

# The occurrence and consequences of violence against healthcare workers in Turkey: before and during the COVID-19 pandemic

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**Background:** Before and throughout the COVID-19 pandemic, healthcare workers (HCWs) were victims of workplace violence (WPV). There are no reliable statistics on the occurrence and consequences of WPV against HCWs in Turkey throughout the pandemic period.

**Objective:** We investigated the rates of WPV against HCWs in Turkey in the pre-pandemic and pandemic periods, variables associated with WPV, and the relationship between these variables and job satisfaction and burnout.

**Methods:** A structured online questionnaire was disseminated through social media channels to HCWs in various healthcare settings. All the respondents also completed the Maslach Burnout Inventory (MBI) and Job Satisfaction Scale. Based on the data obtained, we determined the frequency, causes, and consequences of WPV against HCWs before and during the pandemic.

**Results:** There were 701 completed questionnaires. 68.2% of participants were female, and 65.6% of them were doctors. The rate of WPV was 54.1% and 24.3% before and during the pandemic, respectively. Verbal abuse was the most common kind of WPV. Female HCWs were more likely to be physically assaulted than their male counterparts, especially those working in COVID-19 units. The majority of HCWs who were exposed to the violence at least once did not report WPV. HCWs exposed to WPV during the pandemic reported more emotional exhaustion and depersonalization and a lower perceived level of personal achievement.

**Conclusion:** HCWs were exposed to significant levels of violence both before and during the pandemic. Preventing WPV against HCWs and removing barriers to reporting abuse is crucial.

**Key words:** bullying, burnout, harassment, healthcare worker, workplace violence

## Background

Violence in the healthcare setting is a major problem, which continues to increase. Violence against healthcare workers (HCWs) poses a severe threat to workplace safety. The World Health Organization (WHO) defines workplace violence (WPV) as an act of being abused, threatened, or attacked in the workplace, explicit or implicit defiance of a person's safety, well-being, or health.<sup>1</sup> Based on its definition, WPV encompasses physical attacks, murder, verbal abuse, bullying, sexual harassment, and threats.

HCWs are exposed to violence more frequently than those working in other sectors.<sup>2</sup> According to the studies in Turkey, the rate of violence against HCWs varies from 49% to 87%.<sup>3–5</sup> In China, the overall prevalence of WPV against HCWs was reported to be 62.4%, with physical violence, psychological violence, verbal abuse, threatening behaviours, and sexual harassment rates of 13.7%, 50.8%, 61.2%, 39.4%, and 6.3%, respectively, according to a meta-analysis study.<sup>6</sup> According to a meta-analysis, worldwide, one in every five HCWs is subjected to physical violence by patients or visitors coming to the hospitals every year.<sup>7</sup> A survey found that 39.6% of nurses were subjected to WPV.<sup>8</sup>

Physical and verbal abuse of HCWs increased during the COVID-19 pandemic, with patients and their families the primary perpetrators.<sup>9</sup> Sleep disorders, fear, stress, anxiety, depression, burnout, and post-traumatic stress disorder linked to WPV also increased among HCWs during the pandemic.<sup>10</sup> The prevalence of WPV is likely much higher than the evidence indicates. The difficulties in identifying the actual frequency may be due to substantial occurrences, such as bodily injuries, characterized as violence. Furthermore, the majority of HCWs do not report WPV. Some victims may not consider this when co-workers and superiors are the perpetrators, much as they may not consider violence against a health professional.<sup>11</sup> No studies have investigated the impact of WPV against HCWs on burnout and job satisfaction during the pandemic versus the pre-pandemic period. In this study, we investigated the frequency, types, causes, and consequences of violence and aggression experienced by HCWs in Turkey during their interactions with patients, patients' relatives, colleagues, and supervisors before and during the pandemic period and the relationship between these variables and occupational burnout and job satisfaction.

## Key messages

- One of the essential psychosocial risk factors is workplace violence.
- During the pandemic, one in four healthcare workers was subjected to violence.
- The most common type of violence was verbal violence.
- More than half of healthcare workers did not report violence.
- A special effort is needed to minimize violence against healthcare workers.

