have recently started featuring prominently in judicial reports in emergency services, their frequency increasing due to reasons such as not paying enough attention to workplace safety, lacking necessary precautions, or expecting much more productivity from workers in a shorter time (3).

According to International Labor Organization sources, about 1 million work accidents occur in one day, and every 15 seconds, one employee loses his / her life due to occupational illnesses or work accidents, and 160 work accidents occur every 15 seconds (4). In our country, the number of employees who have a work accident in one day is 172 with 4 employees losing their lives and 6 employees becoming permanently unable to work every day (5).

Accidents have become one of the foremost priorities of forensic medicine today with their adverse effects on human health, health care services, workforce and quality of life, and due to the fact that they can cause material losses and yet are preventable (6). This study aims at exploring every aspect of work accidents and emphasizing once again the importance of raising social awareness about them.

## METHODS

This study is a descriptive study to determine the socio-demographic characteristics, accident types and injury areas of 567 patients who applied to Gaziantep University Hospital Emergency Service between 01.01.2013 and 31.12.2014 due to work

This study was presented as 1<sup>st</sup> International TURAZ (Turkish–Azerbaijan) Forensic Medicine and Pathology Congress, 13–16 October, Baku, Azerbaijan.

**Corresponding Author:** Murat Akbaba E-mail: drakbabamurat@gmail.com

**Received:** 09.03.2016 • **Accepted:** 02.11.2016 • **Available Online Date:** 29.01.2018

accidents as well as identifying whether their injuries were life threatening, the nature of the forensic reports prepared and the duration of incapacity caused by the work accidents. Data analyses were performed using Statistical Package for the Social Sciences (SPSS Inc.; version 16.0 Chicago, IL, USA). Frequency distributions were given and the chi-square test was applied when analyses were being performed. The  $p < 0.05$  value was accepted as statistically significant.

The study used the guideline "Forensic Medicine Evaluation of Injury Crimes Defined in the Turkish Penal Code" updated in June 2013, when assessing the parameters of life-threatening accidents, simple medical interventions, and the impact on life functions of bone fractures.

The ethical approval of our study was obtained from Gaziantep University Clinical Trials Ethics Committee with number 06.04.2015 / 108.

**RESULTS**

97.5% of those who had work accidents were male, and 2.5% were female. The mean age of cases at the time of admission to the hospital was  $32.22 \pm 10.23$  (the youngest being 14, the oldest being 65) years. It was determined that most of the cases were in the age group of 30-34 with 18.2%, followed by the age group of 25-29 with 18.0% and 20-24 with 17.3%. The rate of work accidents fell below 10% over the age of 40. A majority of those who had a work accident (93.5%) had a health insurance.

It was also determined that work accidents happen more often in spring (29.3%) and summer (27.8%), with their frequency decreasing in winter (23.3%) and falling to a minimum in autumn (19.6%). Although there is an increase in the incidence of work accidents in the spring and summer seasons, this increase is not statistically significant when the seasons are compared with each other. It was determined that the month with the highest number of work accidents was May (11.1%) with 63 cases and the month with the lowest number of work accidents was found to be September (Figure 1).

In the vast majority of cases (93.7%) there were no life threatening injuries, but more than half (57.5%) were found to sustain injuries which could not have been cured by simple medical intervention.

It was determined that the highest number of admissions to the emergency wards after work accidents took place on Fridays (18.9%) and Mondays (15.9) (Figure 2), and 61.9% of them were admitted between the hours 08: 00-15: 59, 30.5% between the hours 16: 00-23: 59 , and 7.6% between the hours 00: 00-07: 59. The time interval when the highest number of admissions took place is between the hours 09:00 - 10:59 with 18.3%.

