

REVIEWS

WORKPLACE VIOLENCE IN HEALTHCARE DURING AND AFTER THE COVID-19 PANDEMIC: A SCOPING REVIEW

Nikolina Radeva¹, Maria Rohova², Anzhela Bakhova³, Sirma Draganova¹, Atanas Zanev⁴

¹*Department of Disaster Medicine and Maritime Medicine, Faculty of Public Health, Medical University of Varna, Bulgaria*

²*Department of Healthcare Economics and Management, Faculty of Public Health, Medical University of Varna, Bulgaria*

³*Department of Social Medicine and Health Care Organization, Faculty of Public Health, Medical University of Varna, Bulgaria*

⁴*Department of Anaesthesiology, Emergency, Intensive Medicine, Faculty of Medicine, Medical University of Varna, Bulgaria*

ABSTRACT

INTRODUCTION: Workplace violence (WPV) against healthcare workers is a pervasive occupational hazard that undermines workforce well-being, quality of care, and health system resilience. The COVID-19 pandemic intensified pre-existing risk factors, although evidence on temporal trends across pandemic phases remains inconsistent and fragmented.

AIM: The aim of this article is to synthesise and map global evidence on the prevalence, forms, risk factors, and contextual determinants of WPV against healthcare workers during and after the COVID-19 pandemic, and to compare temporal and regional trends across pandemic and post-pandemic periods.

MATERIALS AND METHODS: A scoping review was conducted following the Arksey and O'Malley framework, as refined by the Joanna Briggs Institute. Reporting adhered to the PRISMA-ScR. Searches were performed in PubMed/MEDLINE, Scopus, Web of Science (from 2020 onwards), and were supplemented with Google Scholar and citation chaining. From 196 screened records, 39 studies were included.

RESULTS: Workplace violence prevalence ranged from approximately 28–79% across studies, with frequent escalation during acute pandemic phases. Verbal aggression was the predominant form of WPV in all settings. Nurses and emergency department staff were the most vulnerable groups. Marked geographic disparities were observed, with Latin America, South Asia, and sub-Saharan Africa reporting the highest rates. Multi-level interventions combining training, reporting systems, and psychological support were associated with measurable reductions in WPV.

CONCLUSION: Workplace violence in healthcare is a critical public health issue that was exacerbated by the COVID-19 pandemic. Effective long-term mitigation requires coordinated policy interventions, stan-

Address for correspondence:

Nikolina Radeva
Faculty of Public Health
Medical University of Varna
55 Marin Drinov St
9002 Varna, Bulgaria
e-mail: niki.radeva@mu-varna.bg

dardised reporting, and sustained multi-stakeholder action.

Keywords: workplace violence, healthcare workers, COVID-19, pandemic, occupational safety

Received: July 25, 2026

Accepted: September 5, 2026

INTRODUCTION

Workplace violence (WPV) in the healthcare sector has emerged as a critical field of inquiry due to its high prevalence and profound impact on healthcare workers (HCWs) and health systems worldwide (1,2). Over the past two decades, evidence has documented increasing rates of WPV, with healthcare settings consistently exhibiting higher incidence than the majority of other industries (3). The COVID-19 pandemic further intensified this issue by exacerbating pre-existing stressors, including workload, psychological strain, and tensions with patients and families, contributing to escalating aggression and violence against health professionals (4). Global estimates suggest that WPV prevalence among HCWs can reach up to 78.9%, with nurses and emergency department personnel disproportionately affected (1,5). Such violence encompasses physical, verbal, emotional, and sexual forms, shaped by interacting individual, organisational, and contextual factors (1,6,7). It undermines workforce retention, diminishes quality and safety of care, and weakens overall health system resilience (2,8).

Despite a growing body of research, important gaps remain in the understanding of WPV trends during and after the pandemic. Some studies report marked increases in WPV during COVID-19 (4), whereas others describe decreases or shifts in the predominant forms, perpetrators, or settings of violence (3,9). There is also inconsistent evidence regarding the influence of gender, profession, and healthcare setting on WPV risk (7,10), and persistent underreporting and lack of standardised measures continue to hinder valid cross-study comparisons and evidence-informed policy development (11). Comparative analyses across regions, health systems, professional groups, and different pandemic phases remain scarce (8,12,13). Although prior reviews have addressed selected dimensions of WPV, such as country-specific prevalence, professional subgroups, or individual phases of the COVID-19 pandemic, there remains a lack of comprehensive scoping evidence synthesising all forms of violence across global healthcare settings from the pre-pandemic through post-pandemic periods.

Given the heterogeneity in designs, measures, and definitions of WPV, a scoping review is appro-

priate to map emerging evidence and identify gaps rather than to pool effect sizes (14). By integrating epidemiological patterns, reported risk factors, and documented organisational and policy responses across diverse settings, this approach allows for a comprehensive overview that can support the development of targeted prevention and mitigation strategies (8,15).

The aim of this scoping review is to synthesise and map current evidence on the prevalence, forms, risk factors, and contextual determinants of WPV against HCWs during and after the COVID-19 pandemic, and to compare temporal and regional trends across pandemic phases. Specifically, the review aims to: (1) map and summarise current knowledge on the prevalence and types of WPV against HCWs during and after COVID-19, including differences by profession, setting, and world region; (2) identify and synthesise reported risk factors, contextual determinants, and vulnerable subgroups associated with an elevated risk; and (3) describe temporal patterns reported in the included studies during and after the COVID-19 pandemic, including any pre-pandemic comparisons where available.

MATERIALS AND METHODS

This scoping review was conducted following the methodological framework proposed by Arksey and O'Malley (16), as further refined by Levac et al. (17) and the Joanna Briggs Institute (JBI) (18). The review is reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) checklist (Appendix 1) (19).

Protocol

The Population – Concept – Context (PCC) framework, recommended by JBI for scoping reviews (18), was used to define the scope of the review question:

- ✧ Population: Healthcare workers, including but not limited to physicians, nurses, paramedics, allied health professionals, and support staff.
- ✧ Concept: All forms of workplace violence (physical, verbal, emotional, and sexual), including prevalence, trends, risk factors, reporting practices, and organisational/policy responses.

- ◇ Context: Healthcare settings worldwide during and after the COVID-19 pandemic (2020 onwards).

No a priori protocol was registered for this review.

Identifying the Research Question

The research question guiding this scoping review was: How have all forms of WPV in the healthcare sector evolved during and after the COVID-19 pandemic, and how do these patterns compare across countries and pandemic periods globally?

To ensure a comprehensive and systematic approach, the broad research question was further operationalised into several targeted sub-questions, each addressing a specific aspect of the topic:

1. What are the global trends in all forms of WPV in the healthcare sector during and after COVID-19, stratified by profession (physicians, nurses, other HCWs) and by setting (hospital, pre-hospital, emergency department, psychiatric unit), and what driving factors and policy implications can be identified?
2. How do regional patterns of WPV in healthcare compare across regions globally, accounting for reporting practices, driving factors, and policy measures for prevention and reporting?
3. What are the trends in WPV against HCWs in emergency departments specifically, including profession- and setting-specific analyses, and what is the reported effectiveness of prevention and intervention strategies?