## Methods

### Study design

This was a cross-sectional, descriptive, online e-survey study of HCWs conducted between 7 June 2021 and 28 July 2021. With the support of healthcare facilities, the snowball technique was employed to disseminate the survey through social networks. All healthcare institutions and HCWs who agreed to participate and satisfied the inclusion criteria, regardless of the type of institution (private or public) and place of work (i.e. COVID-19- or non-COVID-19-related), were included in the study. Participants who clicked on a link at the beginning of the survey potential participants were asked if they agreed to take part in the study and were given an informed consent and withdrawal form that outlined the study's objective. The participants were assured of data security and anonymity.

### Sample

The sample comprised individuals employed in the Turkish healthcare system who fulfilled the following requirements: (1) worked as an HCW in a healthcare facility and (2) signed the informed consent form. According to G\*Power, version 3.1.9.7 software, a sample size of 220 participants was required to obtain statistical power of 0.95, with a medium effect size (0.5) and a significance level of 0.05. In total, 701 questionnaires were completed. The final sample included physicians, nurses, pharmacists, nutritionists, psychologists, laboratory technicians, medical secretaries, other allied health professionals, and healthcare assistants as shown in [Table 1](#).

### Variables

The questions on demographics in the e-survey were adapted from the WHO's 'Workplace Violence in the Health Sector' survey.<sup>12</sup> The e-survey included questions on the type of healthcare facility (e.g. COVID-19-related, public or private), workload, patient population, burnout, and job satisfaction. Other questions inquired about violence type and violence frequency in the pandemic versus pre-pandemic periods and the perpetrator of the violence.

### Maslach Burnout Inventory (MBI)

All the participants completed the MBI, developed by Maslach and Jackson, which comprises 22 items. Three dimensions of the scale evaluate burnout: 'Emotional Exhaustion (EE)' (9 items), 'Depersonalization (DP)' (5 items), and 'Personal Achievement (PA)' (8 items). High scores on the 'EE' and 'DP' sub-scales of the scale and low scores on the 'PA' sub-scale indicate a high degree of burnout.<sup>13</sup> We used the Turkish version of the scale adopted by Ergin, which includes the three sub-scales from the original version.<sup>14</sup>

### Job Satisfaction Scale

All the participants also completed the Job Satisfaction Scale, developed by Hackman and Oldham and adapted by Silah, for use in the Turkish population.<sup>15,16</sup> According to the results of Tasdan and Tiryaki, Cronbach's alpha, a measure of the internal consistency of the scale, is 0.95.<sup>17</sup> A score of 53–70 on the scale indicates high job satisfaction, 33–52 indicates moderate job satisfaction, and 14–32 indicates low job satisfaction.<sup>18,19</sup>

### Statistical analyses

Quantitative and categorical variables were compared using the Mann–Whitney *U* test and Kruskal–Wallis test, and descriptive statistics were presented. Chi-square and Fisher's exact tests were used for categorical data. For more than two groups in the chi-square analysis, Bonferroni correction was applied. Correlations between job satisfaction and burnout were explored using Spearman's coefficients. For each outcome, binary logistic regression was utilized. A *P*-value <0.05 is considered statistically significant in all the analyses.

## Results

There were 478 women (68.2%) in the total number of 701 respondents. Participants were  $38.69 \pm 8.4$  years old on average. 75.4% of the 701 participants were married, and 551 (78.6%) graduated from 6-year university. Four hundred sixty (65.5%) participants were doctors. Two hundred forty-one participants (34.4%) were other HCWs. The institution where the participant's work was evaluated was divided into seven groups: family health centre (14.3%), state hospital (25.1%), university/research hospital (40.5%), private hospital (4.3%), private clinic (2.4%), pharmacy (1.9%), and other centres (11.6%). The clinics worked internally (34%), and other departments (30%) were marked the most. Four hundred fifty-seven (65.2%) participants worked in COVID-related services/polyclinics.

Three hundred seventy-nine HCWs said that they had experienced at least one violent case in their working lives leading up to the survey (54.1%). Approximately 129 of the 223 male HCWs (57.8%) stated that they had been victims of some assault. Female HCWs, on the other hand, were exposed to violence at a higher rate: 310 out of 478 (64.9%). The difference in exposure to violence between male and female HCWs was not significant using the chi-square test ( $\chi^2 = 3.18, P = 0.074$ ).

