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Violence Against Healthcare Professionals: A Retrospective Review of a University Hospital in Turkey

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Abstract

Objective
Workplace violence (WPV) against healthcare professionals (HCPs) is increasing globally. This study retrospectively examines White Code Records (WCR) of WPV cases reported at a university hospital in Turkey.

Material and Method
The study analyzed 106 WCR cases recorded between January 2018 and September 2024. Data included the content and timing of violent incidents, along with demographic details of HCPs and perpetrators. Descriptive statistics, Monte-Carlo simulation, and Fisher's exact test were used to understand the differences by years and logistic regression was used to analyze the conditions affecting the type of violence.

Results
The analysis revealed that the highest incidence of violence occurred in 2022 (25.5%), coinciding with the post-COVID-19 period. Verbal violence was predominant, comprising 83% of cases. WPV incidents were most frequently reported in outpatient polyclinics and imaging departments (42.5%). More than half of the cases (55.7%) occurred in the second half of the year, with 68.9% taking place during daytime hours. Behavioral problems of perpetrators were identified as the leading cause (39.6%) of violent events. Healthcare professionals involved in the incidents had an average age of 31 ± 6.55 years, with 61.3% being female. A majority (67.9%) of HCPs had postgraduate education, with physicians constituting a significant proportion. The average age of perpetrators was 40.1 ± 12.2 years, and 68.9% were male. Notably, 67% of the perpetrators were relatives of patients. Statistically significant year-by-year variations were observed in the type of violence reported. Variables such as daytime incidents, HCP education levels, and perpetrator gender significantly influenced the type of violence ($p < 0.05$).

Conclusion
The findings reveal key trends in WPV in healthcare, with incidents primarily caused by behavioral issues of male relatives of patients. Most affected HCPs are young, female, and physicians. This suggests that gender norms influence violence in healthcare.

Keywords: Workplace violence, verbal violence, healthcare workers, physicians, nurses

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Introduction

The prevalence of workplace violence (WPV) against healthcare professionals (HCPs) remains alarmingly high, posing a significant threat to public health (1,2). WPV is the use of force against an individual or group of people in the workplace, resulting in physical and psychological injury or even death (3). These may be verbal, psychological, or even physical. HCPs may become exposed to WPV because of the stressful and chaotic healthcare environment. It is imperative to ensure that HCPs have a safe and secure working environment (4). Research shows that a significant portion of WPV in the healthcare sector goes unreported (5,6), suggesting that the incidents observed represent only a fraction of the overall problem, akin to the tip of an iceberg.

While overall WPV may be declining in the US, there is a concerning trend of increasing WPV in the healthcare sector (7). One in five health professionals worldwide is subjected to physical violence each year, and at least two are subjected to verbal violence (8,9). WPV can have several negative impacts on the physical and mental health, job satisfaction, and performance of HCPs (10). WPV can have a serious consequence on the physical and mental health of HCPs and the quality of care provided to patients (11).

Over the years, there has been a consistent and steady growth in research on WPV against HCPs worldwide, spanning from 1992 to 2019. This growth is evident in both the increasing number of research documents and the corresponding citations (12). Furthermore, the COVID-19 outbreak, which was declared by the World Health Organization (WHO) in February 2020, increased the workload of HCPs and exacerbated violence against them due to an influx of anxious and concerned people (13-15).

The prevalence of WPV among HCPs in emergency services, polyclinics/waiting rooms, geriatric units, and psychiatric departments is notably high (16,17). Several factors contribute to violence against HCPs in various settings. Sun et al. (2022) reported that gender differences played a role in WPV among Chinese healthcare providers. The study results show that females were at a higher risk of experiencing WPV due to their gender roles. On the other hand, many studies showed that nurses were more likely to be victims of violence than other HCPs (5,18,19). Studies showed that nurses were at risk of verbal and physical violence and that incidents were not mostly reported (20).

Employers need to take proactive measures to prevent WPV and to provide support to victims. Understanding the factors associated with WPV is essential to prevent and mitigate its consequences (21). One solution is to improve communication between patients and HCPs (22). In addition, people with underlying mental and substance use disorders may have a higher incidence of violent behavior. Therefore, frontline clinicians need to be knowledgeable and competent in the management of patients with aggressive behavior to alleviate the condition and prevent or reduce violence (23). Systematic reviews of studies conducted since 1992 suggest that training techniques for dealing with mostly belligerent patients are now the standard practice (24).

