



# The Prevalence and Predictors of Workplace Violence Among Hospital Staff

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## Abstract

**Background:** Workplace violence has always been a serious challenge in health care systems. It reduces employees' satisfaction and productivity, and increases the potential for adverse medical events. This study aimed to determine the prevalence and predictors of workplace violence among hospital clinical staff.

**Methods:** This cross-sectional study was conducted on 140 hospital care staff including nurses and paramedics in 2022. The standard questionnaire of WHO on workplace violence in health sector was used to collect data. To describe the quantitative variables, the mean and standard deviations were utilized, and for analyzing the data, multiple logistic regression model was used. The analysis was performed using SPSS 26.

**Results:** The results showed that 47.9% of the participants experienced verbal violence at least once in the past year, and 19.3% experienced sexual violence. Regarding the perpetrators of violence, except for physical violence, colleagues accounted for the highest. Most physical violence cases against the clinical staff were perpetrated by one of the patient's family members. Gender, marital status, and years of work experience were determined as predictors of workplace violence. Married male employees with limited work experience were disproportionately at risk of workplace violence.

**Conclusion:** Hospital clinical staff were exposed to all kinds of violence, especially verbal violence. Training personnel on the management of workplace violence and enhancing their communication skills and determining the scope, and predictors of workplace violence can help healthcare managers reduce the violence and its complications.

**Keywords:** Hospitals, Paramedics, Workplace violence

## Introduction

Violence is a general term associated with physical or psychological harm that may occur in any cultural context (1,2). It is a behavior with which a person tries to impose his will on others by using physical or non-physical power (3). Violence in the workplace, as an aggressive action towards individuals performing their duties, has been one of the challenges of human resource management in organizations (4). It has four main types including physical, verbal, cultural, and sexual violence. Physical violence is the use of physical force against people and causes physical or psychological harm. Instances of this type of violence are punching, kicking, pushing, pinching, and wounding with sharp objects. Verbal violence is a set of behaviors, such as insults, mockery, and obscenities, in such a way that cause emotional and psychological harm (5). Cultural violence includes offensive behavior based on ethnicity, race, language, religion, place of birth and similar ones. Every unwanted or harmful sexual action in which a person exerts his power over another one and causes threats, insults, or shame to him/her is defined as sexual violence (6).

Although workplace violence is observed in all occupations, its rate is significantly higher in healthcare organizations (7,8). Between 2015 and 2019, over three million violent attacks against healthcare workers have occurred around the world (9). The prevalence of workplace violence varies in different parts of the world. According to reports, it was 76% in Greece, 82% in Pakistan, and 67% in Italy in past years (10). Considering the results of a systematic review, the prevalence of three types of workplace violence among health care workers including physical, verbal and sexual were 20.8, 66.8, and 10.5%, respectively (11). In Iran, workplace violence against medical staff is widespread (12-14). The study by Janatolmakan *et al*, conducted on hospital nurses in Kermanshah, showed that 62% of the study participants experienced physical and 94% verbal workplace violence (15).

Workplace violence brings dire consequences for both individuals and organizations. At the individual level, acts of violence negatively affect employees' physical and mental health and increase the risk of complications such as trauma, physical injuries,

anxiety, and depression (16,17). The findings of a systematic review on workplace violence indicated that despite the cultural differences between countries, nurses' responses to violence include anger, fear, stress syndrome, self-blame, guilt, and shame. These psychological effects can remain for months and years and impact mental health, social life, and perceptions about the nursing profession. In addition, the violence can be an obstacle to providing patient care and increase absenteeism and resignation (18,19). At the organizational level, workplace violence adversely affects employees' performance. In healthcare settings, it negatively impacts the quality of patient services, causes job dissatisfaction, and decreases the employee retention rate (20-22). Although violence primarily targets and harms nurses, the final victims are patients (10).

Due to the high prevalence of workplace violence against care staff, necessary preventive actions should be considered. Little is known regarding the mentioned issue in the hospitals of Mashhad, Iran. This study aimed to determine the factors and predictors of exposure to workplace violence among hospital staff in this city. The results can help health services managers and policymakers better plan and adopt measures to reduce occupational violence and complications caused by it.

