Assessment of Vocational Training and Workplace Safety from the Perspective of the Injured Worker

Kazazedenin Bakış Açısıyla İş Eğitimi ve Güvenliğinin Değerlendirilmesi

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SUMMARY

Objectives

To determine the socio-demographic and clinical characteristics of occupational accident patients who were admitted to a third level emergency unit and assess vocational training and workplace safety from the injured workers' perspective.

Methods

A questionnaire was given to 506 patients aged 15 years and older between April and May 2011.

Results

The average age of the patients was 33 years old. The sector with the highest numbers of injuries was the metal and metal-based products industry (29.1%). The hour in which accidents occurred most often was the sixth hour (16.8%). Most of the injuries were minor (85.8%). The most frequent type of injury was penetrating wounds (35.6%). The most commonly affected area was the extremities (51.8%). 95.5% of the patients were treated as outpatients. Patients who were high school graduates were revealed to have had more training in comparison to primary and intermediate school graduates (p=0.001). The most common reasons for primary school graduates to experience occupational accidents were found to be the lack of necessary precautions inside the working environment, insufficient measures taken to prevent accidents, and a stressful workplace environment (p=0.016). Workers between the ages of 15 and 25, along with those who had worked for less than six months, were exposed to more occupational accidents when compared with all other workers (p=0.002, p=0.001, respectively).

Conclusions

Our study suggested that unqualified workers with low-level training do not receive sufficient vocational training and that they work in unsafe and stressful environments.

Key words: Accidents; clinical medicine; health and safety; occupational health practice; training and education.

ÖZET

Amaç

Amacımız üçüncü basamak bir acil servise başvuran iş kazası hastalarının, sosyo-demografik, klinik özelliklerini belirlemek ve yaralanmış işçinin bakış açısıyla iş eğitimi ve iş yeri güvenliğini değerlendirmektir.

Gereç ve Yöntem

Nisan ve Mayıs aylarında, 15 yaş ve üzerindeki, toplam 506 hastaya anket uygulaması yapıldı.

Bulgular

Hastaların ortalama yaşı 33 yıl idi. En sık yaralanmanın olduğu sektör, metal ve metalden mamul eşya sanayiydi (%29.1). En sık kazanın gerçekleştiği saat, çalışmanın altıncı saatiydi (%16.8). Yaralanmalar sıklıkla minördü (%85.8). En sık yaralanma mekanizması penetran (delici) yaralanmalardı (%35.6). En sık etkilenen bölge ekstremitelerdi (%51.8). Hastaların %95.5'i ayaktan tedavi ve taburcu oldu. Lise mezunları, ilk ve ortaokul mezunlarına göre daha fazla iş eğitimi verildiğini belirtmiştir (p=0.001). İlkokul mezunlarına göre iş kazalarının en sık nedenleri, işyerinde gerekli önlemlerin alınmaması, yeterli tedbirlerin olmaması veya işyerinin stresli olmasını daha fazla ifade ettikleri saptandı (p=0.016). 15-25 yaş grubunda olan veya çalışma süresi altı ayı geçmeyen çalışanların, diğer tüm çalışanlara göre daha sık kaza yaşadıkları gözlendi (sırasıyla, p=0.002, p=0.001).

Sonuç

Çalışmamız düşük eğitim düzeyine sahip vasıfsız işçilerin, yeterli iş eğitimi almadıklarını, iş yeri güvenliği yetersiz ve stresli iş ortamlarında çalıştıklarını göstermektedir.

Anahtar sözcükler: *Kazalar; klinik tıp; sağlık ve güvenlik; mesleki sağlık uygulamaları; eğitim ve öğretim.*

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Introduction

The work environment is the most important factor affecting the physical, mental, and social well-being of workers. Occupational health and safety are at the top of the agenda for developing countries, with constantly improving and interchanging dynamics, as well as for developed industrial countries. Each year, many workers are killed or become handicapped because of occupational accidents and occupational diseases which could have been easily prevented, and companies are legally responsible for making their workplaces as safe as possible.[1]

According to information excerpted from the Turkish Social Insurance Institute (TSII) database, the numbers of occupational accidents and deaths in 2010 were 62.903 and 1444, respectively. These data indicates that 2.46 occupational accidents occurred for every one million working hours (55/10,000 people) in 2010.[2] According to the March 2007 statistics, 46.2% of the overall working population was made up of unregistered workers.[3] According to the 2010 Turkish Statistical Institute (TURKSTAT) database, the percentage of the population not covered by social security was 17%.[2]

Studies in our country investigating this issue from the standpoint of the causes of injuries due to occupational accidents and worker training are limited. Our aim was to determine the socio-demographic and clinical characteristics of patients admitted to a third stage emergency unit and to assess vocational training and workplace safety from the injured workers' perspective.

