

Workplace violence against healthcare professionals: A systematic review

Carmela Mento^{a,*}, Maria Catena Silvestri^b, Antonio Bruno^c, Maria Rosaria Anna Muscatello^d, Clemente Cedro^d, Gianluca Pandolfo^d, Rocco A. Zoccali^d

^a Department of Biomedical and Dental Sciences and Morphofunctional Imaging, Psychiatric University of Messina, Psychiatric Unit Policlinico Hospital Messina, Consolare Valeria str. 1, 98125 Messina, Italy

^b Psychiatric Unit Policlinico Hospital Messina, Consolare Valeria str. 1, 98125 Messina, Italy

^c Department of Biomedical and Dental Sciences and Morphofunctional Imaging, University of Messina, Psychiatric Unit Policlinico Hospital, Consolare Valeria str. 1, 98125 Messina, Italy

^d Department of Biomedical and Dental Sciences and Morphofunctional Imaging, University of Messina, Consolare Valeria str. 1, 98125 Messina, Italy

ARTICLE INFO

Keywords:

Workplace violence
Healthcare professionals
Emergency departments

ABSTRACT

Background: Workplace violence is defined as an aggression when staff members are abused, intimidated or attacked in circumstances related to their work, including commuting to and from work, involving an explicit or implicit challenge to their safety, well-being or health. Violence against healthcare professionals is frequent, and constitutes a source of concern in the health system. Scientific literature highlights negative behavioral, emotional, cognitive and physical outcomes. The aim of this review is to examine the impact that exposure to workplace violence against healthcare professionals can produce, to improve healthcare professionals' knowledge about the consequences of workplace violence, and to guide future research in identifying strategies that could effectively reduce the incidence of workplace violence.

Method: We have conducted, in accordance with PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, a systematic search for the literature on PubMed. Search terms related to WPV were ("Workplace violence", "Aggression", "Aggression department emergency"), and search terms related to WPV consequences were ("Mental health", OR "Health care workers", OR "Burnout").

Initial search identified 1.434 articles. One-hundred publications have been selected and the relevant publications, appropriate to the topic review, was reduced to twenty-seven.

Result: According to examined literature, workplace violence mostly occurs in psychiatric departments, emergency services, polyclinics/waiting rooms, and geriatric units. Negative factors such as lack of information, insufficient personnel and equipment, and communication breakdowns increase the risk of violent behavior in healthcare services. Most violence in health institutions is perpetrated by patients and their relatives in the forms of verbal abuse, psychological violence, physical assault, and sexual abuse.

Conclusion: Workplace violence might lead to various negative impacts on health workers' psychological and physical health, such as increase in stress and anxiety levels; feelings of anger, guilty, insecurity, burnout.

1. Introduction

Workplace violence (WPV) against healthcare workers consists in abuses, intimidations, aggressions, in circumstances related to work (Saragoza & White, 2016; Shea, Sheehan, Donohue, Cooper, & De Cieri, 2017; Kowalczyk & Krajewska-Kułak, 2017; Hoyle, Smith, Mahoney, & Kyle, 2018). The literature examines the concept of violence, defined as any aggressive act, such as yelling, snide comments, withholding pertinent information, and rude, ignoring, and humiliating behaviors,

which occurs between two or more persons on different levels of the hierarchical system (Bayram, Çetin, Oray, & Can, 2017; Baby, Gale, & Swain, 2019; Seun-Fadipe, Akinsulore, & Oginni, 2019; Beattie, Griffiths, Innes, & Morphet, 2019; Rafeea, Al Ansari, Abbas, Elmusharaf, & Zeid, 2017; Shafran-Tikva, Chinitz, Stern, & Feder-Bubis, 2017; Sun et al., 2017; Volz, Fringer, Walters, & Kowalenko, 2017).

According to the World Health Organization (WHO), workplace violence can be categorized as physical, psychological (emotional), sexual and racial (Ray, 2007). Physical and psychological violence are

* Corresponding author at: Department of Biomedical and Dental Sciences and Morphofunctional Imaging, University of Messina, Consolare Valeria str. 1, 98125 Messina, Italy.

E-mail addresses: cmento@unime.it (C. Mento), antonio.bruno@unime.it (A. Bruno), mmuscatello@unime.it (M.R.A. Muscatello), clemente.cedro@unime.it (C. Cedro), gianluca.pandolfo@unime.it (G. Pandolfo), rocco.zoccali@unime.it (R.A. Zoccali).

<https://doi.org/10.1016/j.avb.2020.101381>

Received 29 April 2019; Received in revised form 13 January 2020; Accepted 27 January 2020

Available online 04 March 2020

1359-1789/ © 2020 Elsevier Ltd. All rights reserved.

both common, but psychological violence appears to be more popular. Psychological violence can be defined as the intentional act against a person or collective force that results in physical, mental, spiritual, moral, and social harm, including insults, threats, attacks, verbal abuse (Ray, 2007; Peng et al., 2018). The health sector has the highest risk (Schablon, Wendeler, Kozak, Nienhaus, & Steinke, 2018; Kleissl-Muir, Raymond, & Rahman, 2018; Kim et al., 2019; Bloom, 2019). The National Institute for Occupational Safety and Health (NIOSH) notes that the public place where most violence towards employees can be observed is the hospital; healthcare workers are the most vulnerable professionals to workplace violence (Vorderwülbecke, Feistle, Mehring, Schneider, & Linde, 2015; Sun et al., 2017; Shea et al., 2017; Volz et al., 2017).

A shocking finding in international studies is that aggressive behavior towards doctors is a usual occurrence (Vorderwülbecke et al., 2015); the reported cases of violence form the tip of the iceberg, whereas non-reported cases of violence remain as the submerged portion of the iceberg (Shea et al., 2017; Nico, Volz, Fringer, Walters, & Kowalenko, 2017; Pinto, Radon, & van Dijk, 2018; Niu et al., 2019).

