








Predictors of events of violence or aggression against nurses in the workplace: A scoping review

Nicola Pagnucci MSN, RN, PhD, Researcher¹  |
 Giulia Ottonello MSN, RN, PhD Candidate¹  | Davide Capponi MSN, RN¹ |
 Gianluca Catania MSN, RN, PhD, Assistant Professor¹  |
 Milko Zanini MSN, RN, PhD, Assistant Professor¹ |
 Giuseppe Aleo MA, PhD, Lecturer¹  |
 Fiona Timmins MSC, RGN, PhD, Full Professor of Nursing²  |
 Loredana Sasso MSN, RN, FAAN, Full Professor of Nursing²  |
 Annamaria Bagnasco MSN, RN, PhD, Full Professor of Nursing¹ 

¹Department of Health Sciences, University of Genoa, Genoa

²School of Nursing, Midwifery & Health Systems, University College Dublin, Dublin, Ireland

Correspondence

Gianluca Catania, PhD, MSN, RN, Assistant Professor and Researcher, Department of Health Sciences, University of Genoa, Via Pastore, 1, 16132 Genoa, Italy.
 Email: gianluca.catania@edu.unige.it

Abstract

Aim: To identify predictors and consequences of violence or aggression events against nurses and nursing students in different work contexts.

Background: Workplace violence against nurses and nursing students is a very common and widespread phenomenon. Actions to manage or prevent violent events could be implemented knowing the risk factors and consequences. However, there is a lack of systematic reviews that summarize knowledge on the predictors and consequences of workplace violence.

Evaluation: A scoping review was conducted using electronic databases including APA PsycInfo, CINAHL, Cochrane, Ovid Medline, PubMed and Scopus.

Key issues: After full text analysis, 87 papers were included in the current scoping review. Risk factors of horizontal violence were grouped into ‘personal’ and ‘Environmental and organizational’, and for violence perpetrated by patients into ‘personal’, ‘Environmental and organizational’ and ‘Characteristics of the perpetrators’.

Conclusions: The results of this scoping review uncover problems that often remain unaddressed, especially where these episodes are very frequent. Workplace violence prevention and management programmes are essential to counter it.

Implications for Nursing Management: The predictors and the consequents identified constitute the body of knowledge necessary for nurse managers to develop and implement policy and system actions to effectively manage or prevent violent events.

KEYWORDS

consequences, nurse, nursing students, predictors, scoping review, workplace violence

1 | BACKGROUND

The International Labour Organization defines 'workplace violence' as 'any action, incident or behaviour that departs from reasonable conduct in which a person is threatened, harmed, injured in the course of, or as a direct result of, his or her work' (ILO-International Labour Organization, 2003). The value of this definition lies both in its completeness (it covers all forms of violence), physical or psychological and in its inclusiveness (it does not exclude colleagues as a source of violence).

Health care professionals are often exposed to the risk of assault by patients or visitors. Workplace violence (WPV) among health care professionals, especially nurses, is the main occupational hazard in both developing and developed countries (Liu et al., 2019). A recent study reported that the prevalence of WPV against health care workers is high, especially in Asian and North American countries, psychiatric and emergency department settings, and among nurses and physicians (Liu et al., 2019).

More specifically, in North America, a survey conducted by the Emergency Nurses Association suggested that about one in every four nurses report having experienced physical violence more than 20 times in the previous 3 years and nearly a fifth report being verbally abused more than 200 times during the same period (Gacki-Smith et al., 2009). The Australian Incident Monitoring System showed that out of a total of 42.33 accidents, 9% ($n = 3621$) involved health care professionals in events of violence perpetrated by patients, relatives or visitors (Benveniste et al., 2005). Recently, a large study conducted in Australia showed that more than 75% of the nurses and midwives suffered from violence perpetrated by patients and visitors in the previous six months (Pich & Roche, 2020).

A European study conducted in 2019 showed that out of 260 nurses from five different countries, 20.4% confirmed they had been physically assaulted in the workplace in the previous 12 months and 76.9% of these reported that it was unavoidable; 92.3% reported being assaulted by patients, family members or visitors in their professional career (Babiarczyk et al., 2019). In particular, the emergency room has been identified as a high-risk environment for WPV (Kowalenko et al., 2013), where nurses and trainees are the most exposed to this phenomenon (Chapman & Styles, 2006; Gerberich et al., 2005).

Although violent and aggressive patient behaviours are predominantly experienced by staff working in mental health units and emergency departments, patient violence and aggression are rising in other hospital areas, including general medicine and surgery units, paediatrics and intensive care (Ferri et al., 2016; Liu et al., 2019). Outside the hospital, episodes of violence and assaults have been suffered in-home nursing services by 50% of nurses during their

carriers (Fujimoto et al., 2017) and community care by 36% of nurses (Fafliora et al., 2016), as well as in pre-hospital, ambulance and rescue services by 41% of nurses (Coskun Cenk, 2019; Velden et al., 2015).

Given the spread and the impact of this phenomenon, many studies have analysed the consequences of violence against nurses involving both physical and psychological consequences such as anger, fear or anxiety, post-traumatic stress disorder symptoms (Hong et al., 2021), guilt, acute stress, decreased productivity (Al-Ghabeesh & Qattom, 2019b), reduced job satisfaction (Berlanda et al., 2019), increased intention to leave, lower quality of life and even death (Çam & Ustuner Top, 2021; Heslop et al., 2019). The effects of violence in the health care setting may extend to the organization of the local service and entire health systems affecting the quality of services themselves. Health care organizations also incur in higher costs related to decreased productivity, poor job satisfaction and increased turnover (Speroni et al., 2014). Additional costs also result from lawsuits, compensation, and loss of revenue resulting from the negative image caused by violence incidents (Gerberich, 2004; Wax et al., 2016).

Although many health organizations around the world have implemented 'zero tolerance' policies for aggressors and established guidelines for the prevention and management of workplace violence, these policies often do not appear to work effectively in real life (Beattie et al., 2020; Hassankhani & Soheili, 2017; Morphet et al., 2014).

The most frequent risk factors of violence and aggression events include the characteristics of patients and nurses (e.g., gender, age and educational level) (Dangal et al., 2018; Zhu et al., 2021), weaknesses in leadership development or corporate policy implementation (Somani et al., 2021), poor training of personnel in the management of violence events (Jakobsson et al., 2021) and in recognizing risk situations, inadequate patient assessment and inadequate patient observation protocols (Palese et al., 2020), lack of communication between staff and patients, and their families (Yang et al., 2018) and deficiencies in the physical safety of the environment or in safety procedures (Babiarczyk et al., 2019; Najafi et al., 2018; Somani et al., 2021). All these factors and failure to recognize and respond to warning signals increase the risk of aggression or violence (Somani et al., 2021).

The identification of predictors or warning signals would enable health care professionals and managers to prevent and manage situations that could trigger events of violence in the workplace (Morphet et al., 2019). Furthermore, spreading the culture and knowledge of this phenomenon among health care professionals, managers and the general population could help to prevent the incidence of these episodes and protect both health care professionals and health service users.

TABLE 1 Inclusion criteria

Type of participants	Exposure (independent variable)	Outcomes (dependent variable)	Types of studies
<p>All studies, involving:</p> <ul style="list-style-type: none"> • Nurses • Undergraduate nursing students working in any health setting. 	<p>All studies where predictors of violence or aggression against nurses and nursing students were identified or assessed with different tools.</p> <p>Predictive factors included, but not limited to</p> <ul style="list-style-type: none"> • external stimuli, such as institutional health systems and policies (often generating stressful situations) and work environment (structural, environmental and internal climate characteristics of work contexts) • internal factors, such as intrinsic characteristics of patients, family members and other healthcare professionals (including but not limited to social status, personality disorders, past history of aggression, stress, substance and alcohol abuse, medical conditions, insecurity, attitude problems, sense of powerlessness, poor control, poor communication, frustration, anxiety and fear, different experience, skill levels and training). 	<p>Findings of violence or aggression against nurses or nursing students reported by the authors have been included in the review. The most interesting specific results were found in the studies including verbal abuse, psychological abuse, physical abuse, threats, intimidation, physical assaults, horizontal violence and various forms of bullying, in work-related circumstances, carried out by users, family members or other healthcare professionals.</p> <p>The review included studies documenting outcomes on nurses and/or nursing students caused by</p> <ul style="list-style-type: none"> • physical violence or assault events (including but not limited to fractures, lacerations, bruises, sprains, back pain, bites or injuries, deprivation sleep, nausea and headache) • emotional and psychological (including but not limited to stress, emotional exhaustion, burnout, anger, fear, loss of self-esteem, loss of self-confidence, anxiety, guilt, resentment, shock, embarrassment, humiliation, isolation and poor team cohesion) • professional (including but not limited to lack of concentration, decreased job satisfaction, burnout, increased sick leave and decreased sensitivity to others) • economic and/or organizational consequences caused by events of violence or aggression towards nurses or nursing students such as the reorganization of services, the implementation of time-consuming activities to development of new policies and procedures, train and educate healthcare professionals, provide counselling services to victims, revise the organization due to turnover, sick leave and transfer of nurses to other departments, and temporary interruption or reduction of services offered to patients. 	<p>A wide range of study designs was considered appropriate to be as comprehensive as possible and to include the most significant number of studies for this review.</p> <ul style="list-style-type: none"> • Randomized controlled trials (RCTs) • observational studies (e.g., prospective and retrospective cohort studies) • case-control studies • cross-sectional analytical studies • Qualitative studies (e.g., phenomenological studies, ethnographic studies and Grounded Theory studies)

2 | OBJECTIVES

To identify predictors of violence or aggression against nurses and undergraduate nursing students in different health care settings.