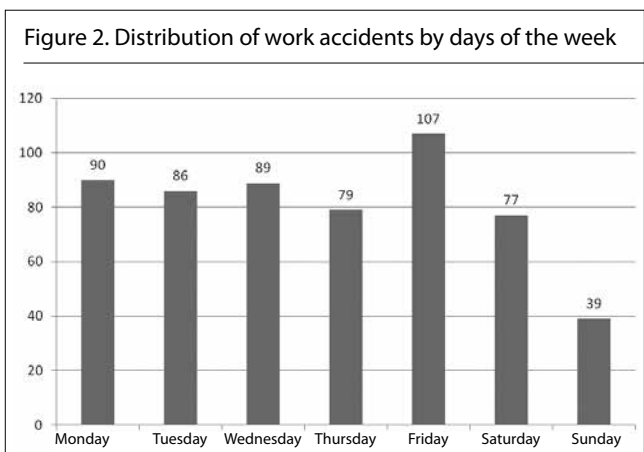
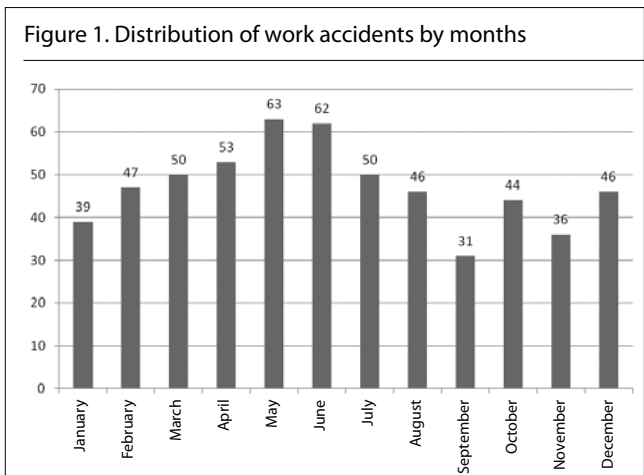
The most common type of work accident was injury due to sharp objects (25.0%) (Table 1). Approximately half (46.4%) of the patients who were admitted to the emergency service were referred to other departments, which were Plastic Surgery (53.6%), Orthopedics (16.3%) and Eye Diseases (13.3% ), respectively.

Most bodily injuries were injuries in the upper extremities (48.8%) followed by lower extremity injuries (11.1%). The majority of cases with more than one injury area (n = 95 84.8%) were found to sustain injuries in different parts of their bodies in addition to upper extremity injuries (Table 2).

Most individual injuries were observed to be soft tissue trauma (n=98 17.3%) (Table 3). Amputation occurred in 13.4% of all cases and one of them had subtotal ear amputation, seventy-five had extremity amputation, and the extremity amputations were mostly found at total (33.3%) and subtotal (32.0%) levels in fingers apart from thumbs.

Bone fractures occurred in 204 cases (36.0%). The highest number of bone fractures were found to be in the upper extremities (64.2%), 83.2% of which were in the fingers. In the second place were fractures in the lower extremities (10.8%), and multiple bone fractures were found in 17.1% of the cases. Bone fractures had a 2<sup>nd</sup> degree impact on life functions (45.1%) in about half of the cases. In the majority of the cases (21.6%), bone fractures were found to have a third degree influence on life functions.

1.2% of the cases who were admitted after a work accident lost their lives and all of them were male employees. The mortality rate was 4.4% in falls, while the death rate was 0.4% for work incidents other than falls. The proportion of inpatients was found to be 18.1% and the clinics which admitted the highest number of



**Table 1.** Distribution of cases by the types of accidents

Types of accidents	Number	Percentage
Injuries due to sharp objects	142	25.0
Falling from heights	85	15.0
Being stuck under a heavy object	57	10.1
Being stuck between two objects	49	8.6
Crush injuries	49	8.6
Foreign object stuck in the eye	36	6.4
Falling (regardless of the height)	28	5.0
Sharp object falling on the head	20	3.5
Traffic accidents	16	2.8
Crash injuries	12	2.1
Electric shocks	12	2.1
Burns	5	0.9
Toxic substances / intoxications	4	0.7
Rope burn	3	0.5
Explosions	1	0.2
Multiple accident types	4	0.7
Not specified	44	7.8
Total	567	100.0

patients were found to be Plastic Surgery (43.7%), Orthopedics (32.0%) and Eye Diseases (12.6%), respectively. It was found that most of the cases (69.3%) received outpatient treatment, and the proportion of those sent to external centers was 5.8%.

When sick leave reports related to work accidents were evaluated, the average workday loss was found to be 15.71±39.29 days.

## DISCUSSION

Occupational injuries and deaths constitute an important place in forensic medicine applications. As employees have a number of legal rights and employers have a set of legal responsibilities in regards to work accidents, it should be carefully evaluated whether an accident matches the definition of a work accident.

According to our study, 97.5% of those who had work accidents were males and 2.5% were females. The percentage of men who had work accidents ranges from 83.8% to 100.0% (3, 7-21) in different studies. The higher rate of exposure of males to work accidents in comparison to females has been construed as indicating the preponderance of men in business life as well as the propensity to use them for heavy duties.

