

Research Paper

Violence Against Medical Assistants by Colleagues at Educational Hospitals and Its Effects on the Quality of Education



Mahdi Chinichian¹ , Abbas Aghabiklooei^{2*} , Ramin Mehrdad³ , Gholamreza Pouryaghoub³ , Milad Orouji²

1. Department of Occupational Medicine, Tehran University of Medical Sciences, Tehran, Iran.

2. Department of Forensic Medicine, Firoozgar Hospital, Iran University of Medical Sciences, Tehran, Iran.

3. Center for Research on Occupational Diseases, Tehran University of Medical Sciences, Tehran, Iran.



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ABSTRACT

Background: Violence against medical assistants (residents) by colleagues is a serious problem at educational hospitals that has not been sufficiently examined. The present study was conducted to determine the prevalence, risk factors, and types of violence perpetrated by colleagues against medical assistants.

Methods: In a cross-sectional study conducted at two large tertiary referral educational hospitals, the study questionnaires were distributed among 480 healthcare professionals to investigate their experiences of violence.

Results: Of 280 responders, 162 residents (57.9%) reported a history of violence or aggression. Of these, nearly 50% had experienced pure psychological violence, and 16.7% had been physically abused. The prevalence of victimization was high among the residents of the neurosurgery, orthopedic, and obstetric departments (90%, 88%, and 85%, respectively).

Conclusion: Harassment experience was more common among the surgical residents than the internal medicine residents because of the former's high level of work stress. Senior residents or fellowship residents were the main abusers. Losing professional self-esteem, decreasing job satisfaction, and dropping out of school were the main adverse outcomes of violence experienced by the victims.

* Corresponding Author:

Abbas Aghabiklooei

Address: Department of Forensic Medicine, Firoozgar Hospital, Iran University of Medical Sciences, Tehran, Iran.

Tel: +98 (912) 3083847

E-mail: aghabikloo.a@iums.ac.ir ; aghabikloo@yahoo.com

1. Introduction

Healthcare violence is a major problem worldwide with adverse outcomes for the safety and well-being of healthcare workers and workplace activities [1]. As a general rule, all healthcare personnel is constantly at risk of being the victim of violence by patients or their relatives. Healthcare professionals are highly vulnerable to becoming the victim of violence by patients, the patients' relatives, and colleagues. Workplace violence is a common problem in healthcare systems, and all healthcare workers are exposed to workplace violence [2-5]. The European Commission definition, which has been adopted by the International Labor Organization (ILO), International Council of Nurses (ICN), the World Health Organization (WHO), and Public Services International (PSI) joint program on workplace violence in the health sector, defines workplace violence as "incidents in which the staff is explicitly or implicitly abused, threatened or assaulted in the circumstances related to their work, including commuting to and from work" [6]. The three broad types of workplace violence defined by the California Occupational Safety and Health Administration (CAL-OSHA) are as follows: type I) the assailant has no legitimate relationship to the workplace, and the primary object of the attack is cash or some other valuable commodity, type II) it involves some form of assault by a person who is either the recipient or the object of a service provided by the affected or the victimized workplace, and type III) an assault is perpetrated by another employee, a supervisor, or an acquaintance of the worker [7]. The most frequent perpetrators of workplace violence in healthcare environments are patients and peers (type II) [8, 9]. Although colleagues are not the primary source of workplace violence, many studies have reported workplace violence among healthcare workers (type III) [4]. Junior residents are at a higher risk as inexperienced healthcare providers [10]. This study was designed to investigate the prevalence of workplace violence by any of the medical staff against the residents and vice versa.

2. Materials and Methods

This cross-sectional study investigates interpersonal violence among the medical staff of two tertiary referral educational hospitals, namely Firoozgar Hospital and Hazrat Rasoul Hospital, which had a total of 1006 clinical faculty members and 480 medical assistants in Tehran City Iran, in 2018-2019. All residents were included in the study and were asked about their experi-

ences of being subjected to violence or aggression by their colleagues using the adapted WHO/ILO questionnaire (Workplace Violence in the Health Sector Questionnaire) developed in 2003 by ILO, ICN, WHO, and PSI. The data collection sheet was tailored for this study and included demographic information (not included in the original questionnaire), such as year of residency and specialty, while a few redundant queries about the line of work and workplace were excluded. The participating residents were also provided with a separate sheet containing 12 additional questions about violence perpetrated by the respondent against other staff members. An extra data collection sheet was also provided, which inquired about violence perpetrated by the respondents against other medical staff.

Before the participants were asked to respond to the questions, they were explained the different types of workplace violence and their classification into the two major psychological and physical violence categories. Psychological violence is defined as "any intentional use of physical force or power, against another person or group resulting in harm to physical, mental, spiritual, moral or social well-being, such as verbal abuse, bullying, and harassment." Physical violence is defined as "any use of physical force against another person resulting in physical or psychological harm, such as beating, kicking, slapping, pushing, biting, and pinching." Any form of physical or sexual harassment is also considered physical violence. This study aimed to assess violence among medical staff, which was explained to the participants. Therefore, they were asked to exclude violence from other sources, such as patients and their relatives.