Secondary objectives:

- Evaluate physical and psychosocial outcomes on nurses and undergraduate nursing students caused by violence or aggression and

the economic and organizational consequences (unavailability and restoration of services).

- Describe episodes of violence or aggression against nurses and nursing students in the community setting.

Scoping review question

What are the predictors of the violence or aggression against nurses and students in different work contexts that enable their prevention or management?

Secondary questions:

What are the physical and psychosocial outcomes on nurses and nursing students of violence or aggression and the economic and organizational consequences?

Which violence or aggression events against nurses and nursing students in the community are described in the literature?

3 | METHODS

3.1 | Study design

The present review was developed according to the Joanna Briggs Institute (JBI) guidelines for scoping reviews (M. Peters, Godfrey, et al., 2020). The scoping review methodology was further refined, and corresponding guidance was developed by a working group from JBI and the JBI Collaboration (JBIC) (Aromataris & Munn, 2020; Peters et al., 2015).

A research question was developed based on the PEO components: Population (types of participants), Exposure of interest (independent variable) and Outcome (dependent variable).

The PRISMA-ScR statement for scoping reviews (Tricco et al., 2018) was used to ensure the transparency of the study selection process.

The inclusion criteria are described in Table 1.

3.2 | Search strategies

3.2.1 | Electronic databases

Based on the review question, six databases were searched: APA PsycInfo, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Cochrane, Ovid Medline, PubMed and Scopus. Since no similar reviews were found, no time limit was set. Only papers in English and Italian were included.

The search terms were identified through the conceptual analysis conducted by Ventura-Madangeng and Wilson (2009) and a further research of the literature.

The initial search strategy was as comprehensive as possible to include the largest number of studies, which were then gradually reduced based on the inclusion and exclusion criteria. Specific search strategies were adopted for each database. Table 2 shows the search concepts according to the PEO method and the

keywords. The terms included synonyms or specific terms according to each database. The terms were combined as subject headings and text words in APA PsycInfo, CINAHL, Cochrane, Ovid Medline, PubMed and Scopus. The study selection process included two phases:

1. An initial screening of titles, abstracts and keywords according to the inclusion and exclusion criteria. The papers were independently selected by four reviewers. Studies were excluded even if only one inclusion criterion was not met. All duplicates were removed.
2. Full texts eligible for inclusion were read and analysed.

An external expert in scoping reviews supervised the entire selection and analysis process. All the papers were separately examined by two researchers and in case of disagreement a third researcher was involved to reach an agreement. The reasons for the exclusion of the full texts were recorded to track the decisions that were taken.

3.3 | Data extraction

A data extraction sheet was developed according to the JBI guidelines for scoping reviews (M. Peters, Godfrey, et al., 2020).

The following data were collected:

Study design/methodology, purpose/objectives, research questions/hypotheses, study context (setting), sample description, sample size, exposure, tools for measuring results, results, methods of data analysis (statistical analysis), conclusions, comments and issues raised.

Data were extracted separately by two researchers.

3.4 | Data synthesis

The results of the included studies underwent narrative synthesis, using words and text to summarize and explain the results. Its form varied from a simple account and description of the characteristics of the study, to the context, the quality and the results. Tables were used to compare the characteristics of the studies and the extracted data (Soilemezi & Linceviciute, 2018).

4 | RESULTS

4.1 | Selection of the studies included in the review

A total of 15,523 records were initially identified after searching the databases. After titles and abstracts were screened, 121 papers underwent full text review. After reading the full texts, 87 papers were included in the current scoping review (see Figure 1, the PRISMA flow diagram).

TABLE 2 Search concepts and keywords used (with appropriate Boolean operators)

Population: Nurse/Nurse student	Exposure: violence predictors	Outcome: Consequences of workplace violence	
Subject heading: In CINAHL: ('nurses' and 'students, nursing')	Subject heading: In CINAHL: N/A	Subject heading: In CINAHL: ('Workplace Violence')	Subject heading: In CINAHL: ('costs')
In APA PsycInfo: ('nurses' and 'nursing students')	In APA PsycInfo: N/A	In APA PsycInfo: ('Workplace Violence')	In APA PsycInfo: ('costs')
In Medline: ('nurses' and 'nursing students')	In Medline: N/A	In Medline: ('Workplace Violence')	In Medline: ('Workplace Violence')
In PubMed, Cochrane: ('Nurses'[Mesh] and 'Students, Nursing'[Mesh])	In PubMed, Cochrane: N/A	In PubMed, Cochrane: ('Workplace Violence'[Mesh])	In PubMed, Cochrane: ('Costs and Cost Analysis'[Mesh])
Keywords: nurse ^a RN 'registered nurse' ^a 'nursing student' ^a 'student nurse' ^a	Keywords: predictor ^a Predicting antecedent ^a 'risk factor' ^a 'warning sign' ^a 'warning factor' ^a 'prediction sign' ^a 'prediction factor' ^a 'foreteller sing' ^a 'foreteller factor' ^a foreshad ^a forewarn ^a sign ^a factor ^a harbinger ^a	Keywords: 'workplace violence' aggression ^a attack ^a violence ^a assault ^a hostility abuse ^a 'physical aggression' ^a 'physical attack' ^a 'physical violence' ^a 'physical assault' ^a 'physical hostility' 'verbal aggression' ^a 'verbal attack' ^a 'verbal violence' ^a 'verbal abuse' ^a 'verbal assault' ^a intimidation ^a badgering bludgeoning deceive brainwash browbeat bulldoze bully ^a 'horizontal violence' 'lateral violence' coerce constrain domineer harass intimidate oblige oppress persecute press push subjugate torment tyrannize	Keywords: cost ^a 'financial impact' 'financial burden' 'economic impact' 'financial cost' ^a 'economic cost' ^a 'monetary cost' ^a 'cost-of-illness' 'economic evaluation' 'illness cost' ^a 'medical cost' ^a 'health cost' ^a 'sick leave' 'turnover' policies policy procedure ^a 'service interruption' 'reorganization of service' 'physical consequence' ^a 'physical injurie' ^a 'broken bone' ^a laceration ^a bruise ^a sprain backache ^a bite ^a wound ^a 'sleep deprivation' nausea headache ^a pain 'emotional consequence' ^a 'psychological consequence' ^a disbelief 'power' 'autonomy' stress 'emotional exhaustion' depersonalization 'personal accomplishment' burnout anger fear 'self-esteem' 'self-confidence' anxiety 'self-blame'

(Continues)

TABLE 2 (Continued)

Population: Nurse/Nurse student	Exposure: violence predictors	Outcome: Consequences of workplace violence
		resentment shock embarrassment humiliation isolation 'team cohesion'

^aAny group of characters, including no character.

