



## Review Paper

# Workplace violence against healthcare workers: an umbrella review of systematic reviews and meta-analyses



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## ARTICLE INFO

## Article history:

Received 8 February 2023

Received in revised form

2 May 2023

Accepted 31 May 2023

Available online 3 July 2023

## Keywords:

Workplace violence

Healthcare workers

Umbrella review

Occupational health

## ABSTRACT

**Objectives:** The aim of this umbrella review of systematic reviews and meta-analyses was to address workplace violence (WPV) against healthcare workers (HCWs). Several systematic reviews exist in the literature, but the diversity of settings, population considered, and type of violence investigated make it difficult to gain insight and use the vast amount of available data to implement policies to tackle WPV. With this in mind, we conducted an umbrella review of systematic reviews and meta-analyses on WPV against HCWs to examine the global prevalence of the phenomena and its features.

**Study design and methods:** Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, PubMed, Scopus, and ISI Web of Science were searched for relevant systematic reviews and meta-analyses published in English up to November 2022. Data on authors, year, country, violence type, prevalence (pooled and not), setting, population, and specific considerations were extracted.

**Results:** A total of 32 systematic reviews were included, 19 of which performed a meta-analysis, investigating overall, physical, and non-physical violence. Even considering the variability of the data, the COVID-19 pandemic has exacerbated the scale of the problem. From our review, we found that overall violence prevalence among HCWs was reported to be as high as 78.9%, and nurses working in psychiatric wards were the professionals most impacted.

**Conclusion:** In conclusion, this umbrella review revealed a high prevalence of WPV among HCWs, which varies between countries, population subgroups, and detection methods. Strengthening recognition of the problem could lead to appropriate local and international strategies to address it.

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## Introduction

Workplace violence (WPV) is a concerning issue in public and occupational health. It is described as violent events that pose a

threat to staff members' safety, well-being, or health while they are at work. It refers to any physical, verbal, or psychological abuse, including threats, harassment, physical assault, bullying, and other forms of aggression.<sup>1,2</sup> Healthcare workers (HCWs), including doctors, nurses, and other staff, are at a higher risk of experiencing WPV because of the nature of their work and the populations they serve. In fact, according to US data, the healthcare environment accounts for almost 70.0% of all WPV.<sup>3</sup> In addition, WPV is also frequently viewed as an inherent component of the job, which results in a general underreporting.<sup>4,5</sup>

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Several factors contribute to WPV healthcare settings, including high stress levels, long hours, and dealing with patients who may be in distress or have a history of violent behavior. In addition, the lack of effective communication, dissatisfaction with treatment and service attitude, excessive waiting times, and high medical costs are listed in the literature as major causes of WPV,<sup>6,7</sup> making patients, their family, and visitors as the main offenders (classified as type II violence).<sup>8,9</sup> Moreover, in addition to violence committed by patients or outside individuals, healthcare professionals can also experience violence from their colleagues. This type of violence is known as lateral or horizontal violence, and it refers to any harmful or aggressive behavior directed at a colleague by another colleague. Lateral violence can occur between healthcare professionals at all levels, from entry-level staff to senior leaders (type III violence) (12–14). In these cases, the offender is often a present or former employee of the company; an example would be a recently fired employee beating his or her former manager.<sup>10</sup>

Out of completeness, the healthcare settings could be the theater of crime-related violence (type I violence), especially in areas with few resources.<sup>11</sup>

As a major occupational danger for healthcare professionals around the world, WPV is a global issue with deleterious consequences for both the individual targeted and the overall healthcare organization.<sup>12,13</sup> Indeed, WPV has been linked to decreased job dedication, effectiveness, and satisfaction, as well as poor living quality, more stress, disturbed sleep, burnout, and even death.<sup>14–16</sup> It can lead to poor job performance, high staff turnover, and a negative impact on patient care.

Furthermore, the COVID-19 pandemic has been an important stressor for both HCWs and non-HCWs<sup>17</sup> because of the pandemic itself, the occupational burden of the long COVID-19 condition,<sup>18,19</sup> and the transformation of the workplace caused by the pandemic.<sup>20</sup> Thus, the COVID-19 pandemic may have acted as an added catalyst for WPV.<sup>21,22</sup>

Considering the public and occupational health impact of the problem, investigating its extent is critical. Addressing WPV is important for the safety and well-being of healthcare professionals, as well as the quality of care provided to patients. Indeed, data could inform tailored strategies to prevent WPV and contribute to the creation of long-term programs in most affected settings. Several systematic reviews exist in the literature, but the diversity of settings, population considered, and type of violence investigated make it difficult to gain insight and use the vast amount of available data to implement policies to tackle WPV. With this in mind, we conducted an umbrella review of systematic reviews and meta-analyses on WPV against HCWs to examine the global prevalence of the phenomena and its features.

