

Research Article

Epidemiologic Study of Spinal Injuries Referred to the Legal Medicine Office in Boyerahmad City in 2016

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ABSTRACT:

Introduction: Spinal cord is recognized as the main axis of the body and its vital role is important. This research was conducted with the aim of investigating the epidemiology of spinal injuries referred to the Boyer Ahmad legal medicine office in 1395.

Materials and Methods: This study was a descriptive cross-sectional study. The target population of all individuals referred to the legal medicine office during one year who was examined from the spinal column. The required data were extracted from their files and analyzed by SPSS21 software. **Results:** There were 111 cases in one year. Minimum age was 15 years and maximum 60 years. Most of the patients were over the age of 45 years. The number of men was 71.2% and women 28.8%. The findings show that most of the people referred to have been educated and illiterate at the educational level. Frequently-recruited occupations were 37.8%. The most common cause of injury in patients with an accident was 84.7% and the most frequent fracture of the lumbar spine was 21.6%. Based on the results of the time distribution from the time of impact to the time of referral, 32.4% of the patients were referred to the first day of the blow.

Conclusion: According to the results of the research, the most common cause of injury is driving and it is important to raise awareness among people in the community and to take into account safety issues.

PROBLEM STATEMENT:

The spine is recognized as the main axis of the body and its vital role is important. Because in addition to protecting the spinal cord, it is also irrevocably impacted, since any damage and deformation impairs the function of the body (1). Because of the essential role of the spine in everyday activities and the enduring of internal and external mechanical stress, it is possible that the damage to this organ is very high, and when the spine is damaged, it can cause pain in the affected area and, as a result, disruption moved (2). Spinal injuries are one of the most common causes of impotence and death following trauma. The combination of spinal fractures with spinal cord injuries can lead to nerve defects and social-economic problems (4). These injuries are often seen in many patients (5). The rate of death from traumatic spinal cord injuries is 3

times higher than that of women, and the severity of traumatic injury is about 5 (6). According to researches and estimates, 80 percent of Americans experienced at least one spastic pain in their lives (3). Studies in this area show that in the 1995 census, about 5 million Americans have had back pain. Of these, about half a million people were paralyzed, and the rest were somewhat upset (9). The results of a study by Hillman et al in the general population on 1,437 men and 1747 women aged 25-64 years showed that the incidence of low back pain in the general population was 4.7% and the prevalence of 12 months was 59% (10). Spinal injury statistics vary by source and population. Many considerations justify these differences based on age and gender (7, 8). Information on the epidemiology of spinal cord

fracture is mixed with spinal cord injury with and without it, and even mixed with spinal injuries in some sources (8, 11). In our country there is little information in this area. Because spinal cord fracture is common in various injuries, awareness of this rate is evident, and given that it has special importance in Iranian law and this study was conducted to determine the epidemiology of spinal injuries refer to a forensic medicine in Boyerahmad city in 1395.

METHODOLOGY

This research was a descriptive cross-sectional study. The population of this study was all individuals referred to forensic medicine in Boyer Ahmad city in 12 months which were examined for spinal injuries. Totally 111 patients were examined. The data gathering tool was a researcher-made questionnaire. The questionnaire included information such as age, level of education, place of residence, the type of injury and the cause of injury and the time of referral to the forensic system were extracted from the records of these individuals, and then the information was collected and imported into

the software and analyzed using descriptive analysis and spss21 software.

FINDINGS

There were 111 cases in one year. Minimum age was 15 years and maximum 60 years. Most of the patients were over the age of 45 years (Seventh grade). The frequency distribution of patients by gender is presented in Table (2) and shows that the number of men in men was 71.2% and women 28.8%. Findings show that most of the people who came to the diploma and under the diploma were illiterate at the educational level and 7.2% of graduates have the lowest bachelor's degree. Occupation of frequent visitors was 37.8% and lives in almost everywhere in the city and in the countryside. Table 4 shows the distribution of the cause of injury, the highest fracture risk in the traffic accidents with 84.7% and after the accident was 10.8% and the conflict was 4.5%. Table 5 shows the distribution of damages according to the location of injury, the most frequent in the lumbar spine fracture was 21.6%. Based on the results of the distribution of time from impact to referral date, 32.4% were referred to the first day of impact.