Information Sources and Search Strategy

A systematic literature search was conducted (December 2025) across three electronic databases: PubMed/MEDLINE, Scopus, and Web of Science. No language restrictions were applied during the database search. Non-English studies were included if a validated English-language abstract or full-text translation was available. Additional records were identified through Google Scholar and manual screening of reference lists of included articles.

The search combined the several terms using Boolean operators. Search string (adaptable per database): (“workplace violence” OR “occupational violence” OR “work-related violence” OR “aggression” OR “verbal abuse” OR “physical assault”) AND (“healthcare worker” OR “health professional” OR “nurse” OR “physician” OR “doctor” OR “medical

staff”) AND (“COVID-19” OR “SARS-CoV-2” OR “pandemic” OR “coronavirus”).

The search was limited to peer-reviewed articles published between 2020 and 2025 to capture the COVID-19 pandemic and post-pandemic periods. Because the database search was limited to studies published from 2020 onward, evidence from the COVID-19 period and its immediate aftermath was primarily mapped. Where included studies reported pre-pandemic data, those comparisons were summarised descriptively, but the review was not designed to provide a comprehensive pre-pandemic baseline.

In addition to electronic database searches, backward and forward citation chaining was performed for all included core studies. Backward citation chaining involved examining the reference lists of included papers to identify earlier foundational or relevant works. Forward citation chaining was performed using Scopus and Google Scholar to identify more recent papers that had cited each core study, thereby capturing emerging evidence and methodological advances.

Eligibility Criteria

Several inclusion and exclusion criteria were applied.

Inclusion criteria:

- ◇ Original research studies (including cross-sectional, cohort, case-control, interventional, and qualitative studies) and evidence syntheses (systematic reviews and meta-analyses) addressing WPV against HCWs.
- ◇ Studies conducted in healthcare settings globally.
- ◇ Studies reporting on any type of WPV (e.g., physical, verbal, emotional, sexual) occurring during or after the COVID-19 pandemic.
- ◇ Publications dated from 2020 onwards.

Exclusion criteria:

- ◇ Commentaries, editorials, opinion pieces without substantive analysis relevant to the review objectives, conference abstracts without full text, and non-peer-reviewed grey literature.
- ◇ Studies not specific to the healthcare sector.

- ◆ Studies focusing exclusively on violence unrelated to the workplace (e.g., domestic violence among HCWs).
- ◆ Studies published before 2020 without relevance to the COVID-19 context.

Selection of Sources of Evidence

All retrieved records were exported to Rayyan, a web-based application for systematic and scoping review screening. After automatic and manual removal of duplicates, screening was performed in two stages:

Title and abstract screening: Two reviewers (Reviewer 1: PhD; Reviewer 2: PhD student) independently screened all titles and abstracts against the eligibility criteria. Any discrepancies were resolved through discussion, and when consensus could not be reached, a third reviewer (Reviewer 3: PhD) was consulted.

Full-text screening: The full texts of all potentially eligible records were retrieved and independently assessed by the same two reviewers, applying the predefined inclusion and exclusion criteria. Reasons for exclusion at the full-text stage were documented and are reported in the PRISMA-ScR flow diagram (Fig. 1) (19).

The initial database search yielded 181 records. An additional 46 records were identified through backward and forward citation chaining, resulting in a combined pool of 227 records. After deduplication, 196 records were screened by title and abstract, and 146 were excluded as not meeting the eligibility criteria. The remaining 50 full-text articles were assessed for eligibility, of which 39 met the inclusion criteria and were included in the final review, while 11 were excluded for not meeting the contextual criteria.

Data Charting Process

Data were extracted using a standardised data charting form developed collaboratively by the review team in line with JBI recommendations for scoping reviews (18). The charting form was piloted on a subset of five included studies and refined to ensure consistency and completeness. The following data items were extracted from each included study:

- ◆ Study characteristics: author(s), year of publication, country/region, study design, sample size.
- ◆ Population characteristics: HCWs (e.g., nurses, physicians, paramedics, other), healthcare setting (e.g., hospital, emergency department, outpatient, psychiatric unit, primary care).

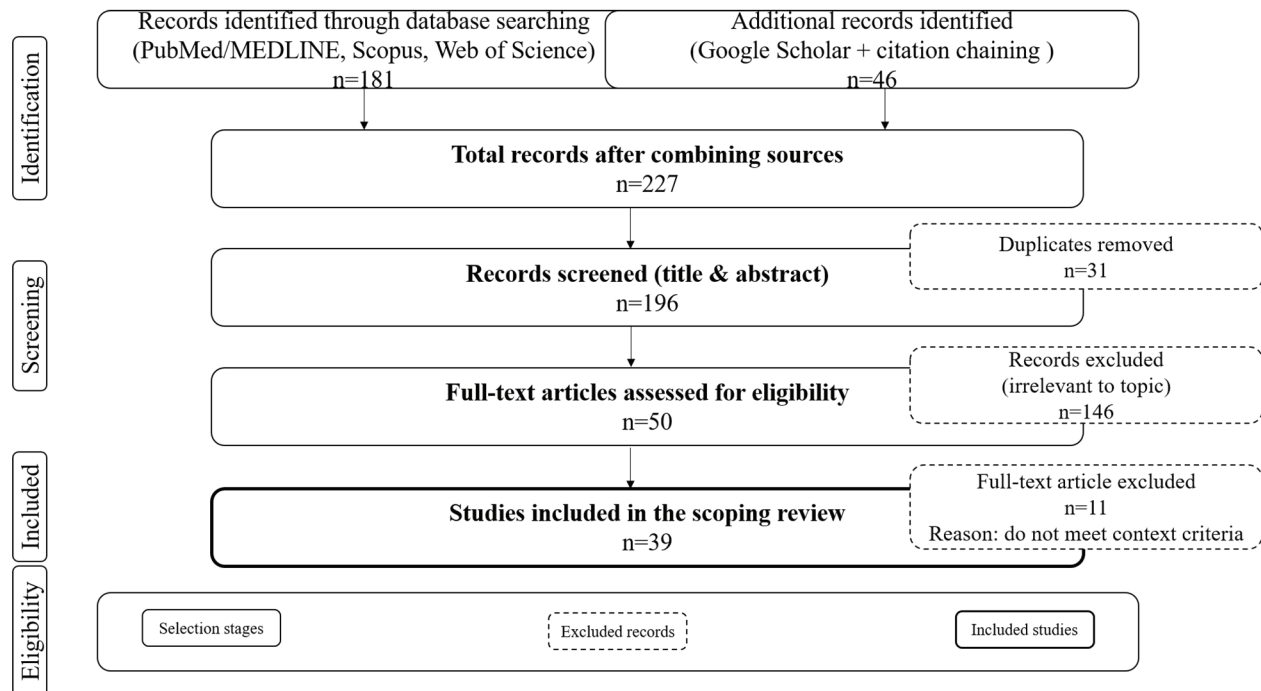


Fig. 1. PRISMA-ScR flow diagram.