Verbal abuse was reported by over one-third (36.6%) of the HCWs who took part in the survey, making it the most common form of violence. Physical violence was reported by around 8.4% of HCWs. In terms of the period when the violence occurred in the institution you worked, 60.6% of HCWs exposed to violence reported it happened when they

**Table 1.** Socio-demographic characteristics of the healthcare workers who answered the e-questionnaire made in June–July 2021 (*n* = 701).

Personal information	<i>n</i>	%
Gender		
Female	478	68.2
Male	223	31.8
Marital status		
Married	530	75.6
Single	171	24.4
Education		
High school	25	3.6
2-year university	32	4.6
4-year university	93	13.3
6-year university	551	78.6
Job		
Doctor	460	65.6
Other healthcare workers	241	34.4
Institution served		
Family health centre	100	14.3
State hospital	176	25.1
University/research hospital	284	40.5
Private hospital	30	4.3
Private clinic	17	2.4
Pharmacy	13	1.9
Other	81	11.6
Working hours		
Only mornings	432	61.6
Morning–night shifts	4	.6
Only nights	265	37.8
Exposure to violence before the pandemic		
Yes	379	54.1
No	60	8.6
Total	439	62.6
Exposure to violence during the pandemic		
Yes	170	24.3
No	268	38.2
Total	438	62.5
	Mean	SD
Age	38.69	8.397
Number of patients seen per day	43.63	47.045
Working years	14.872	9.3644
Number of violence before the pandemic	7.11	55.670
Number of violence during the pandemic	16.43	108.383

were working in a polyclinic (Table 2). It was determined that most of the HCWs who were exposed to violence worked in state hospitals (24.1%) and university/training research hospitals (41.2%). This was statistically significant ( $P = 0.003$ ).

Despite the fact that a considerable majority of HCWs (54.6%) indicated they had been subjected to violence, only 12.1% reported it to the hospital administration, and 19.1% reported it to the authorities. A number of reasons contributed to this. The top three reasons cited were that the staff was used to violence, it would be unnecessary reporting, and the staff was terrified of the outcomes, with 9.3%, 14.4%,

**Table 2.** The type and time of violence experienced by the healthcare workers who answered the e-questionnaire and the reasons for not reporting the violence in June–July 2021 (*n* = 701).

	<i>n</i>	%
Violence type		
Verbal violence	302	36.6
Physical violence	70	8.4
Mobbing	9	0.09
The exact time of violence		
Visiting hour	32	6
Polyclinic services	324	60.6
Hospitalization	63	11.8
Discharge	116	21.7
Reasons for not reporting WPV		
Not important	10	4.6
Feeling guilty	2	0.9
Not necessary	63	29.6
Being used to violence	41	19.2
Embarrassed	2	0.9
Afraid of negative results	66	31
Don't know who to report	29	13.6

and 15%, respectively. Table 2 shows the reasons for not reporting violence.

We determined a statistically significant difference between 'PA' and being a doctor and exposure to violence during pandemic ( $P < 0.001$ ;  $P = 0.002$ ). As seen from Table 3, a significantly low correlation was found between age and Job Satisfaction Scale. As the age increased, the scores of this scale increased, which was interpreted in favour of job satisfaction.

We found a statistically significant association between 'EE' and gender ( $P = 0.044$ ) education status ( $P = 0.024$ ). Women had a higher mean of EE scores than men. Four-year university and faculty graduates had higher scores from EE. Total Maslach, EE, DP, and job satisfaction scores of HCWs exposed to violence during and before the pandemic were higher, but only PA and total scores had significant differences from doctors ( $P < 0.001$ ).

Working hours, the unit of work, being a physician and the institution served, age, gender, years of employment were all independent variables. Before the pandemic, the EE ( $P = 0.149$ ) and DP ( $P = 0.134$ ) mean scores of the participants who were exposed to violence were higher, although not statistically significant, and the mean PA ( $P = 0.959$ ) was slightly lower. These results showed us that those exposed to violence were higher burnout levels. However, this situation became statistically significant during the pandemic period, and burnout levels increased even more in HCWs who were exposed to violence [EE ( $P < 0.001$ ); DP ( $P < 0.001$ ); PA ( $P = 0.002$ )]. Night workers' job satisfaction ( $P = 0.006$ ) scores were significantly lower than the other two groups when the data were analysed according to the variable of working hours. However, when we analysed the data according to the point of view of violence, no statistical relationship was found between working hours and exposure to violence before and during the pandemic ( $\chi^2 = 0.998$ ,  $P = 0.487$ ;  $\chi^2 = 0.141$ ,  $P = 0.897$ ) as was seen in Table 4.

