

Medicine and Society

Workplace violence against physicians in intensive care units in Turkey: A cross-sectional study

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ABSTRACT

Background. Although there are many studies on violence against physicians in the literature, there are few studies on violence against physicians working in intensive care units (ICUs). We aimed to investigate the frequency, type and underlying factors of violence against physicians working in ICUs in Turkey in the past 1 year.

Methods. We collected data by sending a questionnaire about violence against physicians working in ICUs via e-mail and WhatsApp between 1 and 15 May 2022. IBM SPSS Statistics V.24.0 was used for data analysis. The chi-square test and Fisher precision test were used to compare categorical data.

Results. Over one-third (38.6%) of the 354 physicians participating in our study reported that they had been exposed to violence in the past year, while 20.7% reported that they had been exposed to violence more than once in the past year. There was a significant relationship between the frequency of exposure to violence, female gender, age group, title, subspecialization status, working style and duration of working in the ICU ($p < 0.05$). There was no relationship between the working area, type of hospital and ICU and exposure to violence ($p > 0.05$). The presence of restriction and control points at the entrance to ICUs prevented violence ($p < 0.05$).

Conclusion. Physicians working in ICUs encounter violence against them. The frequency of violence increased after the Covid-19 pandemic. A significant relationship was found between the frequency of violence and female gender, age group, title, subspecialization status, working style and duration of working in ICUs.

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INTRODUCTION

Every year, around 1.3 million people worldwide die as a result of interpersonal violence, accounting for 2.5% of the total number of deaths. As with all forms of violence, workplace

violence against healthcare professionals is an important problem and is spreading worldwide.¹

Violence in the hospital environment, which is often a source of stress for patients and their relatives, is a problem of all health systems. Violence against healthcare workers is attracting more and more attention, especially in the field of public health. Violence, which ranks first among the causes of death in the workplace of healthcare workers, is also an important problem in terms of employee safety.² In the face of this threat, which has become an epidemic in many countries, healthcare professionals, especially nurses who are exposed to violence at the highest rate, should play a more decisive role.^{3,4}

Intensive care units (ICUs) are open 24 hours a day, 7 days a week, and provide advanced care to patients. The frequency of violence in ICUs cannot be underestimated, and a study showed that ICU nurses frequently experience violence at work.⁵

Violence against health personnel is an important problem in Turkey, with 44.7% of all health personnel being exposed to violence every year. Although nurses are the group at highest risk in terms of violence in many parts of the world, physicians and dentists have been reported to be the group at highest risk in terms of workplace violence in the health sector in Turkey.⁶ This may be because physicians are seen as the primary representative of health services in Turkey. Other reasons for the increasing violence against physicians could be unrealistic expectations of patients and their families, and blaming physicians for the present problems of the health system.^{6,7}

Violence against physicians increases the rate of stress and depression, causes a decrease in the level of job satisfaction, and thus causes serious disruptions in functioning. It is seen as one of the leading sources of problems in the health systems in both developing and developed countries. While efforts are being made to prevent violence, the increase in the number of doctors and healthcare workers who have lost their lives as a result of violence by patients and their relatives all over the world in the past 10 years is substantial.^{8,9}

Many studies have examined the severity and consequences of violence against healthcare professionals.^{10,11} However, there are few studies that looked at factors that led to violence such as the safety conditions of ICUs, and the expertise and experience of physicians. We aimed to determine the prevalence of violence against physicians working in ICUs in Turkey and the factors associated with it. We also examined the recommendations of physicians for the prevention of this type of violence.

METHODS

For this prospective cross-sectional survey, we contacted physicians working in ICUs using email and WhatsApp after

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receiving approval from the Scientific Research Ethics Committee. Data were collected by sending a questionnaire form.

A questionnaire consisting of 42 items was prepared. The education level, age, gender, current status of the physicians, whether they were exposed to violence in the ICU, the type of violence, the routine procedures and results following the violence, the physicians' thoughts about the causes of such violence and methods suggested to prevent violence were enquired.