## Materials and Methods

This cross-sectional and descriptive-analytical study was conducted on 140 clinical staff including nurses and paramedics, working in a large teaching hospital in Mashhad, Iran, in 2022. The entry criteria were having at least one year of clinical work experience and direct contact with hospital patients. Convenience sampling was used in this study. In order to collect the data, with some modifications, the standard questionnaire of World Health Organization on workplace violence in health sector was utilized (23). The face and content validity of the tool was examined by five medical emergencies and disaster management experts. The reliability of the tool was assessed by 30 members of the research community with test-retest method. The reliability coefficient was 0.87 between the two tests.

The questionnaire had 3 parts. The demographic information of the study participants (age, sex, marital

status, and work experience) was asked in the first part of the questionnaire. The second part comprised 12 questions in four areas of physical, verbal, cultural, and sexual violence. In each section, the respondents were asked to express their experience by answering yes/no questions. In the last part, the respondents described the attacker in four categories: the patient, the patient’s family members, colleagues, and others. The questionnaires were completed online, by phone, or in person.

Mean and standard deviation were used to describe the data. A multiple logistic regression model was used to analyze the data on the effects of demographic and occupational variables on different aspects of violence. The final model was selected by the backward method based on the likelihood ratio test. In order to check the fitted regression models, their rock diagrams were drawn, and the area under the rock curve was measured. All the statistical analyzes were performed at a significance level of 0.05 using SPSS 26.

**Results**

In this study, 140 clinical personnel of the hospital participated (response rate=42.8%). Their average age was 36±7 years, and most of them were married (71%), had permanent contract (72.2%) and bachelor degree (85%). They had 12±7 years of work experience. More details regarding demographic information are reported in table 1.

The frequency of workplace violence against the study participants according to the type of violence is shown in table 2. According to the table, a high percentage of the participants experienced verbal violence at least once in the past year (47.9%), and 19.3% experienced sexual violence.

Except for physical violence, colleagues were the major perpetrators of violence. The rate of sexual violence committed by colleagues (68.4%) is alarming. The vast majority of physical violence against the clinical staff was committed by patient’s family members. Table 3 shows the person committing violence according to the type of violence.

The results of fitting the multiple logistic regression model to investigate predicting factors of physical violence demonstrated that a year increase in work experience reduced the chance of experiencing

**Table 1.** Demographic and occupational characteristics of the study participants

Variables		Mean	Standard deviation
Age		36	7
Years of work experience		12	7
Working shifts in a month		31	9
		Number	Percentage
Marital status	Single	41	29.3
	Married	99	70.7
Employment status	Permanent	101	72.2
	Temporary	21	15.1
	Others	18	12.7
Education	High school	7	5
	Bachelor	119	85
	Master, PhD or MD	14	10
Department	ICU/CCU	14	10
	Operation rooms	47	33.3
	Emergency	38	27.3
	Others	41	29.4
Gender	Female	72	51.4
	Male	68	48.6

**Table 2.** The frequency of workplace violence against the study participants by the type of violence

Type of violence	Experienced in the last year	
	No	Yes
Physical	81(58.1)	59(41.9%)
Verbal	73(52.1%)	67(47.9%)
Cultural	94(67.1%)	46(32.9%)
Sexual	113(80.7%)	27(19.3%)

physical violence by 0.25 (p<0.001). Moreover, single individuals were less likely (p=0.001) and female personnel more probable (OR=0.113) to experience physical violence (p<0.001) (Table 4).

**Table 3.** The person committing violence by the type of violence

Type of violence	Perpetrator			
	Colleagues	Patients	Patients' family members	Others
Physical	14(26.4%)	8(15.1%)	25(47.2%)	6(11.3%)
Verbal	35(50.7%)	13(18.8%)	18(26.2%)	3(4.3%)
Cultural	27(54.0%)	2(4.0%)	17(34.0%)	4(8.0%)
Sexual	13(68.4%)	1(5.3%)	5(26.3%)	0(0%)

**Table 4.** Parameters of the estimated logistic regression model for physical violence

Dependent variables	Wald Statistic	Standard deviation (95% confidence Interval)	Odds ratio	p-value
Years of work experience	21.754	(0.659-0.844)	0.746	<0.0001
Marital status				
Single	11.091	(0.024-0.380)	0.095	0.001
Married (reference)	-	-	1	-
Gender				
Female	14.275	(0.037-0.350)	0.113	<0.0001
Male (reference)	-	-	1	-
Employment status				
Permanent	12.108	(0.010-0.276)	0.052	0.001
Temporary	15.773	(0.000-0.069)	0.005	<0.0001
Others (reference)	-	-	1	-
Working shifts per month	4.857	(1.009-1.156)	1.009	0.028

The results of fitting the multiple logistic regression model to examine predictors of verbal violence demonstrated that a year increase in work experience reduces the chance of experiencing this type of violence by 0.006 ( $p=0.006$ ). Also, the chance for female personnel to experience verbal violence was 0.72 less than males ( $p=0.005$ ) (Table 5).