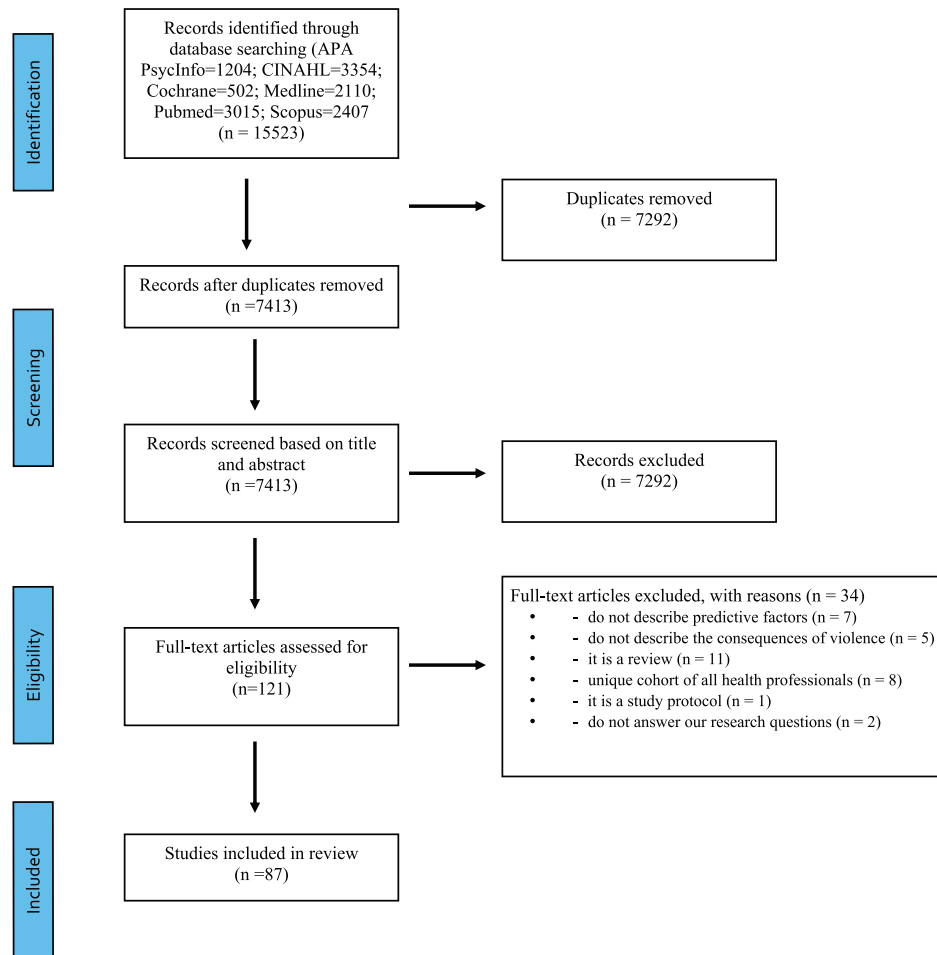


FIGURE 1 Flow diagram of the literature review process (PRISMA 2009)

4.2 | Overview of the studies included in the review

Twenty-eight studies were conducted in North America, 20 in Africa and the Middle East, 16 in Europe and 14 in Asia.

Of the studies included in the review, 59 analysed mainly the hospital setting and they involved all the departments ($n = 31$), the emergency room ($n = 15$), the psychiatric and mental health wards ($n = 9$), the operating room ($n = 2$), the medical and surgical departments ($n = 1$), the neonatal intensive care ($n = 1$) and in the trauma department ($n = 1$). Twenty-four studies involved both

hospital and community settings, of these 22 included various departments, and 2 were in mental health. Studies that exclusively analysed the community context, in the home care setting, were the least represented ($n = 4$). All the details regarding the context and sample characteristics of the included studies are shown in Table 3.

Regarding the designs of the included studies, the cross-sectional descriptive design was adopted by 75 studies, 11 studies had a qualitative design and one a mixed-methods design (Table 4).

The population mainly included nurses (85 studies), and nursing students (2 studies). All studies had higher percentages of female

TABLE 3 Context and sample characteristics of included studies

Study reference	Country	Setting	Department	Sample description
Horizontal violence				
Al-Ghabeesh and Qattom (2019b)	Jordan	Hospital	Emergency department	120 ED nurses
Anusiewicz et al. (2020)	USA	Hospital	Various departments	15 hospital nurses
Bambi et al. (2014)	Italy	Hospital	Emergency, intensive care, operating room departments	1202 ED, ICU, Operating Room nurses
Bambi et al. (2019)	Italy	Community and Hospital	Various departments	930 hospital and community nurses
Bardakçı and Günüşen (2014)	Turkey	Hospital	Various departments	284 hospital nurses
Blackstock et al. (2015)	Canada	Hospital	Various departments	103 hospital nurses
Bloom (2019)	USA	Hospital	Various departments	76 hospital nurses
Budin et al. (2013)	USA	Community and Hospital	Various departments	1407 hospital and community nurses
Chatziioannidis et al. (2018)	Greece	Hospital	Neonatal Intensive Care	233 neonatal intensive care nurses
Clarke et al. (2012)	Canada	Community and Hospital	Various departments	674 nursing students
Difazio et al. (2019)	Russia	Community and Hospital	Various departments	438 hospital and community nurses
		Community and Hospital	Various departments	998 community and hospital nurses
Favaro et al. (2021)	Canada	Community and Hospital	Various departments	1080 hospital and community nurses
Fontes et al. (2018)	Brazil	Community and Hospital	Various departments	419 hospital and community nurses
Hampton and Rayens (2019)	USA	Hospital	Various departments	170 nursing leaders
Hartin et al. (2020)	Australia	Community and Hospital	Various departments	70 hospital and community nurses
Higgins and MacIntosh (2010)	Canada	Hospital	Operating room	10 operating room nurses
Kozakova et al. (2018)	Czech Republic	Hospital	Various departments	456 hospital nurses
Laschinger and Grau (2012)	Canada	Community and Hospital	Mental Health	165 Psychiatric mental health nurses
Laschinger and Grau (2012)	Canada	Community and Hospital	Various departments	342 new graduate nurses
Laschinger et al. (2010)	Canada	Hospital	Various departments	415 hospital nurses
Park and Choi (2020)	South Korea	Hospital	Various departments	205 hospital nurses
Reknes et al. (2014)	Norway	Community and Hospital	Various departments	2059 hospital and community nurses
Serafin and Czarkowska-Pączek (2019)	Poland	Community and Hospital	Various departments	404 hospital and community nurses
Yokoyama et al. (2016)	Japan	Community and Hospital	Various departments	825 hospital and community nurses
Violence perpetrated by patients and family members or visitors				
Avander et al. (2016)	Sweden	Hospital	Trauma Department	14 hospital nurses
Baby et al. (2014)	New Zealand	Community and Hospital	Mental Health	14 Psychiatric mental health nurses
Basfr et al. (2019)	Saudi Arabia	Hospital	Mental Health	

(Continues)

TABLE 3 (Continued)

Study reference	Country	Setting	Department	Sample description
				310 Psychiatric mental health nurses
Bimenyimana et al. (2009)	South Africa	Hospital	Mental Health	10 Psychiatric mental health nurses
		Hospital	Various departments	592 hospital nurses
Boafo and Hancock (2017)	Ghana	Hospital	Various departments	92 hospital nurses
Estry-Behar et al. (2008)	Belgium, Germany, Finland, France, Italy, the Netherlands, Norway, Poland, Slovakia, UK	Community and Hospital	Various departments	39 898 hospital and community nurses
Evers et al. (2002)	The Netherlands	Community	Nursing Homes	551 community nurses
Farrell et al. (2014)	Australia	Community and Hospital	Various departments	1495 hospital and community nurses
Franz et al. (2010)	Germany	Community	Various departments	123 community nurses
Fujimoto et al. (2017)	Japan	Community	Mental Health	94 Psychiatric mental health nurses
Galián Muñoz et al. (2014)	Spain	Hospital	Emergency department	137 ED nurses
Gillespie et al. (2014)	USA	Hospital	Emergency department	177 ED nurses
Grainger and Whiteford (1993)	Australia	Hospital	Mental Health	717 incident report forms
Hahn et al. (2010)	Switzerland	Hospital	Various departments	291 hospital nurses
Hamdan and Hamra (2017)	Israel	Hospital	Emergency department	355 ED nurses
Hanohano (2017)	USA	Hospital	Mental Health	131 Psychiatric mental health nurses
Havaei et al. (2020)	Canada	Community and Hospital	Various departments	532 hospital and community nurses
Jenkins et al. (1998)	Ireland	Hospital	Emergency department	233 ED nurses
Jeong and Kim (2018)	South Korea	Hospital	Emergency department	246 ED nurses
Kobayashi et al. (2020)	Japan	Hospital	Mental Health	599 Psychiatric mental health nurses
Kowalenko et al. (2013)	USA	Hospital	Emergency department	117 ED nurses
Levin et al. (1998)	USA	Hospital	Emergency department	22 ED nurses
Ogundipe et al. (2013)	Nigeria	Hospital	Emergency department	81 ED nurses
Pinar and Ucmak (2011)	Turkey	Hospital	Various departments	255 hospital nurses
Ramacciati et al. (2019)	Italy	Hospital	Emergency department	816 ED nurses
Ray and Subich (1998)	USA	Hospital	Mental Health	78 Psychiatric mental health nurses
Rodney (2000)	Australia	Community	Nursing Homes	102 community nurses
Spelten et al. (2020)	Australia	Hospital	Emergency department	18 ED nurses
Speroni et al. (2014)	USA	Hospital	Various departments	762 hospital nurses
Tomagová et al. (2020)	Czech Republic	Hospital	Various departments	526 hospital nurses
Wolf et al. (2017)	USA	Hospital	Emergency department	16 ED nurses
Xing et al. (2015)	China	Hospital	Various departments	398 hospital nurses
Yang et al. (2018)	China	Hospital	Mental Health	290 hospital nurses
Zeng et al. (2013)	China	Hospital	Mental Health	387 Psychiatric mental health nurses