Table 1 Frequency distribution by age of the samples

Age by year	Number	Percent
Under 15 years old	2	1.8
15-20 years	9	8.1
20-25 years old	19	17.1
25-30 years old	9	8.1
30-35 years	11	9.9
35-40 years	14	12.6
40-45 years	12	10.8
Over 45 years old	35	31.5
total	111	100.0

Table 2 Frequency distribution by gender of the samples

gender	Number	Percent
Female	32	28.8
Male	79	71.2
total	111	100.0

Table 3 Frequency distribution in terms of education of samples

Level of Education	Number	Percent
illiterate	27	24.3
Elementary	14	12.6
Guidance	22	19.8
diploma	29	26.1
Associate Degree	5	4.5
bachelor	11	9.9
Bachelor and higher	3	2.7
total	111	100.0

Table 4 Frequency distribution according to the cause of injury of samples

Cause of referral	Number	Percent
Crash	94	84.7
Dispute	5	4.5
Work accident	12	10.8
total	111	100.0

Table 5 Frequency distribution according to the type of injury to the samples

Damage location	Number	Percent
Cervical spine fracture	13	11.7
Lumbar spine fracture	24	21.6
Soft tissue damage of the spine	2	1.8
Dorsal trunk fracture	8	7.2
Cervical vertebral fracture	3	2.7
Back spinal cord fracture	19	17.1
Lumbar disc lining	12	10.8
Ruptured lumbar disc	1	.9
Dorsal and lumbar spine fracture	10	9.0
Breast trunk fracture	3	2.7
Dorsal spinal cord fracture along with soft tissue damage	5	4.5
Lumbar spine fracture with soft tissue damage	4	3.6
Cervical spine fracture with soft tissue damage	1	.9
lumbar lobe fracture	4	3.6
Breast bone fracture	2	1.8
total	111	100.0

Table 6 Frequency distribution according to the time of samples

period of time	Number	Percent
1 to 5 days	36	32.4
6 to 10 days	21	18.9
11 to 15 days	11	9.9
16 to 20 days	11	9.9
21 to 25 days	5	4.5
26 to 30 days	6	5.4
31 to 35 days	5	4.5
36 to 40 days	3	2.7
46 to 50 days	2	1.8
51 days to above	11	9.9
total	111	100.0

CONCLUSION:

The spine is recognized as the main axis of the body and its vital role is important. Because in addition to protecting the spinal cord, it is also irrevocably impacted, since any damage and deformation impairs the function of the body (1). During the year, 111 files were registered and examined in the forensic examination of the city of Boyer Ahmad for the examination of spinal injuries. Of these, the highest frequency of people referred to forensic medicine was males (71.2%) and the rest (28.8%). In other words, the highest frequency of injured patients

was men; the results of this study are consistent with the results of Fakharyan et al. (15). It can be attributed to the difference in physical activity and men's mobility and the prevalence of high-risk behaviors toward women. More than 40% of the clients were over 40 years old. In other studies, lesions aged 35 to 45 years (13) were found in another study, aged between 13 and 34 years (10 and 12) and in the Fakharyan study, it has been between 20 and 50 years (15). Age differences can be due to differences in the way of study, socio-economic, cultural, and regional factors. Regarding the level of

education, the highest frequency of referral to forensic medicine was observed in diploma education (26.1%) and illiterate (24.3%). According to the report, it can be said that in fact more than 80% of the under-graduate students are illiterate. They have lower education and more coincidence than educated people and this shows that the less people are literate, they pay less attention to driving laws and this shows the importance of the high level of education and awareness of the community. In this study, 84.7% (94 cases) of the cases were due to an accident, 10.8% (12 people) were affected by the accident and 4.5% (5 persons) of the cases were the victims of the conflict. In the United States, traffic accidents are the most common cause of spinal cord injury (10, 12, and 13), but in the Fakharyan study, 52% of the cases were due to fall and 35% due to traffic accidents (14). This difference may be due to the fact that the subjects studied in this study are often referred to referral forensic medicine to determine the extent of injury due to an accident. On the other hand, increasing the number of vehicles and industrialization of the community may reduce this disparity. In this study, the most common fracture sites were lumbar spine fracture, 21.6%, spinal cord fracture, 17.1%, respectively.

The neck and back fractures in this study are also more common in traffic accidents, which is consistent with studies by Fakhariyan et al. (15). Information on the epidemiology of spinal cord fracture with spinal cord injury with and without it is different and even in some sources with spinal cord injury (11, 8) epidemiologic studies also show that the incidence of damage varies greatly which depends on the population studied, according to nationality, age, sex, status of provision of health services and the classification system of injury. Therefore, their results cannot be easily compared with each other. Finally, although some of the findings of this study are consistent with other studies but in general, there are very few studies in this country that have comparative power and the conclusion is limited. It is suggested that further studies be carried out in other forensic clinics. Considering that the most common cause of

traffic accident damage is awareness raising and safety considerations.

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