## Methods

Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statements, an umbrella review was performed, searching for relevant articles on three databases (PubMed, Scopus, and ISI Web of Science) published in the English language up to November 2022 (without time limitations). The English language was used as a filter because the researchers performing the screening have a thorough knowledge of English as a second language, but no other language was added (no systematic reviews were found in Italian, the authors' first language).

The PICO model was used to formulate a query, establishing the population (P) as HCWs, the intervention (I) as assessing the prevalence of WPV, and the outcome (O) as a systematic review being performed. Comparison (C) was not applicable because of the aim of the performed review. The following search query was then used to retrieve systematic reviews and meta-analyses of studies

that investigated the prevalence of WPV against HCWs: [(healthcare OR workplace OR hospital) AND (workers OR workforce OR professionals OR personnel) AND (harassment OR mobbing OR violence OR assault) AND (systematic AND review)].

All articles were uploaded to the Rayyan Web site<sup>23</sup> and screened by title and abstract by four reviewers using double-blind methodology. Conflicts were resolved by group discussion. Subsequently, eligible articles were screened by full texts. Citations of the retrieved eligible papers were further hand-searched for additional publications that might have been missed during the initial search.

Concerning inclusion criteria, records were included in the umbrella review if they were systematic reviews assessing WPV on HCWs, already published at the time of the screening (November 2022), and written in the English language; studies were excluded if they were written in a language other than English, did not investigate a form of violence happening in the workplace or not on HCWs (reviews performed on students, pharmacists, administrative staff were excluded), or were not systematic reviews (narrative reviews, research articles, editorials, and so on were excluded).

Risk of bias and quality control were performed through ROBIS tool.<sup>24</sup>

The results are presented in a descriptive way grouping the reviews by the reported type of violence; the prevalence for each WPV type is reported by quartiles.

## Results

The initial search resulted in 997 entries across the three databases (PubMed, ISI Web of Knowledge, and Scopus). After removing duplicates, the initial search was performed by four researchers independently; any conflict about the inclusion or exclusion of the manuscripts was resolved by internal discussion between the researchers. Thirty-two systematic reviews were included in our umbrella review (see Fig. 1).

Thirty-two systematic reviews were included in this umbrella review, 19 (59.4%) of which performed a meta-analysis on the included studies. Twenty-five (78.1%) reviews included studies from multiple countries, 3 (9.4%) included studies performed only in China, two (6.2%) studies performed in Iran, one (3.1%) study performed in Germany, and one (3.1%) study performed in the United States. Most of the studies ( $n = 14$ , 43.7%) were performed on a miscellaneous of HCWs, followed by studies performed on nurses ( $n = 10$ , 31.2%). Most reviews ( $n = 14$ , 43.7%) were performed in hospital HCWs. The main results are summarized in Table 1.

### Overall violence prevalence

The prevalence of overall violence was investigated in 17 (53.1%) of the included reviews, 11 of which performed a meta-analysis (57.9% of the reviews with meta-analysis). Considering the meta-analysis, the majority ( $n = 7$ ) reported a prevalence of WPV between 50% and 75%, three reported a pooled prevalence between 25% and 50%, and one reported a prevalence over 75%. The highest prevalence of generic WPV was reported in a Chinese meta-analysis performed on 5926 psychiatric ward nurses, which highlighted a 78.9% prevalence (95% CI 65–88%);<sup>25</sup> the lowest was highlighted in a review performed including studies from multiple countries performed on oral HCWs, with a 34.1% prevalence (95% CI: 32.1–36.2).<sup>26</sup>

### Physical violence

Twenty-three systematic reviews investigated physical violence (71.9% of all included reviews), 11 of which included a pooled