To assess exposure to violence, participants were asked whether they were exposed or not in the past year according to the 'Country Case Study Research Tools-Survey of Violence at Work in the Health Sector, Geneva 2003', which was prepared jointly by the International Labour Office, the International Council of Nurses, WHO, and Public Services International.

Whether other physicians working in the same department were exposed to violence in the past year was also enquired. Physical violence was categorized as 'physical assault' and 'assault with a firearm/sharp object', but besides definitions of violence, physicians' experiences of different types of violence in public hospitals were also investigated. This was accepted as a form of violence as in previous studies.¹⁰ For items that evaluate the type of violence experienced, the causes of perceived violence, suggested solutions, and measures to prevent violence, participants were allowed to choose more than one answer, while a single response was requested for all other items.

The individual consent of the participants was mandatory. To avoid repetitive entries, the website was limited to a digital object identifier.

Power analysis

For power analysis, the *www.calculator.net* website and power analysis programme were used. The exact number of specialists and assistants working in ICUs in Turkey is not known. We assumed that 3000 specialists and assistants worked in the ICUs, 50% frequency was accepted for the conditions of unknown frequency, and at the 5% accepted error and 95% confidence level, we calculated that at least 341 participants should be included in the study.

Statistical analysis

IBM SPSS Statistics V.24.0 was used for data analysis. Categorical data were presented as number and frequency. Chi-square test and Fisher precision test were used to compare categorical data. To determine effect sizes for results with more than two categories and $p < 0.05$ in the comparative analysis, a binary logistic regression analysis was done to calculate confidence intervals (CI) and odds ratios (ORs) using the forward step (OR) method. A p value < 0.05 was considered statistically significant.

RESULTS

Data from a total of 354 participants were analysed, although 3 participants (0.84%) answered the questionnaire, they did not give consent for their data to be used. Over half (51.1%) the participants were women. Most participants (32.5%) were between 40 and 49 years of age; 36.7% were working as specialist doctors and 68.4% were in the field of Anesthesiology and Reanimation. Half (50%) the participants worked in the Anesthesiology and Reanimation ICU. Nearly all (91.2%) the participants were working in stage III ICUs. The highest number

of participants were working in the Aegean region (24.9%), Central Anatolia (19.2%), and Marmara (15.5%). Nearly half (46.6%) the participants were working in university hospitals and 30.5% were working in the Ministry of Health Training and Research hospitals. Nearly two-thirds (65.8%) of the participants worked in day and night shifts.

Over one-third (38.6%) of the 354 physicians participating said they had been exposed to violence in the past year, while 20.7% said that they had been exposed to violence more than once in the past year. When the entire period that the participants worked in the ICU was evaluated, 62% of participants were exposed to violence. Nearly three-fourths (72.9%) of the participants said that they had witnessed a health worker exposed to violence at least once in the past year.

On the other hand, 86.6% of the participants reported that they had witnessed a health worker in the ICU exposed to violence at least once while they were working in the ICU. Insults (36.9%) and threats (30.4%) were the most common types of violence, while 27.7% of the participants reported that they were exposed to complaints to state officials and 19.3% to mobbing (Table I).

The frequency of exposure to violence in the past year, gender ($p = 0.008$), age group ($p = 0.004$), title ($p = 0.007$), subspecialization ($p = 0.034$), working style ($p = 0.041$), working duration in intensive care unit ($p = 0.027$), and applying to court due to previous violence ($p < 0.001$) were found to be significant (Table II).

We found that women were exposed to violence 1.76 times more often than men (43.4% men, 57.5% women). Also physicians in the 30–39 years age group had the highest probability of experiencing violence and were exposed to violence 2.88 times more often.

The frequency of experiencing violence was the highest among physicians who were fellows in the subspecialty (OR 5.83; 95% CI 1.99–17.08), who worked in day and night shifts (OR 2.02; 95% CI 0.81–5.05) and those had worked in ICUs for 1–4 years (OR 3.62; 95% CI 1.41–9.26) were exposed to violence the most.