Materials and Methods

Study Setting and Patient Inclusion Criteria

Our study consisted of a questionnaire-based study carried out between April and May of 2011 in a third level emergency unit that serves an average of 180.000 people annually. The questionnaire was given to fully oriented patients aged 15 years old and older who were admitted to the emergency ward with an injury due to an occupational accident which had occurred within the previous 48 hours. Patients with whom interviews could not be conducted due to unconsciousness, the need for immediate surgery, hemodynamic instability, lack of information, or death were not enrolled in the trial. Those who were admitted with chronic occupational diseases and those who declined to enroll were also excluded. This study was approved by the hospital's regional ethics committee, and informed written consent was obtained from all patients prior to the initiation of the study.

Contents of the Questionnaire

The first items in the questionnaire concerned workplace safety, training conditions, daily routines of the workers, and their ideas concerning occupational accidents. As there was no similar type of questionnaire that could serve as an example, the investigators developed the questionnaire form. Questions about socio-demographic characteristics, job sector, professional experience, accident characteristics (type of accident, factor causing the accident, time of accident), type of injury, injured body part, and revised trauma score were included. Additionally, a section in which the injured worker provided his/her opinions from his/her own perspective (grouped under the headings workplace safety, accident training, vocational training, reasons for occupational accidents, and injuries due to occupational accidents caused by personal reasons) were included.

A five-point Likert scale was used to rank the questionnaire answers in which the victim's own perspective of the casualty was assessed.[4] The Revised Trauma Score (RTS),[5,6] the Abbreviated Injury Scale (AIS),[7,8] and the Injury Severity Score (ISS) were used for the determination of the seriousness of the trauma and severity of the injury in the patients,[9,10] and the ISS was grouped according to mild (1-3), moderate (4-8), serious (9-15), severe (16-24), and critical (25-75), as shown by Stephenson et al. and Santana et al. in their own study methodology.[11,12]

An injury involving two or more body parts was considered to be multiple traumas in terms of the AIS. The Trauma and Injury Severity Scoring (TRISS) was used for to determine injury severity and seriousness.[13,14]

Study Protocol

Patients who were eligible according to the study inclusion criteria and who accepted inclusion answered the prepared questionnaire form either on their own or with the aid of an emergency ward physician, when necessary, following their necessary treatment. Patients who left the questionnaire incomplete were either telephoned or a face-to-face meeting a week after their first admission to the emergency ward was scheduled so as to complete the form.

Statistical Analysis

Data obtained was entered into SPSS for Windows version 15.0 statistics program (SPSS Inc., Chicago, Illinois, USA). Symmetrical distribution of the data was assessed by the Kolmogorov-Smirnov test. In our study, the chi-square and Fischer's exact tests, along with an independent sample t-test and one-way analysis of variance (ANOVA) (post hoc Bonferroni's test), were used in the assessment of classified data and intergroup comparisons of continuous data, respectively. Results were statistically significant within the 95% confidence interval (CI), and with a p value of <0.05.

Results

Socio-demographic Characteristics

A total of 526 patients were enrolled in the study, and 506 (96.2%) were eventually included. The average age of the patients was 33 years old (standard deviation: ±9.6, 95% CI). 93.7% of participants were male. Details regarding the socio-demographic characteristics of the patients are given in Table 1.

Clinical Information on the Injuries

The workers from the metal and metal-based products industry were seen the most (29.1%) (Table 2). Patients were most frequently admitted to the emergency ward between the hours of 14:00 and 14:59 (8.5%, n=43). Thursday was the day of the week with the most admissions (17.8%, n=90).