In recent years, many doctors have been assaulted, seriously wounded and even murdered by patients or relatives; consequently, doctors and healthcare assistants are at high risk of serious injury or death in hospital settings due to attacks by patients (Tian & Du, 2017; Volz et al., 2017; Strickler, 2018; Schablon et al., 2018; Jeong & Kim, 2018). Over the last two decades the percentage of assaults on healthcare assistants has been increasing across the globe. The incidence of WPV against physicians was also reported to vary among departments and was substantially higher in emergency medicine and psychiatry departments (Wu et al., 2015; Volz et al., 2017; Pinto et al., 2018; Li, Zhang, Xiao, Chen, & Lu, 2019), which more often treat patients with problems of substance abuse or mental illness (Pekurinen et al., 2017).

Several recent studies have identified physicians' characteristics associated with the experience of WPV; for example long waiting lists, perceived emergency, anxiety for the disease, or doctors being unable to extend sick leave, or not willing to comply with patients' desires for prescription of certain types of drugs, in Countries where essentially all these are freely available, but doctors are supposed to justify their actions to higher authorities (Bayram et al., 2017). This situation may be highly distressing for healthcare assistants and entails a series of negative consequences, since psychological and physical violence among health care workers is associated with decreased job satisfaction, increased occupational strain, and poor patient care outcomes. Additionally, WPV negatively influences health care workers' organizational commitment (Peng et al., 2018).

The negative consequences of such widespread violence heavily affect the delivery of healthcare services, calling upon the quality of care. Moreover, in developing Countries equal access of care seekers to primary health care may be threatened if already scarce healthcare workers abandon their profession because of the threat of violence; recent reports have shown that, in Bangladesh, violence against physicians perpetrated by patients or patients' attendants has increased, and the severity has simultaneously intensified both in emergency and indoor departments (Peng et al., 2018; Jalil, Huber, Sixsmith & Dickens, 2017).

Recent studies have found out that people who experience psychological violence are seven times as likely to be victims of physical violence. In a study on hospital violence in China, the incidence of violence in hospitals has reached as high percentages as 95%, indicating that physical and verbal abuse of medical staff is common (Peng et al., 2018).

A study from Canada concluded that 29% of all participating primary care physicians had been exposed to aggressive behavior in the month preceding the survey: almost each one had experienced milder aggressive events, such as verbal insults and verbal abuse; 26% had experienced moderate aggression - damage to property (criminal

damage)- and 8% had been victim of serious physical violence and sexual assaults (Vorderwülbecke et al., 2015).

Violence against healthcare professionals is similarly an important problem in Turkey, with one study finding that 44.7% of all healthcare personnel are subjected to violence every year. Although nurses are the highest at-risk group for violence in many parts of the world, physicians and dentists were reported as the highest at-risk groups for workplace violence in the health sector in Turkey (Bayram et al., 2017). Although healthcare providers are increasingly concerned about the escalating incidents of workplace violence, there is a lack of evidence to support this concern due to low reporting rates. A study found that only around 15% of workplace violence cases were reported to police or public security authorities. In addition, sometimes these cases were reported as negligence of physicians without proper investigation by the concerned authorities (Ahmed, Memon, & Memon 2018).

Authors showed that almost every primary care physician had faced at least one violent event, be it mild, in the preceding 12 months of their work. In contrast, other international studies documented high percentages of violence, although in those cases some participants were spared such mistreatment. One such study carried out in Japan from 2007 indicated that 84.8% of the doctors had experienced violence during their practice, 72.1% were verbally abused, whereas alcohol-associated harassment accounted for 51.8% (Ahmed et al., 2018).

Studies undertaken in America in 2004 and 2015 have demonstrated that verbal abuse is the most frequent type of violence reported by physicians and nurses (39–99%). Also, in a study in Pakistan, more than two-thirds of the respondents (n = 121/164, 73.8%) had been victims of violence in the preceding 12 months, with verbal abuse (n = 104/121, 86%) being the main type of aggression.

In Jordan, the prevalence of verbal abuse by patients and visitors was approximately 63.9%, for physical abuse, 7.2% was committed by patients and 3.1% by visitors (Peng et al., 2018). In both the private and public sectors in Hong Kong, non-physical violence was found to occur more frequently than physical violence; in addition, there is a reported lack of readiness of many organizations in dealing with violence (Peng et al., 2018).

2. Methods

2.1. Research strategy

This systematic review was conducted according to PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines (Moher et al., 2009). PubMed database was searched from January 1, 2014, to January 1, 2019, using 3 key terms related to WPV (“Workplace violence”, “Aggression”, “Aggression department emergency”), and 3 key terms related to WPV consequences (“Mental health” OR “Health care workers” OR “Burnout”). The electronic search strategy used for PubMed is described in Table 1. Articles have been selected by title and abstract; the entire article was read if title/abstract was related to the specific issue of exposition to workplace violence

Table 1
List of search terms entered into the PubMed search.