There was no statistically significant difference between the frequency of exposure to violence in the past 1 year and the region of work, type of hospital and type of ICU ($p > 0.05$).

Nearly two-thirds (64.4%) of the participants said that no precautionary measures were taken against violence in their ICUs. We also found that physicians working in ICUs that did not take precautions against violence were exposed to more violence ($p = 0.003$); 51.4% of the participants reported that they had security guards in their ICUs. We found that physicians working in ICUs with security guards were exposed to less violence in the past 1 year, but the difference was not statistically significant ($p = 0.09$).

Nearly three-fourths (73.2%) of participants said that there were restrictions or checkpoints on entry to their ICUs. There was a significant difference between exposure to violence in the past year and the presence of a restriction or control point for admission to the ICU ($p = 0.009$). Also physicians working in ICUs with restrictions or control points on admission to the ICU had been exposed to less violence in the past 1 year.

When exposure to violence in the past 1 year was compared with the presence of a security guard at the entrance to the ICU, the presence of security cameras in the ICU, and the presence of a metal detector at the entrance to the hospital, no significant difference was found ($p > 0.05$; Table III).

TABLE I. Physicians' exposure to violence, frequency and type in the intensive care unit in the past 1 year

Question	Options	n	%
Have you been exposed to violence in the past year?	More than once	74	20.7
	Once	63	17.6
	None	221	61.7
Has any healthcare worker been exposed to violence in the past year at your place of work?	Yes	261	72.9
	No	97	27.1
How often have you been exposed to violence in the past year?	Every day shift and/or night shift	0	0
	Almost every day shift and/or night shift	5	1.4
	More than once per month	32	8.9
	Once in a month	27	7.5
	Less than once a month	113	33
	Nil	176	49.2
What kind of violence have you been exposed to in the past year?	Insults	132	36.9
	Threats	109	30.4
	Complaint to government officials	99	27.7
	Mobbing	69	19.3
	Assault on personal or hospital property	36	10.1
	Physical violence	10	2.8
	Assault with a firearm/sharp object	2	0.6
	Sexual assault	0	0
	I do not want to answer	5	1.4

Most physicians said that the frequency of violence in the ICUs increased during the Covid-19 pandemic (42.2%) whereas 33.2% of the participants said there was no change, and 20.7% said that it had decreased.

We found that sociocultural (91.3%) and educational status (80.1%) influenced the tendency to violence. The health conditions of themselves and their relatives (56.3%), psychiatric disorders (51.3%), substance use (36.1%), alcohol use (27.2%) and other health problems affecting the state of consciousness (21%) also influenced the tendency to violence.

When physicians were asked about their reactions after being exposed to violence, 32.6% stated that they continued their work after a short break; 18.7% applied Code White, and 8.2% reported the incident to law enforcement officers; 14.4% of the physicians did nothing and continued their work. We found that participants mostly trusted their colleagues (33%) when they encountered violence. To a lesser extent, they stated that they trust their own abilities (31.8%) and law enforcement officers (5.6%). On the other hand, 26.5% of the participants stated that they do not trust any person or institution.

Most physicians (98.9%) believed that the existing legal regulations and legislations related to violence were insufficient. The three most important reasons reported for violence were inadequate laws (88.3%), ineffective penalties (88%) and policies of the Ministry of Health (87.2%). On the other hand, 76.5% of the participants stated that 'lack of adequate security precautions in institutions' was the leading cause of violence.

When physicians were asked for suggestions to prevent violence, 90.5% of the participants believed that the severity of punishments should be increased, while 85.7% agreed that the attitudes of the Ministry of Health and hospital administrators should be changed. On the other hand, 83.5% of the participants thought that violence against physicians should not be tolerated.