**Table 3.** The relationship between burnout and job satisfaction scores of healthcare workers who participated in the e-survey, with gender, age, education, job, working hours, and exposure to violence in June–July 2021 ( $n = 701$ ).

	Job satisfaction	Maslach Burnout Scale			
		EE	DP	PA	Total
Gender ( $P$ ) <sup>a</sup>	0.255	<b>0.044</b>	0.717	0.218	0.532
Female	36.06 ± 9.89	26.79 ± 6.90	11.46 ± 4.80	31.62 ± 4.92	72.30 ± 11.50
Male	35.45 ± 10.33	25.47 ± 7.78	11.68 ± 4.57	31.95 ± 5.51	71.69 ± 13.08
Age ( $\rho$ ; $P$ ) <sup>b</sup>	<b>0.097; 0.01</b>	<b>0.008; 0.839</b>	<b>-0.027; 0.477</b>	0.007; 0.863	<b>0.242; &lt;0.001</b>
Education ( $P$ ) <sup>c</sup>	0.229	<b>0.024</b>	<b>&lt;0.001</b>	0.475	<b>0.045</b>
High school	34.16 ± 8.38	24.56 ± 7.72	10.20 ± 4.78	31.91 ± 5.45	68.68 ± 12.34
2-year university	34.38 ± 9.17	23.03 ± 6.41	11.88 ± 4.51	31.62 ± 5.03	67.81 ± 10
4-year university	34.37 ± 10.3	26.90 ± 7.19	10.61 ± 0.507	33.10 ± 0.427	71.36 ± 11.31
6-year university	36.28 ± 10.08	26.55 ± 7.21	11.49 ± 0.195	31.46 ± 0.222	72.64 ± 12.12
Job <sup>a</sup>	0.563	0.899	0.636	<b>&lt;0.001</b>	<b>&lt;0.001</b>
Doctor	35.68 ± 9.55	26.34 ± 7.28	11.49 ± 4.61	31.24 ± 5.24	70.62 ± 11.64
Other HCWs	36.22 ± 10.91	26.42 ± 7.10	11.62 ± 4.50	32.65 ± 4.74	74.95 ± 12.25
Exposure to violence ( $P$ )					
Before Pandemic	0.073	0.149	0.134	0.959	0.705
Yes	36.13 ± 9.97	27.72 ± 6.96	12.31 ± 4.53	31.25 ± 5	69.15 ± 9.27
No	33.48 ± 10.09	26.43 ± 7.31	11.33 ± 4.46	31.30 ± 5.20	69.78 ± 10.34
During pandemic	0.079	<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>0.002</b>	0.232
Yes	36.85 ± 9.70	29.89 ± 6.20	13.53 ± 4.78	30.27 ± 5.31	73.10 ± 11.91
No	35.09 ± 10.16	26.07 ± 7.09	11.33 ± 4.15	31.88 ± 4.74	71.61 ± 11.96
Working hours	<b>0.006</b>	0.837	0.731	0.340	0.164
Only mornings	36.69 ± 0.49	26.34 ± 0.348	11.43 ± 0.220	31.91 ± 0.246	70.16 ± 9.63
Only nights	26.00 ± 4.06	24.25 ± 3.83	11.75 ± 3.119	30.25 ± 3.010	71.75 ± 10.87
Morning–night shifts	34.66 ± 0.587	26.44 ± 0.440	11.70 ± 0.228	31.44 ± 0.313	68.78 ± 9.34

Burnout dimensions—EE, emotional exhaustion; DP, depersonalization; PA, personal achievement. The bold type denotes statistical significance.

<sup>a</sup>Mann–Whitney  $U$  test;

<sup>b</sup>Spearman correlation  $\rho$ ;

<sup>c</sup>Kruskal–Wallis  $U$  test.