Table 1. Socio-demographic characteristics of the questionnaire group

Age groups (years)	Total	
	n	%
15-25	125	24.7
26-35	189	37.4
36-45	137	27.1
46-55	49	9.7
56 or above	6	1.2
Education Status		
Primary	210	41.5
Intermediate	149	29.4
High school	119	23.5
Undergraduate school	24	4.7
Literate	4	0.8
Wage Status		
Below minimum wage	28	5.5
Minimum wage*	323	63.8
Above minimum wage	155	30.6
Working groups		
Unqualified personnel	368	72.7
Facility and machine operators and fitters	67	13.2
Service and sales personnel	23	4.5
Artisans and craftsmen	19	3.8
Office and customer service personnel	9	1.8
Secondary executive personnel	5	1.0
Agriculture, husbandry, hunting, forestry, and fisheries	3	0.6
Executive personnel	2	0.4
The others	10	2.0

*Minimum monthly salary of Turkey as of January 2012 is 362.84 Euros.

In addition, the accidents most often took place during the sixth hour of work (16.8%, n=85). The most frequent type of accident that caused injuries was "stepping on or hitting an object or being hit by an object" (54.5%, n=276) and the most frequent accident factor was inappropriate working environment (53.4%) (Table 2).

The most common cause of injury observed in patients was penetrating wounds (35.6%, n=180), and the most common type of injury was superficial and open wounds (57.7%, n=292). Eight patients (1.6%) had fatal injuries according to AIS. Two were multi-trauma patients. The mean RTS value was 7.84±0.01. There was no mortal patient detected according to ISS. The mean TRISS value which shows survival rate was 99.48±0.2. There was no death. The injury characteristics are given in Table 3. The percentage of patients who were enrolled in the study who had simple injuries that could be treated with simple medical interventions was 87.9%. The patients' progresses are shown in Supplemental Figure 1 at the end of the article as study flow chart.

Assessment from the Victim's Perspective

No statistically significant difference between gender distribution and age groups, except in the 15-25 year-old age group, was observed concerning workplace safety, accident training, vocational training, reasons for occupational accidents, and injuries due to occupational accidents caused by personal reasons (Table 4). The workers within the 15-25 year-old age group frequently had accidents due to personal reasons (p=0.002).

The workers who had graduated from middle school were observed to have received no workplace accident training compared with high school and undergraduate school graduates (p=0.001). These individuals stated that high school graduates received more vocational training than primary and middle school graduates (p=0.001). There was not a statistically significant difference between the educational statuses of the questionnaire group regarding workplace safety and injuries due to occupational accidents caused by personal reasons. Workers who had graduated from primary and high school who were injured because of workplace safety and protection equipment deficiencies or stressful environment were detected (p=0.016) (Table 4).

Workers with a monthly salary exceeding the minimum wage were more positive about workplace safety and health compared with those working for the minimum wage (p=0.005). Those working for lower than the minimum wage were more likely to claim to have been injured due to occupational accidents caused by personal reasons than those receiving the minimum wage or higher (p=0.001) (Table 4).

The facility and machine operators and fitters more fre-

Table 2. Accident characteristics of the questionnaire group

Sectorial distribution	Total	
	n	%
Metal and metal-based products industry	147	29.1
Construction industry	91	18.0
Wood and wood-based products industry	71	14.0
Machine manufacturing and maintenance industries	53	10.5
Health, education and other social services	48	9.5
Food and beverage and tobacco industries	30	5.9
Fibre, textile and confection industries	24	4.7
Shipping and similar industries	20	4.0
Leather and leather-based products industry	6	1.2
Stone and soil industry	4	0.8
Agriculture and husbandry industries	4	0.8
Chemical industry	4	0.8
Mining and drilling works industries	2	0.4
Metallurgical industry	2	0.4
Type of accident		
Stepping on or hitting an object or being hit by an object	276	54.5
Being pressed in between two objects, squeezed	74	14.6
Running over a falling object	40	7.9
Falling from a height	18	3.6
Exposure to or interaction with a hazardous substance or radiation	13	2.6
Extensive stretching or incorrect movement	12	2.4
Exposure to or interaction with extensive heat	11	2.2
Exposure to or interaction with an electrical current	4	0.8
Explosion	4	0.8
Motor vehicle accident	3	0.6
Other types of accidents	51	10.1
Cause of accident		
Inappropriate working environment	270	53.4
Machines	193	38.1
Carrying or lifting equipment	26	5.1
Hazardous substances*	17	3.4

*Hazardous substances: Burning liquids including sulphuric acid, chemicals in a solid or gas state such as a welding piece etc.