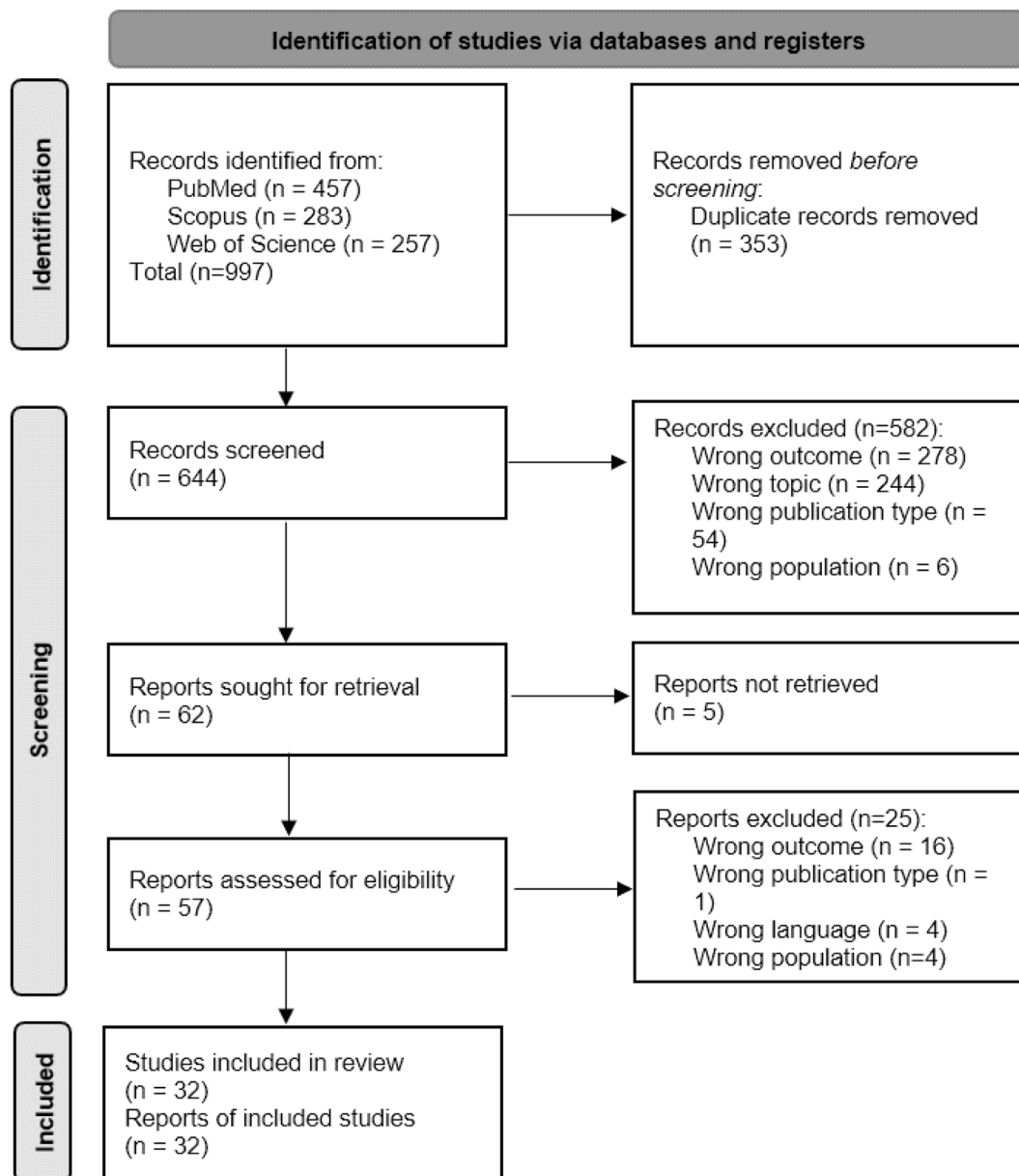


Fig. 1. PRISMA flowchart.

prevalence of physical violence (57.9% of the reviews with meta-analysis). Most meta-analyses ( $n = 7$ ) reported a pooled prevalence of physical violence below 25%, whereas the other four reported a prevalence between 25% and 50%. The highest prevalence of physical violence was highlighted in a meta-analysis performed on Iranian Emergency medical workers, and it was 36.4% (95% CI 27.29–45.50);<sup>27</sup> the lowest prevalence was found in a Chinese study conducted on multiple types of HCWs (13.7%, 95% CI: 12.2–15.1%).<sup>28</sup>