- ◇ WPV characteristics: types of violence reported (physical, verbal, emotional, sexual), perpetrators (patients, visitors/family, colleagues), prevalence/incidence figures, temporal context (pre-pandemic, during COVID-19, post-COVID-19 period).
- ◇ Risk factors and determinants: individual-level (e.g., gender, age, profession, experience), organisational-level (e.g., staffing, reporting system, security measures), and contextual/societal factors (e.g., region, pandemic phase, public health policies).
- ◇ Reporting, prevention, and intervention data: approaches to WPV reporting, organisational and policy responses, prevention programs, and their reported effectiveness.
- ◇ Key findings and conclusions relevant to the research question and specific objectives of the review.

Two reviewers (Reviewer 1, PhD; Reviewer 2, PhD student) independently charted data for all included studies. Disagreements were resolved through discussion, with Reviewer 1 making the final determination when consensus could not be reached. Data charting was managed using Microsoft Excel and Rayyan for cross-referencing with the screening records.

Collating, Summarising, and Reporting Results

Extracted data were stratified by violence type, profession, healthcare setting, geographic region, and pandemic period to enable structured mapping and narrative synthesis. A descriptive numerical summary of the included studies was produced (e.g., frequency counts by study design, region, and type of WPV). Thematic analysis was applied to synthesise findings relating to risk factors, reporting practices, and policy responses. The results are presented using narrative summaries, tables, and a PRISMA-ScR flow diagram illustrating the selection process. Consistent with JBI guidance for scoping reviews, no formal critical appraisal of individual sources of evidence was performed, as the aim was to map the extent and nature of the available evidence rather than to assess methodological quality or pool effect sizes.

RESULTS

This scoping review mapped the research landscape on current trends of all types of WPV in the healthcare sector during and after COVID-19 across 39 studies, encompassing systematic reviews, meta-analyses, cross-sectional surveys, and qualitative research. The included studies covered diverse geographic regions, including Asia, Europe, Latin America, Africa, and North America, and examined a range of healthcare settings such as emergency departments, psychiatric units, acute hospital wards, and COVID-19 frontline services. The comparative analysis addressed WPV prevalence rates and forms, professional and setting-specific vulnerabilities, regional policy and health-system contexts, and the reported effectiveness of prevention and intervention strategies, thereby providing a broad, policy-relevant overview of risks and protective measures for HCWs (Table 1).

Across 39 studies conducted in diverse countries and healthcare settings, WPV against HCWs during and after COVID-19 remained highly prevalent, with estimates typically ranging from approximately 28% (10) to 78% (13), and a pooled prevalence of 78.9% among psychiatric-ward nurses in China, as reported in an umbrella review (1). Evidence suggested frequent escalation of WPV during acute pandemic phases, although some contexts reported stabilisation or partial declines linked to operational changes such as visitor restrictions and service reorganisation. Emergency departments and high-acuity environments, including psychiatric units, repeatedly emerged as settings with the highest incidence, including reports of approximately 50% increases in the UK (5) and a 169% rise in Canada (15) following the onset of the pandemic.

Across studies, verbal aggression was consistently the most common form of WPV, followed by physical violence, emotional/psychological abuse, bullying, and sexual harassment (less frequently). Pandemic-specific patterns also included stigma-related attacks, conflict-related violence, and harassment associated with vaccination campaigns, clustering around peaks in public fear and politicisation.

Table 1. Summary of included studies.

N	Study	Prevalence Rates	Violence Typology	Professional and Setting Variability	Regional and Policy Impact	Intervention Effectiveness
1	Rossi et al., 2023 (1)	Up to 78.9% WPV prevalence globally; increased during COVID-19	Physical, verbal, non-physical violence; nurses in psychiatric wards most affected	Nurses most impacted; variability by country and setting	Variations by country; underreporting issues noted	Calls for strengthened recognition and local/international strategies
2	Zhang et al., 2023 (4)	43% overall WPV during COVID-19; physical violence 9%, verbal 48%	Verbal, physical, emotional, bullying, sexual harassment	Nurses had double physical violence rates vs physicians; no gender difference	Regional differences limited; COVID-19 HCWs higher risk for physical violence	Emphasises need for reporting systems and psychological support
3	Kuhlmann et al., 2023 (8)	High WPV prevalence; no clear health system pattern	All forms of violence; focus on political and social dimensions	Women, nurses, minorities more vulnerable; no clear system pattern	Policy failures in Brazil, UK; better outcomes in New Zealand, Germany	Calls for political leadership and comprehensive prevention
4	Duffhues et al., 2024 (20)	255 COVID-19 related attacks globally from 2020-2023	Stigma-related, conflict-related, vaccination campaign attacks	Attacks across diverse settings; peaks early pandemic and 2021	Global distribution; conflict zones and politicised contexts	Highlights need for prevention and mitigation during pandemics
5	Ramzi et al., 2022 (21)	47% WPV prevalence during COVID-19; physical 17%, psychological 44%	Physical and psychological violence predominant	Physicians higher WPV prevalence than other HCWs; regional differences Asia/America	Higher WPV in Americas; regional variability noted	Recommends interventions to protect nursing staff
6	Donald & Lindsay, 2023 (5)	50% increase in WPV incidents in UK emergency departments during COVID-19	Physical and verbal violence; regional variation in trends	Higher WPV in London and North West England; physical violence rising	Regional disparities within UK; underreporting common	Suggests targeted policies and increased resource allocation
7	Garcia-Zamora et al., 2023 (22)	62.9% WPV prevalence in Argentina during COVID-19; higher than Latin America average	Verbal (97.7%) and physical (11.8%) violence	Higher frequency and stress in Argentina vs other Latin American countries	Regional comparison within Latin America; Argentina more affected	Highlights impact on job retention and need for protection
8	Garcia-Zamora et al., 2022 (23)	54.8% reported violence in Latin America; verbal 95.6%, physical 11.1%	Verbal, physical, other violence types; frequent weekly occurrences	Doctors, nurses, administrative staff more affected; women and COVID-19 care linked	Latin America-wide data; vulnerable subgroups identified	Urges development of mitigation strategies
9	Rony et al., 2023 (24)	77.29% WPV prevalence in Bangladesh; verbal abuse most common	Verbal, emotional, physical, sexual harassment	Night-shift work as a risk factor; patients' relatives as perpetrators; nurses highly affected	National data; organisational policy gaps noted	Calls for security strengthening and training programs
10	Eshetie et al., 2025 (25)	55.64% pooled WPV prevalence in East Africa	Physical violence 20-38%; verbal and emotional violence included	Emergency department staff, females, younger workers more at risk	Regional focus; underreporting and system limitations	Recommends targeted interventions and policy attention