DISCUSSION

Our study shows that violence against ICU physicians is a serious problem in Turkey as it is all over the world. Our results showed that age, female gender, current position, subspeciali-

zation, working in alternating shifts, working duration in the ICU, and going to court due to previous violence affect the likelihood of physicians being exposed to violence. The type of hospital, the type of ICU and the region did not affect the exposure of ICU doctors to violence.

Healthcare workers are at a higher risk of being exposed to violence than those working in other professions. The European Agency for Occupational Health and Safety reported that the health sector has the highest rate of exposure to violence among occupational groups in the European Union (15.2%).¹² A systematic review summarized the evidence for the prevalence of workplace violence in healthcare by patients or visitors.¹³ This study emphasized that 61.9% of 331 544 participants were exposed to workplace violence. Violence against nurses and doctors working in emergency services and psychiatry clinics has a high prevalence, especially in Asia and North America.¹³ Workplace violence occurs in various forms in different professional layers and health work settings, including various hospital units, and primary care, emergency mental health and radiology services.^{14,15}

Violence against healthcare professionals in Turkey has been increasing and has at times caused deaths.¹⁶ We found the frequency of exposure to violence among physicians working in the ICU in the past 1 year to be significantly higher among women physicians (57.5%). Gender inequality, the fact that women are more vulnerable than men in terms of physical strength, the level of development of the country, and sociocultural variables can make violence against women more likely. There is an increase in the frequency of violence against women worldwide and in Turkey in general, and this situation also affects women health workers.¹⁷ As per the United Nations Development Programme (UNDP) in 2020, the proportion of women aged 15 years and older who experienced physical and/or sexual violence by their partners was approximately 28% in Europe and Central Asia, 31% in South Asia and Sub-Saharan Africa, 52% in Bangladesh, 59% in Bolivia, 51% in Afghanistan and 38% in Turkey.¹⁸

Although ICUs are more isolated areas compared to other

TABLE II. Relationship between exposure to violence and various personal and institutional variables