The results of fitting the multiple logistic regression model to investigate the predicting factors of cultural violence showed that the chance for female personnel to experience this type of violence was 3.02 times that of men ( $p=0.025$ ). Also, by increasing working shifts in a month, the chance of experiencing cultural violence increased by 1.07 ( $p=0.014$ ) (Table 6).

The results of fitting the multiple logistic regression model to examine the predictors of sexual violence represented that the chance of female personnel to experience sexual violence was 3.77 times that of men ( $p=0.025$ ) (Table 7).

In order to measure the usefulness of the models, a rock curve was drawn for each model, and the area under the curve was measured. The results proved that the models fit well (Table 8, Figure 1).

## Discussion

The present study aimed to investigate workplace violence against hospital clinical staff and the associated factors. The results indicated the

**Table 5.** Parameters of the estimated logistic regression model for verbal violence

Dependent variables	Wald statistic	Standard deviation (95% confidence interval)	Odds ratio	p-value
Years of work experience	7.591	(0.849-0.973)	0.909	0.006
Gender				
Female	7.797	(0.115-0.648)	0.280	0.005
Male (reference)	-	-	1	-
Employment status				
Permanent	0.562	(0.75-0.895)	0.259	0.033
Temporary	0.543	(0.094-3.129)	0.543	0.494
Others (reference)	-	-	1	-

**Table 6.** Parameters of the estimated logistic regression model for cultural violence

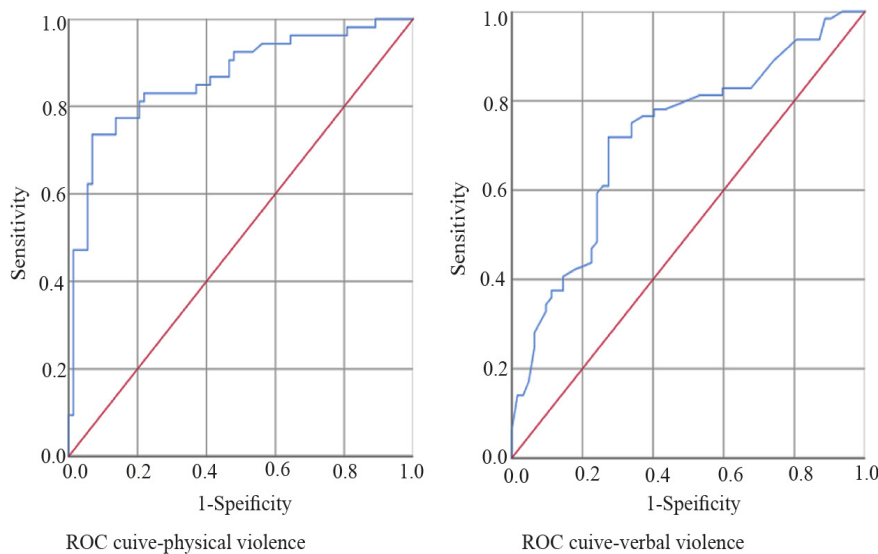
Dependent variables	Wald statistic	Standard deviation (95% confidence Interval)	Odds ratio	p-value
Marital status				
Single	0.764	(0.989-8.260)	2.859	0.052
Married (reference)	-	-	1	-
Gender				
Female	0.037	(1.150-7.921)	3.018	0.025
Male (reference)	-	-	1	-
Employment status				
Permanent	0.207	(0.224-2.541)	0.754	0.649
Temporary	5.904	(0.017-0.646)	0.104	0.015
Others (reference)	-	-	1	-
Working shifts per month	6.037	(1.013-1.124)	0.067	0.014

**Table 7.** Parameters of the estimated logistic regression model for sexual violence

Dependent variables	Wald Statistic	Standard deviation (95% Confidence Interval)	Odds ratio	p-value
Gender				
Female	5.867	(1.288-11.053)	3.774	0.015
Male (reference)	-	-	1	-
Department				
ICU/CCU	1.534	(0.573-11.837)	2.604	0.215
Operation rooms	1.860	(0.077-1.580)	0.348	0.172
Emergency	2.312	(0.759-8.865)	2.594	0.128
Others (reference)	-	-	1	-