In the study, the average age was found to be 32.22±10.23 years, with 36.2% of the cases being in the 25-34 age group. As a result of our findings consistent with the literature, it was concluded that the younger age group was more involved in work life, that they were employed in more difficult and demanding jobs, and that they had more work accidents due to a lack of experience (10, 15, 22).

**Table 2.** Distribution of employees by injury areas

Injury area	Number	Percentage
Fingers	208	37.3
Wrist-hand	39	7.0
Feet and toes	38	6.8
Eye	35	6.3
Face	19	3.4
Forearm	19	3.4
Vertebra	16	2.9
Head	15	2.7
Chest	10	1.8
Knee	9	1.6
Crus-tibial area	8	1.4
Femur-thigh region	7	1.2
Nose	4	0.7
Humerus	3	0.5
Inguinal area	2	0.4
Gluteal area	2	0.4
Shoulder	2	0.4
Neck	2	0.4
Pelvic region	1	0.2
Teeth	1	0.2
Abdomen	1	0.2
Scapula-clavicle	1	0.2
Other	3	0.5
Multiple injury areas	112	20.1
Total	557	100.0

Our study also found that the season in which occupational accidents happened the most was spring (29.3%) followed by summer (27.8%). The season during which the least number of accidents occurred was autumn (19.6%). The months during which the highest number of accidents took place were May (11.1%) and June (10.9%), and the month during which the least number of job accidents occurred was September (5.5%). Yavuz et al. (12) reported that most hospital admissions due to work accidents were mostly during the summer (35.6%) months while Sayhan et al. (11) also found that most admissions took place during the summer (31.2%) while the least number of admissions were in the autumn (15.8%) (11). Çelik et al. (22) reported that the highest number of work-related accidents took place in May (12.0%) and the least number of work accidents took place in February (4.9%). When all literature data are evaluated together, we believe that the difference in the relationship between the frequency of occupational accidents and the seasons is due to regional differences such as an increase in employment in the construction sector in spring and summer and an increase in the

**Table 3.** Distribution of cases by lesion types

Lesion type	Number	Percentage
Yumuşak doku travması (ekimoz, sıyrık, abrazyon)	98	17,3
Soft tissue trauma (ecchymosis, scratches, abrasions)	98	15.0
Superficial cuts, lacerations	85	10.6
Amputations	60	9.7
Bone fractures	55	6.0
Crush	34	2.8
Tendon lacerations	16	2.1
Burns	12	0.7
Poisoning	4	0.5
Muscle lacerations	3	0.5
Rupture of the tendon of the knee, degeneration	3	0.4
Nerve lacerations	2	0.4
Large vascular injury	2	12.9
Other	73	21.1
Multiple lesion types*	120	100.0
Total	567	*Includes

\*Includes other types of lesion other than large vascular injuries

number of seasonal workers, especially in summer, in some agricultural regions.

Our study also found that the highest number of admissions to emergency services were on Friday (18.9%) and Monday (15.9%). 79.5% of cases who had a work accident were admitted to the emergency services on weekdays and 20.5% on weekends. Sayhan et al. (11) reported that 75.7% of the admissions were during weekdays. Kekeç et al. (16) found that most admissions to emergency services took place on Tuesday while Dağlı et al. (10) found that most admissions took place on Monday (21.0%). We think that work accidents usually occur on Fridays and Mondays as a result of employees being exposed to permanent and intense work during the week, as a result of employers not creating enough opportunities for employees to rest mid-week, and due to employees experiencing adaptation and attention issues on Mondays.

It was found that most admissions to our emergency services due to work accidents took place during working hours (61.8%), and these admissions were mostly between the hours 09:00-09:59 and 10:00-10:59 (9.3% and 9.0% respectively). This demonstrated a resemblance with similar studies in literature (3, 10, 11, 20, 22, 23). We think that most of the job accidents occur during early working hours as workplaces tend to employ more staff during day shifts and workers experience difficulties adapting to the work environment and giving their attention to work when starting their shift.

The rate of life-threatening occupational accidents was 6.3% according to our study. The majority of cases (57.5%) were found to have injuries that could not be remedied by simple medical interventions. Seviner et al. (18) found that 5.0% of the cases had life-threatening injuries, and that 40.4% of the cases had injuries that could not be fixed by simple medical interventions. These results show that work accidents cause significant damage to the human body and that work accidents are an issue which should be taken seriously.

