

# Frequency of opium use in traumatic patients admitted to Shahid Rahnemoon hospital



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**Abstract**

**Objective:** Narcotic and alcohol use are recognized as the two important underlying factors in all types of trauma. In this study, the prevalence of opium consumption was investigated in traumatic patients who referred to Shahid Rahnemoon hospital in Yazd in 2018.

**Methods:** In this descriptive cross-sectional study, 252 patients with trauma admitted to Shahid Rahnemoon Hospital from October to December 2018 were studied. In order to collect the data, a checklist was administered including the patients' demographic information (age and gender), opium consumption, location of trauma, *day of occurrence of trauma* and cause of trauma.

**Results:** The mean of patients' age was  $31.33 \pm 19.46$  years ranging from 2 to 90 years and 71.4% of them were males. The most common causes of trauma included accidents with motor vehicles (56%), falls from height (19.8%), and intimate partner violence (6%), respectively. Regarding opium consumption, 87.3% of patients did not use it, while 10.3% consumed opium. Narcotic abuse was significantly different with regard to the patients' gender ( $P=0.000$ ) and age ( $P=0.000$ ).

**Conclusion:** Opium consumption increases the risk of error and accident while driving. People on methadone treatment also show high-risk behaviors and are at greater risk of accidents.

**Keywords:** Opium, Accident, Multiple Trauma, Alcohol Consumption

**Introduction**

Narcotic and alcohol use are recognized as the two important underlying factors in all types of trauma (1). Trauma is the first cause of death and disability in active populations of the developing countries (2). Based on a survey, the trauma-related death rate per 100 000 populations was 58 in Iran and 99 in the world (3). Among all injuries, maxillofacial trauma has a high prevalence and imposes a high cost on patients (3). Most epidemiological reports have indicated that maxillofacial trauma which is more common in 20-30 years old men (4-6), can be caused by traffic accidents, falls, and interpersonal violence. Among narcotic abusers, most injuries are caused by interpersonal violence, which may be due to the neurophysiological effects of the narcotics (7). A study by Carrigan et al indicated that using certain narcotics, due to suppression of the nervous system function, have a psycho-motor impact on the individuals and make them susceptible to trauma (1). Alcohol and some narcotics, such as marijuana, are also known as the leading causes of road accidents, which may occur due to the central

nervous system disorders (8).

Majdzadeh et al also stated that the risk of accidents increased in regular opium users (9). In general, better understanding of the trauma epidemiology can help the authorities to design appropriate programs and strategies to take preventive measures and organize the delivery of medical services, which consequently can lead to an improvement in the quality of trauma care. Of all trauma prevention programs, prevention injury programs have been the most cost-effective measures (10). Most studies conducted on maxillofacial trauma investigated the etiologic and therapeutic factors, while identifying the causes of maxillofacial trauma can prevent these injuries more efficiently (6). Benefits of preventive policies regarding maxillofacial trauma in different countries included reduced mortality rate and socio-economic burden (11). However, the importance of this issue has not received much attention in different countries (12). The aim of this study was to evaluate the prevalence of opium use in head and neck trauma patients who referred to Shahid Rahnemoon hospital of Yazd in 2018.



## Methods

In this descriptive cross-sectional study, All of trauma patients that admitted to the Emergency Department in Shahid Rahneemoun Hospital of Yazd from October to December of 2018 were investigated. Inclusion criteria are trauma patients referred to the emergency department of Shahid Rahneemoun Hospital in Yazd in 2018 and Exclusion criteria are any trauma patient who has been discharged out of personal consent. Data collection involved two stages. First, secondary information was obtained from the hospital information system using daily data. Then a checklist was administered including the patients' demographic information (age, gender), location where trauma occurred (in the city, outside the city), day that trauma occurred (holiday, non-holiday), cause of trauma (falling from height, motor vehicle accident, pedestrian, intimate partner violence), as well as opium consumption (Yes, No). After making the needed coordination, patients hospitalized in the Emergency Department of Shahid Rahneemoun Hospital of Yazd were interviewed. Initially, the patients or their companions were explained about the study purpose, asked to sign the informed consent forms, and required to complete the self-reported checklist. To assess the reliability of the questionnaire, the questionnaire was filled out twice by the patient or her companion, the first time at the time of hospitalization and the second time immediately before the patient's discharge. After the interviews were completed, the data were coded and analyzed using SPSS 23 by running descriptive statistics and chi-square test. This study has been approved by the "Ethics Committee in Research of Shahid Sadoughi University of Medical Sciences of Yazd" with the number IR.SSU.REC.1398.202.