11	Shah et al., 2025 (26)	49.9% WPV prevalence in Kenya; verbal and emotional abuse common	Verbal, emotional, online harassment	Patients/relatives main aggressors; increased violence post-COVID-19	National data; occupational safety and health guideline awareness but implementation challenges	Highlights need for actionable safety measures
12	Qi et al., 2022 (27)	64.2% WPV in China during early COVID-19; decreased by 11% post-peak	Physical, verbal, psychological violence; psychiatric departments high risk	Males, psychiatric staff, COVID-19 contact linked to higher WPV	National data; mental health impact emphasised	Suggests multidisciplinary interventions combining mental health and WPV
13	Dai et al., 2024 (28)	71.4% WPV exposure in China; 47.5% recent incidents	Physical, verbal, witnessed violence; post-traumatic stress disorder	Age, gender, experience, COVID-19 contact significant risk factors	Large-scale national data; mental health consequences highlighted	Urges prioritisation of mental health and WPV prevention
14	Spatari et al., 2024 (29)	Rising reported violence in Genoa, Italy (396 incidents, 2018–mid-2023)	Mainly verbal, threatening, but also physical	Nurses most affected; emergency and psychiatric services high risk	Increasing incidents in district services	Calls for integrated prevention policies, staff training, psychological support, and stronger security measures
15	Magnavita et al., 2024 (3)	5.8–11.1% physical assault over 20 years; decreased during COVID-19	Physical assaults, threats, harassment	Reduced violence attributed to visitor restrictions and service balance	Longitudinal data from Italy; pandemic impact on violence rates	Supports health surveillance as risk assessment tool
16	Lombardi et al., 2024 (30)	30% increase in WPV in healthcare facilities over 10 years pre-pandemic	Physical and verbal violence trends	Facility type influences WPV rates; occupational differences minimal	US national data; system issues beyond pandemic	Emphasises need for targeted interventions
17	Meese et al., 2024 (31)	Rising violence and mistreatment stress in US HCWs	Verbal and physical violence; patient/visitor origin	Nurses, young workers, ER staff most stressed	US national trends; organisational predictors identified	Recommends comprehensive prevention and support plans
18	Belingheri et al., 2024 (32)	38.2% WPV among Italian physicians/dentists during pandemic	Harassment, threats, bullying; patients and relatives main aggressors	Higher violence perceived during pandemic; communication deterioration	Regional data; pandemic-related factors linked to violence	Suggests prevention and management improvements
19	Huang et al., 2024 (33)	Decline in psychological violence (from 60.9 to 33.9%) in China	Physical and psychological violence reduction post-intervention	Night shifts, patient contact, and worry linked to WPV	Single hospital data; HealthWISE intervention impact	Demonstrates effectiveness of occupational health systems
20	Ceballos-Vásquez et al., 2024 (34)	54.6% psychological and physical violence in Chilean private emergency units	Psychological and physical violence; users main perpetrators	Age and concern about violence increase risk	Regional data; private healthcare focus	Provides empirical basis for workplace safety decisions
21	Nelson et al., 2024 (7)	Gender-based WPV review; women more exposed to non-physical violence	Verbal abuse, sexual harassment, bullying more common in women	Younger, less experienced, minority status increase risk	Global scope; gendered sociocultural determinants emphasised	Calls for systemic gender-sensitive interventions

22	Schulz-Quach et al., 2025 (15)	169% increase in WPV incidents in Canadian emergency units post-pandemic start	Verbal de-escalation, trauma-informed training implemented	Multi-method project; staff interviews and surveys	Canadian institutional data; systemic approach	Framework for tailored WPV mitigation strategies
23	Iida et al., 2022 (35)	COVID-19-related bullying and harassment higher in HCWs than non-HCWs	Workplace bullying and patient harassment prevalence	Higher risk during pandemic peaks	Nationwide panel survey of full-time employees; temporal trends across four 2020 waves	Urges strengthened countermeasures for HCWs
24	O'Brien et al., 2024 (2)	Rising WPV severity and frequency globally; unmet patient expectations	Physical, verbal, emotional violence linked to organisational factors	Staff turnover and patient safety impacted	Global literature synthesis	Few sustained prevention successes; calls for multi-stakeholder action
25	Cascales-Martínez et al., 2024 (36)	High physical and non-physical violence in Spanish emergency professionals	Nurses and administrative assistants most affected	Burnout and job satisfaction vary by profession	Single Spanish hospital emergency department	Suggests workplace environment improvements
26	Ghareeb et al., 2021 (37)	65.5% WPV prevalence in Jordanian hospital during COVID-19	Verbal violence most common; patient relatives main perpetrators	Younger, male, rotating shift workers at higher risk	Single hospital data; cultural factors noted	Calls for risk communication and prevention policies
27	Musse et al., 2022 (9)	60% violence pre-pandemic; 57.9% during pandemic in Brazilian emergency staff	Verbal violence predominant; anxiety and stress consequences	Mostly physicians; low reporting and prevention measures	Regional data; pandemic did not increase violence	Emphasises need for management and prevention
28	Caruso et al., 2022 (6)	High violence rates against physicians globally; increased during COVID-19	Verbal aggression, threats, physical assault; intensive care and emergency units high risk	Physicians face underreporting and lack of protection	Global review; cultural and organisational factors	Advocates multi-level interventions and reporting systems
29	Díaz et al., 2023 (12)	Decrease in first-time workplace aggression during COVID-19 in Spain	Verbal aggression most frequent; nurses and psychiatric staff vulnerable	Women and men showed similar magnitude of risk, with slightly higher rates in women	Longitudinal institutional data	Suggests organisational and societal factors influence trends
30	Shahjalal et al., 2023 (38)	14.1% workplace injuries and 22.4% absenteeism due to WPV in Bangladesh	Injuries higher in emergency, intensive care, surgery, and gynaecology departments	Workers in high-risk departments and rotating shifts more affected	National hospital data	Recommends policy integration for violence reduction
31	Tang et al., 2025 (39)	Psychological violence (34.1%) more common than physical (2.2%) in Chinese infectious disease hospital	Communication and safety protocol gaps identified	Outpatient and temporary staff at higher risk	Mixed-methods study; system-related triggers	Proposes CARE framework for WPV mitigation
32	Önal et al., 2023 (40)	63% verbal and 17% physical violence in Eastern Mediterranean HCWs	No significant difference by profession or sample size	Variation by country and year	Regional meta-analysis	Supports policy development for violence prevention