Implementing measures to prevent WPV is important for healthcare facilities. To minimize WPV against HCPs, more safety programs and training need to be implemented as well as efficient reporting systems and a policy of zero tolerance (25). In addition to efforts to prevent or reduce physical violence against HCPs, non-physical violence should be given importance and focused on patient perpetrators (26). An increasing number of countries are implementing stricter penalties for perpetrators of WPV against HCPs (27).

Workplace violence contributes significantly to absenteeism among HCPs because of injuries sustained in violent incidents or fear of personal safety. In addition, some workers may leave their jobs out of fear for their safety, leading to higher turnover rates in workplaces where WPV is common (28). The quality of patient care is negatively affected by absenteeism and high turnover, as they result in understaffing, increased workloads for those who are still on the job and reduced quality of care.

Globally, there is a concerning observation of high levels of violence against HCPs in Turkey. The incidence of violence directed at HCPs in Turkey is steadily increasing each year, leading to adverse psychological and physical effects on those exposed to such violence (29). Due to the increase in cases of violence, it is a necessity to take measures both in health institutions and at the national level. As part of these measures, the Ministry of Health first introduced the "White Code Application" in all hospitals in the country in 2011 (30,31). The White Code Records (WCR) is a system that is activated by HCPs. Providing legal assistance to HCPs while ensuring their safety is the main purpose of this system. In the White Code process, violence against HCPs is evaluated within the scope of a public case. At the same time, the Ministry of Health aims to guide the fight against violence by collecting detailed data on violence (32).

As of today, WPV remains a persistent and unresolved issue, primarily due to factors such as using social media to target HCPs and the absence of sufficient deterrence against such crimes. In addition to legal measures, the importance of scientific approaches in addressing this problem has been increasingly recognized. By conducting an in-depth analysis of violence cases and evaluating the situation qualitatively based on the results obtained, this study aims to shed light on the development of preventive regulations. The study focuses on a retrospective evaluation of quantitative data derived from WCR in a university hospital.

Materıal and Method

Design and Participants

In this retrospective study, we conducted an analysis of WCR documenting incidents of WPV perpetrated by patients and their relatives against HCPs in a university hospital. All White Code notifications reported during the seven-year study period were included in this study. A total of 106 cases of violence were identified between January 2018 and September 2024. No sampling was performed, as the study aimed to include all reported cases of violence. The sample size was calculated using the G*POWER 3.1 statistical program. Based on a medium effect size (0.1), a significance level of 0.05, and a power of 80%, the required sample size for regression analysis was determined to be 100.

Data Collection

A data collection form prepared by the researchers was used in this study. Through this data collection form, the files received from the White Code Unit were analyzed. The data collection form included demographic information about HCPs and perpetrators of violence, and the content, causes, and details of the violence (year, month, time, department). The causes of violence were identified by integrating the categories available in the Turkish Ministry of Health's White Code data system, following the relevant literature (33,34). Inappropriate demands encompassed requests for procedures with incomplete documentation demands for prescription medication or reports, and requests for examinations or procedures outside of scheduled appointment times. Under the service complaints category, dissatisfaction with treatment, demands for a different physician, and requests for faster treatment or procedures were included. The behavioral issues of the perpetrators involved threats, bullying, insults, swearing, and attempts at physical violence. Additionally, actions such as visiting outside of accompanying hours, unauthorized filming or photographing with hidden cameras, and entering restricted areas were categorized as rule violations.

Data Analysis

IBM SPSS Statistics version 24.0 was used for data analyses. Descriptive statistics, Fisher’s exact test with Monte-Carlo simulation, and logistic regression were employed to compare the data. For Fisher's exact test, Cramér's V coefficient was calculated to assess the strength of the association between variables (35). Statistical analyses were conducted with a 95% confidence interval (CI), and significance was determined at $p<0.05$.