## Results

In this study, 252 trauma patients admitted to the Emergency Department of Shahid Rahneemoun Hospital in Yazd were studied (Table 1). The mean of participants' age was  $31.33 \pm 19.46$  years and ranged from 2 to 90 years. Regarding gender, 71.4% of the patients were male and the rest (28.6%) were female. The relative frequency of patients based on the day of accident showed that most traumatic accidents (77.4%) occurred in non-holiday days. Based on the findings, 67.9% of the patients were traumatized inside the city, while 32.1% of the accidents occurred outside the city. The relative frequency of patients according to the cause of trauma indicated that the most common causes of trauma were motor vehicle accident (56%), fall from height (19.8%), and intimate partner violence (6%). The entails the frequency distribution of patients by narcotic use and non-narcotic use. In the present study, 177 (70.2%) individuals did not use any types of narcotics and 29 (11.5%) people smoked cigarettes or used hobbler bubble. In general, 87.3% of the patients did not consume opium and methadone, while 10.3% used opium and 2.4% consumed methadone.

The frequency of opium and methadone consumption in male and female trauma patients is shown in Table 2. The results of chi-square test indicated a significant difference between narcotic abuse and gender ( $P=0.000$ ). In this regard, the prevalence of substance use was higher in men than women. In Table 2, the frequency of opium and methadone consumption in trauma patients across different age groups is depicted. According to the chi-square test, a significant difference was observed between narcotic use and age ( $P=0.000$ ). The highest prevalence of opium intake was in the age group of over 65 years, 25-44 years, and 45-64 years, respectively. Methadone users were within the age groups of 45-64 and 25-44 years. The frequency of opium and methadone consumption in trauma patients with regard to the day of accident is shown in Table 2. The chi-square test showed no significant difference between narcotic use and the day that trauma occurred ( $P=0.517$ ). Also, Table 2 depicts the data on the frequency of opium and methadone consumption in trauma patients by location of trauma; inside or outside the city. The results of chi-square test showed no significant difference between substance use and trauma location ( $P=0.383$ ).

As can be seen from Table 3, of the 141 traumatic motor vehicle accidents, 16 people used opium and 6 consumed methadone. Of the 11 trauma cases that occurred due to occupational accidents, 6 individuals were opium users.

**Table 1.** Demography frequency distribution of traumatic patients

Variable	Number	Percent
Age groups	<15	23
	15-24	21.4
	25-44	31
	45-64	17.9
	≥65	6.7
Gender	Male	71.4
	Female	28.6
Day that trauma occurred	Holiday	22.6
	Non-holiday	77.4
Location where trauma occurred	In the city	67.9
	Outside the city	32.1
The cause of trauma	Motor vehicle accident	56
	Falling from height	19.8
	Intimate partner violence	6
	Pedestrian	4.8
	Occupational accidents	4.4
	Falling	4
	Sport accidents	3.6
	Others	1.6
	Type of narcotic	Non- narcotic use
Opium		10.3
Methadone		2.4

**Table 2.** Frequency distribution of trauma patients

Narcotic use		Non- narcotic use		Opium		Methadone		P value <sup>a</sup>
		Number	Percent	Number	Percent	Number	Percent	
Gender	Male	149	82.8	26	14.4	5	2.8	0.000
	Female	71	98.6	0	0	1	1.4	
Age group	<15	58	100	0	0	0	0	0.000
	15-24	54	100	0	0	0	0	
	25-44	59	75.7	16	20.5	3	3.8	
	45-64	36	80	6	13.3	3	6.7	
	≥65	13	76.5	4	23.5	0	0	
Day of trauma	Holiday	53	93	3	5.2	1	1.8	0.517
	Non-holiday	167	85.6	23	11.8	5	2.6	
Trauma location	In the city	153	89.4	14	8.3	4	2.3	0.382
	Outside the city	67	82.7	12	14.8	2	2.5	

<sup>a</sup> Chi-square test.