33	Veronesi et al., 2023 (11)	Approximately 2% 12-month WPV rate post-implementation of systematic reporting in two public hospitals in Northern Italy	Nurses, young workers, and men reported the highest WPV rates	Psychiatric and emergency departments the most affected hospital areas	Hospital-based data; improved reporting accuracy	Demonstrates benefits of guideline-compliant reporting
34	Elhadi et al., 2022 (13)	78.3% WPV prevalence in Sudan during COVID-19; verbal 91.6%, physical 50%	Emergency department highest incidents; half unreported	Occupation, age, marital status significant factors	National survey data	Urges policy and system interventions
35	Alfuqaha et al., 2022 (41)	48% physicians and 31.6% nurses experienced WPV in Jordan during COVID-19	Verbal abuse most common; physical abuse less frequent	Communication skills and demographics associated with violence	Single hospital data	Highlights need for security and communication training
36	Jiang et al., 2023 (10)	37.25% WPV in frontline and 27.73% in non-frontline HCWs in China	Higher WPV in those with advanced professional titles; nurses at higher risk among non-frontline workers	Age and hospital type influence risk	Large city-based study	Recommends prioritising frontline HCWs
37	Ramos et al., 2024 (42)	68.5% verbal and 35.2% physical aggression in Spanish hospital workers	Nurses and emergency staff at higher risk; women more physically assaulted	Low knowledge but high interest in training	Single hospital survey	Calls for enhanced training and awareness
38	Lyver et al., 2025 (43)	Qualitative insights on WPV impact in urban emergency departments	Themes include normalisation of violence and leadership gaps	Staff experience disconnect during WPV response	Multi-site academic health centre	Provides actionable recommendations for culture change
39	Brunelli et al., 2023 (44)	46.5% WPV in COVID-19 immunisation centres in Italy; 35.5% post-traumatic stress disorder risk	Verbal and physical violence; gender differences in prevention views	Vaccination staff vulnerable due to politicisation	Regional survey	Advocates multidisciplinary approaches and support

Nurses and emergency department staff were identified as the most vulnerable professional groups, with one meta-analysis reporting approximately double the rate of physical violence compared with physicians (4) and disproportionate exposure to verbal and emotional abuse.

Mapped risk factors included younger age, gender (with inconsistent findings across studies), limited experience, minority status, night-shift work, frontline status and direct COVID-19 patient contact, as well as occupation in psychiatric or infectious-disease settings.

Considerable geographic disparities were reported, with Latin America, South Asia, and parts of sub-Saharan Africa generally showing higher WPV levels than many European and North American datasets (e.g., Argentina: 62.9% (22); Bangladesh: 77.3% (24); Sudan: 78.3% (13); East Africa: 55.6% (25)).

Underreporting and weak surveillance were recurrent barriers, and policy differences across jurisdictions were highlighted, including examples of policy gaps (e.g., Brazil, the UK) versus more comprehensive multi-level prevention approaches (e.g., New Zealand, Germany).

Finally, the review mapped evidence that multi-component interventions such as combining training, reporting systems, and psychological support, were associated with measurable reductions in WPV in several institutions, although sustained impact was consistently linked to the need for coordinated multi-stakeholder action across policy, organisational culture, and ongoing workforce support.

DISCUSSION

This scoping review synthesises evidence from 39 studies on WPV against healthcare workers during and after the COVID-19 pandemic. Across the included studies, violence remains common, with reported prevalence ranging from approximately 28% to 79% (1,10,13), verbal aggression is the most frequently reported form (4,13,22–24), nurses and emergency department staff are repeatedly identified as high-risk groups (1,4), and regional differences are substantial (13,22,24,25). The variation in prevalence likely reflects a combination of measurement heterogeneity, reporting practices, and differences in exposure across settings and regions.

Several studies reported elevated WPV during acute COVID-19 phases and partial post-acute declines, consistent with the meta-analysis of Zhang et al. (4) and the UK time-series data of Donald and Lindsay (5). Nevertheless, retrospective reporting designs introduce recall bias and subjective temporal categorisation, limiting confidence in causal interpretation. Prospective longitudinal studies with contemporaneous incident reporting are needed to clarify whether observed changes reflect real shifts in violence, reporting behaviour, or health-system organisation.

Nurses report substantially higher WPV exposure than physicians across multiple included studies, a pattern also documented in prior reviews, including the umbrella analysis by Rossi et al. (1). Emergency departments show elevated exposure, consistent with the concentration of acute psychiatric crises, substance intoxication, and high-acuity care in those settings. Jiang et al. (10) further suggest that frontline status compounded occupational risk. These findings point to correlates of exposure rather than established causal determinants.

Elevated WPV rates in Latin America, South Asia, and sub-Saharan Africa, including estimates from Argentina (22), Bangladesh (24), Sudan (13), and East Africa (25), likely reflect a mix of security infrastructure, staffing adequacy, organisational prevention capacity, and regional differences in reporting norms and measurement approaches. These disparities have clear health equity implications, particularly where WPV contributes to HCW attrition in already understaffed systems.

Underreporting is a pervasive systemic failure. The Italian surveillance study by Veronesi et al. (11) shows that standardised monitoring can reveal substantial underreporting under routine conditions, while cross-sectional data from Sudan, Bangladesh, and Latin America (13,22–24) indicate that many violent events are never formally reported. This may reflect absent or weak reporting systems and limited organisational prevention measures (9,13,24), as well as the normalisation of violence within healthcare settings (43); fear of retaliation may also discourage reporting, although this explanation was not directly examined in the included studies and should be considered tentative. Kuhlmann et al. (8) argue that

WPV is not only an occupational safety issue but also a public health and political problem, with observed cross-national differences reinforcing the need for strengthened policy measures.

Multi-component interventions combining de-escalation training, incident reporting systems, security measures, and psychological support were associated with measurable reductions in WPV across several included studies. The HealthWISE-type intervention in a Chinese hospital has reduced psychological violence from 60.9% to 33.9% and physical violence from 5.13% to 3.33% (33). The Italian standardised monitoring programme has also reduced underreporting (11). However, selection bias, reverse causation, and organisational confounding prevent causal conclusions from observational designs, and gains may not persist after emergency organisational arrangements are withdrawn.

Several included studies linked WPV during the pandemic to its politicised context (8,20,44). The politicisation of the pandemic response, together with the spread of misinformation through social media and the erosion of institutional trust, may have created conditions in which healthcare workers were increasingly perceived as representatives of contested political positions rather than as neutral caregivers, potentially contributing to new pathways to violence. As the role of misinformation and institutional trust was not directly assessed in the included studies, this interpretation should be regarded as tentative. Stigma-related attacks, conflict-related violence against healthcare facilities, and aggression linked to vaccination campaigns illustrate how pandemic-specific social dynamics generate forms of WPV that extend beyond conventional occupational safety frameworks (20,44).

Overall, WPV against HCWs remains a pervasive occupational and public health problem, and the reviewed studies suggest that it intensified during the COVID-19 pandemic, although temporal patterns varied across settings. The findings support the need for standardised surveillance, stronger reporting and accountability mechanisms, multi-component prevention programmes for high-risk groups, and coordinated policy action. Strengthening responses requires mandatory, standardised WPV surveillance, integration of prevention into healthcare standards,

and legislation that explicitly protects HCWs, particularly in contexts with weak policy and enforcement.