Faculty graduates, physicians working in family health centres, and doctors working in internal medicine parts were found to be significantly more exposed to violence than other school graduates, non-physicians, and HCWs in other departments during their time working in the health sector ( $P = 0.002$ ,  $P < 0.001$ ,  $P = 0.003$ ,  $P < 0.001$ , respectively). Also, we analysed that the rate of being exposed to violence in the departments that care for COVID-19 patients and who worked in the family health centre was significantly higher than those who did not ( $P = 0.009$ ,  $P < 0.01$ ).

Exposure to violence was found to have a relation with being a physician ( $\beta = 1.066$ ,  $P < 0.001$ ), being married ( $\beta = 0.398$ ,  $P = 0.035$ ), and being woman ( $\beta = 0.498$ ,  $P = 0.005$ ). These variables explained 65% of the variance in HCWs for being exposed to violence (Table 5).

## Discussion

WPV continues to be a significant problem in medical settings. In our study population, 54.1% of HCWs reported exposure to violence before the pandemic. The reported rates of exposure to WPV vary by country, with previous research reporting rates of 45%, 48%, 61%, 62%, 75%, and 75% among HCWs in Italy,<sup>20</sup> Saudi Arabia,<sup>21</sup> Bulgaria,<sup>22</sup> and

India,<sup>23</sup> respectively. Geographic and cultural factors, WPV severity, differences in definitions/perceptions of WPV practice settings, study locations, work schedules, occupations, and methodological differences in research studies may all contribute to different frequencies of reporting WPV in studies.

A key finding of our study was that WPV was less common (24.3%) during the pandemic than before the pandemic (54.1%). Throughout the pandemic, HCWs in Turkey worked tirelessly. The decrease in WPV during the pandemic may be a sign of citizens' appreciation for the work of the healthcare staff. It might also be due to fewer visits to health facilities and fewer hospitalizations.

In contrast to our findings, attacks on HCWs increased significantly in some countries, including the United States, India, and Pakistan, during the COVID-19 pandemic.<sup>24</sup> According to this report, negative feelings towards the doctor, perceived as potential sources of virus contagion to others, was an important factor that increased WPV. In Turkey, although fewer HCWs reported WPV during the pandemic, one in every four healthcare professionals in our study reported being a victim of violence at some time. Another remarkable finding of our study was that HCWs providing direct services to COVID-19 patients were exposed to more incidents of WPV than HCWs working in non-COVID-19-related settings.

**Table 4.** Evaluation of demographic characteristics of healthcare workers participated in the e-survey based on the degree of the WPV before and during the pandemic in June–July 2021 (*n* = 701).

	Exposure to violence before pandemic, <i>n</i> (%)	Doesn't exposure to violence before pandemic, <i>n</i> (%)	<i>P</i>	Exposure to violence during the pandemic, <i>n</i> (%)	Doesn't exposure to violence during the pandemic, <i>n</i> (%)	<i>P</i>
Gender ( <i>P</i> )	310	129	0.422 <sup>a</sup>	170	268	0.883 <sup>a</sup>
Female	265 (69.9)	45 (75)		121 (71.2)	189 (70.5)	
Male	114 (30.1)	15 (25)		49 (28.8)	79 (29.5)	
Age (mean ± SD)	38.80 ± 0.41	38.87 ± 1.07	0.888 <sup>b</sup>	37.75 ± 0.60	39.48 ± 0.49	0.053 <sup>b</sup>
Education ( <i>P</i> )	379	60	0.005 <sup>a</sup>			0.577 <sup>a</sup>
High school	7 (1.8)	3 (5)		2 (1.2)	8 (3)	
2-year university	11 (2.9)	2 (3.3)		4 (2.4)	9 (3.4)	
4-year university	40 (10.6)	15 (25)		21 (12.4)	34 (12.7)	
6-year university	321 (84.7)	40 (66.7)		143 (84.1)	217 (81)	
Job <sup>a</sup>			0.001 <sup>a</sup>			0.065 <sup>a</sup>
Doctor	291 (76.8)	34 (56.7)		134 (78.8)	190 (70.9)	0.065
Other HCWs	88 (23.2)	26 (43.3)		36 (21.2)	78 (29.1)	
Working hours			0.487 <sup>c</sup>	170	268	0.897 <sup>c</sup>
Only mornings	226 (59.6)	35 (58.3)		103 (60.6)	158 (59)	
Only nights	2 (0.5)	1 (1.7)		1 (0.6)	2 (0.7)	
Morning–night shifts	151 (39.8)	24 (40)		66 (38.8)	108 (40.3)	
Working in units serving COVID-19 patients			0.937 <sup>a</sup>			0.009 <sup>a</sup>
Yes	257 (67.8)	41 (68.3)		128 (75.3)	170 (63.4)	
No	122 (32.2)	19 (31.7)		42 (24.7)	98 (36.6)	