Number	Search term
1	WORKPLACE Violence [all fields]
2	AGGRESSION [all fields]
3	AGGRESSION DEPARTMENT EMERGENCY [all fields]
4	MENTAL HEALTH [all fields]
5	HEALTH CARE WORKERS [all fields]
6	BURNOUT
7	1 OR 2 OR 3
8	4 OR 5 OR 6
9	7 AND 8
10	English [language]
11	2014/01/01 to 2019/01/31 [publication date]

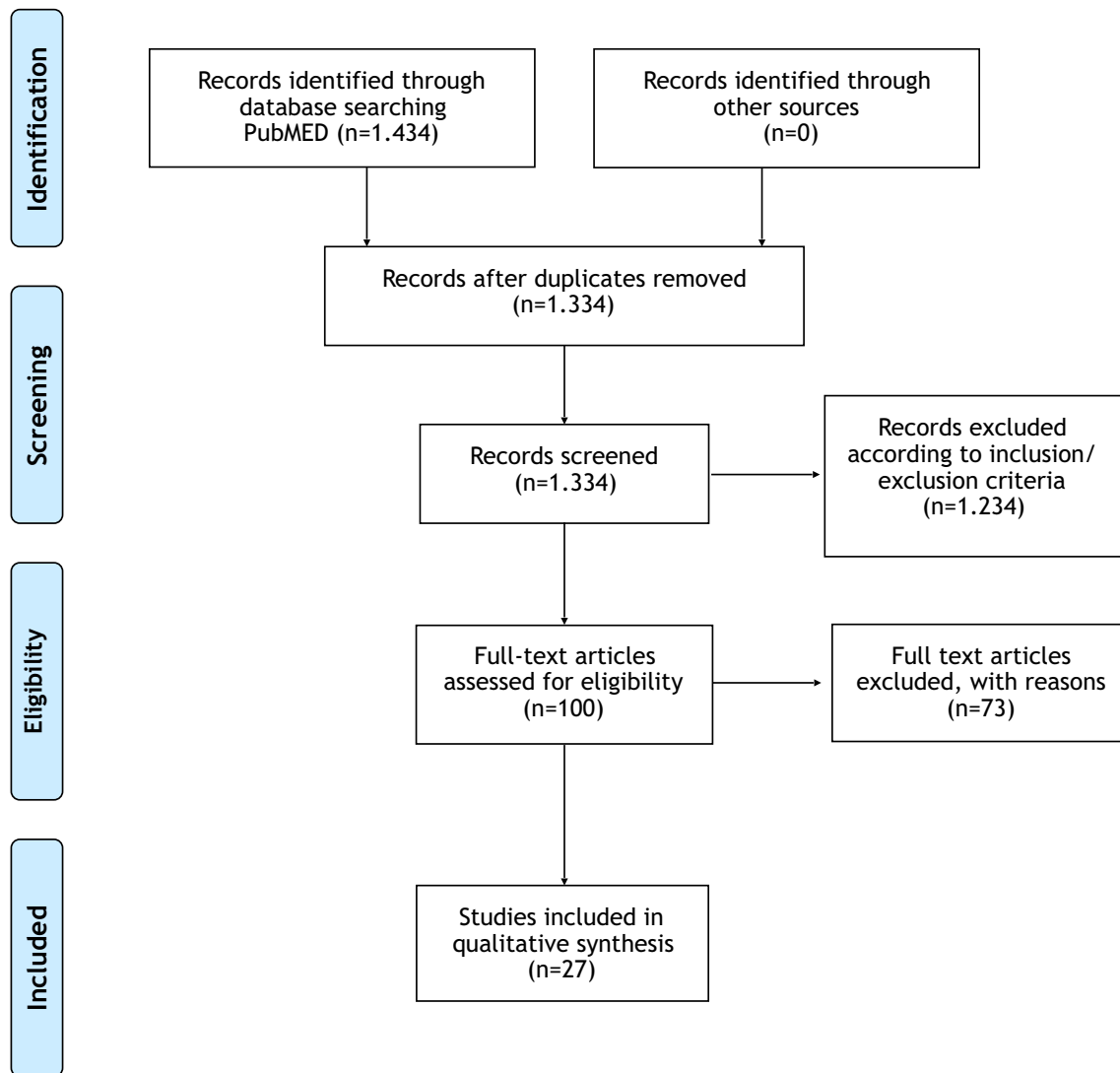


Fig. 1. Flowchart of articles selected.

against health care workers, and if the article potentially met the inclusion criteria. References of the selected articles were also examined in order to identify additional studies meeting the inclusion criteria.

2.2. Study selection

Articles were included in the review according to the following inclusion criteria: English language, publication in peer reviewed journals, quantitative information on workplace violence against healthcare workers, and year of publication at least 2014. Articles were excluded by title, abstract, or full text for WPV against workers other than healthcare, and for irrelevance to the topic in question. Further exclusion criteria were review articles, editorial comments, and case reports/series. Furthermore, we arbitrarily decided to start our research from 2014 to give a more recent view of “WPV against healthcare workers” findings.

2.3. Data extraction

Two authors (MCS, AB) performed the initial search, independently reviewed and selected the references based on the inclusion and exclusion criteria, and clarified any disputes in the presence of a third expert reviewer (CM). The results were subsequently reevaluated by the auditors, and the salient results were shown. After having discarded

duplicate articles, data derived from our research of articles included study author names, publication dates, study aims, sample size and characteristics, type of measurement.

3. Results

Fig. 1 summarizes the flowchart of articles selected for the review. The search of PubMed database provided a total of 1434 citations; no additional studies meeting inclusion criteria were identified by checking the reference list of the selected papers. After adjusting for duplicates, 1334 records were screened. Of these,

1234 studies were excluded according to inclusion and exclusion criteria.

After the screening, a total of 27 studies assessing the workplace violence against healthcare workers met the inclusion criteria and were included in the systematic review (Table 2); in particular 20 studies focused on workplace violence and investigated the impact of training on more broadly aggressive accidents, which included verbal aggression and violence towards objects, and 8 studies focused on the aggression-related psychological vulnerability of healthcare professionals.

This review investigated the impact of workplace violence and found that major violence is shown at emergency and psychiatric departments. This situation is associated with negative consequences in healthcare workers, such as increases in anxiety, anger, and depression

Table 2
Characteristics of the studies included in the review.