#### Sexual harassment

Sexual harassment was investigated in 11 reviews (34.4% of all included reviews), 8 of which performed a meta-analysis (42.1% of the meta-analysis included). Pooled prevalence of sexual harassment was below 25% in most ( $n = 6$ ) reviews, and it was between 25% and 50% in the other two. A meta-analysis performed on

medical residents, on studies from multiple countries, highlighted the highest sexual harassment rate, with 36.2% (95% CI 19.8–52.6%) pooled prevalence,<sup>29</sup> whereas the lowest was found among Chinese hospital nurses (6%, 95% CI 4–9%).<sup>30</sup>

#### Non-physical violence (verbal violence, bullying/mobbing, threats, and psychological violence)

Non-physical violence was investigated in four reviews (12.5% of all included reviews), three of which had meta-analysis (15.8% of included meta-analysis). The highest pooled prevalence was 64.0% (95% CI: 54–74%) in a meta-analysis on physicians and nurses,<sup>31</sup> whereas the lowest was 44.0% (95% CI: 31–57%);<sup>32</sup> both studies gathered data from multiple countries.

Verbal violence was investigated in 17 reviews (53.1%), nine of which performed a meta-analysis (47.4% of included meta-analysis). Only one meta-analysis reported a prevalence above

**Table 1**

Main characteristics of included systematic reviews and studies with meta-analyses first and without after (studies are ordered from most to least recent).

Author (year)	Country	Type of HCWs	Type of WPV	Setting	Number of included studies	Number of studies based on violence type	Meta-analysis data, if performed		
							Total number of workers included	Prevalence (95% CI)	Heterogeneity (%)
Gianakos AL et al. (2022) <sup>35</sup>	Multicountry	Residents	Bullying Discrimination Harassment Sexual harassment	Hospital (surgical wards)	25	12	29,980	63% (62–63%)	NR
						9		43% (42–44%)	NR
						8		29% (28–29%)	NR
						13		27% (26–28%)	NR
Li L et al. (2022) <sup>25</sup>	China	Nurses	Violence	NR	19	19	5926	78.95% (65–88%)	98.8
Ramzi ZS et al. (2022) <sup>32</sup>	Multicountry	Miscellaneous	Physical violence Non-physical violence	NR	17	17	17,207	17% (6–28%)	NR
						NR		44% (31–57%)	NR
Sahebi A et al. (2022)	Multicountry	Miscellaneous	Physical violence Verbal violence	Hospital and prehospital	14	10	674,266	47% (34–61%)	NR
						10		20.8% (16.23–25.33)	93.9
						7		66.8% (60.96–72.56)	88.6
						8		10.5% (7.47–13.46)	92
Saragih ID et al. (2022) <sup>31</sup>	Multicountry	Miscellaneous	Stigmatization Violence (overall) Physical violence Non-physical violence	Hospital	14	9	34,873	43% (21–65%)	99.85
						5		42% (30–54%)	99.82
						3		26% (16–36%)	88.32
						3		64% (54–74%)	87.10
Zhang Y et al. (2022)	Multicountry	Nurses	Lateral violence	Nurse workplace	14	13	5745	33.08% (23.41–42.75%)	99.0
Aljohani B et al. (2021) <sup>33</sup>	Multicountry	Physicians and nurses	Verbal violence	Emergency department	26	21	9072	77% (72–82%)	87.0
Liu X et al. (2021)	China	Nurses	Overall Physical violence Verbal abuse Threats Sexual harassment	Hospital	38	38	22,968	71% (67–75%)	98.0
						14%		(11–18%)	98
						63%		(58–67%)	98
						43%		(39–48%)	98
Varghese A et al. (2021)	Multicountry	Nurses	Verbal abuse Physical violence Sexual harassment Bullying/mobbing Threatening behavior Physical assault	Public and private sectors	38	29	42,222	64% (59–70%)	98.78
						28		23% (14–34%)	99.68
						17		12% (7–17%)	98.73
						7		25% (17–33)	94.69
						NR		30% (11–52%)	99.63
						NR		21% (8–38%)	99.24
Li YL et al. (2020)	Multicountry	Physicians and nurses	Physical violence	Various	65	65	61,800	58% (51–64%)	99.26
						19.33%		(16.49–22.53%)	98.8

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Table 1 (continued)