<sup>a</sup>Analysed by the chi-square test;<sup>b</sup>Mann–Whitney *U* test;<sup>c</sup>Fisher's exact test.

Verbal abuse is frequently not included in studies on WPV. However, it is important to consider this form of abuse, as it can be a precursor to physical violence. In our study, verbal abuse was the most common form of violence both before and during the pandemic (65.4% and 68%, respectively), which is consistent with the literature.<sup>6,25</sup> Compared to the pre-pandemic period, the percentage of people subjected to physical violence declined, while the number of those subjected to mobbing increased. Various factors, such as stressful working conditions, increased workloads, changes in working conditions, and working in areas outside established specialties, may have contributed to increased mobbing.

In our study, female HCWs were more likely than their male counterparts were to experience WPV, a finding consistent with most prior research studies.<sup>20,26–28</sup> In a previous study, doctors were more likely than other healthcare professionals were to be subjected to violence (89.5% vs. 77.1%).<sup>28</sup> The same study reported that physicians and nurses, both of whom have frequent interactions with patients and their families, were more likely to have been exposed to WPV as compared with other healthcare professionals.<sup>28</sup> In this study, before and during the pandemic, patients' relatives (42.2% and 41.8%, respectively) were the main perpetrators of WPV, with male relatives mainly responsible (61.9% for both). As care providers, physicians are at the forefront of the healthcare system. In our study, the majority of exposure to violence occurred in outpatient care settings. The large patient numbers and diversity of populations attending outpatient facilities may explain the higher reported incidence of violence in these

facilities as compared to that in other healthcare settings. In our study, HCWs in family health centres and internal medicine departments reported a higher incidence of WPV than professionals in other healthcare settings.

Violence against HCWs has many negative consequences. These include decreased performance and productivity, burnout, compassion fatigue, depression, trauma-related mental illnesses, decreased interest in work, job dissatisfaction, deterioration in job functioning, and a reduction in working hours, as well as life-threatening injuries and even death.<sup>29–32</sup> In this study, 27 (3.9%) HCWs reported WPV resulting in physical injuries. The EE and DP scores, which are the subscales of burnout, were higher in those exposed to violence in the pre-epidemic period than those not exposed to violence. EE and DP were higher and perceived PA was lower in those exposed to violence during the pandemic. Stress-related behaviour among HCWs may also act as a trigger for violence perpetrated by others (e.g. patients and patients' families). The cross-sectional nature of our study precludes us from drawing any conclusions in this regard. In terms of job satisfaction, there was no difference between those exposed to WPV and those not exposed to WPV before and during the pandemic. In our study, job satisfaction among HCWs was moderate, regardless of exposure to WPV. Occupational satisfaction was lower in night workers, consistent with previous studies.<sup>33</sup>

In our study, more than half of HCWs exposed to WPV did not report the incident. The most common reason for non-reporting was a fear of negative consequences, such as

**Table 5.** Logistic regression results of the factors affecting the state of being exposed to violence and not being exposed to workplace violence of healthcare workers who participated in the study conducted in June–July 2021.