**Table 8.** Characteristics of the rock curve in the regression model

Estimated model	Area under the rock curve	Confidence level 95%	p-value
Physical violence	0.866	0.799-0.933	<0.0001
Verbal violence	0.719	0.629-0.808	<0.0001
Cultural violence	0.731	0.637-0.825	<0.0001
Sexual violence	0.767	0.677-0.858	<0.0001

**Figure 1.** ROC curves of the estimated regression models.

percentages of participants who experienced verbal, physical, cultural and sexual were 47.9, 41.9, 32.9 and 19.3%, respectively. Also, gender, marital status, and years of work experience were identified as the predictors of workplace violence.

Among the four areas of physical, verbal, cultural and sexual violence, the most common type of violence was verbal. Nearly 48% of the study participants experienced this type of violence at least once in the past year. These findings are consistent with the findings of Al-Bashtawy *et al's* study, which aimed to determine the prevalence of workplace violence and the predictors of violent behavior against emergency department employees of Jordanian hospitals (24). Various studies demonstrate that violence against nurses, especially verbal violence, is widespread, while sexual violence is rare. Based on the results of a systematic review, in 90.5% of the studies, verbal and physical violence against nurses was prevalent, which

is consistent with the results of the present study. However, sexual violence was investigated in only six studies (28.5%), and racial violence in four studies (19%). In the review, the frequent type of violence was verbal violence, which included insulting, rebuking, or excessive yelling. Its prevalence varied from 23.2 to 97.8%. After that, physical violence was reported with a frequency of 9.1 to 71.6%. Then, there was racial and sexual violence ranged from 12 to 20.7% and 1.07 to 9.5%, respectively. The most common types of verbal violence were humiliation and insults, and the non-verbal types were threatening looks. Prevalent types of physical violence were pushing and throwing objects. None of the studies mentioned types of behavior associated with sexual and racial violence (23). The reason might be that nurses avoid speaking about sexual violence due to cultural reasons and fear of possible consequences (1).

According to our study, among individuals committing



violence, the patient's family members were the frequent causes of violence (47.2%) which is consistent with the findings of Lindquist's study indicating that the majority of violence was perpetrated by one of the patient's family members and companions (19). Also, a systematic review showed that 41.4 to 73.8% of violence is committed by patient's companions (25). However, in the study by Bigham *et al*, which was conducted to describe and investigate the experience of violence in healthcare setting in Australia, Sweden, and the United States (18), patients were the most common perpetrators of violence, which is not in line with our results. The difference might be rooted in the environment and context of the two studies. However, in various studies, most offenders were companions and patients (26). It can be due to the lack of proper understanding of nursing and paramedical services and long working hours (1).

It seems that by training hospital guards and controlling patients and companions, violence in hospital wards can be reduced to some extent (25). However, according to a recent study, colleagues accounted for the highest percentage of the perpetrators of violence, except in cases of physical violence (27). A study in two large hospitals in Iran conveyed that the main reason of committing workplace violence by colleagues was work stress caused by work pressure (28). In Sahebi *et al*'s study, the group causing the most cases of physical violence was the patient's companions, and the group causing the most verbal violence was the staff (11). In recent studies, perhaps psychological issues caused by the COVID-19 epidemic affected the resilience of clinical staff and exposed them to violence and even showing violent behavior (29).

Based on the findings of the present study, there was a statistically significant relationship between gender and exposure to all four types of violence. Moreover, employment status was related to cultural and physical violence. Exposure to physical and verbal violence had a statistically significant relationship with the number of work experience. Between marital status and exposure to physical violence, a significant relationship was observed. The findings of a systematic review indicated that being male, old age (over 35 years), having a long work experience (over ten years), or working more hours were the most

important characteristics of nurses who were victims of violence. In some studies, physical violence against female nurses was higher (23,29). The high prevalence of violence against clinical personnel and the complications resulting from it harms health systems. Mismanagement of workplace violence will undoubtedly lead to job dissatisfaction, mental illness, absenteeism and a shortage of healthcare human resources. Special training is needed to lower the possibility of workplace violence and manage one's behaviors (11).