Author (year)	Country	Type of HCWs	Type of WPV	Setting	Number of included studies	Number of studies based on violence type	Meta-analysis data, if performed		
							Total number of workers included	Prevalence (95% CI)	Heterogeneity (%)
Lu L et al. (2020) <sup>28</sup>	Multicountry	Nurses	Sexual harassment	NR	43	28	52,345	13% (11–14%)	98.6
Lu L et al. (2020) <sup>28</sup>	China	Miscellaneous	Physical violence	NR	47	44	78,026	13.7% (12.2–15.1%)	NR
			Psychological violence					50.8% (46.2–55.5%)	NR
			Verbal abuse					61.2% (55.1–67.4%)	NR
			Threats					39.4% (33.4–45.4%)	NR
			Sexual harassment					6.3% (5.3–7.4%)	NR
			Overall					62.4% (59.4–65.5%)	98.9
Binmadi NO et al. (2019) <sup>26</sup>	Multicountry	Oral healthcare workers	Violence (sexual harassment, verbal abuse, bullying, physical abuse, threats)	NR	8	8		34.1% (32.1–36.2)	95.94
Liu J et al. (2019) <sup>34</sup>	Multicountry	Healthcare workers	Non-physical violence	Various	253	140		42.5% (38.9–46.0%)	99.9
			Physical violence			138		24.4% (22.4–26.4%)	99.7
			Verbal abuse			NR		57.6% (51.8–63.4%)	NR
			Threats			NR		33.2% (27.5–38.9%)	NR
			Sexual harassment			NR		12.4% (10.6–14.2%)	NR
			Overall			78		61.9% (56.1–67.6%)	99.9
Sahebi A et al. (2019) <sup>27</sup>	Iran	Emergency healthcare workers	Physical violence	Emergency Medical Services	9	8	1257	36.39% (27.29–45.50)	90.8
			Verbal violence			7		73.13% (68.64–77.62)	62.7
			Cultural violence			3		16.51% (3.49–29.53)	94.7
Nowrouzi-Kia B et al. (2019)	Multicountry	Physicians	Violence (physical and psychological)	Hospital	13	6	21,480	69% (58–78%)	97.40
Dalvand S et al. (2018)	Iran	Nurses	Verbal violence	NR	22	22	5639	74% (66–83)	NR
			Physical violence					28% (21–35)	NR
			Unreported violence					48% (28–68)	97.3
Huang Y et al. (2018)	Multicountry	Surgical healthcare workers	Discrimination	Hospital (surgery wards)	8	4		22.4% (14.0–33.9%)	93.2
			Bullying			4		37.7% (34.0–41.5%); 40.3% (34.7–46.2%)	62.5; 83.2
			Harassment			3		31.2% (10.0–65.0%)	99.3

Fnais N et al. (2014) <sup>29</sup>	Multicountry	Residents	Overall (Harassment or discrimination)	Hospital	59	51	38,353	63.4% (53.6–73.2%)	99						
			Verbal harassment			28		58.2% (45.5–70.9%)	99						
			Physical harassment			24		28.9% (15.9–41.8%)	98						
			Gender discrimination			13		66.6% (58.7–74.5%)	99						
			Academic harassment			14		27.7% (6.0–49.4%)	99						
			Sexual harassment			35		36.2% (19.8–52.6%)	99						
			Racial discrimination			10		26.3% (24.2–28.3%)	99						
			Chakraborty S et al. (2022)			Multicountry		Physicians and nurses	Physical violence	Hospital	22	12			
									Non-physical violence			3			
									Violence			4			
Verbal violence	12														
Threats of violence	1														
Sexual harassment	5														
Bullying	2														
Racial harassment	2														
Mobbing	1														
Smear reputation	1														
Jang SJ et al. (2022)	Multicountry	Nurses	Violence (physical and verbal)	Psychiatric settings	16										
Kiprillis N et al. (2021)	Multicountry	Nurses	Horizontal violence	Hospital	9										
Albalwei HSS et al. (2021)	Multicountry	Pediatric healthcare workers	Violence (physical and verbal)	Hospital (pediatric department)	6										
Schaller A et al. (2021)	Germany	Nurses	Violence (physical and verbal violence, sexual harassment)	Acute, long-term, and home-based care	9										
Njaka S et al. (2020)	Multicountry	Miscellaneous	Verbal, physical, sexual, and psychological violence	Various	22										
Odes R et al. (2020)	USA	Healthcare workers	Violence (physical and psychological)	Inpatient psychiatric settings	14										
Halim UA et al. (2018)	Multicountry	Physicians and nurses	Bullying, undermining behavior, and harassment	Hospital (surgical wards)	22										
Pourshaikhian M et al. (2016)	Multicountry	Healthcare workers	Violence (verbal and physical)	Emergency department	18										