Table 3. Injury characteristics of participants

Mechanism of injury	Total	
	n	%
Penetrating injury	180	35.6
Blunt injury	76	15.0
Incisive injury	66	13.0
Hit	64	12.6
Fall	54	10.7
Crush and incisive injury	37	7.3
Burn (chemical or electrical) or explosion	21	4.2
Other mechanisms	5	1.0
Motor vehicle accidents	3	0.6
Type of injury		
Superficial or open wounds	292	57.7
Dislocation, strain, or sprains	140	27.7
Fractures	35	6.9
Burn, corrosion, boiling, and freezing	16	3.2
Other injuries	15	3.2
Concussions or internal organ injuries	4	0.8
Traumatic amputations	2	0.4
Acute intoxication or infection	1	0.2
AIS regions		
Extremities (pelvis included)	262	51.8
Face	182	36.0
Head and neck	35	6.9
Characteristics unknown (multiple trauma)	10	2.0
External (general or skin)	9	1.8
Chest	4	0.8
Abdomen	4	0.8
AIS scores		
Minor	434	85.8
Moderate	37	7.3
Serious but not life-threatening	19	3.8
Serious and life-threatening-possible survival	6	1.2
Multiple trauma	10	2.0
ISS scores		
Mild injury (1-3 points)	438	86.6
Moderate injury (4-8 points)	38	7.5
Serious injury (9-15 points)	21	4.1
Severe injury (16-24 points)	9	1.8

quently claimed to receive vocational training (p=0.002). No statistically significant difference was observed between the work groups concerning workplace safety, accident training, reasons for occupational accidents, and personal causes for occupational accidents (Table 5).

Compared with other workers, those who had been in their current workplace for six months and those who had professional experience up to six months more frequently claimed that occupational accidents were caused by personal reasons (p=0.001 for both). Additionally, according to the dura-