References (Author, place)	Aims	Sample size and characteristics	Group characteristics	Type of measurement
Babanataj, Mazdarani, Hesamzadeh, Gojji, and Cherati (2019)	The aim of this study was to determine the effect of training for resilience on nurses working in the unit of intensive care and on their occupational stress and resilience levels.	30 nurses	This study is an almost experimental intervention done by recruiting 30 nurses who were selected from critical care units of an educational hospital in Sari City, Iran.	The pretest-posttest approach was used in this study, and the nurses completed the Connor-Davidson Resilience Scale, and Expanded Nursing Stress Scale, before and 2 weeks after the training program.
Baby et al. (2019)	This study aimed to evaluate the effect of an intervention (communication skill training) to reduce the experience of aggression for healthcare support workers.	The participants were healthcare support workers working in mental health services of the District Health Board (DHB) and nongovernmental organizations (NGOs) from 14 organizations across the Otago and Southland regions and Auckland region of New Zealand. 713 physicians	The criteria of participants were as must be a healthcare support worker working for an NGO, District Health Board, or Aged Care facility; aged 18 years and above; must be fluent in English; able to provide informed consent; Physicians currently practicing in EDs in Turkey.	The first questionnaire included demographic data, Perception of Patient Aggression Scale-New Zealand (POPAS-NZ), Kessler Psychological Distress Scale (K10), Impact of Events Scale-Revised (IES-R), and Interpersonal Communication Competence Scale (ICCS). -Workplace Violence in the Health Sector Country Case Studies Research Instruments-Survey Questionnaire, Geneva 2003, which was prepared by a joint programme by the International Labour Office, International Council of Nurses, WHO and Public Services International.
Bayram et al., 2017	The aim of this study is to determine the prevalence of violence directed at emergency department (ED) physicians in Turkey and confirm the factors influencing such violence.	Managers, directors, health/safety staff, nurses and educators (n = 99). 380 health workers.	The participants worked in occupational health and safety (OHS) or coordinated the hospital aggression management plan were invited to participate.	Semistructured, individual or group interviews were conducted taking into account the preferences of the participants for type of interview, time and place.
Beattie et al. (2019)	This paper examines the relationship between WPV perpetrated by clients, their innate neurophysiological response to disease and the resulting interactions with healthcare providers.	114 forensic nursing.	The participants were stratified according to profession and the number of participants to be recruited per profession was determined by proportionate sampling to ensure proportional representation of all professional groups as follows: 99 doctors, 200 nurses, 11 pharmacists, 16 workers from professions allied to medicine, 23 technical staff and 31 support staff.	The questionnaire was developed by International Labour Organization/ International Council of Nurses/ World Health Organization/ Public Services International (ILO/ICN/WHO/PSI) joint programme on workplace violence in the health sector (ILO/ICN/WHO/PSI, 2003) General Health Questionnaire (GHO-12).
de Looff et al. (2018)	This study explored the association between type and severity of aggressive behavior as experienced by nursing staff and staff's burnout symptoms.	769 primary care physicians aged 31.	Nursing staff members worked in four Dutch forensic psychiatric hospitals for clients with intellectual disabilities and severe challenging behavior, such as aggressive behavior. 769 doctors, 524 allowed to participate in the survey.	-Maslach Burnout Inventory -Modified Overt Aggression Scale + -The Modified Overt Aggression Scale.
Farah et al. (2018)	Aggression and Violence against primary care physicians is reportedly common in Pakistan but there is no documented study to-date on this burning issue.	24 nurses.	The nurses were recruited from the two inpatient units.	-The demographic data -the questionnaire included questions regarding the level of safety that primary care physicians felt during their work setups and on-call duties, along with the experience of aggression against them by the perpetrators & the support provided by the hospital management in such cases.
Foster et al. (2018)	The aim of this study was to evaluate the feasibility of a workplace resilience education programme for nurses in high-severity adult mental health settings.	Sixty-eight mental health nurses.	Nurses who were designated keyworkers for patients enrolled into a related study.	-Mental health was measured with the DASS 21 scale (Depression, Anxiety and Stress) -Satisfaction with Life Scale -Positive and negative affect schedule - expanded form.
Jalil et al. (2017)	To identify relationships between mental health nurses' exposure to patient aggression, their emotions, their attitudes towards coercive containment measures, and their involvement in incidents involving seclusion and restraint.	1624 healthcare workers.	493 nurses, 504 midwives, 501 physicians and 126 medical rescue workers.	-Perception of prevalence of aggression scale. -The attitudes to containment measures questionnaire. -Novaco anger scale provocation inventory. -MDM Mobbing Questionnaire.
Kowalczak and Krajewska-Kulak (2017)	The aim of this study was to assess exposure of various professional groups of healthcare personnel to			

(continued on next page)

Table 2 (continued)

