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Review

Violence towards emergency nurses: A narrative review of theories and frameworks

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ABSTRACT

Introduction: Workplace Violence in the health environment is a growing issue worldwide. Emergency department have been identified as a high-risk setting for Workplace Violence and emergency nurses are most exposed to this phenomenon. To address workplace violence in the ED effectively, it is critical to understand frameworks established in the literature to assist in development of appropriate interventions and corrective measures. An overview of available theories of violence towards emergency nurses in the literature is presented herein in the format of a narrative review.

Methods: A search of international literature on WPV theories was conducted in three databases: PubMed, CINAHL, Scopus, and Proquest Central. Articles concerning theories that have direct implications for patient-related violence (client-on-worker Type 2 Violence) in the emergency department were sought.

Results: Four hundred and fifty-nine articles were found. Applying established inclusion and exclusion criteria, fourteen of these were included in the review. In the international literature there are 24 theories and frameworks pertaining to violence towards nurses in the emergency department which describe different intervention strategies based on these.

Discussion: Both the theories on violence developed by nurses and those derived from other disciplines are complex and many key elements are invariably intertwined. Understanding such theories might be useful to manage violence towards emergency nurses with greater effectiveness.

1. Introduction

Workplace Violence (WPV) in the health environment is a growing issue worldwide [1], so that, in view of the severe and relevant consequences, many important international organizations rank at the top of the global public health agenda [2,3]. In particular, the emergency department has been identified as a high-risk setting for WPV [4] and emergency nurses are the most exposed to this phenomenon [5,6]. Several studies focus on this specific topic, as evidenced by the growing production of scientific research on the subject (Fig. 1). However, despite the fact that WPV phenomenon is well described in the literature, several authors believe this is still an understudied research field [7], especially with reference to specific actions designed to address or reduce WPV [8] or the evaluation of intervention effectiveness [9,10]. The relevance of such statements regarding the issue of WPV in the emergency department is definitely highlighted by important systematic reviews [11–13], or secondary literature articles on the topic [14,15]. The purpose of this manuscript is to present, through a narrative review of the literature, the theories on violence towards health professionals developed to date, particularly those related to patients, their family members, and visitors (client-on-worker violence or Type 2 as classified by the University of Iowa Injury Prevention Research Center) [16] in ED. The rationale underlying this review is that deep and critical knowledge of the phenomenon is needed in order to effectively address the WPV in emergency department, with future actions. In the absence of evidence on the effectiveness of interventions adopted to date, basing actions intended to mitigate violence on solid theories may prove to be a valid strategy for managing WPV.

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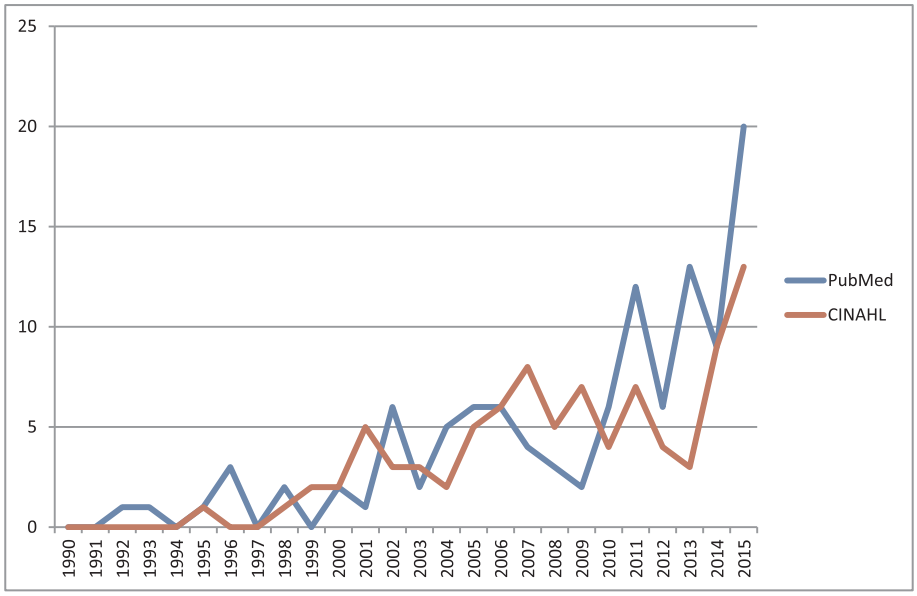

Fig. 1. Studies indexed on PubMed and CINAHL about Violence towards the Emergency Nurses by year of publication. Source: PubMed and CINAHL Databases. Access 23 June 2016. PubMed search details: ("workplace violence" [MeSH Terms] OR ("workplace" [All Fields] AND "violence" [All Fields]) OR "workplace violence" [All Fields]) AND ("emergencies" [MeSH Terms] OR "emergencies" [All Fields] OR "emergency" [All Fields]) AND ("nurses" [MeSH Terms] OR "nurses" [All Fields]). CINAHL Boolean/phase: workplace n1 violence AND emergency n1 nurses.