A physician contacted all the residents of both hospitals in person to receive the questionnaire. To encourage the residents to participate in the survey, we guaranteed that their data would remain confidential. Therefore, the participants were not asked to register their names or identification codes in the questionnaires. We divided the residents' specialties into two surgical and non-surgical categories. The surgical residencies included orthopedics, general surgery, neurosurgery, gynecology, otolaryngology, and ophthalmology. Any other program was considered non-surgical. The examined variables included the type of violence (psychological or physical), age, gender, marital status, specialty, and whether the respondent was a first-year resident.

Statistical analysis

International Business Machines (IBM) of Statistical Package for the Social Sciences (SPSS) statistics soft-

ware, version 25.0, was used to analyze the data. First, the study population was described using mean and standard deviations for the quantitative variables and frequency and percentage for the qualitative variables. Then, the respondents were divided into two groups, including those who were subjected to violence and another group who were not victims of violence in this context. Then, they were compared with each other. Quantitative variables with a normal distribution were compared using an independent t test, and other quantitative variables were compared using The Mann-Whitney U test. The qualitative variables were compared using a Chi-square test. P values less than 0.05 were considered statistically significant.

3. Results

Two hundred and eighty of 480 medical assistants in the surveyed hospitals answered the questionnaire (response rate: 58%). Their mean age was 31.4 years (minimum: 25, maximum: 49). The mean years of experience as a general practitioner (GP) before the residency were 3.9 years (with a range of 0-20 years). The male to female gender ratios was almost equal (1/1). A total of 56.1% of the participants were married, as shown in Table 1.

Of the 280 responders, 162 cases (57.9%) had a history of violence or aggression in the hospital area by their colleagues, including 140 (86.4%) cases of psychological violence and 47 cases (16.8%) of physical violence. Also, 235 out of the 480 residents (83.9%) were worried about workplace violence by colleagues.

Of 162 participants, 81 residents (50%) experienced psychological violence, 27 (16.6%) experienced physical violence, and 54 (33.3%) provided a history of psychological and physical violence by a colleague. A total of 140 residents (86%) had undergone psychological and physical violence by their colleagues more than once (with a mean of 11.06 times).

Table 2 presents the distribution of the different types of psychological violence experienced by the residents. Of 162 residents with a positive history of violence or aggression, the highest prevalence of violence occurred among the surgery residents, especially in the neurosurgery, orthopedic, and obstetric departments (90%, 88%, and 85%, respectively). Figure 1 shows the relative frequency of violence in surgery assistants compared to internal residents (non-surgical assistants) in the last 12 months.

4. Discussion

In this study, 58% of the surveyed cases had a history of violence by other colleagues. A systematic review showed that more than 90% of emergency medical staff had been exposed to at least one type of workplace violence [11]. A cross-sectional study of 5874 healthcare workers in multiple educational hospitals in 2011 in Iran showed the prevalence of psychological violence to be nearly 75% [5]. Another study in 2015 in Turkey, conducted among physicians, showed an 85% prevalence of violence over one year [12]. According to that study, residents had the highest violence exposure rate. Fifty-eight percent of the residents who participated in this study had exposed to at least one kind of workplace violence from their colleagues; half of them had been experienced psychological violence, and 70% had suffered from physical abuse. Many factors, such as hospital overcrowding, contribute to violence among healthcare workers. This phenomenon leads to a vicious cycle of violence between medical residents and negatively affects the overall quality of education.

Although there are numerous studies on workplace violence among healthcare staff, according to these researchers' knowledge, there is only one study about workplace violence among medical residents from different specialties conducted in Turkey [13]. There are also some smaller-scale studies on particular populations, such as emergency medicine residents [14-16]. The present study is the first study conducted on inter-personnel workplace violence among medical residents in Iran.

According to the present findings, medical residents experienced a high prevalence of inter-personnel violence. While no significant difference was observed between the genders regarding psychological violence, the prevalence of physical violence was significantly higher in men. Various other reports also confirm this finding [17-19]. Some specialties, such as orthopedic surgery, are male-dominated, and the prevalence of inter-personnel physical violence is higher in these departments. The presence of female residents seems to reduce the problem of physical workplace violence in hospital departments. Despite the presumption that older residents or medical staff have more experience in communication and tend to perpetrate less workplace violence than younger residents, neither age nor marital status was a predictor of psychological or physical violence. No correlation was observed between the length of employment in our cases as a general practitioner (whether more or less than one year) and the rate of workplace violence.