According to our study, the most common types of work accidents were injuries due to sharp objects (25.0%) and falls (20.0%), respectively. Sayhan et al. (11) found that 40.6% of the cases had injuries due to sharp objects and 16.7% of the cases had injuries due to falls, while Bakhtiyaria et al. (23) found that slipping and falling (18.5%) were the most common occupational accidents. When one looks at the most common types of work accidents, it becomes clear that they can be reduced to a minimum with simple safety measures.

Most accidents (17.3%) resulted in a soft tissue trauma. This was followed by cuts / lacerations (15%), amputations (10.6%) and bone fractures (9.7%), respectively. Özkan et al. (14) found that 36.7% of injuries were soft tissue trauma, 26.3% were cuts and lacerations, 11.2% were fractures-dislocations, and 6.9% were amputations. Jorgensen et al. (24) reported a fracture or amputation rate of 18.0%. According to SSI statistics, soft tissue traumas ranked first with 42.8% in terms of injuries resulting from work accidents in 2012 and the rate of bone fractures was 9.9% (25).

In our study, the majority of cases with both amputations (97.4%) and bone fractures (98.0%) were males. Similar to our findings, Friedman et al. (26) reported a high number of amputations due to work accidents (88.8%) in male workers. The literature on work accidents suggests that serious injuries such as bone fractures and amputations are seen more frequently in male workers than female workers, suggesting that men are more involved in heavy duty tasks requiring more physical effort. In addition to these findings, taking into account the fact that bone fractures have 2<sup>nd</sup> degree impact on life functions in 45.1% of the cases and a 3<sup>rd</sup> degree impact in 21.6% of the cases, bone fractures and amputations alone show what dangers workers' lives are exposed to unless necessary precautions are taken.

When it was examined which body parts were affected the most by work accidents, it was found that the injuries were mostly in the singular upper extremities (hands and fingers in 90.8% of the cases) with 48.8%, followed by singular head and neck injuries with 13.6% and (feet and toes in 61.3% of the cases) individual lower extremity injuries with 11.1%. Similar results have been obtained in other studies on work accidents in our country (9, 10, 12-14, 22, 25). It has been determined that workers should be especially trained on safety measures to protect the upper extremity, especially the hands and fingers, and the lower extremity, namely their feet and toes, when injuries to the upper extremities, body areas most affected by amputations and fractures as well as data from the relevant literature and our study are taken together.

Similar to our findings, many studies conducted in our country have shown that the majority of occupational accident cases were discharged following admission to the emergency service (11-13, 16, 22). This is a major indication in itself that work accidents can be avoided in most cases with simple measures.

Patients were mostly treated in Plastic Surgery (43.7%) and Orthopedic Clinics (32.0%). Similar results have been obtained in other studies (11,12). Work accidents often lead to extremity and soft tissue trauma, requiring reconstruction and fracture stabilization. Although the fact that most work accident related cases are discharged from the emergency service after out-patient treatment and the injuries are usually in the form of soft tissue traumas shows that most work accidents result in simple injuries, it is noteworthy that these accidents cause both loss of life and loss of property in view of the clinics where the patients are treated.

In studies conducted, it was determined that the mortality rate in occupational accidents was between 0.25% and 1.0% (10, 11, 13, 14, 22, 27). This rate was 1.2% in our study, somewhat higher than what the current literature tells us. We believe that this result is contributed to by the lack of adequate security measures despite the fact that our city is an industrial city and there are lots of factories around with heavy working conditions.

Our study found that the average workday loss was 15,71 days. Kekeç et al. (16) and Jorgensen et al. (24) found that the loss rate was 15,5 and 5,5 days, respectively. Compared with foreign publications, it is a fact that temporary incapacity in our country is rather long. While this shows that, in our country, workers are exposed to more severe occupational accidents than abroad, it shows from another perspective that this situation puts more burden on our country's economy than on developed countries.

#### Limitations of the Study

We tried to determine for the purposes of this study to which occupational groups the victims of work accidents examined in the study belonged, but hospital records revealed no patient records containing information on their employment. We tried to contact patients using the contact details in the hospital records, but our efforts produced no viable results. We found that most of the contact details belonged not to the person who had a work accident but rather to the person who brought the patient to the emergency service.