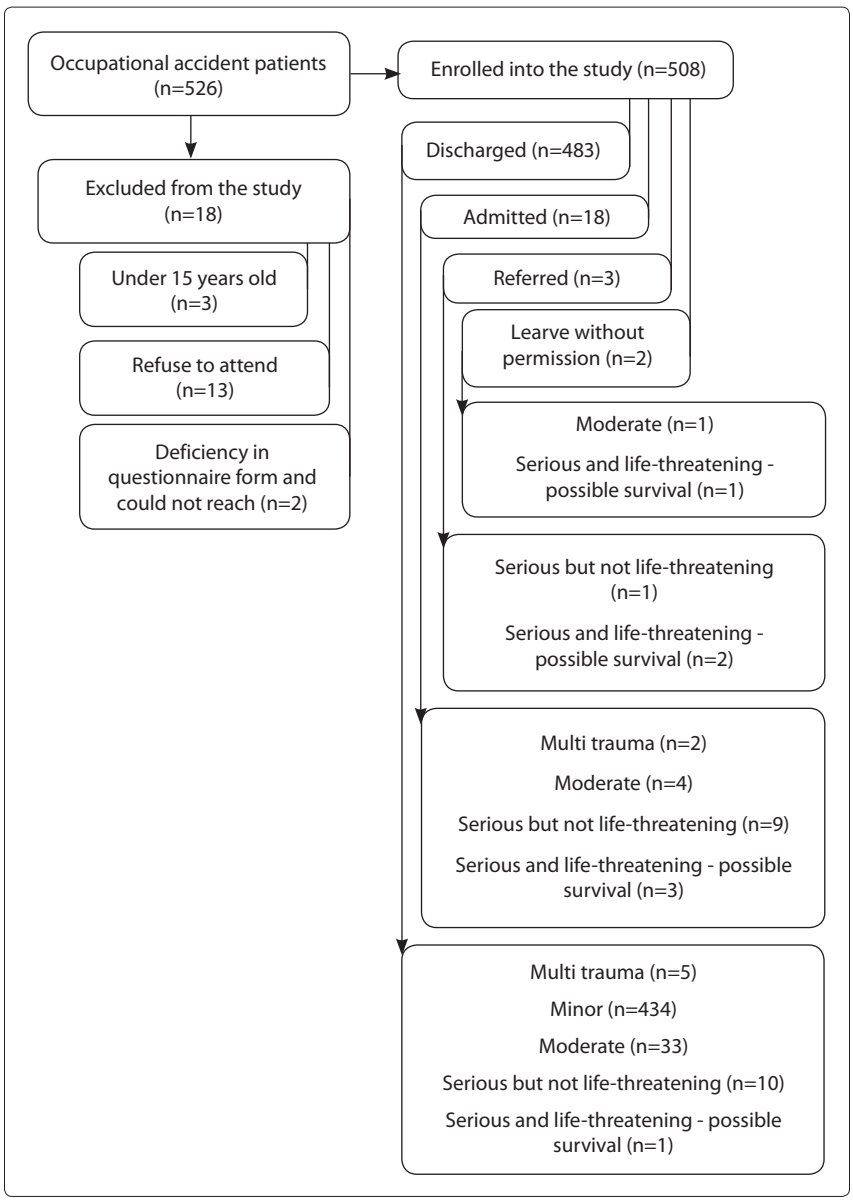

Figure 1. Supplemental figure: Study flow chart.

tion of professional experience, there was no statistically significant difference between the groups regarding workplace safety, accident training, vocational training, and individual causes for occupational accidents (Table 5).

Discussion

When examining the scientific literature concerning issues of workplace safety and the health of workers, we observed that all studies concluded that it was not possible to completely eliminate occupational accidents in spite of all indirect and direct measures and controls.[15] Studies performed by the International Labor Organization (ILO) have shown that the incidence rates for occupational accidents are still rather high, especially in developing countries due to insufficient controls, lack of education, no increase in worker awareness, cost reduction efforts, and the abundant number of youths in the workforce.[16]

The prevalence of occupational accidents in Turkey is 13.6 per 10.000.16 Despite annual briefings made by the TSII with respect to the numbers of deaths caused by occupational accidents, these numbers do not reflect reality according to TURKSTAT and the labor unions. For instance, the TSII reported three deaths following occupational accidents in coal and lignite mines in 2010, whereas the media, including newspapers, reported 11 deaths in one mine alone. The three deaths were the only officially recorded cases. Keeping

Table 4. Distribution of Likert scores in terms of socio-demographic characteristics

Socio-demographic characteristics	Questionnaire score groups (Mean±SD)				
	Workplace safety	**Accident training**	**Vocational training**	**General accident causes**	**Personal accident causes**
Gender					
Male	3.83±1.21	0.81±0.81	2.69±1.71	3.02±1.04	1.45±0.86
Female	3.44±1.46	0.53±0.72	2.5±1.76	3.16±0.92	1.28±0.63
Total	3.81±1.23	0.79±0.81	2.68±1.71	3.03±1.03	1.44±0.85
p value	0.079	0.060	0.540	0.480	0.276
Age groups (years)					
15-25	3.86±1.22	0.69±0.75	2.66±1.75	3.09±1.11	1.63±0.96
26-35	3.84±1.2	0.88±0.83	2.74±1.73	3.03±1	1.32±0.73
36-45	3.77±1.25	0.83±0.8	2.77±1.66	2.99±0.98	1.52±0.93
46-55	3.69±1.29	0.61±0.81	2.31±1.66	3.02±1.09	1.16±0.37
≥56	3.5±1.52	0.67±1.03	2.33±2.07	3±1.1	1.5±1.22
Total	3.81±1.23	0.79±0.81	2.68±1.71	3.03±1.03	1.44±0.85
p value	0.860	0.127	0.536	0.965	0.002
Educational status					
Primary school	3.75±1.2	0.8±0.82	2.55±1.62	3.11±0.99	1.43±0.86
Intermediate school	3.66±1.35	0.59±0.78	2.3±1.66	2.79±1.09	1.42±0.88
High school	3.98±1.13	0.97±0.75	3.29±1.76	3.18±0.97	1.43±0.73
Undergraduate school	4.33±0.82	1.17±0.82	3.25±1.78	3.04±1.12	1.54±1.02
Literate	3.5±1.73	–	1.75±1.5	3.25±0.96	2.25±0.96
Total	3.81±1.23	0.79±0.81	2.68±1.71	3.03±1.03	1.44±0.85
p value	0.051	0.001	0.001	0.016	0.384
Wage status					
Below minimum wage	3.61±1.47	1.07±0.94	2.82±1.66	2.89±1.1	2.07±1.33
Minimum wage*	3.7±1.26	0.67±0.79	2.46±1.69	3.03±1.01	1.39±0.8
Above minimum wage	4.07±1.08	0.99±0.76	3.12±1.69	3.05±1.06	1.43±0.79
Total	3.81±1.23	0.79±0.81	2.68±1.71	3.03±1.03	1.44±0.85
p value	0.005	0.001	0.001	0.753	0.001

*Minimum monthly salary of Turkey as of January 2012 is 362.84 Euros.

in mind that nearly 46.2% of all workers in Turkey are unregistered, it is easy to understand that the actual rate may be higher.[2,17] This may occur because of either the lack of reporting by those who were injured or negligence by the healthcare personnel who failed to pay attention to the hazardous conditions while providing treatment. Furthermore, people working in their own work environment or at agricultural sites far from immediate healthcare services may also be factors that lead to the lack of reporting. In order to have accurate records, it is necessary to develop registry systems within the country and place all workers under the umbrella of social security.