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Table 1 (continued)

Author (year)	Country	Type of HCWs	Type of WPV	Setting	Number of included studies	Number of studies based on violence type	Meta-analysis data, if performed	
							Total number of workers included	Prevalence (95% CI)
Guay S et al. (2015)	Multicountry	Miscellaneous	Physical violence	Hospital and general practice	13			
Nelsen AJ et al. (2015)	Multicountry	Physicians	Stalking	Hospital and general practice	12			
Edward KL et al. (2014)	Multicountry	Nurses	Verbal abuse	Various	53	NR		
Hahn S et al. (2008)	Multicountry	Miscellaneous	Physical assault Physical or psychological violence	Hospital	31	NR		

A quality assessment was performed in all studies, resulting in an overall low risk of bias (Table 2).

75% of verbal violence, with 77.0% (95% CI: 72–82%) prevalence among physicians and nurses working in emergency department (ED).<sup>33</sup> The other eight meta-analyses reported a pooled prevalence between 50% and 75%, the lowest of which was 57.6% (95% CI: 51.8–63.4%), highlighted in HCWs from various workplaces.<sup>34</sup>

Bullying and/or mobbing were investigated in six reviews (18.7%), three of which (15.8% of included meta-analysis) performed a meta-analysis on this type of violence. The highest prevalence reported was 63.0% (95% CI: 62–63%) in a meta-analysis performed on surgical residents working in hospitals from multiple countries,<sup>35</sup> whereas the lowest rate reported was 25.0% (95% CI: 17–33%) in a study conducted on nurses.<sup>36</sup>

Six reviews investigated threats (18.7% of all included reviews), four of which performed a meta-analysis (21.0% of included meta-analysis), all with a pooled prevalence between 25% and 50%. The highest prevalence of threatening behavior against HCWs was 43.0% (95% CI: 39–48%), highlighted in a meta-analysis performed on Chinese hospital nurses;<sup>30</sup> the lowest prevalence was 30.0% (95% CI: 11–52%), and it was reported in a meta-analysis performed on nurses from multiple countries.<sup>36</sup>

Five reviews (15.6% of all included reviews) investigated psychological violence against HCWs, and only one (5.3% of included meta-analysis) included a meta-analysis on this type of violence, reporting a pooled prevalence of 50.8% (95% CI: 46.2–55.5%) in a miscellaneous of HCWs.<sup>28</sup>

### Discussion

Violence against HCWs is a worldwide phenomenon in terms of scale and severity. Even considering the variability of the data, the COVID-19 pandemic has exacerbated the scale of the problem.<sup>21,22</sup> From this review, the overall violence prevalence among HCWs was reported to be as high as 78.9%, nurses working in psychiatric wards were the professionals most impacted.

The ED is a particularly dangerous place for HCWs to be because of the nature of the patients who seek care there. The risk factors for WPV in healthcare settings could be described as individual and environmental related and include history of drug or alcohol abuse, violence, or psychiatric diseases, as well as long wait times, not enough staff in emergency rooms, and free movement of the public.<sup>37</sup> Moreover, there is evidence from academic studies to suggest that ED violence is destructive to the health and safety of ED personnel, leading to more sick days, less output, and ultimately lower quality of care for patients,<sup>33</sup> and counterproductive to the healthcare industry as a whole. In particular, WPV has been found to be related to the increased use of defensive medicine,<sup>38–40</sup> which costs an estimated \$100–\$180 billion each year.<sup>41</sup> In national healthcare systems, such as Italy's, it accounts for 10% of total healthcare expenditure, whereas in private health care, almost half of the doctors declare that they fear malpractice litigation.<sup>42,43</sup> The alarming prevalence of WPV could undermine legislative efforts to curb medicolegal litigation without affecting the quality of care and sustainability of healthcare systems.<sup>44,45</sup>

Furthermore, there is a gender imbalance in the field of emergency medicine, with women being underrepresented. Overall, 34.0% of all physicians were female in 2015, while just 26.6% of those working in emergency medicine were female. Even while the number of women working in emergency care has been growing over the years, it is still much lower than the percentage of women working in other fields of medicine. There were 48.8% female students enrolled in medical schools in 2018, whereas only 37.3% (according to statistics from 2015) of ED residents were female. This disparity suggests that female medical graduates are less inclined to seek training in emergency medicine. Women face inequalities in terms of earnings, promotions, and leadership positions.<sup>46</sup>

