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# The prevalence of workplace violence and related factors in the emergency department staff of Iran: a cross-sectional study

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## Abstract

**Background:** To determine the prevalence of workplace violence and related factors in the emergency department staff of Kosar Hospital of Semnan City (Iran) during 2020–2021. This cross sectional study was performed on 202 medical personnel working in the emergency department of Kosar Hospital in Semnan City. Sampling was done by census. Two questionnaires were used to collect data. The first included demographic characteristics and the second was workplace violence questionnaire in the health sector which was evaluated in term of validity and reliability. Finally, data was analyzed using SPSS26 and  $P$  value  $< 0.05$  was considered as a significant level.

**Results:** Content validity index (CVI) was obtained more than 0.79 and content validity ratio (CVR) was more than 0.70 for all questions. Also, Cronbach's alpha coefficient with 0.89 confirmed the reliability. The mean (S.D) age of participants was 28.12 (6.72) years and 53.5% (108) were male. The overall prevalence of workplace violence was 88.1%. The prevalence of verbal, physical, sexual and racial violence was 98.9, 25.2, 2, and 2.5%, respectively. There was a statistically significant relationship between occupational row and shift work and with workplace violence ( $P$  value  $< 0.05$ ). However, there was no statistically significant relationship between age, gender, education, work experience, work experience in the emergency, employment status, and number of patients cared for shift with the occurrence of violence ( $P$  value  $> 0.05$ ).

**Conclusions:** The prevalence of workplace violence in emergency department personnel is high, which can lead to many physical and psychological complications, so the design and implementation of prevention programs in these employees seems necessary.

**Keywords:** Workplace violence, Prevalence, Emergency department, Iran

## Background

Violence in the workplace is one of the concerns of medical staff in the workplace that is becoming a pervasive and global phenomenon. Violence is an aggressive behavior that causes discomfort or injury to the victim and leads to a reduction in the quality of work life, job satisfaction, and efficiency of medical staff [1–3]. In recent years,

violence has become an important issue in health system policy and is considered as one of the most important and complex issues in the health system [4, 5]. Among the medical staff, the emergency department staff are the first and most available staff in the hospital that due to dealing with stressful situations such as accidents, patient death, waiting for a visit by a doctor or transferring the patient to another ward or hospital will be more exposed to violence and violent behavior [6–8]. Although any hospital staff member may face violence such as physical assault and verbal threats, however, emergency personnel are more vulnerable to aggression and violence due to multiple contacts with patients and their companions.

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Studies have shown that working in the intensive care unit, psychiatry, and emergency department are important risk factors for violence [8–10].

Referrals to the emergency department are usually in a critical situation due to stress, which causes patients or their companions to commit violence under various physical and psychological stresses. Fear of the patient's condition, prolonged waiting time and nervous and anxious companions are factors that can increase the risk of violence in the emergency room. Also, some people who go to the emergency department may be addicted to drugs and alcohol and may have some degree of mental disorder that increases the likelihood of violence [11–13]. The WHO classifies violence into physical, verbal, racial, and sexual violence, of which verbal violence is the most common form of violence experienced by medical personnel [14]. Medical personnel who experience verbal violence are several times more likely to experience physical violence. They also suffer from a variety of emotional traumas such as anger, fear, frustration, and anxiety, which are just as damaging to physical violence. And its consequences are devastating not only psychologically but also professionally, and can lead to a reduction in the quality of care, prolonged absence from work, and change or even leaving the job. Most of the violence in the hospital was caused by patients, patient relatives, doctors, and other hospital staff [15, 16].

Although several studies have been conducted on the frequency of occupational violence and its types, however, most of them are on a specific group of medical staff, especially nurses, and comprehensive studies have not been performed on all medical staff working in hospital emergency units; therefore, this cross-sectional study conducted to investigate the prevalence of violence and related factors in medical personnel working in the emergency department of Kosar Hospital in Semnan City during 2020–2021.

## Methods

### Study design and subjects

This cross-sectional study conducted to investigate the prevalence of violence and related factors in medical personnel working in the emergency department of Kosar Hospital in Semnan City during 2020–2021. The study population was medical staff working (assistant nurse, nurse, medical student, and physician) in Kosar Hospital of Semnan City. Sampling was done by census, so there was no need to determine the sample size and sampling method and a total of 202 medical personnel working in the emergency department of Kosar Hospital in Semnan City were studied. Inclusion criteria were having at least 2 months of work experience in the emergency department and agreeing to participate in the study. Exclusion criteria

also include having a history of mental illness, dissatisfaction with participation in the study, non-medical staff, and having less than 2 months of work experience.