Results

When the 106 notifications from the WCR were analyzed according to years, there were five (4.7%) cases of violence in 2018, 17 (16%) in 2019, three (2.8%) in 2020, 13 (12.3%) in 2021, 27 (25.5%) in 2022, 22 (20.8%) in 2023, and 19 (17.9%) in 2024. According to the type of violence from the WCR, 83% (n=88) were verbal violence and 17% (n=18) were physical violence. Psychological violence was excluded from this study, as it was not defined in the records. During the study period, four individuals experienced violence for the second time as victims. According to the September 2024 data, there were 1154 HCPs in the hospital, and the rate of violence experienced by HCPs in the last year was 2.34%. The highest number of WCRs occurred in the second half of the year and accounted for 55.7% (n=59) of the incidents. Additionally, a significant majority of incidents, 68.9% (n=73), took place during regular working hours from 08.00 to 16.00. The study identified polyclinic and imaging units as the most common areas of violence, accounting for 42.5% (n=45) of the reported cases. Behavioral problems of the perpetrators (39.6%) were the most common cause of WPV incidents (Table 1).
The sociodemographic characteristics of the HCPs and perpetrators are shown in Table 2. According to the data, the mean age of HCPs affected by WPV was 31±6.55 years. Among the victims, 65 (61.3%) were female, 72 (67.9%) had postgraduate education, and 72 (67.9%) were physicians. Regarding the perpetrators of violence, the mean age was 40.1±12.2, 73 (68.9%) were male, and 71 (67%) were patients’ relatives.

Table 3 shows whether there is a significant difference between physical or verbal violence in different years. There is a statistically significant difference in the incidence of physical violence between 2021 and 2022, as well as between 2022 and 2024 ($p<0.05$). Specifically, 5 cases were reported in 2021, none

Table 1 Descriptive Statistics of Workplace Violence

Characteristics	Number (n)	Percentage (%)
Year		
2018	5	4.7
2019	17	16
2020	3	2.8
2021	13	12.3
2022	27	25.5
2023	22	20.8
2024	19	17.9
Type of Violence		
Physical	18	17
Verbal	88	83
Half of The Year		
1st (Jan-Jun)	47	44.3
2nd (Jul-Dec)	59	55.7
Shift Period		
08 am -16 pm	73	68.9
16 pm -08 am	33	31.1
Area of healthcare		
Emergency	40	37.7
Clinics	21	19.8
Polyclinic and Imaging	45	42.5
WPV Causes		
Inappropriate demand	21	19.8
Complaint about service	22	20.8
Perpetrators' behavioral problems	42	39.6
Disobeying the rules	21	19.8

in 2022, and 6 cases in 2024. Similarly, there is a significant difference in verbal violence between 2021 and 2022 and between 2022 and 2024 ($p<0.05$). The significant difference corresponds to a high effect size (0.402).

The results of the logistic regression regarding certain variables that may influence the type of violence directed toward HCPs are presented in Table 4. In the analysis, the reference groups were defined as: experiencing verbal violence for the type of violence variable, the year 2024 for the year variable, daytime for the shift period variable, second half of the year for the quarter of the year variable, being over the age of 30 for HCPs age variable, being male for HCPs gender variable, being a nurse for the job position variable, having postgraduate education for the education level variable, being over the age of 30 for the perpetrator's age variable, being male for the perpetrator's gender variable, and being a patient's relative. All assessments were made about these reference groups. According to logistic regression analysis, it was found that experiencing violence during the day shift, the educational level of the HCPs, and the gender

Table 2 Descriptive Statistics of Healthcare Professionals and Perpetrators

Characteristics	Number (n)	Percentage (%)
HCPs' Age		
31±6.55 (Minimum= 20, Maximum= 55)		
<30	70	66
≥31	36	34
HCPs' Gender		
Female	65	61.3
Male	41	38.7
HCPs' Educational Status		
Undergraduate level	34	32.1
Postgraduate level	72	67.9
HCPs' Worker Role		
Physician	72	67.9
Nurse	18	17
Other	16	15.1
Perpetrators' Age		
40.1±12.2 (Minimum= 20, Maximum = 69)		
<30	27	25.5
≥31	79	74.5
Perpetrators' Gender		
Female	33	31.1
Male	73	68.9
Perpetrators' Role		
Patient	35	33
Patient' relative	71	67

Table 3 Exploring Differences in Physical and Verbal Violence between Different Years

Violence Type		Years							Total	X^2	p
		2018	2019	2020	2021	2022	2023	2024			
Physical Violence	Frequency (f)	$0_{a, b, c}$	$5_{a, b, c}$	$0_{a, b, c}$	5_{c}	0_{b}	$2_{a, b, c}$	$6_{a, c}$	18	16.904	**0.004**
	Percentage (%)	0	27.8	0	27.8	0	11.1	33.3	100		
	Year (%)	0	29.4	0	38.5	0.0	9.1	31.6	17		
Verbal Violence	Frequency (f)	$5_{a, b, c}$	$12_{a, b, c}$	$3_{a, b, c}$	8_{c}	27_{b}	$20_{a, b, c}$	$13_{a, c}$	88		
	Percentage (%)	5.7	13.6	3.4	9.1	30.7	22.7	14.8	100		
	Year (%)	100	70.6	100	61.5	100	90.9	68.4	83		

a, b, c: Significant difference indicator between cells, there is a significant difference between cells that do not share the same character.