**Table 2**  
Quality assessment through ROBIS tool.

Author (year)	Concerns on				Risk of bias
	Eligibility criteria	Identification and selection of studies	Data collection and study appraisal	Synthesis and findings	
Gianakos AL et al. (2022) <sup>35</sup>	Low	Low	Low	Low	Low
Li L et al. (2022) <sup>25</sup>	Low	Low	Low	Low	Low
Ramzi ZS et al. (2022) <sup>32</sup>	Low	Low	Low	Low	Low
Sahebi A et al. (2022)	Low	Low	Low	Low	Low
Saragih ID et al. (2022)	Low	Low	Low	Low	Low
Zhang Y et al. (2022)	Low	Low	Low	Low	Low
Aljohani B et al. (2021) <sup>33</sup>	Low	High	High	Low	Low
Liu X et al. (2021)	Low	Low	Low	Low	Low
Varghese A et al. (2021)	Low	Low	Low	Low	Low
Li YL et al. (2020)	Low	Low	Low	Low	Low
Lu L et al. (2020) <sup>28</sup>	Low	Low	Low	Low	Low
Lu L et al. (2020) <sup>28</sup>	Low	High	Low	Low	Low
Binmadi NO et al. (2019) <sup>26</sup>	High	Low	Low	Low	Low
Liu J et al. (2019) <sup>34</sup>	Low	Low	Low	Low	Low
Sahebi A et al. (2019) <sup>27</sup>	Low	Low	Low	Low	Low
Nowrouzi-Kia B et al. (2019)	Low	Low	Low	Low	Low
Dalvand S et al. (2018)	Low	Low	High	Low	Low
Huang Y et al. (2018)	Low	Low	High	High	Low
Fnais N et al. (2014) <sup>29</sup>	Low	Low	Low	Low	Low
Chakraborty S et al. (2022)	Low	Low	Low	Low	Low
Jang SJ et al. (2022)	Low	Low	Low	Low	Low
Kiprillis N et al. (2021)	Low	Low	Low	Low	Low
Albalwei HSS et al. (2021)	Low	High	High	High	High
Schaller A et al. (2021)	Low	High	Low	Low	Low
Njaka S et al. (2020)	Low	Low	Low	Low	Low
Odes R et al. (2020)	Low	Low	High	Low	Low
Halim UA et al. (2018)	low	low	High	Low	Low
Pourshaikhian M et al. (2016)	Low	Low	Low	Low	Low
Guay S et al. (2015)	Low	Low	High	Low	Low
Nelsen AJ et al. (2015)	Low	Low	Low	Low	Low
Edward KL et al. (2014)	Low	Low	High	Low	Low
Hahn S et al. (2008)	Low	Low	High	Low	Low

Following research, we observed that the highest rates of sexual harassment were found in medical residents, with 36.2% prevalence. Recent years have seen an increase in the amount of research conducted on this topic, all of which have come to the same conclusion: discrimination and harassment of medical students and residents is a pervasive problem, not one that is exclusive to a select number of nations or training programs. During their medical education, up to 95% of trainees have reported being subjected to at least one type of harassment or discrimination, which is a startlingly high prevalence rate. The possibility is that a vertical abuse cycle develops, with the same behavioral patterns reproduced on both the aggressor's (the tutor or professor's) and victim's sides (young medical resident).

To examine violence against healthcare professionals correctly, tools should be designed and validated with gender disparities for each category of violence. Some of the included reviews find a greater incidence of violence in the female gender, whereas others claim a higher prevalence of violence in the male gender.