**Table 3.** Frequency distribution of opium use among trauma patients by the cause of trauma

Narcotic use		Non- narcotic use		Opium		Methadone		P value <sup>a</sup>
		Number	Percent	Number	Percent	Number	Percent	
Cause of trauma	Motor vehicle accident	119	84.3	16	11.3	6	4.3	0.404
	Fall from height	47	94	3	6	0	0	
	Intimate partner violence	13	86.6	2	13.3	0	0	
	Pedestrian	11	91.7	1	8.3	0	0	
	Occupational accidents	7	63.6	6	36.4	0	0	
	Falling	10	100	0	0	0	0	
	Sport accidents	9	100	0	0	0	0	
	Others	4	100	0	0	0	0	

<sup>a</sup> Chi-square test.

Also, of the 15 cases of trauma caused by intimate partner violence, 2 individuals used opium. Besides, of the 12 pedestrians with trauma accident, one was an opium user. Based on the results of chi-square test, no significant difference was found between narcotic use and cause of trauma ( $P=0.404$ ).

## Discussion

In this study, 252 trauma patients admitted to the Emergency Department of Shahid Rahnemoon Hospital were evaluated. The mean of patients' age was 31.33 years ranging from 2 to 90 years, but most of them ( $N=190$ ) were under 45 years of age, representing the economically active group. The incidence rate of trauma in the age group of 25-44 years was 31%, which is probably due to the behavioral, social, economic, and emotional changes that generally occur at this age. These changes lead to social excitement, high mobility, careless driving, and physical involvement (13-16).

The majority of trauma patients in this study were male (71.4%). This finding is in line with the studies conducted by Zargar et al (17) in Tehran, Taghipour et al (18) in Yazd, Kakhodaie (19) in Rasht, Lee et al (14) in Korea,

Ellis et al (20) in Scotland, Al Ahmed et al (21) in the United Arab Emirates, and Adekeye (22) in Nigeria. The higher incidence of trauma in men may be due to the fact that in many families they are the breadwinners which may put them at greater risk of accident or conflict (23). Furthermore, men often drive and participate in sports and physical activities more than women. They are also more probable to use alcohol and narcotics before driving, putting them at a greater risk of trauma (24).

Motor vehicle accident (56%) was the most common cause of trauma in this study. Prevention, one of the most important strategies to deal with this problem, requires the index of trauma epidemiology. Driving accidents are one of the main problems in developing countries. Evidence shows that 3500 people die from accidents in the world on a daily basis, most of which occur in Africa and the Middle East. Even in advanced countries, including the United States, trauma-related injuries (especially motor vehicle accidents) are the seventh leading cause of death (25). In the present study, of 252 patients, 153 cases were related to vehicle accidents. Results of the research by Taghipour et al on 251 fatal injuries caused by traffic accident in Yazd during 2004-2007 showed that 202 patients were

male (80.5%). The mean of patients' age was 34.1 years and the most frequent cause of trauma was accidents of cars and motorcycles with pedestrians with a frequency of 100 cases (39.8%) (18). In the present study, the most common causes of trauma were motor vehicle accident (56%), falling from height (19.8%), and intimate partner violence (6%), respectively. The significant difference in the frequency of trauma-related accidents in this research compared to other studies can be due to less observance of the traffic laws and safety legal requirements such as wearing helmets and seat belts by drivers. The number of events caused by accidents can be reduced significantly by observing the safety principles (26). According to the Central Insurance Institute of Iran, Iran is ranked 189 among 190 countries of the world in terms of the unsafe driving accidents. On average, traffic accidents cause 23 000-27 000 deaths and 6,000 injuries annually in Iran. Yaghubi et al compared the traffic accidents of Iran and other countries and concluded that the number of accidents increased by 55% in Iran during 1994-1996. The index related to the number of Iranian accident victims is also several times higher than other countries. Most Iranian victims are within the active age groups of 20-50 years and among pedestrians (27).