Table 1. Demographic and experience characteristics of the medical residents

| Variables | | | Physical Violence | | | Psychological Violence | | |
|----------------------------|----------|-----|-------------------|-----|------|------------------------|-----|------|
| | | | Yes | No | P | Yes | No | P |
| Age (y) | ≤30 | 105 | 17 (16.2) | 88 | 0.84 | 49 (46.7) | 56 | 0.39 |
| | >30 | 175 | 30 (17.1) | 145 | | 91 (52.0) | 84 | |
| Gender | Male | 137 | 11 (7.8) | 130 | 0.00 | 63 (46.0) | 74 | 0.19 |
| | Female | 141 | 36 (26.3) | 101 | | 76 (53.9) | 65 | |
| Marital status | Single | 119 | 24 (20.2) | 95 | 0.28 | 63 (52.9) | 56 | 0.36 |
| | Married | 152 | 23 (15.1) | 129 | | 72 (47.4) | 80 | |
| Freshman resident | Yes | 119 | 21 (17.6) | 98 | 0.74 | 54 (45.4) | 65 | 0.18 |
| | No | 161 | 26 (16.1) | 135 | | 86 (53.4) | 75 | |
| Work experience as GP >1 y | Yes | 154 | 25 (16.2) | 129 | 0.62 | 31 (49.2) | 32 | 0.95 |
| | No | 63 | 12 (19.0) | 51 | | 75 (48.7) | 79 | |
| Specialty | Surgical | 94 | 25 (26.6) | 69 | 0.00 | 61 (64.9) | 33 | 0.00 |
| | Medical | 186 | 22 (11.8) | 164 | | 79 (42.5) | 107 | |

GP: General practitioner.

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Surgical residents experience a more stressful work environment, which causes more frequent inter-personnel tensions and seems to be the main reason for this group's higher prevalence of workplace violence. Longer work shifts may be another reason for this specialty's higher prevalence of workplace violence. In addition, some surgical residents presume that violence is a part of their daily work and therefore do not hesitate to use it.

Although some surveyed residents had already worked as general practitioners for ten years or more, many others had immediately entered the residency program

from school with no prior work experience. The present study assessed the association between workplace violence (psychological or physical) and age, gender, marital status, specialty, workplace (hospital of service), and whether the respondent was a first-year resident. An association was observed between specialty and physical and psychological violence, but gender was associated only with physical violence. Other variables were not associated with physical or psychological violence.

In educational hospitals, there are strict, written, and unwritten rules for the grading of residents. Higher-level

Table 2. Types of psychological violence experienced by the medical residents (n=140)

| Variables | Frequency | Percentage |
|-------------|-----------|------------|
| Abuse | 23 | 16.4 |
| Bullying | 30 | 21.4 |
| Harassment | 15 | 10.7 |
| Threat | 12 | 8.6 |
| Mixed type* | 56 | 40.0 |
| Other | 3 | 2.1 |

* Mixed type indicates a combination of 2 or more types.

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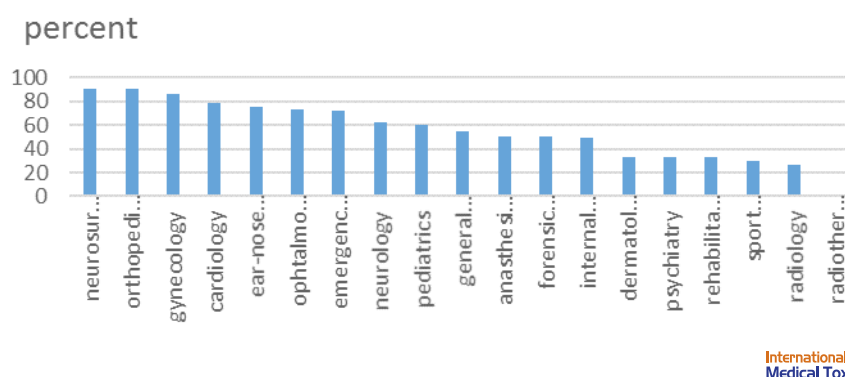
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Figure 1. The relative frequency of violence against surgical compared to non-surgical residents

residents always supervise the work of lower-level residents. This hierarchy can increase the chance of abuse and other types of workplace violence from higher-level residents against lower-level residents. The most common sources of violence among first-year residents were higher-level residents. Despite the general belief that workplace violence is more common among first-year residents, the prevalence of workplace violence by colleagues was not different between the freshman and senior residents. Nonetheless, another study comparing junior residents (years 1-4) with senior residents (years 5 and above) showed a higher prevalence of workplace violence among junior residents [20].

Healthcare professionals are especially vulnerable to assaults [21], and personal relationships constitute the culprit of most common instances of violence experienced in the hospital setting [22]. Violence affects one in each two healthcare professionals around the world. The possibility of exposure to violence is higher in nurses than in medical residents [23].