#### CONCLUSION

Our study found that most victims of work accidents were male employees, that most accidents occurred in the 25-34 age group, that most admissions to emergency services due to work accidents took place during day shift, that work accidents occurred more frequently on Mondays and Fridays, that most injuries were caused by sharp objects followed by falls, that most injuries were soft tissue traumas followed by superficial cuts and lacerations, that the body part most affected by work accidents was

the single upper extremities, namely fingers, and that most bone fractures occurred on upper extremities, especially fingers, that more than half of the cases were discharged following out-patient treatment at the emergency service, and that most fatalities resulting from work accidents occurred due to falling from heights, and that temporary periods of work incapacity due to work accidents were longer in comparison to other countries in light of data from sick leave reports.

**Ethics Committee Approval:** Ethics committee approval was received for this study from the ethics committee of Gaziantep University Clinical Investigations (decision no: 06.04.2015/108).

**Informed Consent:** Informed consent was not received due to the retrospective nature of the study.

**Peer-review:** Externally peer-reviewed.

**Author contributions:** Concept - M.K.A., M.Annaç; Design - M.Akbaba, M.K.A.; Supervision - M.Akbaba; Resource - M.K.A.; Materials - M.K.A.; Data Collection and/or Processing - M.K.A.; M.Annaç; Analysis and/or Interpretation - M.Akbaba, M.K.A., M.Annaç; Literature Search - M.K.A., M.Annaç; Writing - M.K.A., M.Akbaba; Critical Reviews - M.K.A., M.Akbaba.

**Conflict of Interest:** No conflict of interest was declared by the authors.

**Financial Disclosure:** The authors declared that this study has received no financial support.

#### REFERENCES

- Occupational Injuries Statistics From Household Surveys and Establishment Surveys. ILO, 2008. [http://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/publication/wcms\\_173153.pdf](http://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/publication/wcms_173153.pdf) (erişim tarihi: 28.08.2015).
- İş Sağlığı ve Güvenliği kanunu. [http://www.ttb.org.tr/mevzuat/index.php?option=com\\_content&view=article&id=923:salii-ve-guevenli-kanunu&Itemid=28](http://www.ttb.org.tr/mevzuat/index.php?option=com_content&view=article&id=923:salii-ve-guevenli-kanunu&Itemid=28) (erişim tarihi: 27.08.2015).
- Kalemoğlu M, Keskin Ö, Yıldırım İ, Erşanlı D. Analysis of traumatic workplace injuries at emergency services. *Nobel Med* 2006; 2: 21-3.
- Çakar İ. İş Kazaları. <http://www.csgb.gov.tr/csgbPortal/ShowDoc/WLP+Repository/per/dosyalar/duyurular/iskazalari> (erişim tarihi: 26.03.2015).
- 6331 sayılı İş Sağlığı ve Güvenliği Kanunu. T.C. Çalışma ve Sosyal Güvenlik Bakanlığı İş Sağlığı ve Güvenliği Genel Müdürlüğü. [http://www.csgb.gov.tr/csgbPortal/ShowProperty/WLP%20Repository/csgb/dosyalar/kitap/kitap03\\_6331](http://www.csgb.gov.tr/csgbPortal/ShowProperty/WLP%20Repository/csgb/dosyalar/kitap/kitap03_6331) (erişim tarihi: 26.03.2015).
- Bilge Y, Saltık A, Fişek G. İş Kazaları ve Bilirkişilik Kitabı. <http://kitaplar.ankara.edu.tr/dosyalar/pdf/857.pdf> (erişim tarihi: 26.03.2015).
- Sunay YM, Faruk OI. Evaluation of forensic cases applied to emergency department of Suleyman Demirel University Medical School Hospital between 1999-2001. *Adli Tıp Dergisi* 2003; 17: 47-53.
- Korkmaz T, Kahramansoy N, Erkol Z, Sarçıl F, Kılıç A. Evaluation of the Forensic patients presenting to the emergency department and legal reports. *Haseki Tıp Bülteni* 2012; 50: 14-20.
- Zeren C, Karakuş A, Çelikel A, Çalışkan K, Aydoğan A, Karanfil R, et al. Evaluation of forensic cases in emergency service, Mustafa Kemal University Hospital of Medical Faculty. *Mustafa Kemal Üniv Tıp Derg* 2011;2: 34-42.
- Dağlı B, Serinken M. Occupational injuries admitted to the emergency department. *JAEM* 2012; 11: 167-70.
- Sayhan MB, Sayhan ES, Yemenici S, Oğuz S. Occupational injuries admitted to the emergency department. *J Pak Med Assoc* 2013; 63: 179-84.