(Continues)

TABLE 3 (Continued)

Study reference	Country	Setting	Department	Sample description
Both bullying and violence perpetrated by patients and family members or visitors				
Abou-ElWafa et al. (2014)	Egypt	Hospital	Emergency and Medicine departments	134 ED nurses 152 Internal medicine Department nurses
AbuAlRub et al. (2007)	Iraq	Hospital	Various departments	116 hospital nurses
AbuAlRub and Al-Asmar (2011)	Jordan	Hospital	Various departments	422 hospital nurses
AbuAlRub and Al-Khawaldeh (2014)	Jordan	Hospital	Various departments	396 hospital nurses
Aksakal et al. (2015)	Turkey	Hospital	Various departments	538 hospital nurses
Al-Omari (2015)	Jordan	Hospital	Various departments	486 hospital nurses
Alameddine et al. (2015)	Lebanon	Hospital	Various departments	593 hospital nurses
Ceballos et al. (2020)	Brazil	Hospital	Emergency department	80 hospital nurses
Çelik and Çelik (2007)	Turkey	Community and Hospital	Various departments	622 hospital and community nurses
Cheung and Yip (2017)	Hong Kong	Hospital	Various departments	850 hospital nurses
Ferri et al. (2016)	Italy	Hospital	Various departments	125 hospital nurses
Hutton and Gates (2008)	USA	Hospital	Various departments	145 hospital nurses
Jafree (2017)	Pakistan	Hospital	Various departments	309 hospital nurses
Jaradat et al. (2016)	Palestine	Community and Hospital	Various departments	343 hospital and community nurses
Lash et al. (2006)	Turkey	Hospital	Various departments	73 nursing students
McKenna et al. (2003)	New Zealand	Community and Hospital	Various departments	551 hospital and community nurses
Merecz et al. (2020)	Poland	Community and Hospital	Various departments	413 hospital and community nurses
Nguluwe et al. (2016)	South Africa	Hospital	Mental Health	13 Psychiatric mental health nurses
Pai and Lee (2011)	Taiwan	Community and Hospital	Various departments	521 hospital and community nurses
Park et al. (2015)	South Korea	Hospital	Various departments	970 hospital nurses
Peters et al. (2020)	USA	Hospital	Various departments	279 hospital nurses
Read and Laschinger (2013)	Canada	Community and Hospital	Various departments	342 new graduate nurses
Sakellaropoulos et al. (2011)	USA	Hospital	Operating room	205 Nurse Anesthetists
Shi et al. (2017)	China	Hospital	Various departments	696 hospital nurses
Williams (1996)	USA	Community and Hospital	Various departments	345 hospital and community nurses
Wu et al. (2020)	China	Hospital	Various departments	1517 hospital nurses
Yang et al. (2012)	USA	Hospital	Various departments	176 hospital nurses

nurses or students (range = 58%–100%) except for the study by Xing. Nurses' work experience ranged between 1–23 years. The percentage of nurses with a diploma or (bachelor's) degree ranged between 38% and 93%. The Negative Act Questionnaire (NAQ) and the Workplace Violence in the Health Sector-Country Case Study (WHO tool) to detect bullying and violent incidents were used in four studies.

4.3 | Risk factors of violence

The forms of violence suffered by nurses and nursing students reported in the included studies are divided into *horizontal violence* perpetrated by professional co-workers or by other students and clinical instructors (including different forms of bullying and mobbing), and *violence perpetrated by patients, family members, visitors or informal*

TABLE 4 Designs of included studies (Total = 87)

Methodology	Number of articles	% of articles
Quantitative	75	86.2
Cross-sectional descriptive design	74	98.6
Case report	1	0.4
Qualitative	11	12.6
Qualitative descriptive design	9	81.8
Qualitative phenomenological design	1	9.1
Qualitative historical design	1	9.1
Mixed methods	1	1.2
Total	87	100

caregivers. Table 5 shows in detail all the risk factors of WPV reported in the included studies.

4.3.1 | Risk factors of horizontal violence suffered by nurses

Horizontal violence factors can be divided into personal and environmental/organizational factors.

Personal factors

Contrasting findings were reported with regard to nurses' gender; in some studies 'being a male nurse' was reported as a predictor (Chatziioannidis et al., 2018; Jaradat et al., 2016), whereas in others, 'being a female nurse' was considered a predictor (Anusiewicz et al., 2020; Park et al., 2015). In addition, being a young nurse (Bloom, 2019; Favaro et al., 2021; Reknes et al., 2014) or having few years of experience in the current workplace (Al-Ghabeesh & Qattom, 2019b; Chatziioannidis et al., 2018; Higgins & MacIntosh, 2010; Yokoyama et al., 2016) were described as factors related to the risk of being bullied. On the contrary, other authors found that a work experience of <5 years was a factor that protected nurses from horizontal violence (Bambi et al., 2019; Bardakçı & Günüşen, 2014).

Environmental and organizational factors

These factors included situation- or task-oriented leadership, rigid hierarchical structures (Favaro et al., 2021; Fontes et al., 2018; Hampton & Rayens, 2019; Laschinger & Grau, 2012; Laschinger et al., 2010; A. Peters, El-Ghaziri, et al., 2020), informal organizational alliances (i.e., covert coalitions of bullies) and the consequent abuse of organizational procedures (Blackstock et al., 2015). Furthermore, several studies identified the increase in workload and understaffing, pressure placed on workers (AbuAIRub et al., 2007; AbuAIRub & Al-Asmar, 2011; Anusiewicz et al., 2020; Hartin et al., 2020; Kozakova et al., 2018; Serafin & Czarkowska-Pączek, 2019; Yokoyama

et al., 2016) and high levels of stress (Bambi et al., 2019; Bloom, 2019; Cheung & Yip, 2017) as factors facilitating mobbing or bullying. Numerous authors identified structural empowerment and authentic leadership as protective factors against bullying in the workplace with a statistically significant negative correlation between these variables (Favaro et al., 2021; Laschinger et al., 2010; Laschinger & Grau, 2012; Read & Laschinger, 2013; Yokoyama et al., 2016).

4.3.2 | Risk factors of horizontal violence suffered by nursing students

Personal factors

'Being female' is reported as a predictor of bullying for nursing students by Grainger and Whiteford (1993) and Lash et al. (2006). According to Jafree (2017), having an age between 20 and 29 years, single marital status, and following the Muslim religion are predictors of horizontal violence.

Environmental and organizational factors

Attending clinical internship during the day shifts is reported as a predictor of horizontal violence for students by Grainger and Whiteford (1993) and Jafree (2017).

4.3.3 | Risk factors of violence suffered by nurses perpetrated by patients, family members or visitors

These include personal factors, environmental/organizational factors and characteristics of aggressors.

Personal factors

Gender of health workers is controversially identified as a factor that increases the risk of suffering violence. In some studies, 'male gender' was associated with a higher risk of suffering WPV (Alameddine et al., 2015; Jaradat et al., 2016; Yang et al., 2018; Zeng et al., 2013), while, according to other studies, this risk was associated with 'female gender' (Boafo & Hancock, 2017; Cheung & Yip, 2017; Ferri et al., 2016; Grainger & Whiteford, 1993; Merecz et al., 2020; Ramacciati et al., 2019; Tomagová et al., 2020; Xing et al., 2015). Instead, according to Al-Omari (2015), being a female protects from violence. Another factor is younger age. Several studies found that those aged <35 years were most at risk (Boafo & Hancock, 2017; Cheung & Yip, 2017; Evers et al., 2002; Hahn et al., 2010; Kobayashi et al., 2020; Park & Choi, 2020; Sakellaropoulos et al., 2011; Yang et al., 2012). In particular, being younger than one's patients was another factor that increases the risk of suffering violence (Nguluwe et al., 2016). Other authors identified the 30-to 39-year age group (Ramacciati et al., 2019; Xing et al., 2015) as the one most at risk. Also, having a bachelor's degree or higher educational level has identified as predictor of WPV (Cheung & Yip, 2017; Hahn et al., 2010; Kowalenko et al., 2013; Zeng et al., 2013).