References (Author, place)	Aims	Sample size and characteristics	Group characteristics	Type of measurement
Li et al. (2019)	Patients' aggression, and to identify potential determinants (medical profession, age, gender, professional experience and employment at outpatient/inpatient healthcare units) of this exposure. The aims of this study is to describe WPV, job satisfaction and turnover intention of emergency nurses and clarify the relationship between them.	385 nurses.	The nurses working in emergency department in 13 general hospitals in Beijing.	-Demographic characteristic of emergency nurses -Questionnaire on frequency of workplace violence -Satisfaction Scale (MMSS) -Six items Turnover Intention Toll developed. -Basic information -Nottingham Health Profile (NHP).
Liang et al. (2015)	This study tried to explore the quality of life (QOL) of young clinical doctors in public hospitals in China's developed cities to study the psychometric properties of QOL and related risk factors of doctor's health.	Young doctors.	This study sampled young doctors aged 15–45 in 18 public hospitals of three cities in East China.	
Nico et al. (2017)	This pilot study investigates the prevalence of HV among emergency department (ED) attending physicians, residents, and mid-level providers (MLPs).	67 physicians.	The physician's residents (n = 25), and MLPs (n = 24) in three unique EDs within a single multi-hospital medical system.	The survey consisted of 18 questions regarding HV and seven additional questions aimed to elicit its impact on the participant.
Peng et al. (2018)	The purpose of this study was to estimate prevalence and risk factors of psychological violence in Chinese township hospitals.	990 doctors and nurses	In this survey, all doctors and nurses (N = 990) of the selected hospitals were approached and a total of 990 questionnaires were distributed.	The questionnaire was divided into four sections: - demographic characteristics of the respondents and workplace data; - physical violence, including prevalence of physical violence, and the demographic characteristics of perpetrators, attack time, attack tools, and consequences; - psychological violence, including prevalence, response of healthcare workers, and workers' methods of dealing with psychological violence; - organizational measures, including incident reporting, supervisor support, and training programmes.
Rafeea et al. (2017)	This study explored workplace violence towards emergency staff in the Ed of the BDF Hospital in Bahrain.	120 people work in ED.	The study included responses from 100 staff in the Ed of the BDF Hospital in Bahrain (doctors, nurses, and support personnel). The majority of the participants were nurses.	-Demographic and professional background (15 questions) -Exposure to violence (22 questions) -Levels of burnout assessed by Maslach Burnout Inventory (MBI). - Questionnaire as the survey instrument
Ramacciati et al. (2019)	To analyze the dimensions and characteristics of Violence towards Emergency Nurses in a national context (Italy).	668 EDs in Italy.	For the sample size calculation, they referred to the survey findings of Becatini, Bambi, Palazz, Lumini, 2007 in 14 Italian regions in 2007, when 90% of emergency nurses declared to have suffered from violence in the previous year of work.	
Schablon et al. (2018)	The objective of the survey was to study the frequency and nature of violence and the handling of aggressive behavior by facility management.	181 workplaces.	A total 81 workplaces participated in the study with a potential of around 5000 employees who met the required patient/client/resident/contact for a study participation.	-The Interview topics included the description of the specific violent event, the roles played by all involved, its contributing factors, and emotions that arose during the episode. -In-depth interviews
Shafran-Tikva et al. (2017)		678 physicians, and nurses.		

(continued on next page)

Table 2 (continued)

References (Author, place)	Aims	Sample size and characteristics	Group characteristics	Type of measurement
Shea et al. (2017)	The aims of the study was to identify and describe the perceptions of staff and patients regarding the factors that lead to violence on the part of patients and those accompanying them. This study also examines the relative contributions of demographic characteristics and workplace and individual safety factors in predicting OVA.	The nursing and caring profession.	Comprising 34% nurses and 66% physicians (93% response rate). The nursing and caring professions in Victoria, Australia, nearly all respondents were female and between the ages of 46 and 65 years. Most had been employed in the nursing and caring profession for more than 10 years.	-Demographic questions for gender, age, job. -Two items measures to examine respondent experience of Ova. -The quantitative workload inventory -Individual safety factors were measured using three scales: Safety motivation, safety compliance, safety participation. The questionnaire they used to measure WPV was developed in 2003 by an International Labour Office (ILO), International Council of Nurses (ICN), WHO, and Public Services International (PSI) joint programme to measure workplace violence. In the present survey they used a 6-point Likert scale, with 'never', rarely', 'occasionally', 'often', and 'every day', to reflect the frequencies of work-related violence against doctors.
Sun, Gao, et al. (2017)	This research aimed to determine the prevalence of workplace violence (WPV) against healthcare workers, explore the frequency distribution of violence in different occupational groups, and determine which healthcare occupation suffers from WPV most frequently. This study had three objectives: -to identify the incidence rate of WPV against doctors under a new classification, -to examine the association between exposure to WPV, psychological stress, sleep quality and subjective health of Chinese doctors and -to verify the partially mediating role of psychological stress.	1899 healthcare workers.	The healthcare workers from Heilongjiang, a province in Northeastern China, completed the questionnaire. Of the respondents, 83.3% reported exposure to workplace violence, and 68.9% reported non-physical violence. The survey was conducted among 1740 doctors in tertiary hospitals, 733 in secondary hospital and 139 in primary hospital across 30 provinces of China.	
Sun, Zhang, et al. (2017)	This pilot study investigates the prevalence of HV among emergency department (ED) attending physicians, residents, and mid-level providers (MLPs).	2617 doctors.	67 physicians residents (n = 25), and MLPs (n = 24) in three unique EDs within a single multi-hospital medical system.	
Jia Tian & Li Du (2017)	In this paper, they explore how perspectives on the LCPH incident and related opinions on stopping hospital violence is presented on the Weibo, or micro-blogs.	661 Chinese-language.	In this study using the Sina Weibo's built-in search tool, they established a dataset of 661 Chinese-language micro-blogs containing the search terms.	The content analysis was conducted in two stages. They first conducted an exploratory thematic analysis on 10% of the dataset.
Volz et al. (2017)		67 physicians.		The survey consisted of 18 questions that asked participants to indicate with what frequency (never, once, a few Times, monthly, weekly, or daily) they have witnessed or experienced a particular behavior in the previous 12 months. Seven additional questions aimed to elicit the impact of HV on the participant, the work environment, or the patient care.
Vordenwülbecke et al. (2015)	To gauge the general sense of personal safety in primary care physicians in the surgery, on house visits and visits to homes, and during on-call duties (practice based or house visits).	1500 primary care physicians.	The total study population consisted of all resident primary care physicians who were active in Germany in October 2013.	The four-page questionnaire was developed after an inspection of the original questionnaires from several International sources The measure has been used previously to assess the occurrence of aggression at work, not only regarding healthcare workers.
Pekurinen et al., 2017	The aim of this study was to estimate and compare the prevalence of patient aggression and the associations between patient aggression and the wellbeing of nurses in psychiatric and non-psychiatric	5288 nurses.	A sample of 5288 nurses (923 psychiatric nurses, 4070 medical and surgical nurses, 295 emergency nurses) participated in the study.	