To ensure comparability of data and to make a transparent comparison between different contexts within the same hospital or different regions or countries, the instruments used should be standardized, working on the knowability of the circumstances defining WPV. Although beyond the scope of the article but helpful for making assumption on the data, we could not find the systematic adoption of specific validated instruments: most of the questionnaires currently used are not validated, which indicates a scarce use of internationally recognized survey instruments.<sup>47</sup> Adopting consistently standardized methods for measuring WPV can help to ensure that data are accurate and comparable across different settings and countries. In some countries, the healthcare

system might be better equipped to manage and prevent WPV, whereas in others, it might be a more significant problem. In some countries, WPV could be more prevalent because of factors such as a lack of security in healthcare facilities, inadequate training and resources for staff, and social and cultural factors could also play a role. In addition, legal frameworks and regulations for preventing and addressing WPV may also vary between countries.<sup>48,49</sup>

The aforementioned contextual factors could also contribute to underreporting of WPV against healthcare professionals. Several factors may be at the root of this, such as inadequate reporting mechanisms or a lack of trust in the legal system and fear of stigmatization of reporting violence. In addition, healthcare professionals may be reluctant to report incidents of violence due to fear of retaliation or negative impact on their careers. They may also believe that violence is a normal part of their job or that their complaints will not be taken seriously: WPV is seen and accepted by HCWs as a normal part of their jobs in the care settings where it occurs most frequently, such as emergency and psychiatric departments, and is rarely reported.<sup>50</sup>

The consequences of WPV have several dimensions. Physical consequences may include injuries from assaults, whereas emotional and mental health effects can include anxiety, depression, posttraumatic stress disorder, and other mental health conditions.<sup>51,52</sup> Hsieh et al. found a prevalence of 76.0% of depression symptoms among assaulted nurses at a psychiatric department.<sup>53</sup> Violence is also a predictor of burnout syndrome, accentuating the other consequences of WPV.<sup>52</sup> According to data, burnout and traumatic stress in HCWs can have negative effects on their quality of life and well-being and have a cascading impact on the care that patients receive.<sup>22</sup>



The effects of WPV can also extend beyond the individual, affecting the work environment and leading to decreased job satisfaction, increased absenteeism and turnover, and a decrease in the overall quality of care provided to patients. Adopting a multi-disciplinary approach, it is important for healthcare organizations to address and prevent WPV to protect the well-being of their staff and to ensure that they can provide the best possible care to patients. This can include implementing violence prevention programs, providing support and resources for staff who have experienced violence, and fostering a culture of respect and safety within the workplace. The World Health Organization (WHO) emphasized, in the COVID-19 era, that the first step in protecting the mental and physical health of HCWs is to put all necessary safeguards in place to ensure their workplace safety.<sup>54</sup> In addition, the WHO, in collaboration with other international agencies, developed the guidelines and a questionnaire to investigate the effects of violence in such settings.<sup>55</sup> However, no shared core of regulations have been adopted at supranational level.

In the United States, only three states (Alaska, Idaho, and Washington) have legislation against WPV in HCWs,<sup>56</sup> and in Europe, the International Labour Organization Convention on Violence and Harassment (No. 190, 2019) provided a gender strategy to prevent and end violence and harassment in the workplace. However, only Greece and Italy have ratified the convention.<sup>57</sup> Despite the European Commission's commitment and despite the increase in this phenomenon due to COVID-19, there has so far been no unified response from all states to address this alarming phenomenon.<sup>58</sup>

In Italy, in 2020, the Italian Parliament passed a law to impose harsher punishments for acts of violence against medical professionals, particularly when there is personal injury.<sup>59</sup> A new article was established that defines the offense especially against healthcare employees by imposing stronger sanctions in light of the rising number of cases of WPV against HCWs through the Law n 113/2020,<sup>59,60</sup> an amendment to the Criminal Code states that any injury against a healthcare provider is directly prosecutable ex officio.<sup>61</sup> However, non-physical aggression has not received the same level of attention. It is important for healthcare organizations and policy-maker to be aware of the challenges related to WPV in their country and to tailor their interventions and prevention strategies accordingly.

This umbrella review has some strengths and limitations. While offering an overall review of the systematic reviews conducted on WPV, gathering data from different work settings and countries, a limitation is that all studies with a different design than systematic reviews were excluded from this review. Furthermore, only reviews performed in the English language were included; therefore, systematic reviews performed at country level in other languages may have been left out of this review.

In conclusion, this umbrella review revealed a high prevalence of WPV among HCWs, which varies between countries, population subgroups, and detection methods. Strengthening recognition of the problem could lead to appropriate local and international strategies to address it. Providing a healthy workplace could safeguard the quality of care and avoid wasting resources in increasingly complicated healthcare systems, which must be sustainable to ensure an effective long-term care alliance.

## Author statements

### Ethical approval

None required.

## Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

## Competing interests

The authors declare no conflict of interest.

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