TABLE 5 Risk factors of workplace violence reported in included studies

Risk factors of horizontal violence suffered by nurses	References
<p>Personal factors</p> <ul style="list-style-type: none"> • Gender <ul style="list-style-type: none"> • Female • Male • Age <ul style="list-style-type: none"> • Age 35 years old or younger • Age differences among nurses • Educational level <ul style="list-style-type: none"> • College diploma • Bachelor's degree • Master's degree • Work experience <ul style="list-style-type: none"> • <5 years (protective factor) • Being young nurses • Less years of experience in current workplaces 	<p>Anusiewicz et al. (2020) Ferri et al. (2016) Park et al. (2015) Sakellaropoulos et al. (2011) Serafin and Czarkowska-Pączek (2019) Chatzioannidis et al. (2018) Difazio et al. (2019) Favaro et al. (2021) Jaradat et al. (2016) Nguluwe et al. (2016) Jaradat et al. (2016) Budin et al. (2013) Favaro et al. (2021) Bambi et al. (2019) Cheung and Yip (2017) Pai and Lee (2011) Hartin et al. (2020) Bardakçi and Günüşen (2014) Bambi et al. (2014) Bardakçi and Günüşen (2014) Bloom (2019) Favaro et al. (2021) Reknes et al. (2014) Al-Ghabeesh and Qattom (2019b) Chatzioannidis et al. (2018) Higgins and MacIntosh (2010) Yokoyama et al. (2016)</p>
<p>Environmental and organizational factors</p> <ul style="list-style-type: none"> • Orientation of leadership towards situation or task • Rigid hierarchical structures • Low nurse manager ability • Informal organizational alliances • Tolerance of bullying • Understaffing • Increase in workload • High levels of stress • Unpredictability and constant change • Excessive competition between professionals 	<p>Favaro et al. (2021) Fontes et al. (2018) Hampton and Rayens (2019) Laschinger et al. (2010) Laschinger and Grau (2012) Peters et al. (2020) Bloom (2019) Fontes et al. (2018) Yokoyama et al. (2016) Blackstock et al. (2015) AbuAIRub et al. (2007) AbuAIRub and Al-Asmar (2011) Anusiewicz et al. (2020) Hartin et al. (2020) Kozakova et al. (2018) Serafin and Czarkowska-Pączek (2019) Yokoyama et al. (2016) Bambi et al. (2019) Bloom (2019) Cheung and Yip (2017) Hartin et al. (2020) Hartin et al. (2020) Serafin and Czarkowska-Pączek (2019)</p>

(Continues)

TABLE 5 (Continued)

Risk factors of horizontal violence suffered by nurses	References
<ul style="list-style-type: none"> • Dayshift • Nightshift • Structural empowerment (protective factor) • Authentic leadership (protective factor) 	<p>Bambi et al. (2014) Bambi et al. (2019) Budin et al. (2013) Park and Choi (2020) Reknes et al. (2014) Favaro et al. (2021) Laschinger et al. (2010) Yokoyama et al. (2016) Laschinger and Grau (2012) Read and Laschinger (2013) Yokoyama et al. (2016)</p>
Risk factors of horizontal violence suffered by nursing students	References
Personal factors	
<ul style="list-style-type: none"> • Gender • Age • Marital status • Religion 	<ul style="list-style-type: none"> • Female • Age 20 and 29 years old • Being single • Being Muslim <p>Grainger and Whiteford (1993) Lash et al. (2006) Jafree (2017) Jafree (2017) Jafree (2017)</p>
Environmental and organizational factors	
<ul style="list-style-type: none"> • Morning shift 	<p>Grainger (1993) Jafree (2017)</p>
Risk factors of violence suffered by nurses perpetrated by patients, family members or visitors	References
Personal factors	
<ul style="list-style-type: none"> • Gender • Age • Work experience 	<ul style="list-style-type: none"> • Female • Female as protective factor • Male • Age 35 years old or younger • Age between 30 and 39 years old • To be younger than one's patients • <5 years • >5 years <p>Ferri et al. (2016) Cheung and Yip (2017) Merecz et al. (2020) Boafo and Hancock (2017) Grainger and Whiteford (1993) Ramacciati et al. (2019) Tomagová et al. (2020) Xing et al. (2015) Al-Omari (2015) Alameddine et al. (2015) Jaradat et al. (2016) Yang et al. (2018) Zeng et al. (2013) Boafo and Hancock (2017) Cheung and Yip (2017) Evers et al. (2002) Hahn et al. (2010) Kobayashi et al. (2020) Park et al. (2015) Sakellaropoulos et al. (2011) Yang et al. (2012) Xing et al. (2015) Ramacciati et al. (2019) Nguluwe et al. (2016) Al-Omari (2015) Celik and Çelik (2007) Tomagová et al. (2020) Ceballos et al. (2020) Fujimoto et al. (2017) Galián Muñoz et al. (2014)</p>

(Continues)

TABLE 5 (Continued)

Risk factors of violence suffered by nurses perpetrated by patients, family members or visitors	References
<ul style="list-style-type: none"> Educational level (Bachelor's degree or higher) 	Hahn et al. (2010) Cheung and Yip (2017) Hahn et al. (2010) Kowalenko et al. (2013) Zeng et al. (2013)
<ul style="list-style-type: none"> Negative personal attitudes and behaviours 	Hamdan and Hamra (2017) Christopher (1998) Wolf et al. (2017)
<ul style="list-style-type: none"> Poor communication skills 	AbuAlRub and Al Khawaldeh (2014) Nguluwe et al. (2016) Yang et al. (2018)
Environmental and organizational factors	
<ul style="list-style-type: none"> Understaffing 	Basfr et al. (2019) Bimenyimana et al. (2009) Grainger and Whiteford (1993) Ogundipe et al. (2013) Yang et al. (2018)
<ul style="list-style-type: none"> Working department 	Estry-Behar et al. (2008) Farrell et al. (2014) Ferri et al. (2016) Hahn et al. (2010) Jenkins et al. (1998) Jeong and Kim (2018) Pinar and Ucmak (2011) Ramacciati et al. (2019) Speroni et al. (2014) Tomagová et al. (2020) Williams (1996)
<ul style="list-style-type: none"> Work in emergency departments 	Estry-Behar et al. (2008) Farrell et al. (2014) Ferri et al. (2016) Franz et al. (2010) Yang et al. (2018)
<ul style="list-style-type: none"> Work in psychiatric settings 	Estry-Behar et al. (2008) Farrell et al. (2014) Ferri et al. (2016) Hahn et al. (2010)
<ul style="list-style-type: none"> Work in geriatric settings 	Franz et al. (2010) Williams (1996)
<ul style="list-style-type: none"> Work in nursing homes and long-term care 	Abou-ElWafa et al. (2014) Aksakal et al. (2015) Alameddine et al. (2015) Basfr et al. (2019) Ceballos et al. (2020) Cheung and Yip (2017) Estry-Behar et al. (2008) Farrell et al. (2014) Ferri et al. (2016) Grainger and Whiteford (1993) Hanohano (2017) Pai and Lee (2011) Yang et al. (2018) Zeng et al. (2013)
<ul style="list-style-type: none"> Working in shifts 	Estry-Behar et al. (2008) Evers et al. (2002) Hanohano (2017)
<ul style="list-style-type: none"> High workload Time pressure Physical load 	

(Continues)

TABLE 5 (Continued)

Risk factors of violence suffered by nurses perpetrated by patients, family members or visitors	References
<ul style="list-style-type: none"> • Low quality of physical working environment • Providing direct patient care • Being a front-line nurse 	<p>Jafree (2017) Yang et al. (2012) Havaei et al. (2020) Wu et al. (2020) Cheung and Yip (2017) Gillespie et al. (2014) Hahn et al. (2010) Hutton and Gates (2008) Speroni et al. (2014) Xing et al. (2015)</p>
<ul style="list-style-type: none"> • Long waiting time 	<p>Basfr et al. (2019) Gillespie et al. (2014) Hamdan and Hamra (2017) Levin et al. (1998) Kowalenko et al. (2013) Ogundipe et al. (2013) Yang et al. (2018)</p>
<ul style="list-style-type: none"> • Unmet expectations of patients/families 	<p>Basfr et al. (2019) Hamdan and Hamra (2017) Ogundipe et al. (2013) Yang et al. (2018)</p>
<ul style="list-style-type: none"> • Lack of anti-violence policies • Lack of procedures to report WPV 	<p>AbuAlRub et al. (2007) AbuAlRub and Al Khawaldeh (2014) Alameddine et al. (2015) Gillespie et al. (2014) Xing et al. (2015)</p>
<ul style="list-style-type: none"> • Inadequate security system 	<p>Jenkins et al. (1998) Levin et al. (1998) Merecz et al. (2020) Ogundipe et al. (2013)</p>
Characteristics of the perpetrators	
<ul style="list-style-type: none"> • Patient alcohol or drug abuse 	<p>Avander et al. (2016) Baby et al. (2014) Ferri et al. (2016) Hamdan and Hamra (2017) Nguluwe et al. (2016) Ogundipe et al. (2013) Spelten et al. (2020) Speroni et al. (2014)</p>
<ul style="list-style-type: none"> • Mental status and patient conditions 	<p>Baby et al. (2014) Bimenyimana et al. (2009) Levin et al. (1998) Spelten et al. (2020) Yang et al. (2018) Cheung and Yip (2017)</p>
<ul style="list-style-type: none"> • Dementia or Alzheimer 	<p>Speroni et al. (2014) Nguluwe et al. (2016)</p>
<ul style="list-style-type: none"> • Pain • Anxiety • Fear 	<p>Hamdan and Hamra (2017) Hamdan and Hamra (2017) Christopher (1998) Pai and Lee (2011) Shi et al. (2017)</p>
<ul style="list-style-type: none"> • Patients with aggressive behaviours 	<p>AbuAlRub and Al-Asmar (2011) Rodney (2000)</p>
<ul style="list-style-type: none"> • Patients with unrealistic expectations 	<p>Gillespie et al. (2014)</p>