Table 4 The Relationship Between the Type of Violence and Various Variables

Characteristics	B	S.E.	p	Exp(B)	95% CI for EXP(B)	
					Lower	Upper
Year	-.300	.199	.132	.741	.501	1.095
Shift period	1.362	.682	.046	3.903	1.026	14.852
Half of the year	.471	.662	.477	1.602	.438	5.866
HCPs' age group	.548	.674	.417	1.729	.461	6.486
HCPs' gender	.481	.630	.446	1.617	.470	5.561
HCPs' worker role	.515	.451	.254	1.673	.691	4.053
HCPs' educational status	2.237	1.046	.032	9.367	1.205	72.807
Perpetrators' age group	.933	.676	.168	2.542	.675	9.571
Perpetrators' gender	-2.652	1.115	.017	.070	.008	.627
Perpetrators' role	.517	.633	.414	1.677	.485	5.803

of the perpetrator had a significant effect on the type of violence ($p<0.05$). If violence is experienced during the daytime shift, the probability of being subjected to verbal violence increases approximately four times compared to physical violence (Odds Ratio: 3.903). If HCPs had a postgraduate education level, the likelihood of experiencing verbal violence compared to physical violence increased by nine times (Odds Ratio: 9.367). If the perpetrator was male, the likelihood of the HCPs experiencing physical violence, compared to verbal violence, increased by 14 times (Odds Ratio: 14.285).

Discussion

Workplace violence against HCPs has been widely recognized as a significant public health issue (12). Despite this recognition, violence against HCPs remains both more prevalent and underreported in surveys conducted in Turkey and globally (3,32,36). Furthermore, some studies from Turkish hospitals have reported higher prevalence rates of violence (30,32,37–40).

In a comprehensive study conducted across 30 countries, the rate of physical violence against HCPs was found to be 19.3%. In contrast, our study observed a slightly lower but comparable rate of 17%. It is known that some demographic variables such as education level are among the important factors affecting individuals' tendency to violence (41). According to data from the Turkish Statistical Institute, the prevalence of physical violence increases as the level of education decreases. Notably, Çanakkale province, where this study was conducted, has the second-highest literacy rate in Turkey (42,43). Additionally, the West Marmara region, which includes Çanakkale, is among the regions with the lowest rates of physical violence (42). These factors may explain why the observed violence rates in this study are lower compared to those reported in other studies.

The patriarchal belief in the superiority of male over female, reinforced by cultural norms, significantly increases the likelihood of male resorting to acts of violence (44). Consistent with this, previous studies have demonstrated that males are more prone to engaging in violent behaviors due to gender norms (45,46). The findings of this study indicate that when the perpetrator is male, the likelihood of the HCPs experiencing physical violence, rather than verbal violence increases by 14 times (Table 4). Although no significant association was found between the gender of HCPs and the type of violence they experienced in this study, some studies have suggested that male HCPs are at greater risk of physical assault (47).

Workplace violence among HCPs was primarily directed toward females (61.3%). Although females were more frequently victimized by violence, as observed in our findings, gender did not have a statistically significant impact on WPV (7). However, the risk of WPV is thought to be higher in nursing, a profession predominantly occupied by females (48).

Similarly, one study reported that female physicians have a lower sense of security compared to male physicians (49). While the influence of Turkey's patriarchal societal structure is considered a potential factor contributing WPV, it is essential to note that the findings from the European Working Conditions Survey (EWCTS) 2021, encompassing 36 European countries, also highlight that female are more at risk of experiencing WPV (50).

Looking at violence by year, there was a decrease from 2020 with the COVID-19 pandemic beginning, but the acceleration, which increased from 2021, reached a record level in 2022 (n=27). There is also evidence from some studies that there was an increase in WPV against HCPs after the COVID-19 pandemic (4,15,28). For example, a meta-analysis found that nurses were particularly vulnerable during the pandemic, facing an overall prevalence of violence of 47% (13). In this study, physical violence cases increased from 5 in 2021 to zero in 2022 and 6 in 2024 ($p<0.05$). Similarly, verbal violence cases increased from 8 in 2021 to 27 in 2022 and decreased to 13 in 2024 ($p<0.05$). It may be thought that this situation may be related to COVID-19 and that verbal violence was resorted to by avoiding physical contact while the effects of the pandemic continued.