(continued on next page)

Table 2 (continued)

References (Author, place)	Aims	Sample size and characteristics	Group characteristics	Type of measurement
Wulff, Casper, Andersen, and Sorensen (2017)	specialties (medical and surgical, and emergency medicine). This study evaluated an intervention for patient-staffs' use of patient handling equipment and improve their general health, reduce musculoskeletal problems, aggressive episodes, days of absence and work-related accidents.	937 nursing staffs.	Nursing staffs' use of patient handling equipment and improve their general health, reduce musculoskeletal problems, aggressive episodes, days of absence and work-related accidents.	The questionnaire was based on validated instruments or questions. A generic quality of life instrument (SF-12v2 (Ware, Kosinski, Keller, 1996)) was included in full (with a license obtained by the de-velopers), and a number of questions previously used in surveys by the National Research Center for the Working Environment (NRCWE). The questionnaire contained items relating to WPV.
Wu et al. (2015)	The main aim of this study was to examine the 582 organizational determinants of WPV for clinical physicians.	189 physicians	Physicians from three public hospitals and one private hospital in Northern 29 Taiwan completed a survey, and the response rate was 47.1%.	The questionnaire contained items relating to WPV.

levels, and guilt, with negative outcomes on well-being and quality of life of the involved professionals.

4. Discussion

Most of the research analyzed is focused on the effects of the exposure to workplace violence; Healthcare services can be experienced as stressful environments and the care context can be perceived as a threat to clients' psychological and physical assurance, activating an aggressive response (Beattie et al., 2019; Strickler, 2018). In general the workplace violence has a negative influence on health of healthcare professionals (Ramacciati et al., 2019; Pinto et al., 2018; Bloom, 2019).

General practitioners, when visiting their patients at home, especially at night and when the physician is a female, are more vulnerable, and in some extreme cases physical violence results in injury, death and psychological harm.

In several Countries, violence against doctors is more dangerous and is often directed to junior doctors who may not have anything to do with the perceived wrong or inadequate treatment of the patient. In China, for example, due to the worsening of the patient-physician relationship, the number of violent attacks in hospitals has increased in the last couple of years (Volz et al., 2017).

Violent incidents often occur after medical malpractice or even when treatment results do not meet patients' expectations. In most cases, patients and their relatives use verbal abuse, or threats against physicians to express their dissatisfaction and disappointment with the treatment results (Liang, Wang, & Tao, 2015).

The Ahmed et al., 2018 showed gender differences in the safety level felt by physicians. Female physicians felt lesser safe than male physicians, both at work setup and during on-calls; furthermore, female physicians reported to feel safer at work setup than during on call duties. However, the difference in male physicians' level of safety at work setup and during on-call duties was non-significant.

Workplace violence in healthcare professionals has many negative and adverse consequences, such as job dissatisfaction, diminished productivity, drug abuse, excessive drinking, and low health and life satisfaction (Liang et al., 2015). The general consequences seem to be a reduced quality of life, since both physicians and nurses usually suffer from burnout, which is a long-term condition; however, other mental problems, such as emotional exhaustion, suicidal thoughts, depression, and anxiety, have been reported (de Looft, Nijman, Didden, & Embregts, 2018; Jalil et al., 2017). Regarding burnout, symptoms experienced by doctors significantly affect work significance, functioning, since high levels emotional exhaustion, cynicism, and low perceived professional efficacy are related to poor occupational satisfaction and performance. However, besides workplace violence, it is well known that resident doctors are a population at risk for burnout, mainly due to high perceived pressure in workplace and emotional distress, and these psychological aspects of medical professionals should also be considered (Chang, Lee, & Wang, 2018; Cheung, Lee, & Yip, 2018; Schablon et al., 2018). In addition, several factors contribute to the development of mental health problems among doctors. Individual factors include personality features, sense of accomplishment, personal commitment, attitudes, and practices towards the profession are also considered as reliable predictors of well-being and work satisfaction in health professionals (Seun-Fadipe et al., 2019; Babanataj 2018; Liang et al., 2015). Among external factors that contribute to mental health conditions in this population, working conditions and occupational characteristics play a significant role. Mental health settings are complex, there is a clear need for practical approaches addressing the negative impact of stressors on doctors and nursing workforce's mental health (Baby et al., 2019; Foster et al., 2018; Kowalczyk & Krajewska-Kula, 2017; Nico et al., 2017; Shafraan-Tikva et al., 2017; Tian & Du, 2017).

In conclusion, workplace violence can lead to various negative psychological and physical outcomes in health workers; furthermore,

the consequences of violence on health organizations are considerable, when considering absence due to work injuries or sick days, absenteeism, burnout, decreased job satisfaction, all factors that strongly affect quality of work, budgets, and costs.