### How to conduct the study

After the approval of the study by the Ethics Committee of Semnan University of Medical Sciences, the researcher went to the administration of Kosar Hospital and prepared a list of all the personnel working in the emergency department of the hospital along with their attendance times. Then, in a meeting, necessary explanations were given to the personnel regarding the objectives of the study, ensuring the confidentiality of the information and how to complete the questionnaire. Then, in a meeting, necessary explanations were given to the personnel regarding the objectives of the study, ensuring the confidentiality of the information and how to complete the questionnaire. Then, the questionnaire was given to the employees who were willing to participate in the study. At the end of the work shift, the researcher returned to them and the questionnaires were collected. It should be noted that the delivery of the questionnaire to the participants was done by the medical student who had chosen this topic as a general medical thesis. Of course, the student had already received the necessary training.

### Data collection

Two questionnaires were used to collect data. The questionnaire included demographic characteristics such as age, sex, level of education, employment status, shift work, work experience in hospital, work experience in emergency, patient gender, and number of patients cared for in each work shift. The second questionnaire was "Occupational Violence in the Health Sector" which Prepared by the WHO, the Office of Labor, the Patient Safety Institute and the International Nurses Association [17]. The questionnaire included 8 questions related to verbal abuse experience during the last 12 months. Questions include the number of times experienced violence, the perpetrator of the violence, the gender of the perpetrator, the staff's response to the violence, the causes of the violence, the report of the violence, and the person to whom the violence was reported. Since there is a possibility of more than one answer to these questions related to violence, the questionnaire states that they can choose more than one option. This questionnaire has already been validated and validated in Iran by Heydarikhayat et al. [18].

Although this questionnaire has already been validated in Iran, however, the provinces of Iran are somewhat different from each other in terms of demographic, cultural, ethnic, and geographical characteristics. Therefore, the questionnaire was re-evaluated for validity and reliability in this study. In order to evaluate the validity

of the questionnaire, face and content validity methods were used. To determine face validity, the questionnaire was given to 20 medical staff to assess the level of difficulty in understanding phrases and words, the degree of appropriateness and optimal relationship of phrases with the dimensions of the questionnaire and ambiguity about misunderstandings of the phrases. To determine the content validity of the questionnaire, two qualitative and quantitative methods were used. In the qualitative method, the questionnaire was given to 10 faculty members of medical sciences and psychiatrists to examine in terms of grammar, use of appropriate words, necessity, placement of phrases in the right place, and proper scoring. Then, content validity ratio (CVR) and content validity index (CVI) were used to quantitatively evaluate the content validity which CVI was obtained more than 0.79 and CVR was more than 0.70 for all questions. To determine the reliability, the internal consistency method was used. For this purpose, the questionnaire was completed by 20 personnel who had the same characteristics as the study units, and Cronbach's alpha coefficient with 0.89 confirmed the reliability.

### Statistical analysis

Data were collected and analyzed using SPSS version 26. In descriptive analyzes, mean and standard deviation (SD) were used for quantitative variables, and number and relative frequency (%) were used for qualitative variables. In analytical analyzes, independent samples *t* test and chi-squared test were used to examine the relationship between variables and *P* value < 0.05 was considered as a significant level.

### Ethics consideration

Before data collection, the aims of the research were explained to the patients, and then informed consent was obtained from them. In addition, this study was performed according to the principles expressed in the Declaration of Helsinki and was approved by the Deputy of Research and Ethics Committee of Semnan University of Medical Sciences (Iran).

### Results

The present study was performed on 202 medical personnel working in the emergency department of Kosar Hospital in Semnan City. The mean (S.D) age of participants was 28.12 (6.72) years and the minimum and maximum ages were 20 and 56 years, respectively. Also, 53.5% (108) participants were male and 92.1% (186) had academic education; 83.7% (169) and 95.5% (193) had  $\leq 10$  years of experience in hospital and emergency department, respectively. The majority of people in terms of employment status were official hospital staff (78.2%) and had

rotational shifts (77.7%). The overall prevalence of workplace violence was 88.1% and the prevalence of verbal, physical, sexual and racial violence was 98.9, 25.2, 2, and 2.5%, respectively. In addition, only 43.3% of people who had experienced violence reported it (Table 1).