### **Limitations and strengths**

Low participation rate was one of the limitations of the present study, which was probably since people were afraid of revealing their painful and very private experiences. Although it was mentioned in the questionnaire that the information would remain confidential, some nurses refused to participate.

One of the strengths of this study was its setting. It was conducted in a mega hospital of a large city with millions of national and international visitors. It provides a picture of a challenging work environment. Future qualitative research is necessary to explain the underlying factors of workplace violence and its process.

### **Conclusion**

The results of this study showed that the clinical staff of the studied hospital were exposed to all kinds of violence, especially verbal and physical. Regarding verbal, cultural and sexual violence, in more than half of the cases of violence, the perpetrator was a colleague. Only for physical violence, most perpetrators were patients' family members. Gender and work experience were two main factors related to violence. Novice female personnel were more likely to be exposed to violence. Training the staff on violence management, especially to novice staff, and enhancing communication skills can be useful. As the main group of perpetrators was co-workers, monitoring and reporting the violence against staff by other staff and establishing strict rules and punishments for the perpetrators can reduce the violence. Also, supervisors and executive managers are advised to protect and support their young employees more. In relation to physical violence by patients' families,

in addition to the violence management training mentioned above, the common methods such as limiting the entry of patients' families to the main clinical spaces of the hospital and deploying guards inside clinical departments are suggested.

### **Ethical considerations**

All the participants filled a consent statement form which declared participation in the study was voluntarily and the participants could refuse to answer questions and withdraw from the study at any time. Moreover, the personal information/identity of the participants would be kept completely confidential.

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### **Conflict of Interest**

The authors declare that there is no conflict of interest.

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## **References**

1. Dehnabi A, Radsepehr H. [Investigating the factors affecting violence against emergency nurses in Sabzevar Medical Sciences Hospitals.] *Occup Hygin Health Promotion J* 2018;2(1):51-61. Persian.
2. Shabanikiya H, Kokabisaghi F, Mojtabaeian M, Sahebi T, Varmaghani M. Global prevalence of workplace violence against paramedics: a systematic review and meta-analysis. *Health in emergencies and disasters quarterly. Health Emerg Disasters Quarter* 2021;6(4):205-16.
3. Imani B, Nazari L, Majidi L, Zandieh M, Tajobi M. [Investigation of the causes and solutions to violence in the workplace, emergency nurses in selected hospitals of Hamadan University of Medical Sciences.] *Pajouhan Sci J* 2014;12(2):64-74. Persian.
4. Dehnadi-Moghaddam A, Asgharzadeh A, Hosseini S, Kouchakinejad-Eramsadati L, Kazemnejad-Leili E, Baghernia Hemmati N. [Frequency and characteristics of violence against nurses of emergency.] *J Health Care* 2013;14(4):62-8. Persian.
5. Tay G, Razak A, Foong K, Ng Q, Arulanandam S. Self-reported incidence of verbal and physical violence against emergency medical services (EMS) personnel in Singapore. *Australas Emerg Care* 2021;24(3):230-4.
6. Lozinski Musse J, Coelho Musse F, Pelloso S, Barros Carvalho M. Violence against health personnel before and during the COVID-19 pandemic. *Rev Assoc Med Bras (1992)* 2022;68(11):1524-9.
7. Ramacciati N, Giusti G. Workplace violence in emergency departments: the health professionals and security personnel alliance. *Emerg Med Australas* 2022;32(6):1074-6.
8. Soheili A, Feizi A, Rahmani A, Parizad N, Sheykh-Kanlou J. The extent, nature and contributing factors of violence against Iranian Emergency Medical Technicians. *Nurs Midwifery Stud* 2016;5(3):e29619.
9. Rayan A, Baker O. Stress, workplace violence, and burnout in nurses working in King Abdullah Medical City during Al-Hajj season. *J Nurs Res* 2019;27(3):e26.
10. Shi L, Zhang D, Zhou C, Yang L, Sun T, Hao T, et al. A cross-sectional study on the prevalence and associated risk factors for workplace violence against Chinese nurses. *BMJ Open* 2017;7(6):e013105.
11. Sahebi A, Golitaleb M, Moayedi S, Torres M, Sheikhbardsiri H. Prevalence of workplace violence against health care workers in hospital and pre-hospital settings: an umbrella review of meta-analyses. *Front Public Health* 2022;10:895818.