It should be noted that most of the residency programs in Iran last four years. The decrease in workplace violence among senior residents may be related to the longer period of work skills training. However, further investigations are needed to find and explain the correlation between employment duration and workplace violence avoidance.

The high prevalence of violence among the residents and their colleagues shows that although patients and their relatives are the most common sources of workplace violence, the prevalence of inter-personnel workplace violence is not minor and can affect the work environment in the long term. In the cited study in Turkey, about two-thirds of the residents had experienced at least one type of workplace violence during the last 12 months, 36% from the academic staff and 21% from the

other residents [13]. The prevalence of residents reporting self-perpetuated violence against other staff members was 8.9%. Residents seemed unwilling to admit that their actions were violent and thought that some of their violent acts were justified in dealing with colleagues or supervising them.

Psychological violence

The main sources of psychological violence were residents (42%), most of whom worked in the same department as the victims (90%), and were mostly seniors to the victims (86%). Faculty members (nearly 20%) and nurses (7%) were other sources of violence. Violence perpetrated by the respondents towards other medical staff was reported by 10% of the medical residents, and only one of them committed physical violence. The most common violence perpetrators (60%) were fellowship residents.

Twenty-five residents (8.9%) declared that they had been violent toward their colleagues at least once in the last year. Most of the violence perpetrators (60%) were fellowship residents. Surprisingly, 23 of these violent perpetrators (more than 90%) were victims of violence, indicating the vicious cycle of chronic violence. The number of men and women who perpetrated violence was equal. Increased stress levels in the residents concerning the patients or relatives as well as the other residents and clinic overcrowding were the main factors involved in the increased incidence of violence among colleagues.

Hospital violence adversely affects the residents' performance [21]. The conflict between education and treatment of patients is another cause of interpersonal workplace violence among healthcare workers in educational hospitals. This workplace violence can cause additional tension and problems among residents, adversely affect-

ing their learning process and treatment of patients. The negative consequences of violence include the loss of professional self-esteem, loss of job satisfaction, trauma, disability, and increased litigation costs. In this study, 23% of the cases believed that threatening behavior targeting them decreased their ability to continue studying science and adversely affected their knowledge acquisition. In most cases, the newer medical residents (freshman) were bullied by their senior colleagues due to the power imbalance. Creating an effective line of communication between the educational deputy and residents, promoting awareness, and providing further training on these subjects can be the main policies in educational hospitals to help prevent harassment.

Physical violence

Of 162 residents who experienced violence, nearly 30% experienced physical violence associated with psychological abuse from their colleagues. Four residents were physically assaulted ten times each. The mean frequency of exposure to physical violence was 3 times, and the median was 1.5 times. A total of 103 residents (37%) reported witnessing physical violence from one colleague against another colleague at least once, with a mean of 4.4 times. The incidence of physical violence was higher among the male residents ($P=0.00$). However, no differences were observed between the single and married residents. Also, no differences were observed in the prevalence of workplace violence between the day and night shift personnel. The prevalence of workplace violence in the early morning or late night shifts was similar to day shifts.

The most prevalent sources of physical violence against the residents were other fellowship residents ($n=22$), especially the more senior fellows. Other sources included faculty members, nurses, and other healthcare workers. While just one resident reported a serious injury from violence, 36% of the medical residents reported that an instance of violence against them prevented them from caring for their patients.

Study limitations

A major limitation of this study was the low response rate of the residents. Lack of time to respond, considering workplace violence to be an insignificant problem (especially in surgical and similar departments), and the belief that these kinds of studies are ineffective, maybe the reasons for the poor response rate. The cross-sectional and self-report nature of the study was another limitation. Indeed, a workplace violence registry system should be

deployed for more detailed studies on workplace violence. Another limitation was the higher response rate among the affected residents who were more sensitive to the topic; it seems that victims of violence are more interested in answering such a questionnaire.

5. Conclusion

Although the main perpetrators of workplace violence in hospitals and healthcare centers have been patients and their relatives, the prevalence of inter-personnel workplace violence among residents and other medical staff is also strikingly high. Since medical staff spends much more time in the hospital or healthcare center and must maintain a closer relationship with each other than with the patients, most of them have a much shorter stay in the hospital. Therefore their relationship with the staff is less intensive. Violence should be prevented by the hospital organization and by holding workshops on stress control for residents. Avoiding clinic and hospital overcrowding, enforcing visiting hours, and training staff adequately in dealing with violent people can contribute to preventing violence.

Ethical Considerations

Compliance with ethical guidelines

This study has been approved by the Ethics Committee of the Iran University of Medical Sciences (REC 1396.31887). All participants were informed about the aim of the study and voluntarily agreed to fill out the questionnaire.

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Authors' contributions

All authors equally contributed to preparing this article.

Conflict of interest

The authors declared no conflict of interest.

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