When patients and their relatives are dissatisfied with treatment, they often resort to threats and sometimes even violence (51). In this study, behavioral problems of perpetrators were identified as the most common source of violence. Perpetrators of violence against HCPs often exhibit behavioral problems, as highlighted in various studies. Research indicates that these perpetrators frequently have psychiatric disorders, anger management issues, and impulsivity. For example, a study found that 50% of individuals who committed violence against HCPs were diagnosed with a psychiatric disorder. Additionally, these perpetrators showed significantly higher levels of anger and impulsiveness compared to the control group (52). In this study, the average age of the perpetrators of violence was significantly higher than that of the HCPs. The evidence indicates that older perpetrators were responsible for perpetrating violence against the HCPs.

Most incidents of WPV against HCPs occurred during the second half of the year (55.7%) and daytime hours (68.9%). This pattern may be attributed to the increased presence of patients and their relatives during these periods. Other studies have reported similar findings supporting this observation (53). Furthermore, violence was most frequently reported in emergency departments, where HCPs are known to face a higher risk of violence compared to the general population (30,54). In this study, nearly half of the reported incidents occurred in outpatient polyclinics and imaging areas (42.5%), followed by the emergency department, which accounted for 37.7%.

Some publications that address violence against HCPs as an occupational problem, as well as publications, such as our study, that collectively examine violence in the healthcare sector. In this study, physicians were identified as the group most frequently exposed to violence, accounting for 67.9% of the reported incidents. Remarkably, this finding aligns with other studies conducted in Turkey, which also reported physicians as the group most vulnerable to WPV (30,32,37–40). Additionally, a recent review of 78 studies reported that nurses experienced more psychological violence than physicians (9,55).

Limitations

This study has some limitations. The violence cases in this study consist only of reported cases. In addition, types of violence other than physical and verbal violence were not reported. For example, psychological violence. Therefore, different types of violence can be examined in future studies. Finally, the WCR of a university hospital was analyzed in our study. Therefore, it is not appropriate to generalize the results to all of Turkey.

Conclusion

The findings reveal key trends in WPV in healthcare, found that violence was most common against physicians, that physical violence was less likely to occur than verbal violence, and that incidents of violence increased as the pandemic progressed. WPV was most prevalent in outpatient polyclinics and imaging areas, particularly during the second half of the year and during the daytime when the hospital experienced its highest activity and patient flow. Although female was more likely to experience violence, there was no correlation between gender, educational level, and physical violence. However, all perpetrators of physical violence were male, and this was statistically significant. The cases of violence were mostly caused by behavioural problems of male relatives of patients. Most of the HCPs exposed to violence were young female physicians, suggesting that gender norms—particularly patriarchal attitudes—significantly impact violence in health services.

These findings may help healthcare facilities consider a few down-to-earth measures to reduce violence.

One step is strengthening psychosocial support and security efforts, especially for female HCPs who face higher risks. It can also be helpful to organize training sessions on communication, conflict resolution, and personal safety so that staff feel more confident when dealing with difficult situations. Clear-cut rules against violence and straightforward reporting and follow-up procedures can encourage everyone to stay accountable. Additionally, hospitals might benefit from collaborating with community groups and local authorities to highlight the consequences of aggressive behavior—not just for HCPs but also for patient care in general. Finally, teaching patients and their relatives about respectful communication and the harms of violence could help lower tensions and change expectations. By weaving these approaches together, healthcare organizations stand a better chance of creating a safer, more supportive environment for everyone involved.

Conflict of Interest Statement
There is no conflict of interest.

Ethical Approval
The Ethics Committee of Çanakkale Onsekiz Mart University Institute of Postgraduate Education granted approval for this clinical research on April 28, 2022, with decision number 09/52. HCPs who experienced violence were informed that their data might be used for scientific research, and explicit consent was obtained from them. In compliance with GDPR guidelines, all personal information was stripped from the data and anonymized to ensure confidentiality. The study was conducted in accordance with the principles set forth in the Declaration of Helsinki.

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Availability of Data and Materials
Data are available on request due to privacy or other restrictions.

Authors Contributions
AK: Concept, Literature Review, Analysis and Interpretation, Article Writing

MAO: Concept, Literature Review, Analysis and Interpretation, Supervision

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