12. Yavuz MS, Aşirdizer M, Uluçay T, Zeyfeoğlu Y, Erbüyük K, Güllüçayır S. İş kazası sonucu acil servise müracaat eden olgular. 6. Anadolu Adli Bilimler Kongresi, Manisa. Sözel ve Poster Bildiriler Kitabı 2007: 102-7.
13. Karakurt Ü, Satar S, Açıkalın A, Bilen A, Gülen M, Baz Ü. Analysis of occupational accidents admitted to the emergency medicine department. *JAEM* 2013; 12: 19-23.
14. Özkan S, Kılıç Ş, Durukan P, Akdur O, Vardar A, Geyik S, et al. Occupational injuries admitted to the emergency department. *Ulus Travma Acil Cerrahi Derg* 2010; 16: 241-7.
15. Mehrdad R, Seifmanesh S, Chavoski F, Aminian O, Izadi N. Epidemiology of occupational accidents in iran based on social security organisation database. *Iran Red Cres Med J* 2014; 16: e10359. [\[CrossRef\]](#)
16. Kekeç Z, Ünal D, Şenol V, Çetinkaya F. The Evaluation of complicated occupational accidents admitted to the accident and emergency department of Erciyes University Hospital. *Fırat Üniversitesi Sağlık Bilimleri Tıp Dergisi* 2003; 17: 277-83.
17. Nur B, Sunay YM, Mesut O. The Medico-legal evaluation of occupational injuries. *Adli Tıp Dergisi* 2001; 15: 14-8.
18. Seviner M, Kozacı N, Ay MO, Açıkalın A, Çökük A, Gülen M, et al. Analysis of judicial cases at emergency department. *Çukurova Üniversitesi Tıp Fakültesi Dergisi* 2013; 38: 250-60.
19. Altun G, Azmak D, Yılmaz A, Yılmaz G. The characteristics of the cases which admitted to emergency department of Trakya University Medical Faculty. *Adli Tıp Bülteni* 1997;2: 62-6. [\[CrossRef\]](#)
20. Ergör OA, Demiral Y, Piyal YB. A Significant outcome of work life: occupational accidents in a developing country, Turkey. *J Occup Health* 2003; 45: 74-80. [\[CrossRef\]](#)
21. Cantürk G, Eşiyok B, Yaşar H, Doğan B, Hancı H. Evaluation of Occupational injury cases in the department of forensic medicine, Ankara University Medical Faculty Between 1993-2003. *Erciyes Tıp Dergisi* 2006; 28: 1-6.
22. Çelik K, Yılmaz F, Kavalcı C, Özlem M, Demir A, Durdu T, et al. Occupational injury patterns of Turkey. *World Journal of Emergency Surgery* 2013; 8: 1-6. [\[CrossRef\]](#)
23. Bakhtiyaria M, Delpisheh A, Riahi MS, Latifi A, Zayeri F, Salehif M, et al. Epidemiology of Occupational Accidents Among Iranian Insured Workers. *Safety Science* 2012; 50: 1480-4. [\[CrossRef\]](#)
24. Jørgensen K, Laursen B. Absence From Work Due to Occupational and Non-occupational Accidents. *Scandinavian Journal of Public Health* 2012; 0: 1-7.
25. İş Kazası ve Meslek Hastalıkları İstatistikleri, 2012. [http://www.sgk.gov.tr/wps/portal/tr/kurumsal/istatistikler/sgk\\_istatistik\\_yilliklari/](http://www.sgk.gov.tr/wps/portal/tr/kurumsal/istatistikler/sgk_istatistik_yilliklari/) (erişim tarihi: 26.10.2015)
26. Friedman L, Krupczak C, Brandt-Rauf S, Forst L. Occupational Amputations in Illinois 2000-2007: BLS vs. Data Linkage of Trauma Registry, Hospital Discharge, Workers Compensation Databases and OSHA Citations. *Injury* 2013; 44: 667-73. [\[CrossRef\]](#)
27. Son HM, Kim SH, Shin SD, Ryoo HW, Ryu HH, Lee JH. Occupational fall injuries presenting to the emergency department. *Emergency Medicine Australasia* 2014; 26: 188-93. [\[CrossRef\]](#)

#### How to cite:

Asıldığ K, Akbaba M, Annaç M. Forensic medical evaluation of patients admitted to the emergency department due to the occupational accidents. *Eur J Ther* 2017; 23(2): 49–54.