Limitations

Five key limitations should be considered when interpreting these findings. First, the majority of the included studies used cross-sectional observational designs, which cannot establish causal relationships or validate intervention effectiveness. Second, retrospective reporting introduces recall bias that may distort prevalence estimates and temporal patterns. Third, convenience sampling limits generalisability and introduces potential selection bias. Fourth, self-reported violence without validated instruments or objective incident record linkage may introduce measurement error of uncertain direction and magnitude. Fifth, geographic representation in the evidence base is uneven, with some high-burden regions underrepresented because of limited research infrastructure and publication barriers.

Future Directions

Future research should prioritise prospective and intervention-focused designs. Three priorities follow directly from the gaps identified in this review: (1) randomised controlled trials and quasi-experimental evaluations of multi-component interventions, particularly in Latin America and sub-Saharan Africa where evidence is sparse; (2) prospective cohort studies with standardised WPV reporting to replace retrospective recall designs; and (3) development and validation of a standardised global WPV measurement instrument to resolve the definitional and measurement heterogeneity that currently precludes robust cross-study comparison.

CONCLUSION

The findings of this scoping review confirm that WPV in healthcare is a persistent structural challenge, amplified by pandemic conditions but rooted in longstanding systemic vulnerabilities. The most prevalent form of WPV is verbal aggression, with nurses and emergency department staff bearing the highest occupational burden, and substantial regional inequalities evident across settings. Sustainable mitigation will depend not only on organisational interventions but on political commitment to protect HCWs as a public health priority. This review highlights critical gaps in surveillance, standardisation, and enforcement that, if addressed, could sub-

stantially reduce the burden of WPV across diverse health system contexts.

Funding: The research study was financed with funds from the state budget, provided through the Ministry of Education and Science to the Science Fund at the Medical University of Varna for financing the scientific activity inherent in state higher education institutions under Project № 23008. The funder had no role in the study design, data collection, analysis, interpretation, or preparation of the manuscript.

Conflicts of interest: The authors declare no conflicts of interest.

Use of AI assisted technologies: During the preparation of this manuscript, the authors used ChatGPT 5.5. for the purposes of paraphrasing and language improvement. The authors have reviewed and edited the output and take full responsibility for the content of this publication.

REFERENCES

- Rossi MF, Beccia F, Cittadini F, Amantea C, Aulino G, Santoro PE, et al. Workplace violence against healthcare workers: an umbrella review of systematic reviews and meta-analyses. *Public Health*. 2023;221:50–59. doi:10.1016/j.puhe.2023.05.021.
- O'Brien CJ, van Zundert AAJ, Barach P. The growing burden of workplace violence against healthcare workers: trends in prevalence, risk factors, consequences, and prevention – a narrative review. *EClinicalMedicine*. 2024;72:102641. doi:10.1016/j.eclinm.2024.102641.
- Magnavita N, Meraglia I, Viti G, Gasbarri M. Tracking workplace violence over 20 years. *Int J Environ Res Public Health*. 2024;21(11):1438. doi:10.3390/ijerph21111438.
- Zhang S, Zhao Z, Zhang H, Zhu Y, Xi Z, Xiang K. Workplace violence against healthcare workers during the COVID-19 pandemic: a systematic review and meta-analysis. *Environ Sci Pollut Res Int*. 2023;30(30):74838–52. doi:10.1007/s11356-023-27317-2.
- Donald N, Lindsay T. Incidence and trends in workplace violence within emergency departments in the United Kingdom 2017–2022: an observational time series analysis. *Front Public Health*. 2023;11:1211471. doi:10.3389/fpubh.2023.1211471.
- Caruso R, Toffanin T, Folesani F, Biancosino B, Romagnolo F, Riba MB, et al. Violence against physicians in the workplace: trends, causes, consequences, and strategies for intervention. *Curr Psychiatry Rep*. 2022;24(12):911–24. doi:10.1007/s11920-022-01398-1.
- Nelson S, Ayaz B, Baumann AL, Dozois G. A gender-based review of workplace violence amongst the global health workforce — a scoping review of the literature. *PLoS Glob Public Health*. 2024;4(7):e0003336. doi:10.1371/journal.pgph.0003336.
- Kuhlmann E, Brînzac MG, Czabanowska K, Falkenbach M, Ungureanu MI, Valiotis G, et al. Violence against healthcare workers is a political problem and a public health issue: a call to action. *Eur J Public Health*. 2023;33(1):4–5. doi:10.1093/eurpub/ckac180.
- Musse JLL, Musse FCC, Pelloso SM, Carvalho MDB. Violence against health personnel before and during the COVID-19 pandemic. *Rev Assoc Med Bras*. 2022;68(11):1524–9. doi:10.1590/1806-9282.20220345.
- Jiang D, Wang Q, Xiao X, Zhang J, Xie Y, Zhu Y, et al. Workplace violence against COVID-19 front-line healthcare workers versus non-front-line in Hangzhou, China: a cross-sectional study. *BMJ Open*. 2023;13(9):e073226. doi:10.1136/bmjopen-2023-073226.
- Veronesi G, Ferrario MM, Giusti EM, Borchini R, Cimmino L, Ghelli M, et al. Systematic Violence Monitoring to Reduce Underreporting and to Better Inform Workplace Violence Prevention Among Health Care Workers: Before-and-After Prospective Study. *JMIR Public Health Surveill*. 2023;9:e47377. doi:10.2196/47377.
- Díaz A, Utzet M, Mirabent J, Diaz P, Ramada JM, Serra C, et al. Workplace aggression against healthcare workers in a Spanish healthcare institution between 2019 and 2021: the impact of the COVID-19 pandemic. *Front Public Health*. 2023;11:1070171. doi:10.3389/fpubh.2023.1070171.
- Elhadi YAM, Mohamed HMH, Abdelmunim A, Hamza HI, Hassan HM, Ehssan F, et al. Workplace violence against healthcare workers during the COVID-19 pandemic in Sudan: a cross-sectional study. *Public Health Chall*. 2022;1(4):e31. doi:10.1002/puh2.31.
- Munn Z, Peters MDJ, Stern C, Tufanaru C, McArthur A, Aromataris E. Systematic review or scoping review? *BMC Med Res Methodol*. 2018;18(1):143. doi:10.1186/s12874-018-0611-x.