(Continues)

TABLE 5 (Continued)

Risk factors of violence suffered by nurses perpetrated by patients, family members or visitors	References
	Hamdan and Hamra (2017) Pai and Lee (2011) Speroni et al. (2014)
Risk factors of violence suffered by nursing students perpetrated by patients, family members or visitors	References
Personal factors	
• Gender	Grainger and Whiteford (1993) Lash et al. (2006)
• Age	Jafree (2017)
• Marital status	Jafree (2017)
Environmental and organizational factors	
• Being the least knowledgeable and least powerful group	Lash et al. (2006)
• During patient refusing a request	Grainger (1993)
• Placement in a psychiatric ward	Grainger (1993)
• Placement in emergency room	Jafree (2017)
Characteristics of the perpetrators	
• Inexperienced clinical instructors	Lash et al. (2006)
• Patients with aggressive behaviours	Grainger (1993) Jafree (2017)

Work experience was also identified as a predictor of WPV. Controversially, some authors found that having <5 years of service increased the risk of suffering violence (Al-Omari, 2015; Çelik & Çelik, 2007; Tomagová et al., 2020), while for others this was higher in those with a career of >5 years (Ceballos et al., 2020; Fujimoto et al., 2017; Galián Muñoz et al., 2014; Hahn et al., 2010).

Environmental and organizational factors

Many studies have identified several departments as risk factors for WPV. Working in emergency departments (Estryn-Behar et al., 2008; Farrell et al., 2014; Ferri et al., 2016; Hahn et al., 2010; Jenkins et al., 1998; Jeong & Kim, 2018; Pinar & Ucmak, 2011; Ramacciati et al., 2019; Speroni et al., 2014; Tomagová et al., 2020; Williams, 1996), psychiatric settings (Estryn-Behar et al., 2008; Farrell et al., 2014; Ferri et al., 2016; Franz et al., 2010; Yang et al., 2018), geriatric settings (Estryn-Behar et al., 2008; Farrell et al., 2014; Ferri et al., 2016; Hahn et al., 2010) or in nursing homes and long-term care (Franz et al., 2010; Williams, 1996) expose nurses to a greater risk of violence. Various working organizational aspects and having scarce resources are identified as risk factors for WPV: inadequate staffing levels (Basfr et al., 2019; Bimenyimana et al., 2009; Grainger & Whiteford, 1993; Ogundipe et al., 2013; Yang et al., 2018), high workload, time pressure and physical load (Estryn-Behar et al., 2008; Evers et al., 2002; Hanohano, 2017; Jafree, 2017; Yang et al., 2012). The type of job contract is another predisposing factor. Working full-time and in shifts was associated with a higher risk of violence (Abou-ElWafa et al., 2014; Aksakal et al., 2015; Alameddine et al., 2015; Basfr et al., 2019; Ceballos et al., 2020; Cheung & Yip, 2017; Estryn-Behar et al., 2008; Farrell et al., 2014; Ferri et al., 2016; Grainger &

Whiteford, 1993; Hanohano, 2017; Pai & Lee, 2011; Yang et al., 2018; Zeng et al., 2013). Another predisposing factor of violence is long waiting times for patients, especially in the emergency department (Basfr et al., 2019; Gillespie et al., 2014; Hamdan & Hamra, 2017; Kowalenko et al., 2013; Levin et al., 1998; Ogundipe et al., 2013; Yang et al., 2018).

Characteristics of violence perpetrators

Nurses caring for patients suffering from psychiatric disorders or advanced dementias both in the community and in the hospital, report higher rates of physical and verbal violence (Nguluwe et al., 2016; Speroni et al., 2014). Alcohol or drug abuse by patients (Avander et al., 2016; Baby et al., 2014; Ferri et al., 2016; Hamdan & Hamra, 2017; Nguluwe et al., 2016; Ogundipe et al., 2013; Spelten et al., 2020; Speroni et al., 2014) and their mental status and clinical conditions (Baby et al., 2014; Bimenyimana et al., 2009; Cheung & Yip, 2017; Levin et al., 1998; Spelten et al., 2020; Yang et al., 2018), as well as aggressive patients' behaviors (AbuAlRub & Al-Asmar, 2011; Rodney, 2000), expose nurses to a higher risk of violence.

4.3.4 | Risk factors of violence suffered by nursing students perpetrated by patients, family members or visitors

Personal factors

'Being female' (Grainger & Whiteford, 1993; Lash et al., 2006), having an age range of 20–29 years and being single (Jafree, 2017) increase the risk of suffering violence among nursing students.

Environmental and organizational factors

Being in the least knowledgeable and with the least decisional power (Lash et al., 2006) together with being present when a patient refuses a request (Grainger & Whiteford, 1993) are seen as environmental and organizational predictors of violence. Also, internships in psychiatric wards (Grainger & Whiteford, 1993) or the emergency room (Jafree, 2017) are other risk factors.

Characteristics of perpetrators

Usually, the perpetrators of violence towards nursing students are either inexperienced clinical instructors (Lash et al., 2006) or patients with aggressive behaviours (Grainger & Whiteford, 1993; Jafree, 2017).

4.4 | Consequences of violence

The consequences of workplace violence suffered by nurses and nursing students reported in the included studies are divided into 'Professional life' and 'Emotional and psychological wellbeing' for horizontal violence, together with 'Physical consequences' and 'Consequences for the work environment, damage and costs' for violence perpetrated by patients and visitors. Table 6 shows details of WPV consequences.

4.4.1 | Consequences of horizontal violence suffered by professional nurses

Professional life

The most frequent consequence is the increasing intention to change workplace or to leave the nursing profession (Bambi et al., 2014; Blackstock et al., 2015; Favaro et al., 2021; Fontes et al., 2018; Kozakova et al., 2018).

Emotional and psychological wellbeing

At the same time the increasing of impulsiveness, anxiety and depression is the most frequent emotional and psychological consequence (Bambi et al., 2014; Blackstock et al., 2015; Favaro et al., 2021; Fontes et al., 2018).

4.4.2 | Consequences of horizontal violence suffered by nursing students

Professional life

The most frequent consequences for nursing students of horizontal violence are the intention to leave the nursing programme (Clarke et al., 2012), the increased rates of absenteeism from internship placement (Lash et al., 2006).

Emotional and psychological wellbeing

The most frequently reported physical and emotional consequences are headache, loss of appetite and difficulty falling asleep (Lash et al., 2006).

4.4.3 | Consequences of violence suffered by nurses perpetrated by patients, family members or visitors

Professional life

The most frequent consequences suffered by professional nurses of violence perpetrated by patients are poor job satisfaction (AbuAlRub & Al Khawaldeh, 2014; AbuAlRub & Al-Asmar, 2011; Al-Omari, 2015; Galián Muñoz et al., 2014; Jaradat et al., 2016; Kobayashi et al., 2020; Merecz et al., 2020), increased absence from work (AbuAlRub & Al Khawaldeh, 2014; Jenkins et al., 1998; Speroni et al., 2014; Xing et al., 2015) and increased intention to change workplace and leave the profession (Bimenyimana et al., 2009; Hutton & Gates, 2008; Ogundipe et al., 2013; Pinar & Ucmak, 2011).

Emotional and psychological wellbeing

Stress and burnout due to violence perpetrated by patients, family members or visitors (Bimenyimana et al., 2009; Franz et al., 2010; Gillespie et al., 2014; Wu et al., 2020; Yang et al., 2018).

Physical consequences

The most common physical consequences are lacerations, musculo-skeletal injuries, fractures, physical disability, chronic pain and head injuries (Baby et al., 2014; Levin et al., 1998; Nguluwe et al., 2016; Yang et al., 2018).