Of 141 traumatic motor vehicle accidents, 16 individuals were opium users and 6 were methadone users. Based on numerous studies, the individuals' ability to drive is easily impaired by the consumption of narcotics such as opium, benzodiazepines, and cannabis by almost well-known mechanisms (28-31).

Various studies conducted in different countries (32-41) have investigated the epidemiological status of the amount and type of narcotics, illegal medicines, and increased possibility of the fatal and non-fatal accidents. Studies in Iran also focused on the epidemiological status of the trauma causes and severity. Bakhtiari et al. reported that narcotic abuse after alcohol, fatigue, and drowsiness played the most important role in fatal accidents (42). Assari et al found that among those accused of fatal traffic accidents in Iranian prisons, 37.3% were opioid users, 20% were cannabis users, and 13.7% used the mixture of opium and cannabis (43).

Yaghubi et al reviewed the investigations and reports provided by the international organizations on the causes of traffic accidents in Iran and throughout the world and mentioned four effective factors related to human, road, vehicle, and environment in this regard. In 90 to 95% of the Iranian traffic accidents, the human factor was responsible for the event. Among the human factors, the following factors were effective: ignoring the driving regulations, driving errors, having inaccurate traffic attitudes, being tired and drowsy, using narcotic and alcohol, driving in the dark (late at nights, early morning, after lunch), as well as youth driving, especially late at nights and at the weekends with their peers (27).

In the present study, most traumatic events (77.4%)

occurred in non-holiday days, 67.9% of the accidents occurred in the city, and 32.1% of them happened outside the urban area. The results indicated that the day and location of trauma did not have a statistically significant association with the type of narcotic used.

In our research, 26 traumatic patients who consumed opium were male. Of these, 16 were injured in motor vehicle accidents and 4 were injured in occupational accidents. Afshar et al also showed that road accidents and occupation-related injuries were the most common injuries that happened to narcotic abusers admitted to Orthopedic Ward of Urmia University of Medical Sciences (44).

Moreover, unauthorized opiate narcotics can be substituted with maintenance therapy narcotics, such as opioid agonist narcotics (32). Methadone and buprenorphine control all symptoms of deprivation. Based on our findings, 6 traumatic patients had consumed methadone and all of them were traumatized by car accidents. Tabibi stated that methadone-treated individuals had higher risky behaviors while driving than narcotic abusers (45), which may be due to the complications caused by methadone use such as dizziness, fainting and weakness, chronic fatigue, sleep disturbances, hypotension, and pupillary stenosis (33).

### Conclusion

Opium consumption increases the risk of driving errors and accidents. People on methadone treatment show high-risk behaviors more frequently and are at higher risk of accidents. With a better understanding of the epidemiology of trauma, appropriate programs and strategies can be developed, including the implementation of preventive measures and organizing the provision of medical services. This can ultimately lead to an improvement in the quality of trauma care. For example, in some countries, accidents are one of the major causes of death and to reduce the damage caused by them, prevention measures have been prioritized in their work plans. Of all the trauma programs, injury prevention programs have been the most cost-effective. Perhaps due to the knowledge of the epidemiology of accidents, it is possible to design and implement effective studies and practical measures in the prevention and treatment of trauma patients.

### Authors' contributions

All of the authors participated in data collection, analysis and writing this article

### Ethical issues

In order to conduct the study, first the purpose of the study was explained to all patients and after obtaining informed consent to participate in the study, the research questions

were asked based on the checklist prepared. The study was approved by the “Ethics Committee in Research of Shahid Sadoughi University of Medical Sciences of Yazd” with the code number IR.SSU.REC.1398.202

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