15. Schulz-Quach C, Lyver B, Reynolds C, Hanagan T, Haines J, Shannon J, et al. Understanding and measuring workplace violence in healthcare: a Canadian systematic framework to address a global healthcare phenomenon. *BMC Emerg Med*. 2025;25:9. doi:10.1186/s12873-024-01144-1.
16. Arksey H, O'Malley L. Scoping studies: towards a methodological framework. *Int J Soc Res Methodol*. 2005;8(1):19–32. doi:10.1080/1364557032000119616.
17. Levac D, Colquhoun H, O'Brien KK. Scoping studies: advancing the methodology. *Implement Sci*. 2010; 5:69. doi:10.1186/1748-5908-5-69.
18. Peters MDJ, Marnie C, Tricco AC, Pollock D, Munn Z, Alexander L, et al. Updated methodological guidance for the conduct of scoping reviews. *JBIM Evid Synth*. 2020;18(10):2119–26. doi:10.11124/JBIES-20-00167.
19. Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. *Ann Intern Med*. 2018;169(7):467–73. doi:10.7326/M18-0850.
20. Duffhues WAC, Barten DG, De Cauwer H, Mortelmans L, van Osch F, Tin D, et al. Worldwide trends in COVID-19-related attacks against healthcare: a review of the Safeguarding Health in Conflict Coalition database. *Health Secur*. 2024;22(4):294–303. doi:10.1089/hs.2023.0114.
21. Ramzi ZS, Fatah PW, Dalvandi A. Prevalence of workplace violence against healthcare workers during the COVID-19 pandemic: a systematic review and meta-analysis. *Front Psychol*. 2022;13:896156. doi:10.3389/fpsyg.2022.896156.
22. Garcia-Zamora S, Iomini PA, Pulido L, Miranda-Arboleda AF, Lopez-Santi P, Burgos LM, et al. Comparison of violence and aggressions suffered by health personnel during the COVID-19 pandemic in Argentina and the rest of Latin America. *Rev Peru Med Exp Salud Publica*. 2023;40(2):179–88. doi:10.17843/rpmesp.2023.402.12646.
23. García-Zamora S, Pulido L, Miranda-Arboleda AF, García DE, Pérez G, Priotti M, et al. Aggression, micro-aggression, and abuse against health care providers during the COVID-19 pandemic. A Latin American survey. *Curr Probl Cardiol*. 2022;47(10):101296. doi:10.1016/j.cpcardiol.2022.101296.
24. Rony MKK, Das Sharmi P, Parvin MR, Kayesh I, Alamgir HM. Prevalence and risk factors of workplace violence against healthcare workers in Bangladesh and its consequences: a nationwide cross-sectional study. *Inform Med Unlocked*. 2023;40:101335. doi:10.1016/j.imu.2023.101335.
25. Eshetie Y, Baye AA, Ewunetu M, Kerebeh G, Asferie WN, Kefale D. Magnitude of workplace violence and associated factors among healthcare professionals in East Africa: a systematic review and meta-analysis. *PLoS One*. 2025 Sep 19;20(9):e0332415. doi:10.1371/journal.pone.0332415.
26. Shah R, Shah J, Qasba RK, Qasba RK, Mbithi A, Njenga E, et al. Violence against healthcare workers in Kenya: a cross-sectional sub-analysis of the global ViSHWaS study. *BMC Public Health*. 2025 Mar 10;25(1):938. doi:10.1186/s12889-024-20753-w.
27. Qi M, Hu X, Liu J, Wen J, Hu X, Wang Z, et al. The impact of the COVID-19 pandemic on the prevalence and risk factors of workplace violence among healthcare workers in China. *Front Public Health*. 2022 Jul 25;10:938423. doi:10.3389/fpubh.2022.938423.
28. Dai X, He Z, Chu X, Lei Q, Wang J, Chen W, et al. Association between workplace violence and post-traumatic stress disorder among healthcare workers in China, 2020 to 2023. *J Interpers Violence* [Internet]. 2024 Nov 7;40(19–20):4629–50. Available from: <http://dx.doi.org/10.1177/08862605241297323>.
29. Spatari G, De Mite AML, Cantova E, Reggiani S, Re M, Mercogliano M, et al. Violence against healthcare workers during the phases of the COVID 19 pandemic: a descriptive observational study from 2018 to 2023 in the metropolitan city of Genoa (North Western Italy). *J Prev Med Hyg*. 2024;65(2):E256–E264. doi:10.15167/2421-4248/jpmh2024.65.2.3143.
30. Lombardi B, Jensen T, Galloway E, Fraher E. Trends in workplace violence for health care occupations and facilities over the last 10 years. *Health Aff Sch*. 2024;2(12):qxael34. doi:10.1093/haschl/qxae134.
31. Meese KA, Boitet LM, Schmidt JJ, Borkowski N, Sweeney KL. Exploring national trends and organizational predictors of violence and mistreatment from patients and visitors. *J Healthc Manag*. 2024 Jan–Feb;69(1):29–44. doi:10.1097/JHM-D-23-00105.

32. Belingheri M, Riva M, Perconte C, Teruzzi C, Paladino M. Workplace violence against doctors and dentists and their opinion during the pandemic. *Acta Biomed.* 2024;95(5):e2024155. doi:10.23750/abm.v95i5.16296.
33. Huang Y, Zhang M, He C, Wang F, Liu Y, Wu J, et al. Characteristics and trends of workplace violence towards frontline health workers under comprehensive interventions in a Chinese infectious disease hospital. *Healthcare.* 2024;12(19):1911. doi:10.3390/healthcare12191911.
34. Ceballos-Vásquez P, Rolo-González G, Martín-Asuero A, Díaz-Cabrera D, Hernández-Fernaund E. Perception of psychological and physical violence among workers of private emergency units in Chile. *Rev Cienc Salud.* 2024;22(2):e2228. doi:10.12804/revistas.urosario.edu.co/revsalud/a.12528.
35. Iida M, Sasaki N, Imamura K, Kuroda R, Tsuno K, Kawakami N. COVID-19-related workplace bullying and customer harassment among healthcare workers over the time of the COVID-19 outbreak: an eight-month panel study of full-time employees in Japan. *J Occup Environ Med.* 2022;64(5):e300–e305. doi:10.1097/JOM.0000000000002511.
36. Cascales-Martínez A, López-Ros P, Pina D, Cánovas-Pallares JM, López López R, Puente-López E, et al. Differences in workplace violence and health variables among professionals in a hospital emergency department: a descriptive-comparative study. *PLoS One.* 2024;19(12):e0314932. doi:10.1371/journal.pone.0314932.
37. Ghareeb NS, El Shafei DA, Eladl AM. Workplace violence among healthcare workers during COVID 19 pandemic in a Jordanian governmental hospital: the tip of the iceberg. *Environ Sci Pollut Res Int.* 2021;28(43):61441–61449. doi:10.1007/s11356-021-15112-w.
38. Shahjalal M, Mosharaf MP, Mahumud RA. Effect of workplace violence on health workers' injuries and workplace absenteeism in Bangladesh. *Glob Health Res Policy.* 2023;8(1):33. doi:10.1186/s41256-023-00316-z.
39. Tang Y, Zhang M, He C, Fang X, Wang X, Wang F, et al. An investigation on workplace violence in an infectious disease hospital: a mixed-methods study from the perspectives of healthcare workers and patients. *Eur J Investig Health Psychol Educ.* 2025;15(8):155. doi:10.3390/ejihpe15080155.
40. Önal Ö, Evcil FY, Batmaz K, Çoban B, Doğan E. Systematic review and meta-analysis of verbal and physical violence against healthcare workers in the Eastern Mediterranean Region. *East Mediterr Health J.* 2023;29(10):819–830. doi:10.26719/emhj.23.083.
41. Alfuqaha OA, Albawati NM, Alhiary SS, Alhalaiqa FN, Haha MFF, Musa SS, et al. Workplace violence among healthcare providers during the COVID-19 health emergency: a cross-sectional study. *Behav Sci (Basel).* 2022;12(4):106. doi:10.3390/bs12040106.
42. Lorente Ramos L, Rodríguez Lozano B, Barroso Morales ML, Rodríguez Perez D, Jiménez Sosa A, Hernández Cabrera NE, et al. Workplace aggressions on hospital workers: a current and prevalent problem with a high demand for training. *Work.* 2024;78(4):961–968. doi:10.3233/WOR-220702.
43. Lyver B, Singh B, Balzer N, Agnihotri M, Hulme J, Chan K, et al. Exploring the impact of workplace violence in urban emergency departments: a qualitative study. *Healthcare (Basel).* 2025;13(6):679. doi:10.3390/healthcare13060679.
44. Brunelli L, Scarpis E, Lo Presti T, Fiorillo F, Campanella F, Zuliani P, et al. Health professionals who have worked in COVID-19 immunization centers suffer the effects of violence. *Front Public Health.* 2023;11:1264301. doi:10.3389/fpubh.2023.1264301.