The age range in our study of 26 and 35 year old is in line with previous national and international studies. The most commonly reported age of occupational accident victims in need of immediate healthcare services on site ranged from 20 to 40 years old.[18-20] According to recent studies, the reason for the high prevalence of injuries in the younger group is that they have high self-confidence and are negligent in complying with safety measures. Another factor is that elderly workers move into administrative positions. Similarly, the decrease in injury rates in the elderly group may also be explained by the corresponding decrease in the number of workers and the increase in work experience. In our study, no statistically significant difference was observed between age groups with regard to vocational training, workplace safety, or occupational accidents caused by individual rea-

Table 5. Distribution of Likert values in terms of occupational classification and experience in job

Socio-demographic characteristics	Questionnaire score groups (Mean±SD)				
	Workplace safety	Accident training	Vocational training	General accident causes	Personal accident causes
Occupational classification					
Executive personnel	5	1±1.41	3±2.83	3±1.41	2±1.41
Secondary executive personnel	3.4±1.82	0.8±0.45	3.8±1.79	4±0.71	2.2±1.1
Office and customer service personnel	4.33±1.12	0.67±0.87	2.56±1.94	2.67±1.22	1.22±0.44
Service and sales personnel	3.43±1.41	0.43±0.79	1.61±1.27	2.87±1.06	1.52±1.12
Agriculture, husbandry, hunting, forestry and fisheries	4±1	–	3.67±2.31	3.33±0.58	1
Artisans and craftsmen	3.79±1.27	0.79±0.85	2.47±1.61	2.68±0.95	1.79±1.03
Facility and machine operators and fitters	4.01±1.13	1.03±0.78	3.36±1.75	3.03±1.01	1.3±0.7
Unqualified personnel	3.77±1.22	0.78±0.81	2.63±1.69	3.04±1.03	1.45±0.85
The others	3.9±1.37	0.6±0.7	2.1±1.52	3.5±1.08	1.1±0.32
Total	3.81±1.23	0.79±0.81	2.68±1.71	3.03±1.03	1.44±0.85
p value	0.385	0.075	0.002	0.222	0.100
Professional experience					
0-6 months	4.19±1.08	0.81±0.87	2.52±1.63	2.57±1.03	2.62±1.43
6 months -1 year	3.56±1.15	0.67±0.49	2.44±1.46	3.33±1.08	1.72±1.02
1 year -3 years	3.9±1.27	0.84±0.86	2.97±1.82	2.81±1.19	1.52±0.93
3 years-5 years	3.51±1.38	0.71±0.69	3.04±1.73	3.2±0.92	1.4±0.65
5 years or more	3.82±1.21	0.8±0.82	2.63±1.72	3.04±1.02	1.36±0.76
Total	3.81±1.23	0.79±0.81	2.68±1.71	3.03±1.03	1.44±0.85
p value	0.225	0.904	0.448	0.076	0.001
Total length of time at the current workplace					
0-6 months	4.04±1.1	0.86±0.83	2.68±1.63	3.08±1.02	1.9±1.11
6 months-1 year	3.87±1.28	0.82±0.82	2.62±1.63	3.16±1.13	1.42±0.85
1 year-3 years	3.38±1.47	0.79±0.81	2.88±1.77	3.1±1	1.2±0.52
3 years-5 years	3.75±1.17	0.54±0.7	2.51±1.81	2.81±0.97	1.27±0.65
5 years or more	3.89±1.12	0.85±0.82	2.68±1.73	3.03±1.04	1.34±0.73
Total	3.81±1.23	0.79±0.81	2.68±1.71	3.03±1.03	1.44±0.85
p value	0.002	0.041	0.702	0.245	0.001

sons, whereas the younger group showed a statistically significant difference in the latter category.