Variable (category)	No (%)	Yes (%)	Total (%)	OR	95 % CI	p value
<i>Gender</i>						
Women	77 (42.5)	104 (57.5)	181 (51.1)	1.77	1.158–2.689	0.008
Men	98 (56.6)	75 (43.4)	173 (48.9)	–	Reference	
<i>Age (years)</i>						
<30	24 (46.2)	28 (53.8)	52 (14.7)	2.536	1.215–5.292	0.004
30–39	49 (43)	65 (57)	114 (32.2)	2.884	1.555–5.347	
40–49	52 (45.2)	63 (54.8)	115 (32.5)	2.634	1.423–4.873	
≥50	50 (68.5)	23 (31.5)	73 (20.6)	–	Reference	
<i>Current position</i>						
Professor Doctor	35 (64.8)	19 (35.2)	54 (15.3)	–	Reference	0.007
Associate Professor Doctor	24 (63.2)	14 (36.8)	38 (10.7)	1.075	0.453–2.549	
Doctoral Lecturer (Assistant Professor Doctor)	7 (38.9)	11 (61.1)	18 (5.1)	2.895	0.964–8.696	
Specialist	62 (47.7)	68 (52.3)	130 (36.7)	2.020	1.048–3.894	
Fellow in subspecialty	6 (24)	19 (76)	25 (7.1)	5.833	1.992–17.082	
Residents	41 (46.1)	48 (53.9)	89 (25.1)	2.157	1.074–4.329	
<i>Subspecialization status</i>						
Subspecialist	57 (54.8)	47 (45.2)	104 (29.4)	1.224	0.767–1.953	0.034
Not a subspecialist	110 (49.4)	111 (50.2)	221 (62.4)	–	Reference	
Fellow in subspecialty	8 (27.6)	21 (72.4)	29 (8.2)	3.184	1.293–7.840	
<i>Shifts</i>						
Day	58 (58.0)	42 (42)	100 (28.2)	1.777	0.448–3.092	0.041
Night	13 (61.9)	8 (38.1)	21 (5.9)	–	Reference	
Day and night	104 (44.6)	129 (55.4)	233 (65.8)	2.016	0.805–5.047	
<i>Region</i>						
Marmara	29 (52.7)	26 (47.3)	55 (15.5)			0.299
Aegean	36 (40.9)	52 (59.1)	88 (24.9)			
Mediterranean	22 (62.9)	13 (37.1)	35 (9.9)			
Central Anatolia	36 (52.9)	32 (47.1)	68 (19.2)			
Eastern Anatolia	18 (41.9)	25 (58.1)	43 (12.1)			
Southeastern Anatolia	16 (48.5)	17 (51.5)	33 (9.3)			
Black Sea	18 (56.3)	14 (43.8)	32 (9)			
<i>Hospital type</i>						
Public	21 (43.8)	27 (56.3)	48 (13.6)			0.245
Ministry of Health Training and Research	61 (56.5)	47 (43.5)	108 (30.5)			
University	75 (45.5)	90 (54.5)	165 (46.6)			
Private	18 (54.5)	15 (45.5)	33 (9.3)			
<i>Working duration in intensive care unit (year)</i>						
<1	12 (6.9)	21 (11.7)	33 (9.3)	–	Reference	0.027
1–4	53 (30.3)	66 (36.9)	119 (33.6)	3.617	1.413–9.256	
5–9	34 (19.4)	44 (24.6)	78 (22)	2.574	1.259–5.259	
10–19	43 (24.6)	32 (17.9)	75 (21.2)	2.675	1.249–5.729	
≥20	31 (17.7)	15 (8.4)	46 (13)	1.538	0.714–3.314	
No answer	2 (1.1)	1 (0.6)	3 (0.8)			
<i>Intensive care type</i>						
Anesthesiology and Reanimation	93 (52.5)	84 (47.5)	177 (50)			0.730
Internal	29 (44.6)	36 (55.4)	65 (18.4)			
Surgical	4 (36.4)	7 (63.6)	11 (3.1)			
Mixed	43 (50)	43 (50)	86 (24.3)			
Postoperative	2 (50)	2 (50)	4 (1.1)			
Other	4 (36.4)	7 (63.6)	11 (3.1)			
<i>Going to court for previous violence</i>						
No	151 (88.3)	130 (73.4)	281 (80.7)	–	Reference	<0.001
Yes	20 (11.7)	47 (26.6)	67 (19.3)	2.730	1.538–4.843	

health work areas, violence against physicians and health workers is seen with a high frequency. Studies have reported violence up to 50% among healthcare workers in ICU settings and up to 40% among healthcare workers in psychiatry units.^{19,20} In another study investigating the frequency of exposure to violence among doctors and nurses from 20 neonatal ICUs, the frequency of exposure to violence was reported as 53.5% for all

healthcare workers, 53.1% for doctors and 53.6% for nurses.²¹ We found that doctors working on mixed shifts were exposed to maximum violence (72.8%), followed by those working on day shifts (50%) and night shifts (40%–45%).²² We found that 38.3% of the physicians working in the ICU were exposed to violence in the past 1 year. They stated that 20.7% of them had been exposed to violence more than once. It was observed that those

TABLE III. Safety precautions in intensive care units (ICUs) and their effects on exposure to violence in the past year

Question		Total		No		Yes		p value
		%	n	%	n	%	n	
Are there any precautions against violence in your ICU?	Yes	35.9	127	59.8	76	40.2	51	0.003
	No	64.1	227	43.6	99	56.4	128	
Are there security guards in your ICU?	Yes	51.4	182	53.8	98	46.2	84	0.088
	No	48.6	172	44.8	77	55.2	95	
Is there a police checkpoint in or near your ICU?	Yes	14.4	51	49.0	25	51.0	26	0.949
	No	85.6	303	49.5	150	50.5	153	
Are there any restrictions or checkpoints on entry to your ICU?	Yes	73.2	259	53.7	139	46.3	120	0.009
	No	26.8	95	37.9	36	62.1	59	
Do you have security cameras in your ICU?	Yes	92.4	326	49.7	162	50.3	164	0.877
	No	7.6	27	48.1	13	51.9	14	
Is there a metal detector at the entrance to the hospital?	Yes	23.0	6.5	56.5	13	43.5	10	0.482
	No	331.0	93.5	48.9	162	51.1	169	

working on mixed shifts were exposed to violence at the rate of 55.4%, followed by those working on the day shifts (42%) and night shifts (38.1%).