Appendix. 1. PRISMA-ScR Checklist. Workplace violence trends in healthcare: COVID-19 impact.

Item	Section	PRISMA-ScR Requirement (Short)	Where Reported in Manuscript
1.	Title	Identify the report as a scoping review	Title page (identifies 'scoping review') and Abstract
2.	Abstract	Provide structured summary (background, objectives, eligibility criteria, sources of evidence, charting methods, results, conclusions)	Structured Abstract (Introduction, Aim, Materials and Methods, Results, Conclusion)
3.	Introduction	Describe rationale for the review in the context of what is already known, and why a scoping review is appropriate	Introduction, first three paragraphs (WPV burden, COVID-19 intensification, heterogeneity; justification for scoping review)
4.	Introduction	Provide explicit statement of questions/objectives with key elements (population, concept, context)	Introduction, final paragraph (overall aim and three specific objectives)
5.	Materials and Methods	Indicate whether a review protocol exists; if so, where it is registered	Materials and Methods – Protocol (no a priori protocol registered)
6.	Materials and Methods	Specify eligibility criteria (e.g. population, concept, context, study design, years, language) and provide rationale	Materials and Methods – Eligibility criteria (population, concept, context, study designs, years, language; rationale linked to COVID-19 focus)
7.	Materials and Methods	Describe all information sources and date of last search	Materials and Methods – Information sources and search strategy (PubMed/MEDLINE, Scopus, Web of Science, Google Scholar, citation chaining; search completed December 2025)
8.	Materials and Methods	Present full electronic search strategy for at least one database to allow replication	Materials and Methods – Information sources and search strategy (core Boolean search string, adapted for each database)
9.	Materials and Methods	State the process for selecting sources of evidence (screening, eligibility, inclusion)	Materials and Methods – Selection of sources of evidence (title and abstract screening by two independent reviewers; disagreements resolved through discussion or consultation with a third reviewer, Reviewer 3, when consensus could not be reached; full-text screening with documented reasons for exclusion; PRISMA-ScR flow diagram, Fig. 1)
10.	Materials and Methods	Describe data charting methods (forms, piloting, calibration, who charted, how disagreements were handled)	Materials and Methods – Data charting process (JBI-based piloted charting form; two reviewers independently charted data; disagreements resolved by discussion, with Reviewer 1 as final arbiter)
11.	Materials and Methods	List and define all data items (variables) for which data were sought	Materials and Methods – Data charting process (study characteristics; population and setting; WPV types and perpetrators; prevalence/incidence and temporal context; risk factors and determinants; reporting, prevention, and interventions; key findings)

12.	Materials and Methods	If done, describe critical appraisal of individual sources and how this was used	Not applicable – Materials and Methods explicitly state that no formal critical appraisal of individual sources was performed, consistent with the scoping review purpose
13.	Materials and Methods	Describe methods of handling and summarising charted data	Materials and Methods – Collating, summarising, and reporting results (descriptive numerical summary; stratification by violence type, profession, setting, region, and pandemic period; thematic analysis of risk factors, reporting practices, and policy responses)
14.	Materials and Methods	Report numbers of sources screened, assessed for eligibility, and included, with reasons for exclusion; ideally using a flow diagram	Materials and Methods – Selection of sources of evidence (227 records identified; 31 duplicates removed; 196 screened; 50 full-texts assessed; 39 included; 11 excluded for context reasons) and PRISMA-ScR flow diagram (Fig. 1)
15.	Results	Present characteristics of each source of evidence	Results and Table 1 Summary of Included Studies: authors, year, country/region, setting, design, prevalence, WPV typology, risk factors, and interventions
16.	Results	If done, report critical appraisal within sources of evidence (e.g. quality ratings)	Not applicable – No critical appraisal of individual sources was undertaken
17.	Results	Present relevant data from each included source that relate to the review questions and objectives	Results – Table 1 and accompanying narrative: prevalence range, main WPV forms, vulnerable professions and settings, regional and policy contexts, and reported intervention effects
18.	Results	Summarise and present charting results as they relate to the review questions and objectives	Results – Descriptive narrative summary of included studies: global patterns in WPV, temporal shifts across pandemic phases, professional and setting-specific vulnerabilities, regional disparities, and effects of multi-level interventions
19.	Discussion	Summarise main results, link to review questions/objectives, and consider relevance to key groups.	Discussion – Opening paragraphs (summary of prevalence variation, pandemic-related escalation and partial post-acute declines, heightened risk among nurses and emergency staff, and marked regional inequities)
20.	Discussion	Discuss limitations of the scoping review process	Discussion – Limitations subsection: predominantly cross-sectional observational designs; retrospective recall bias; convenience sampling; self-reported violence without validated instruments or incident record linkage; uneven geographic representation
21.	Discussion	Provide general interpretation of results, implications, and potential next steps	Discussion, Future directions, and Conclusion
22.	Funding	Describe sources of funding for included sources of evidence (if available) and for the scoping review; describe the role of funders	Funding section: State budget funding through the Ministry of Education and Science, Science Fund of the Medical University of Varna, project № 23008; the funder had no role in study design, data analysis, interpretation, or manuscript preparation