Table 2 shows frequency distribution of the cause of violence in the population under study. As can be seen, the most common causes of violence were imagine the lack of prompt and timely action by staff (47.8%), the long wait to receive care (44.9%) and mental status of the

**Table 1** Demographic characteristics of participants under study

Qualitative variables		Number	%
Sex	Female	94	46.5
	Male	108	53.5
	Total	202	100
Education	Academic	186	92.1
	Non-academic	16	7.9
	Total	202	100
Occupational row	Nurse or medical student	128	63.4
	Doctor	74	36.6
	Total	202	100
Work experience (year)	$\leq 10$	169	83.7
	> 10	33	16.3
	Total	202	100
Work experience in the emergency section (year)	$\leq 10$	193	95.5
	> 10	9	4.5
	Total	202	100
Employment status	Official	158	78.2
	Unofficial	44	21.8
	Total	202	100
Verbal violence	Yes	178	88.1
	No	24	11.9
	Total	202	100
Physical violence	Yes	51	25.2
	No	151	74.8
	Total	202	100
Sexual violence	Yes	4	2
	No	198	98
	Total	202	100
Racial violence	Yes	5	2.5
	No	197	97.5
	Total	202	100
Shift work	Fixed	45	22.3
	Rotational	157	77.7
	Total	202	100
Violence report	Yes	77	43.3
	No	101	56.7
	Total	202	100

**Table 2** Frequency distribution of the cause of violence in the population under study

Qualitative variables		Number	%
Patient death	Yes	41	23
	No	137	77
Imagine the lack of prompt and timely action by staff	Yes	93	47.8
	No	85	52.2
Aggressive behavior due to drug and alcohol use	Yes	54	30.3
	No	124	69.7
Protest against insufficient number of staff	Yes	51	28.7
	No	127	71.3
Lack of facilities in the care center	Yes	58	32.6
	No	120	67.4
Blocking the movement of companions	Yes	32	18
	No	146	82
The long wait to receive care	Yes	80	44.9
	No	98	55.1
Existence of culture of acceptance of violent behavior	Yes	42	23.6
	No	136	76.4
Mental status of the person	Yes	76	42.7
	No	102	57.3
Lack of proper answers to questions	Yes	13	7.3
	No	165	92.7

person (42.7%), respectively. Table 3 shows frequency distribution of the persons who caused the violence in the population under study. As can be seen, the medical staff received the most violence from the patient's companion and patient with 72.9 (141) and 62.4% (111), respectively.

Table 4 shows frequency distribution of the impact of violence on the personnel under study. Feeling angry and upset (72.5%), decreased job satisfaction (57.3%), stress

**Table 3** Frequency distribution of the person who caused the violence in the population under study

Qualitative variables		Number	%
Doctor	Yes	25	14
	No	153	86
Hospital manager or director	Yes	5	2.8
	No	173	97.2
Supervisor	Yes	20	11.2
	No	158	88.8
Colleague	Yes	29	16.3
	No	149	83.7
Patient	Yes	111	62.4
	No	67	37.6
The patient's companion	Yes	141	72.9
	No	37	20.8

**Table 4** Frequency distribution of the impact of violence on the personnel under investigation

Qualitative variables		Number	%
Feeling angry and upset	Yes	129	72.5
	No	49	27.5
Stress	Yes	97	54.5
	No	81	45.5
Decreased teamwork	Yes	32	18
	No	146	82
Humiliation feeling	Yes	56	31.5
	No	122	68.5
Decreased job satisfaction	Yes	102	57.3
	No	76	42.7
Reluctance to take care of work	Yes	35	19.7
	No	143	80.3
Inability to communicate with the person causing the violence	Yes	38	21.3
	No	140	78.7

(54.3%), and humiliation feeling (31.5%) were the most common negative effects of violence after exposure to violence; respectively.