	Predictor	$\beta$	SE	95% CI lower	95% CI upper	<i>P</i>
Step 1	Gender	0.451	0.182	1.098	2.245	<b>0.013</b>
	Marital status	0.424	0.192	1.049	2.228	<b>0.027</b>
	6-year university					0.300
	High school	-0.165	0.465	0.341	2.109	0.722
	2-year university	-0.078	0.417	0.409	2.096	0.852
	4-year university	0.470	0.296	0.896	2.856	0.112
	Doctor or not	1.193	0.230	2.102	5.169	<b>&lt;0.001</b>
	Shifting					0.423
	Only mornings	-0.199	0.183	0.573	1.173	0.277
	Only nights	0.763	1.198	0.205	22.464	0.524
	Working in units serving COVID-19 patients	0.175	0.182	0.834	1.701	0.337
Step 2	Constant	-0.911	0.339	1.098	2.245	<b>0.007</b>
	Female	0.426	0.180	1.077	2.178	<b>0.018</b>
	Married	0.413	0.192	1.038	2.200	<b>0.031</b>
	6-year university					0.255
	High school	-0.144	0.461	0.351	2.135	0.754
	2-year university	-0.080	0.416	0.409	2.088	0.849
	4-year university	0.498	0.293	0.926	2.923	0.089
	Doctor or not	1.193	0.228	2.111	5.155	<b>&lt;0.001</b>
	Working in units serving COVID-19 patients	0.249	0.171	0.917	1.794	0.146
	Constant	-1.058	0.308			<b>0.001</b>
	Step 3	Female	0.484	0.177	1.148	2.295
Married		0.429	0.191	1.057	2.232	<b>0.024</b>
Doctor or not		1.048	0.169	2.047	3.974	<b>&lt;0.001</b>
Working in units serving COVID-19 patients		0.266	0.170	0.935	1.822	0.118
Constant		-0.967	0.277			<b>&lt;0.001</b>
Step 4	Female	0.498	0.176	1.165	2.324	<b>0.005</b>
	Married	0.398	0.189	1.029	2.156	<b>0.035</b>
	Doctor or not	1.066	0.169	2.086	4.041	<b>&lt;0.001</b>
	Constant	-0.792	0.252			<b>0.002</b>

Logistic regression beta coefficients (together with 95% CI) are reported. 95% CI, 95% confidence interval; SE, standard error. The bold type denotes statistical significance.

punishment from offenders, and the belief that reporting was meaningless because the report would be ignored (i.e. no action would be taken at the management level). In addition, feelings of guilt and humiliation contributed to underreporting of WPV. Other reasons cited for not reporting WPV were a feeling that reporting WPV was unnecessary and normalized violence. Furthermore, a significant number of victims of WPV said they were unsure of WPV reporting protocols. This finding is in accordance with that of previous studies.<sup>11,34–36</sup> Protocols need to be put in place to enable HCWs to report WPV.<sup>37</sup>

### Limitations of the study

The study's primary limitation was its cross-sectional design, which precluded us from establishing a cause–effect relationship. Another limitation was the tool (e-survey) used to reach the intended population, which was health professionals working in different sectors and different types of healthcare facilities. Since the distribution of the reached audience could not be controlled, equal people could not be obtained from

all sectors. As doctors comprised the majority of the respondents, burnout and WPV were compared between only two groups: physicians and other health professionals. Participant bias may be another limitation, with those who responded to the online questionnaire vulnerable to WPV already in a heightened state of stress.

### Conclusions

Our data corroborate the notion that WPV against HCWs is associated with EE, DP, and perceptions of PA. Although the HCWs in our study were exposed to high rates of violence both before and during the pandemic, as in other countries, most cases of violence were not reported.

Assessing violence against HCWs might serve as a starting point for developing recommendations and preventative actions to address WPV and its effects. All HCWs deserve respect and support. They should be provided with an environment where they can perform their duties without fear of violence in a safe workplace. Health service managers should

consider WPV as an important psychosocial risk factor in the workplace and develop effective preventative measures.<sup>38</sup> Healthcare providers should be educated and encouraged to eliminate obstacles to reporting violence. As suggested previously, workplace health promotion programmes are needed in all healthcare settings worldwide to combat WPV against HCWs.<sup>39</sup> To be effective, such programmes must be well planned and include effective preventive strategies. Lawmakers and governments also have a role to play in combatting WPV against HCWs. To eliminate all types of WPV, there must be strong deterrence laws and safer working environments.

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## Supplementary material

Supplementary material is available at *Family Practice* online.

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## Ethical approval

Ethical approval was granted by the institution review board of the Medical Research Ethics Committee (MREC) from Isparta Suleyman Demirel University Medical School (dated 01.04.2021, no: 9/162).

## Conflict of interest

None declared.

## Data availability

The datasets generated during and/or analysed during the current study are not publicly available due to containing protected health information.

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