Another place where violence against healthcare workers is common in Turkey is in emergency services. Bayram *et al.*¹⁰ did a study to examine the type and frequency of violence against physicians in emergency services throughout Turkey and found a significant difference between exposure to violence and age groups. They also found that physicians who worked in the emergency department for 1–4 years had higher exposure to violence as did we. We also found a significant difference between age groups and frequency of exposure to violence in the past 1 year in the ICU, and we found the highest prevalence of exposure to violence in the 30–39 years age group. When the results obtained from the age groups were compared, a significant difference was found between the academic position worked and the frequency of violence in the ICU in the past 1 year, and we found that those working as fellows were exposed to violence more often. Physicians who are more in contact with patients and their relatives in the ICU and on active duty were more likely to encounter violence. Communication skills are a factor but not the most important factor. Fellows and residents do not get the same support from institutions as faculty members do. In addition, it is frequent that students are subjected to abuse in front of patients and sometimes relatives by consultants. This endorses a view in the public that violence (verbal) against them is acceptable and escalation to physical violence will also be tolerated. It has been observed that as the years of service increase, health workers are exposed to less violence. It is thought that the low experience of working physicians may increase the risk of being exposed to violence. From this point of view, it can be considered that the years spent working increases experience and provides a protective effect of being exposed to violence.¹⁰

Globally, workplace violence against physicians is high (54%–70%) regardless of the work environment, access to resources, organizational culture and support.²³ There is an increasing trend (19.6%–25%) in Asian countries and a decrease (48.9%–32.6%) in North American countries.¹³ In developing countries, more than 50% of doctors have faced patient-directed verbal and physical abuse. Also, episodes of verbal abuse (42.5%) of violence are more common than physical violence (24.4%), especially in resident doctors and emergency services (68.4%).^{13,24,25}

In a meta-analysis, misunderstandings between healthcare professionals and perpetrators (37.1%–40.7%), unmet service needs (36.3%–72.2%), and communication barriers (23.5%) are among the factors contributing to violence.²⁶ Overcrowding (33.3%–65.9%), long waiting times (17.0%–32.5%), lack of security (39.4%), lack of protective precautions (13.6%) and not punishing perpetrators of violence (49.6%–67.2%) are among the factors that contribute to violence. Among the reasons for patients/relatives becoming violent were an accident or illness (0.8%–56.9%), lack of information about their health status (30.1%), being mentally ill (20.9%), drug use (12.9%) and not getting a report from their clinician (5.0%).²⁶ We found sociocultural status (91.3%), education level (80.1%), health status of patients and their relatives (56.3%), psychiatric disorders (51.3%), substance use (36.1%) and alcohol use (27.2%) to play a role. Considering the multifactorial causes of violence, the problem needs to be addressed by multidimensional steps.

Various security precautions should be in place to reduce violence, such as the use of metal detectors in hospitals, and restriction of access to certain areas of the hospital. Just as security guards are present at the entrances and exits of ICUs, it is necessary to have a checkpoint and restriction at the entrance to the ICU. Bayram *et al.*¹⁰ showed that there was no significant relationship between the presence of security guards and the frequency of violence. Similarly, we found no significant relationship between the frequency of exposure to violence among physicians working in the ICU in the past 1 year due to the presence of security guards and police checkpoints. In our study, 26.8% of physicians stated that there were no restrictions or checkpoints for entry to ICUs, and 62.1% of them had been exposed to violence in the past 1 year. It is obvious that preventing violence against physicians working in ICUs is not the only solution. We believe that the attitude of administrators should also change in this regard. According to the Occupational Safety and Health Administration guidelines, an effective workplace violence prevention programme should include management commitment and employee involvement, workplace analysis, hazard prevention and control, safety and health education, and record keeping and programme evaluation.²⁷