Finally, Table 5 shows the relationship between demographic variables and violence in the workplace in population under study. As can be seen, there was a statistically significant relationship between occupational row and violence in the workplace, so that nurses and medical students were more exposed to violence than doctors (60.3 vs. 39.7%) ( $P$  value  $< 0.05$ ). There was also a significant relationship between work shift and workplace violence so that violence in the rotational shift was higher than fixed (79.8 vs. 20.2%) ( $P$  value  $< 0.05$ ). However, there was no statistically significant relationship between age, gender, education, work experience, work experience in the emergency, employment status, shift work, and number of patients cared for shift with the occurrence of violence ( $P$  value  $> 0.05$ ).

## Discussion

Violence against staff working in hospital emergency departments has become a common concern around the world. These sectors are known as an environment with high potential for violence in the workplace. Emergency workers often have to deal with violent patients who are suffering from illness, injury, and pain, and with companions who are often overly concerned about their patients, all of which increase the risk of violence [19, 20]. Therefore, we conducted a cross-sectional study to investigate the prevalence of violence and related factors in medical personnel working in the emergency department of Kosar Hospital in Semnan City during 2020–2021.

**Table 5** The relationship between demographic variables and violence in the workplace in population under study

Variable		Violence in the workplace		P value*
		Yes (%)	No (%)	
Sex	Male	94 (52.8)	14 (53.8)	0.611
	Female	84 (47.2)	10 (41.2)	
Education	Academic	165 (92.7)	21 (87.5)	0.376
	Non-academic	13 (7.3)	3 (12.5)	
Occupational row	Nurse or medical student	108 (60.7)	20 (83.3)	0.031
	Doctor	70 (39.3)	4 (16.7)	
Work experience	≤ 10	148 (83.1)	21 (87.5)	0.588
	> 10	30 (61.9)	3 (12.5)	
Work experience in the emergency	≤ 10	169 (94.9)	24 (100)	0.260
	> 10	9 (5.1)	0 (0.0)	
Employment status	Official	138 (77.5)	20 (83.3)	0.518
	Unofficial	40 (22.5)	4 (16.7)	
Shift work	Fixed	36 (20.2)	9 (37.5)	0.046
	Rotational	142 (79.8)	15 (62.5)	
Number of patients cared for per shift	< 10	16 (66.7)	93 (52.2)	0.092
	10–15	1 (4.2)	42 (23.6)	
	> 15	7 (29.2)	43 (24.2)	
Quantitative variable		<b>N</b>	<b>Mean</b>	<b>S.D</b>
Age (year)	Yes	178	28.27	6.67
	No	24	27.79	7.15

\*Chi-square test

\*\*Independent sample t test

In our study, the prevalence of workplace violence was estimated at 88.1%, which was in line with various studies in this field. Jianxin Liu et al. in a meta-analysis study in China on 253 eligible articles estimated the prevalence of violence in healthcare workers at 61.9% (CI 95% 56.1–67.6%) and verbal violence was the most common type of violence with 57.6% (95% CI 51.8–63.4%). This study also showed that the prevalence of the workplace violence in the medical staff varies from country to country, so that in Asian and North American countries in the emergency and psychiatric wards was higher than other countries [21]. In another systematic review and meta-analysis by Dalvand et al. in Iran, 22 studies with a population of 5639 were included in the meta-analysis, which ultimately estimated the prevalence of verbal violence at 74% (95% CI 66–83) in Iranian nurses [22]. A systematic review study in Italy also found that health workers in the emergency, psychiatric, and geriatric units were more exposed to violence, and factors such as lack of information, inadequate personnel and equipment, and communication disorders were among the issues that increased the risk of violence in these wards [3]. Some studies have shown that the prevalence of nosocomial violence in Nordic countries is lower than in Asia. For example, the Hogh A study estimated it at 33% [23]. Nosocomial

violence seems to be more prevalent in Asian countries than in Western countries. The reason for this difference may be cultural and social differences in different societies. In addition, the lack of medical staff and the large number of patients referred to the hospital reduces the quality of service, which is important enough to start a violence by patients and their companions towards medical staff.

In the present study, verbal violence with 98.9% was the most common form of violence, which was consistent with various studies conducted in the country and abroad [21, 24–26]. Verbal violence is generally expected to be higher. This is because most people express their anger by insulting the other person and are less inclined to engage in physical conflict.