Consequences for the work environment, damage and costs

The consequences for the workplace environment range from damage to the furniture (Gillespie et al., 2014), tools and structures of health care facilities (Galian-Munoz et al., 2014). The physical consequences of the violent events also have economic repercussions in terms of loss of regular salary, cost of medical care and long-term leave from work for the recovery process (Favaro et al., 2021). WPV episodes increase staff turnover with a cost of up to \$ 337,500; this leads to inability to hire, generating a toxic work environment and a lack of loyalty and cooperation (AbuAlRub et al., 2007). In a study conducted in the USA, the decrease in productivity was approximately \$ 1300 for each nurse that experienced violence (Hutton & Gates, 2008).

4.4.4 | Consequences of violence suffered by nursing students perpetrated by patients, family members or visitors

Professional life

Consequences for students due to violence perpetrated by patients reported by the studies included in our review involve the increasing rates of absenteeism from internship placements (Clarke et al., 2012).

Emotional and psychological wellbeing

Studies reveal disturbing memories and negative thoughts (Clarke et al., 2012), loss of self-esteem and sense of helplessness (Lash

TABLE 6 Consequences of workplace violence reported in included studies

Consequences of horizontal violence suffered by nurses	References
Professional life	
<ul style="list-style-type: none"> Professional life Quality of care provided Less adequate responses and low patient safety Greater precariousness of work and with less control on clinical practices Poor overall job satisfaction 	<p>Al-Ghabeesh and Qattom (2019b) Çelik and Çelik (2007)</p> <p>Park and Choi (2020) Hartin et al. (2020)</p>
Emotional and psychological wellbeing	
<ul style="list-style-type: none"> Increased impulsiveness Anxiety Depression Sadness Burnout Emotional exhaustion Sense of guilt Feeling victims Cynicism Chronic fatigue Low concentration Sleep disturbances 	<p>Bambi et al. (2014) Blackstock et al. (2015) Favaro et al. (2021) Fontes et al. (2018) Kozakova et al. (2018) Laschinger et al. (2010)</p> <p>Bambi et al. (2014) Chatziioannidis et al. (2018) Laschinger et al. (2010) Bambi et al. (2014) Difazio et al. (2019)</p>
Consequences of horizontal violence suffered by nursing students	References
Professional life	
<ul style="list-style-type: none"> Intentions to leave the nursing programme Increased rates of absenteeism from internship placement Becoming super alert or watchful and on guard 	<p>Clarke et al. (2012) Lash et al. (2006) Clarke et al. (2012)</p>
Emotional and psychological wellbeing	
<ul style="list-style-type: none"> Loss of appetite Difficulty falling asleep Headache Tiredness 	Lash et al. (2006)
Consequences of violence suffered by nurses perpetrated by patients, family members or visitors	References
Professional life	
<ul style="list-style-type: none"> Poor job satisfaction Loss of interest in work Increased fear of new episodes of violence at work Constant state of alertness Sense of diminished security Reducing to the minimum their contacts with patients and the time spent to treat patients Increased absence from work 	<p>AbuAlRub and Al Khawaldeh (2014) AbuAlRub and Al-Asmar (2011) Al-Omari (2015) Galian-Munoz et al. (2014) Jaradat et al. (2016) Kobayashi et al. (2020) Merecz et al. (2020)</p> <p>Bimenyimana et al. (2009) Park et al. (2015) Ramacciati et al. (2019)</p> <p>Al-Omari (2015) Jafree (2017) Tomagová et al. (2020) Ogundipe et al. (2013) Hamdan and Hamra (2017) AbuAlRub and Al Khawaldeh (2014)</p>

(Continues)

TABLE 6 (Continued)

Consequences of violence suffered by nurses perpetrated by patients, family members or visitors	References
	Jenkins et al. (1998) Speroni et al. (2014) Xing et al. (2015)
<ul style="list-style-type: none"> • Increased intention to change the workplace and leave the profession 	Bimenyimana et al. (2009) Hutton and Gates (2008) Ogundipe et al. (2013) Pinar and Ucmak (2011)
Emotional and psychological wellbeing	
<ul style="list-style-type: none"> • Anxiety • Fear • Frustration 	Farrell et al. (2014) Basfr et al. (2019) McKenna et al. (2003) Nguluwe et al. (2016) Pinar and Ucmak (2011)
<ul style="list-style-type: none"> • Depression • Anger • Cynicism • Nervousness • Helplessness 	Galian-Munoz et al. (2014) Nguluwe et al. (2016) Yang et al. (2018) Bimenyimana et al. (2009)
<ul style="list-style-type: none"> • Depersonalization • Stress • Burnout • Emotional exhaustion 	Wu et al. (2020) Yang et al. (2018) Bimenyimana et al. (2009) Franz et al. (2010)
<ul style="list-style-type: none"> • Recurring memories and thoughts related to violence • Nightmares • Sleep disturbances 	Bambi et al. (2019) Levin et al. (1998) Ogundipe et al. (2013)
<ul style="list-style-type: none"> • Loss of appetite • Gastrointestinal disorders 	Bambi et al. (2019)
<ul style="list-style-type: none"> • Drug abuse by nurses and alcoholism 	Bimenyimana et al. (2009)
<ul style="list-style-type: none"> • High risk of post-traumatic stress disorder (PTSD) • Loss of self-confidence 	McKenna et al. (2003)
Physical consequences	
<ul style="list-style-type: none"> • Scratches • Bruises • Abrasions • Swelling • Muscle tension 	Yang et al. (2018)
<ul style="list-style-type: none"> • Fractures • Musculoskeletal injuries • Head injuries • Asphyxia • Lacerations • Sensory deficits • Physical disability • Chronic pain 	Baby et al. (2014) Levin et al. (1998) Nguluwe et al. (2016) Yang et al. (2018)
<ul style="list-style-type: none"> • One to five days of sick leave • Medical examination • Specific treatment 	Franz et al. (2010) Speroni et al. (2014)
<ul style="list-style-type: none"> • Death 	AbuAlRub et al. (2007)
Consequences for the work environment, damages and costs	
<ul style="list-style-type: none"> • Damage to the furniture • Damage tools and structures of health care facilities • Loss of a regular salary • Cost of medical care and long-term leave from work for the recovery process 	Gillespie et al. (2014) Galian-Munoz et al. (2014) Favaro et al. (2021)

(Continues)

TABLE 6 (Continued)

Consequences of violence suffered by nurses perpetrated by patients, family members or visitors	References
<ul style="list-style-type: none"> • Long-term health care • Rehabilitation • Victim reintegration • Unemployment • Retraining costs for victims who lose or leave their jobs • Injury benefits and treatment costs 	Favaro et al. (2021) Speroni et al. (2014)
<ul style="list-style-type: none"> • Increasing staff turnover with a cost of up to \$ 337,500 • Inability to hire due to turnover costs • Decrease in productivity 	AbuAlRub et al. (2007) Hutton and Gates (2008)
Consequences of violence suffered by nursing students perpetrated by patients, family members or visitors	References
Professional life <ul style="list-style-type: none"> • Increased rates of absenteeism from internship placement 	Clarke et al. (2012)
Emotional and psychological wellbeing <ul style="list-style-type: none"> • Disturbing memories • Thoughts • Images of the attack • Sense of helplessness • Loss of self-esteem • Neglect of self-care 	Clarke et al. (2012) Lash et al. (2006)

et al., 2006) as the main emotional and psychological consequences for nursing students.

5 | DISCUSSION

The phenomenon of workplace violence is widespread and documented worldwide. The literature describes violence mainly in hospital settings and in emergency rooms but also in community services and in various hospital departments. The present review enabled to identify several risk factors of WPV.

5.1 | Risk factors and consequences of horizontal violence

Horizontal violence is facilitated by specific personal factors of victims such as gender, age educational level and work experience. A way to promote integration and respect among professionals and prevent horizontal violence could be creating teams of nurses that have a good balance in terms of gender, age, a mix of work experience and skills to achieve common goals and greater autonomy (Edmonson & Zelonka, 2019).

Several environmental and organizational factors, such as poor nurse manager skills, rigid and hierarchical structures, understaffing, high levels of stress, shift work and unhealthy competition between professionals have been reported as additional risk factors for horizontal violence. The replacement of the current situation-oriented or task-oriented leadership with structural empowerment processes (Goedhart et al., 2017) aimed at achieving goals through access

to information, support, resources and opportunities (Moura et al., 2020) can reduce bullying and mobbing. Furthermore, constant organizational changes and staff shortages increase nurses' stress levels. High levels of stress and job dissatisfaction, as well as leading to adverse patient outcomes (Bloom, 2019; Brooks Carthon et al., 2021; Schlak et al., 2021), create a favourable substrate for horizontal violence.