It is well known that healthcare professionals do not report most of the violence they encounter for various reasons—belief that nothing can change or fear of losing their job. In a study, 54.1% of physicians who were subjected to violence

applied Code White, and it was shown that almost half of the physicians did not report the events they experienced.¹⁰ Pol *et al.* reported a minimal increase in Code Grey and Black activation in ICUs after the implementation of the National Emergency Access Target (NEAT), known as the 4-hour rule programme, in Australia.²⁸ We found that only 18.7% of the physicians working in the ICU who were exposed to violence in the past 1 year applied Code White, and 32.6% continued their routine work after a short time. As for the reason for low frequency of reporting violent incidents; certain forms of violence such as insults and threats, may be considered 'part of the profession'. These are more likely to be tolerated. Therefore, it can be helpful to design measures to increase the number of reports of violent incidents, such as awareness training and improving reporting systems to help health workers understand which incidents constitute violence.

Violence in the workplace has a negative impact not limited to the physical and psychological health of healthcare workers. It can also result in poor job performance, increased burnout and intention to leave, thus affecting patient care. The most obvious effect of violence can be seen when the victim suffers a physical injury.²⁹ A study of 106 individuals exposed to violence found that 56.6% of violence resulted in physical injuries. Of these, 62.3% took leave from work and 45.4% did not come to work for the next 2–3 days.²⁰ Some physicians may also show signs of psychological anxiety after experiencing a severe event, such as post-traumatic anxiety (15.4%), mental fatigue (42.4%) and emotional anxiety (39.3%).³⁰ Chen *et al.*³¹ examined the post-violence mental health status of geriatric nurses in the workplace and found that they were prone to post-violent mental health problems and post-traumatic stress disorder. Wang *et al.*³² in a study of 3426 people found that health personnel who were exposed to workplace violence were more prone to depression than others. Again, in previous years, Hanson *et al.*,³³ Hsieh *et al.*,³⁴ Zafar *et al.*²⁴ and Zhao *et al.*³⁵ obtained similar results in their studies. Kumar *et al.* found that 72% of ICU workers experienced workplace violence during working hours. They reported that the most common type of violence was verbal violence (67%) and most participants (60%) had to change their place and way of working.³⁶

In escalating cases of workplace violence, the healthcare community organizes protests to voice its views on unfair treatment by the system, and public protests in the form of strikes can lead to loss of workforce, staff shortages and a burden on the entire health system.³⁷ As a result, productivity and job satisfaction can decrease. It can cause premature burnout and workforce losses that can collectively affect the entire healthcare system. On the other hand, there may be disruptions and deficiencies in the treatment of other patients hospitalized in ICUs during and after violence. The increasing course of violent incidents and the absence of any precautions, sanctions and deterrent punishments against the violence experienced by physicians can lead to much dissatisfaction. Acts of violence can negatively affect doctors' attitudes towards work. These events can discourage some doctors who have a community spirit and are truly invested in their patients' health. Sometimes, doctors may avoid complex procedures or high-risk surgeries to avoid outrage if a negative outcome occurs. In addition, doctors and parents of individuals who want to become doctors are worried about allowing their children to enter this profession because they fear violence.³⁸

We found a significant relationship between the frequency

of violence and female gender, age group, title, subspecialization status, working style, and working duration in ICUs and violence. In particular, female physicians, physicians who have worked in intensive care for 1–4 years, physicians in the process of subspecialty training in intensive care, and physicians working both on day and night shifts are more likely to experience violence. Security precautions such as restrictions and checkpoints at the entrance to ICUs reduce the occurrence of violence against physicians working in ICUs.

Conflicts of interest. None declared

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