The results of the present study showed that only 43.3% of emergency personnel reported violence experienced, which is consistent with the studies. In study of Shoghi et al. in Iran, the reported rates of verbal and physical violence were 35.9 and 49.9%, respectively [27]. Similarly, in a study in Turkey, only 16.5% of violence experienced by medical staff was reported [28]. Lack of legal prosecution by managers and fear of being recognized as a problematic person, feelings of embarrassment, worries about the future of the job, lack of instructions for reporting

cases of violence or complexity, and time-consuming reporting process are some of the reasons why violence is not reported. But probably the lack of accuracy and proper follow-up by managers can play a significant role in this case [28–31]. Managers of medical centers should encourage medical staff to report by removing barriers related to non-reporting of hospital violence and following-up on reported violence. Accelerating the process of investigating and following-up on reported violence is another factor that can increase the reporting of experienced violence.

In this study, most of the violence received by the treatment staff from the patients (62.4%) and their companions (72.9%), which is in line with various studies conducted in Iran and the world [32, 33]. These people are directly receiving health services, in addition, the high stress and anxiety that patients and their companions experience during hospitalization can set the stage for violence. Also, some injuries such as head injuries, severe illness, glucose deficiency, and incurable diseases can also act as a cause of violence.

In this study, no significant relationship was seen between age and violence, which was in line with some studies [34]. However, it was not consistent with some other studies [29, 35]. In general, it is expected that with increasing age and work experience, staff experience in dealing with violence and its management will increase and reduce the incidence of nosocomial violence. Our results did not show a significant relationship between staff gender and the incidence of violence. The results of the study of Mozaffari et al. was similar to the present study [34]. Zeng et al. showed that violence against men is significantly higher than women [36]. In general, it seems that the violence that takes place in hospitals, the gender of the medical staff does not play an important role in its occurrence. Because in those stressful situations, the patient and the companion, their priority is to receive timely and appropriate services.

In this study, there was also a significant relationship between work shift and workplace violence so that violence in the rotational shift was higher than fixed (79.8 vs. 20.2%). Other similar studies have reported high prevalence of violence in rotational and night shifts [37–39]. The higher incidence of violence during night shifts can be due to lack of security forces or lack of manpower, including doctors, nurses, or even equipment. Of course, disrupting the circadian rhythm and sleep disorders may be effective in this regard.

We found a statistically significant relationship between occupational row and violence in the workplace, so that nurses and medical students were more exposed to violence than doctors (60.3 vs. 39.7%). Other

studies in this field have confirmed this fact [40, 41]. It seems that due to the high workload of nurses and medical students compared to other people working in the emergency room, the small number of these people and also their more exposure to patients and their companions, are more exposed to hospital violence. In addition, less experience in dealing with critically ill patients, less communication skills, less familiarity with emergency work rules and regulations, and receiving direct history from patient or companions are other reasons for the high incidence of violence among nurses and medical students.

Perhaps the most important limitation of this study relates to design, because the cross-sectional nature of the present study and the simultaneous measurement of exposure and outcome make it difficult to investigate the causal relationship and, therefore, the analysis of the results should be done with more caution. In addition, there are many known and unknown factors that may affect violence against health care workers, but it is certainly not possible to study all of these cases, especially the socio-economic status of patients in one study, and more studies with higher sample sizes are needed.

## Conclusions

The prevalence of workplace violence in emergency department personnel is high, which can lead to many physical and psychological complications; therefore, the establishment of emergency response centers for hospital violence, the deployment of the police and training workshops on prevention, and management of violence can help reduce the incidence of violence and its complications in these employees.

## Abbreviations

CVI: Content validity index; CVR: Content validity ratio; SD: Standard deviation.

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## Authors' contributions

SHN and NS designed the study. NS and MSK supervised the study. SHN processed the data. MSK and KM did the statistical analysis. KM and MSK interpreted the results. NS, KM and MSK wrote the original draft. NS and SHN review and edit the final draft. All authors have read and approve the final manuscript.

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## Availability of data and materials

Access to the data of this study is not restricted.

## Declarations

### Ethics approval and consent to participate

This study was performed according to the principles expressed in the Declaration of Helsinki and was approved by the Deputy of Research and Ethics Committee of Semnan University of Medical Sciences (Iran).

### Consent for publication

Not applicable.

### Competing interests

The authors declare that they have no competing interests.

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