Nursing students suffer from WPV, too. Likewise, the students' personal factors such as gender, age, marital status and religion have been identified as risk factors of horizontal violence. In order to prevent the bullying of students, faculty members should acknowledge the inherent vulnerability of learners, their personal risk factors and also reflect on their own communication practices and how these impact on learners (Seibel & Fehr, 2018).

5.2 | Risk factors and consequences of violence perpetrated by patients or family members

In many studies included in this review, victims' personal characteristics such as gender, age, work experience and educational level, are reported to be risk factors for violence perpetrated by patients or family members. Limited professional experience not underpinned by appropriate communication skills, combined with inability to anticipate patient needs (Bottega & Palese, 2020), do not enable to notice the initial signs of aggression and consequently prevent it. Other studies have shown that specific interventions aimed at raising nurses' awareness about risk factors, such as young age and limited experience, are essential in reducing aggressive behaviors in patients and their families (Hill et al., 2015; Shi et al., 2017).

Organizational and environmental factors are the most frequently reported risk factors of violence perpetrated by patients. In particular, the emergency department is the setting where WPV is reported to occur by most studies. Understaffing and high workloads are reported as the most frequent risk factors for WPV. Staff shortages that have persisted for decades in hospitals have dramatically worsened over the past 2 years due to the COVID-19 pandemic. Patient-to-nurse ratios vary widely in hospitals, and when nurses have to care for an excessively high number of patients, the chances of causing harm to patients are high (Khera et al., 2021; Lasater et al., 2021). For this reason, the phenomenon of assaults perpetrated by patients may have increased in this period due to the critical shortage of nurses and the increased workload.

Long waiting times in the emergency department (Morphet et al., 2014) associated with patients' unrealistic expectations has also been described as a major risk factor of physical and verbal aggression. In these cases, waiting time management strategies providing timely information and assistance to users, and specific education programmes for emergency personnel, could reduce the cases of aggression (Gillespie et al., 2014; Touzet et al., 2019). The lack of protocols and policies for the management and prevention of violence, the absence of dedicated communication channels and specific means to inform managers and administrators about episodes of violence are described by several studies (Babiarczyk et al., 2019; Jenkins et al., 1998). These shortcomings often occur in contexts where the incidence of violence against nurses is high (Cannavo et al., 2019). In addition, characteristics of the perpetrators, such as their mental status, clinical conditions and alcohol or drug abuse, have been identified as common risk factors of WPV. Greater awareness of the role played by these characteristics in WPV and advanced skills that enable to adequately approach these types of patients could help to predict, prevent, or limit the development of aggressive behaviors (Liu et al., 2019).

Nursing students also suffer violence perpetrated by patients and their families. Likewise, personal characteristics (e.g., gender, age and marital status) and organizational factors (e.g., attending emergency department internship) have been identified as risk factors. Teachers and clinical preceptors have a great responsibility in ensuring a safe learning environment. When personal characteristics and organizational and environmental factors are recognized as risk factors, they must be considered, together with the inherent vulnerability of learners, so that actions that protect students during their clinical learning programme are in place (Seibel & Fehr, 2018; Tee et al., 2016).

The consequences of WPV impact specifically on individual nurses, and generally on the health organization. These affect the quality of care provided, professional life and the emotional, psychophysical and physical well-being of nurses and nursing students. Physical and verbal assaults are related to burnout in each of its three dimensions (Laschinger et al., 2010; Wu et al., 2020; Yang et al., 2018). In this regard, the availability of follow-up programmes for WPV victims, counselling and discussion with hospital administrators have been found to reduce emotional exhaustion and

depersonalization, and increase personal accomplishment (Vincent-Höper et al., 2020). In addition, burnout generated by violence reduces nurses' level of attention when providing care (Al-Ghabeesh & Qattom, 2019a), increasing the likelihood of errors and putting patients' safety and health at risk. On the other side, the poor quality of the care is perceived negatively by patients, who may not feel actively involved and receive unsatisfactory responses to their needs due to distracted nursing care.

5.3 | Economic consequences of workplace violence

Very few studies examined the economic consequences of violence but showed how costs incurred by health institutions rise significantly due to compensation measures for professionals who become victims of violence, their reintegration into the workplace and increased turnover. As in other studies (Jeong & Kim, 2018; Olsen et al., 2017), workplace violence is a significant cause of turnover intent. Constant turnover is an impediment to effective teamwork and cohesion among colleagues, or even worse, it may reinforce any negative attitudes that may harbour in senior staff (Van Bogaert et al., 2017). Furthermore, some consequences of violence, such as burnout, depersonalization and physical harm, also increase intention of turnover and intention to leave the profession that can lead to enormous costs for the health care organizations that have to cope with this phenomenon.

5.4 | Preventing and managing workplace violence

Nurse leaders are in the position to promote a culture of safety that prioritizes the health, safety and wellbeing of their staff, patients and visitors. Health managers should promote policies that refuse violence as an inevitable part of professional practice and allocate resources for the prevention and management of violence and bullying (Johnson et al., 2018; Pariona-Cabrera et al., 2020). Some studies identified strategies to manage and prevent WPV episodes at different levels. For instance, allocating considerable funds to the prevention and management of WPV (Morphet et al., 2019), increasing staff numbers to prevent and manage WPV (Morphet et al., 2018), developing guidance materials evidence-based, focusing on education and training of staff to manage WPV (Geoffrion et al., 2020), implementing monitoring, responding and reporting systems (Burkoski et al., 2019; Ramacciati et al., 2021), sharing information between health services and other agencies and improving communication abilities (Collins, 2021) and implementing an effective security staff (Morphet et al., 2019).

6 | CONCLUSIONS

The results of this review bring to light critical issues often left unaddressed, especially where episodes of violence are very frequent. WPV prevention and management programmes and proactive

commitment are essential to reduce WPV and its consequences. Nursing leaders must explore and implement practices towards mitigating violence against nurses. Action research is needed to engage in a cycle of continuous improvement that supports eliminating violence in the health care sector.

Initiatives for the health and safety of nurses that establish objectives and responsibilities to monitor and curb WPV, and reports describing the outcomes of the measures adopted to prevent and manage episodes of violence should be on the agenda of every health administration. There is sufficient evidence for nurse managers to ensure that nurses and all health care professionals feel protected and safeguarded from verbal or physical abuse, and work in environments that ensure maximum safety for everyone.

6.1 | Limitations

This review included papers about WPV suffered by nurses and nursing students excluding other health professions. Despite the inclusion criteria for this study being wide, limitations can be found in language restrictions (English and Italian) that may have excluded significant studies written in other languages. Most of the studies included in this review were from the North American Continent and Europe, which limits the generalizability of our conclusions.

6.2 | Implications for nursing management

The predictors and consequences of WPV identified through this review constitute the body of knowledge necessary for nurse managers to develop and implement actions to manage or prevent WPV effectively.

Therefore, there is sufficient evidence for nurse managers to contribute to the development of a positive safety culture and awareness, putting at its centre the health, safety and wellbeing of health personnel, patients and visitors. Nurse managers must promote policies that decline violence as an inevitable part of nursing practice and invest resources to neutralize the onset of episodes of violence and transform it into an opportunity for professional and cultural development.

Evidence-based management of violence can contribute to implementing actions that ensure a violence-free working environment through permanent monitoring and reporting systems.

Furthermore, this message on the impact of WPV in health care must also be spread to a broader audience to promote and support change effectively.

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CONFLICT OF INTEREST

The authors of this manuscript have no competing interests as defined by the editorial policy of *Journal of Nursing Management*. They moreover have no other interests that may have influenced the results and discussion of this paper.

ETHICS STATEMENT

Since this is a review of the literature, no ethics approval is required.

AUTHORS' CONTRIBUTIONS

Nicola Pagnucci: Conceptualization, Writing-Original draft preparation.

Giulia Ottonello: Analysis, Writing-Original draft preparation.

Davide Capponi: Analysis, visualization.

Gianluca Catania: Supervision of the review process.

Milko Zanini: Supervision of the analysis.

Giuseppe Aleo: Reviewing and editing final draft.

Fiona Timmins: Reviewing and editing final draft.

Loredana Sasso: Overall supervision.

Annamaria Bagnasco: Conceptualization and overall supervision.

DATA AVAILABILITY STATEMENT

Authors do not wish to share the data.

ORCID


Nicola Pagnucci  <https://orcid.org/0000-0003-4601-3993>


Giulia Ottonello  <https://orcid.org/0000-0002-3785-7847>

Gianluca Catania  <https://orcid.org/0000-0002-0862-071X>

Giuseppe Aleo  <https://orcid.org/0000-0002-1306-3364>

Fiona Timmins  <https://orcid.org/0000-0002-7233-9412>

Loredana Sasso  <https://orcid.org/0000-0001-5886-5937>

Annamaria Bagnasco  <https://orcid.org/0000-0002-9079-8460>

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