12. Afshari Saleh L, Niroumand S, Dehghani Z, Afshari Saleh T, Mousavie M, Zakeri H. Relationship between workplace violence and work stress in the emergency department. *J Inj Violence Res* 2020;12(2):183-90.
13. Babaei N, Rahmani A, Avazeh M, Mohajjelaghdam AR, Zamanzadeh V, Dadashzadeh A. Determine and compare the viewpoints of nurses, patients and their relatives to workplace violence against nurses. *J Nurs Manag* 2018;26(5):563-70.
14. Honarvar B, Ghazanfari N, Raeisi Shahraki H, Rostami S, Bagheri Lankarani K. Violence against nurses: a neglected and healththreatening epidemic in the university affiliated public hospitals in Shiraz, Iran. *Int J Occup Environ Med* 2019;10(3):111-23.
15. Janatolmakan M, Abdi A, Rezaeian S, Framarzi Nasab N, Khatony A. Violence against emergency nurses in Kermanshah-Iran: prevalence and associated factors. *Nurs Res Pract* 2023;2023:9362977.
16. Gómez-Gutiérrez M, Bernaldo-de-Quirós M, Piccini A, Cerdeira J. Posttraumatic stress symptomatology in pre-hospital emergency care professionals assaulted by patients and/or relatives: importance of severity and experience of the aggression. *J Interpers Violence* 2016;31(2):1339-54.
17. Maguire B, O'Meara P, Brightwell R, O'Neill B, FitzGerald G. Occupational injury risk among Australian paramedics: an analysis of national data. *Med J Aust* 2014;200(8):477-80.
18. Bigham B, Jensen J, Tavares W, Drennan I, Saleem H, Dainty K, et al. Paramedic self-reported exposure to violence in the emergency medical services (EMS) workplace: a mixed-methods cross-sectional survey. *Prehosp Emerg Care* 2014;18(4):489-94.
19. Lindquist B, Koval K, Mahadevan A, Gennosa C, Leggio W, Niknam K, et al. Workplace violence among prehospital care providers in India: a cross-sectional study. *BMJ Open* 2019;9(11):e033404.
20. Agbornu FM, Bofo IM, Ofei AM. Effects of workplace violence on the quality of care by nurses: A study of the Volta Region of Ghana. *Int J Africa Nurs Sci* 2022;16:100421.
21. Kumar P, Rahim Khan U, Soomar S, Jetha Z, Saeed Ali T. Workplace violence and bullying faced by health care personnel at the emergency department of a tertiary care hospital of Karachi, Pakistan: a cross-sectional study. *J Emerg Nurs* 2023;49(5):785-95.
22. Wu JC, Hao-Yu C, Lee Hsieh J, Clinciu D, Tung HH. Enhancing health care personnel's response to ER violence using situational simulation. *Clin Simulation Nurs* 2019;28:6-14.
23. Najafi F, Fallahi-Khoshknab M, Dalvandi A, Ahmadi F, Rahgozar M. [Workplace violence against Iranian nurses: a systematic review.] *JHPM* 2014;3(2):72-85. Persian.
24. ALBashtawy M, Al-Azzam M, Rawashda A, Batiha AM, Bashaireh I, Sulaiman M. Workplace violence toward emergency department staff in Jordanian hospitals: a cross-sectional study. *J Nurs Res* 2015;23(1):75-81.
25. Esmaeili R, Lameh Jouybari A. [Violence against emergency nurses and some related factors.] *Clin Excellence* 2020;9(4):34-44. Persian.
26. Sheikhbardsiri H, Afshar P, Baniyasi H, Farokhzadian J. Workplace Violence Against Prehospital Paramedic Personnel (City and Road) and Factors Related to This Type of Violence in Iran. *J Interpers Violence* 2022;37(13-14):NP11683-NP98.
27. Nikbakht F, Miri HH, Khalaj TA, Shabanikiya H. An exploration of occupational violence among emergency medical staff of a major medical university; 2020. *Iran Occup Health* 2023;19(1):427-39.
28. Chinichian M, Aghabiklooei A, Mehrdad R, Pouryaghoob G, Orouji M. Violence against medical assistants by colleagues at educational hospitals and its effects on the quality of education. *Int J Med Toxicol Forens Med* 2022;12(3):1-9.
29. Azami M, Moslemirad M, YektaKooshali M, Rahmati S, Soleymani A, Shamloo M, et al. Workplace violence against Iranian nurses: a systematic review and meta-analysis. *Violence Vict* 2018;33(6):1148-75.