Resilience-promoting interventions and protective strategies have been proposed as preventive approaches to improve skills for addressing workplace stress, improving health and well-being, and preventing adverse outcomes associated with occupational stressors (Beattie 2018; Foster et al., 2018; Kowalczuk & Krajewska-Kułak, 2017; Nico et al., 2017; Shafraan-Tikva et al., 2017; Tian & Du, 2017). Since the major prevention strategy for any healthcare organization is the appropriate education of the whole staff, these interventions should provide training programs aimed at recognizing early signs of violence in patients and/or visitors and potentially violent situations, verbal and physical prevention skills, assertiveness techniques, diversion and de-escalation strategies, and patient management protocols as part of a broad, multifaceted, coordinated response to the phenomenon of workplace violence in the attempt to lessen critical outcomes on physical, psychological and professional well-being.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Declaration of competing interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

References

- Ahmed, F., Memon, M. K., & Memon, S. (2018). Violence against doctors, a serious concern for healthcare organizations to ponder about. *Annals of medicine and surgery*, 25, 3–5.
- Babanataj, R., Mazdarani, S., Hesamzadeh, A., Gorji, M. H., & Cherati, J. Y. (2019). Resilience training: Effects on occupational stress and resilience of critical care nurses. *International journal of nursing practice*, 25(1), e12697.
- Baby, M., & Gale, C. (2019). A communication skills intervention to minimise patient perpetrated aggression for healthcare support workers in New Zealand: A cluster randomised controlled trial. *Health & social care in the community*, 27(1), 170–181.
- Başak, B., Çetin, M., Oray, N., & Can, İ. (2017). Workplace violence against physicians in Turkey's emergency departments: a cross-sectional survey. *BMJ open*, 7(6), e013568.
- Beattie, J., Griffiths, D., Innes, K., & Morphet, J. (2019). Workplace violence perpetrated by clients of health care: A need for safety and trauma-informed care. *Journal of clinical nursing*, 28(1-2), 116–124. <https://doi.org/10.1111/jocn.14683>.
- Becattini, G., Bambi, S., & Palazzi, F. (2007). *Il fenomeno delle aggressioni agli operatori di Pronto Soccorso: la prospettiva italiana. XXVI Congresso Nazionale ANIARTI – Rimini* Ottobre 2007/24–26.
- Bloom, E. M. (2019). Horizontal violence among nurses: Experiences, responses, and job performance. *Nurs Forum*, 54(1), 77–83. <https://doi.org/10.1111/nuf.12300> Epub 2018 Oct 17.
- Chang, Y. P., Lee, D. C., & Wang, H. H. (2018). Violence-prevention climate in the turnover intention of nurses experiencing workplace violence and work frustration. *Journal of nursing management*, 26(8), 961–971.
- Cheung, T., Lee, P. H., & Yip, P. S. F. (2018). The association between workplace violence and physicians' and nurses' job satisfaction in Macau. *PLoS One*, 13(12), e0207577. <https://doi.org/10.1371/journal.pone.0207577> (eCollection 2018).
- de Looft, P., Nijman, H., Didden, R., & Embregts, P. (2018). Burnout symptoms in forensic psychiatric nurses and their associations with personality, emotional intelligence and client aggression: A cross-sectional study. *Journal of psychiatric and mental health nursing*, 25(8), 506–516.
- Foster, K., Shochet, I., Wurfl, A., Roche, M., Maybery, D., Shakespeare-Finch, J., & Furness, T. (2018). On PAR: A feasibility study of the Promoting Adult Resilience programme with mental health nurses. *International journal of mental health nursing*, 27(5), 1470–1480.
- Hoyle, L. P., Smith, E., Mahoney, C., & Kyle, R. G. (2018). Media depictions of “un-acceptable” workplace violence toward nurses. *Policy, Politics, & Nursing Practice*, 19(3–4), 57–71.
- Jalil, R., Huber, J. W., Sixsmith, J., & Dickens, G. L. (2017). Mental health nurses' emotions, exposure to patient aggression, attitudes to and use of coercive measures: Cross sectional questionnaire survey. *International journal of nursing studies*, 75, 130–138. <https://doi.org/10.1016/j.ijnurstu.2017.07.018>.
- Jeong, I. Y., & Kim, J. S. (2018). The relationship between intention to leave the hospital and coping methods of emergency nurses after workplace violence. *Journal of clinical nursing*, 27(7-8), 1692–1701. <https://doi.org/10.1111/jocn.14228>.
- Kim, J. H., Lee, N., Kim, J. Y., Kim, S. J., Okechukwu, C., & Kim, S. S. (2019). Organizational response to workplace violence, and its association with depressive symptoms: A nationwide survey of 1966 Korean EMS providers. *Journal of occupational health*, 61(1), 101–109.
- Kleissl-Muir, S., Raymond, A., & Rahman, M. A. (2018). Incidence and factors associated with substance abuse and patient-related violence in the emergency department: A literature review. *Australasian emergency care*.
- Kowalczuk, K., & Krajewska-Kułak, E. (2017). Patient aggression towards different professional groups of healthcare workers. *Annals of agricultural and environmental medicine*, 24(1), 113–116. <https://doi.org/10.5604/12321966.1228395>.
- Li, N., Zhang, L., Xiao, G., Chen, J., & Lu, Q. (2019). The relationship between workplace violence, job satisfaction and turnover intention in emergency nurses. *International emergency nursing*, 45, 50–55.
- Liang, Y., Wang, H., & Tao, X. (2015). Quality of life of young clinical doctors in public hospitals in China's developed cities as measured by the Nottingham Health Profile (NHP). *International journal for equity in health*, 14(1), 85.
- Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., Group, T. P., Oxman, A., ... Horton, R., et al. (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med. Public Library of Science*, 6, e1000097.
- Volz, N. B., Fringer, R., Walters, B., & Kowalenko, T. (2017). Prevalence of horizontal violence among emergency attending physicians, residents, and physician assistants. *Western journal of emergency medicine*, 18(2), 213.
- Niu, S. F., Kuo, S. F., Tsai, H. T., Kao, C. C., Traynor, V., & Chou, K. R. (2019). Prevalence of workplace violent episodes experienced by nurses in acute psychiatric settings. *PLoS one*, 14(1), e0211183.
- Pekurinen, V., Willman, L., Virtanen, M., Kivimäki, M., Vahtera, J., & Välimäki, M. (2017). Patient aggression and the wellbeing of nurses: a cross-sectional survey study in psychiatric and non-psychiatric settings. *International journal of environmental research and public health*, 14(10), <https://doi.org/10.3390/ijerph14101245>.
- Peng, L., Xing, K., Qiao, H., Fang, H., Ma, H., Jiao, M., ... Kang, Z. (2018). Psychological violence against general practitioners and nurses in Chinese township hospitals: incidence and implications. *Health and quality of life outcomes*, 16(1), 117. <https://doi.org/10.1186/s12955-018-0940-9>.
- Pinto, C. M., Radon, K., & van Dijk, F. (2018). Violence at work and mental distress among firefighters in Guatemala. *Annals of global health*, 84(3), 532.
- Rafeea, F., Al Ansari, A., Abbas, E. M., Elmusharaf, K., & Zeid, M. S. A. (2017). Violence toward health workers in Bahrain Defense Force Royal Medical Services' emergency department. *Open access emergency medicine: OAEM*, 9, 113.
- Ramacciat, N., Gili, A., Mezzetti, A., Ceccagnoli, A., Addey, B., & Raserio, L. (2019). Violence towards Emergency Nurses: The 2016 Italian National Survey—A cross-sectional study. *Journal of nursing management*, 27(4), 792–805.
- Ray, M. M. (2007). The dark side of the job: violence in the emergency department. *Journal of Emergency Nursing*, 33(3), 257–261.
- Saragoza, P., & White, S. G. (2016). Workplace Violence: Practical considerations for mental health professionals in Consultation, assessment and management of risk. *Psychiatr Clin North Am. Dec*, 39(4), 599–610. <https://doi.org/10.1016/j.psc.2016.07.007> (Epub 2016 Sep 28).
- Schablon, A., Wendeler, D., Kozak, A., Nienhaus, A., & Steinke, S. (2018). Prevalence and Consequences of Aggression and Violence towards Nursing and Care Staff in Germany—A Survey. *International journal of environmental research and public health*, 15(6), 1274. <https://doi.org/10.3390/ijerph15061274>.
- Seun-Fadipe, C. T., Akinsulore, A. A., & Oginni, O. A. (2019). Workplace violence and risk for psychiatric morbidity among health workers in a tertiary health care setting in Nigeria: Prevalence and correlates. *Psychiatry Research*, 272, 730–736.
- Shafraan-Tikva, S., Chinitz, D., Stern, Z., & Feder-Bubis, P. (2017). Violence against physicians and nurses in a hospital: How does it happen? A mixed-methods study. *Israel journal of health policy research*, 6(1), 59.
- Shea, T., Sheehan, C., Donohue, R., Cooper, B., & De Cieri, H. (2017). Occupational violence and aggression experienced by nursing and caring professionals. *Journal of nursing scholarship*, 49(2), 236–243.
- Strickler, J. (2018). Staying safe: responding to violence against healthcare staff. *Nursing* 2018, 48(11), 58–62. <https://doi.org/10.1097/01.NURSE.0000545021.36908.28>.
- Sun, Peihang, Zhang, Xue, Sun, Yihua, Ma, Hongkun, Jiao, Mingli, Xing, Kai, Kang, Zheng, ... Yin, Mei (2017). Workplace Violence against Health Care Workers in North Chinese Hospitals: A Cross-Sectional Survey. *Int J Environ Res Public Health*, 14(1), 96. <https://doi.org/10.3390/ijerph14010096> PMID Published online 2017 Jan 19.
- Sun, T., Gao, L., Li, F., Shi, Y., Xie, F., Wang, J., ... Liu, X. (2017). Workplace violence, psychological stress, sleep quality and subjective health in Chinese doctors: a large cross-sectional study. *BMJ open*, 7(12), e017182. <https://doi.org/10.1136/bmjopen-2017-017182>.
- Tian, J., & Du, L. (2017). Microblogging violent attacks on medical staff in China: a case study of the Longmen County People's Hospital incident. *BMC health services research*, 17(1), 363. <https://doi.org/10.1186/s12913-017-2301-5>.
- Volz, N. B., Fringer, R., Walters, B., & Kowalenko, T. (2017). Prevalence of horizontal violence among emergency attending physicians, residents, and physician assistants. *Western journal of emergency medicine*, 18(2), 213. <https://doi.org/10.5811/westjem.2016.10.31385>.
- Vorderwülbecke, F., Feistle, M., Mehring, M., Schneider, A., & Linde, K. (2015). Aggression and violence against primary care physicians—a nationwide questionnaire survey. *Deutsches Ärzteblatt International*, 112(10), 159. <https://doi.org/10.3238/arztebl.2015.0159>.
- Ware, J., Jr, Kosinski M., & Keller, S. D. (1996). A 12-Item Short-Form Health Survey: Construction of scales and preliminary tests of reliability and validity. *Medical Care*, 34, 220–233.
- Wu, J. C., Tung, T. H., Chen, P. Y., Chen, Y. L., Lin, Y. W., & Chen, F. L. (2015). Determinants of workplace violence against clinical physicians in hospitals. *Journal of occupational health*, 15–0111. <https://doi.org/10.1539/joh.15-0111-OA>.
- Wulf, R. B., Casper, S. D., Andersen, L. L., & Sørensen, J. (2017). A multi-component patient-handling intervention improves attitudes and behaviors for safe patient handling and reduces aggression experienced by nursing staff: A controlled before-after study. *Applied ergonomics*, 60, 74–82.