In Turkey, the ratio of male to female cases of occupational accidents is 21:1.2 Unal et al. reported the reasons for the high prevalence of male cases is that 80% of insured workers are men and that men work in more dangerous atmospheres; therefore, they experience accidents more frequently.[21] However, we believe that the reason for the low prevalence of the female gender in occupational accidents is that they frequently take jobs doing household chores and child care. Since they lack social security, there are fewer reports of accidents involving occupational accidents. The claim that they work less and experience less injury due to occupational accidents is not true.

Another important finding concerning the prevalence of injuries is that it decreases by the years of work experience in all age groups.[2] Our study showed a remarkably high prevalence of occupational accidents in the group which has more experience (a working period of five years or more). This may be a reflection of the lack of vocational and/or up-to-date training. In the answers given in terms of the period of work (given as months or years) in our study, there was no

statistically significant difference with regard to workplace safety, training, and measures taken.

In sectorial distribution of accidents, our study was analogous to other publications, with the construction and metal and metal-based products industries having the highest number of admissions to emergency units.[1,18-21] The injury prevalence of the metal and metal-based products industry was 14% in Yardım's study,[1] 41.4% in Serinken et al.'s study,[20] 35.2% in Unal et al.'s study,[21] and 29.1% in ours.

When the cause of injury was examined, our study revealed the most frequent type of accident was stepping on or hitting an object or being hit by an object. In compliance with the scientific literature, the most commonly observed cause was penetrating injuries, and the most frequent type of injury was superficial and open wounds.[19-21] Our study showed a difference from others in that the injuries generally took place in the sixth hour after the lunch break when workers took a rest and then returned to work. Being tired at the end of the working day, along with a decrease in reflexes, may be the reason for this result.

A correlation was observed in the high ratio of low educated casualties to unqualified job positions. This result is somewhat different than that of Copur et al. who noted a decrease in attention to precautions as the education level rose.[22] This discrepancy may be because most of the casualties included in that study group were primary school graduates. In our questionnaire, as the education level increased, accident training became more sufficient. Theoretical and practical information on the dangers of the job, training on how to protect one's self, and precautions given during schooling and prior to the initiation of a professional career would reduce the level of accidents experienced at the workplace.

On the other hand, since occupational accidents are observed most often between the ages of 20 and 34 years old, it is possible that the education received prior to the professional career together with the orientation programs after starting a career do not provide sufficient knowledge about a safe working environment. It has been shown that accidents experienced at the age of 30 are generally caused by noncompliance with changes in work or technology.[2] In general, the gradually decreasing rate of accidents that occurs as the worker is promoted reflects the importance of qualified and experienced workers. Reducing worker circulation and improving the conduct of the workers in their chosen field by continuously updating the necessary training are important factors that could reduce the frequency of occupational accidents.

A substantial part of our study was composed of unqualified workers. In our questionnaire, the perspectives of those workers concerning vocational training, accident training, and workplace safety showed that general satisfaction was not very high. This was true even though workers with a low salary above the minimum wage had significantly more positive responses compared with those who worked for only the minimum wage. The same was true for qualified workers versus those who were unqualified. It is commonly thought that poor countries and companies cannot afford safety and healthcare costs, and ILO research has concluded that no low income country or company with poor healthcare services can provide lengthy benefits. The ILO has reported that the most competitive countries have the safest working conditions and competition and sustainability cannot be achieved with limited safety, healthcare and income settings.[23,24] This report suggests that it is a necessity for countries who want to place themselves in the global arena and increase their market share to make more of an effort to decrease occupational accidents.

Limitations

The two main limitations of our study were that all of the participants came from one center and that the study involved a relatively short time period. Although our results generally comply with those of other published reports, studies performed on a larger scale with a wider population may have different results. Though the perspective on education and training does not change throughout the year, it is possible that we would have obtained different results, especially with the types of accidents and prevalence rates, based on the season and increased pressure of production in the workplace during holidays.

Conclusion

Penetrating injuries are still the leading type of workplace injury. Unqualified workers with low-level training do not receive sufficient vocational training and feel that they work in unsafe and stressful environments. Because of the high occupational accident incidence in the younger population, more attention should be focused on the training of young workers in developing countries. In addition, the most frequently injured people belong to the group that has been working in the same environment for five or more years. This, therefore, emphasizes the crucial need for ongoing training.

Conflict of Interest

The authors declare that there is no potential conflicts of interest.

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