2. Methods

A preliminary search of the international literature on WPV theories was conducted in the PubMed database using the following search terms: "workplace violence", "theory", "framework" and "emergency". Similarly Google Scholar was searched for the grey literature. This allowed identification of key terms to be used in the search strategy. The final search was done between November 29 and December 4, 2016, in 4 electronic databases: PubMed, CINAHL, Scopus, and Proquest Central. The query strings used in the databases were constructed using AND and OR Boolean operators, and quoted string (in PubMed), or Near operator N2 (in CINAHL) when descriptor terms were compound words (Table 1).

Studies were included in this review if the following inclusion criteria were met: 1) the article is published in English; 2) abstracts or full text are available; 3) the article concerned Type 2 Violence (client-on-worker); 4) the theories have direct implications with WPV in the emergency department; and 5) article published in peer-reviewed journals. No time limit was applied regarding the date of publication of the articles because the intent is to identify all WPV theories elaborated over time.

3. Results

The search carried out in PubMed, CINAHL, Scopus, and Proquest Central produced respectively 110, 43, 86, and 217 papers (27 are present in more than one database), for a total of 429 articles. A preliminary review of the literature for inclusion was conducted independently by two investigators (NR and AC) by reading the title of the article for relevancy (177 papers), followed by examining the abstract (18 papers), and, finally, by a review of the full text. Applying the inclusion criteria, we selected 15 studies on explanatory theories of violence towards ED workers (Fig. 2). A synopsis of the selected studies is shown in Table 2.

3.1. Poyner and Warne's model of workplace violence

The first theoretical framework shown was addressed in the article of Whittington, Shuttleworth, and Hill [17], and was developed by Poyner and Warne in 1986 [18], who assume that the situational and interpersonal factors are crucial in the generation of anger and violence. Their model identifies five main characteristics of any violent act occurring in a work setting: the assailant, the employee, the situation, the type of interaction that took place between the assailant and the employee prior to the assault, and the outcome. Whittington and colleagues adopted the interpersonal perspective based on Poyner & Warne's model of WPV in their study conducted in 1996 with the intention of estimating the prevalence of violence to staff in a general hospital setting (including the emergency department) and analysing reasons for WPV. The Poyner and Warne's model of WPV was used to build a profile of high-risk situations in general health care [19], and especially in psychiatric settings [20].

3.2. Ecological occupational health model of workplace assault

This model was used for the first time by Levin, Hewitt, and Misner, to examine the multiple factors hypothesized as contributing to the verbal and physical assault of ED workers [21]. Three factors were identified and found to be strongly interrelated: the individual worker, the workplace, and the external environment. A further factor (the assault situation) was taken into consideration in a further development of this model by Levin, Hewitt, Misner, and Reynolds who analyze the

Table 1
Electronic search strategy.

Database	Entry terms/search strategy	Limits
PubMed	((model[All Fields] OR models[All Fields] OR (("violence"[MeSH Terms] OR "violence"[All Fields]) AND ("analysis"[Subheading] OR "analysis"[All Fields])) OR ("etiology"[Subheading] OR "etiology"[All Fields] OR "causality"[MeSH Terms] OR "causality"[All Fields]) OR concept[All Fields] OR concepts[All Fields] OR theory[All Fields] OR theories[All Fields] OR framework[All Fields] OR frameworks[All Fields]) AND ("workplace violence"[MeSH Terms] OR ("workplace"[All Fields] AND "violence"[All Fields]) OR "workplace violence"[All Fields])) AND ("emergencies"[MeSH Terms] OR "emergencies"[All Fields] OR "emergency"[All Fields])	None
CINAHL	(model OR models or violence N2 analysis OR etiology OR concept OR concepts OR theory OR theories OR framework OR frameworks) AND (workplace N2 violence) AND emergency	None

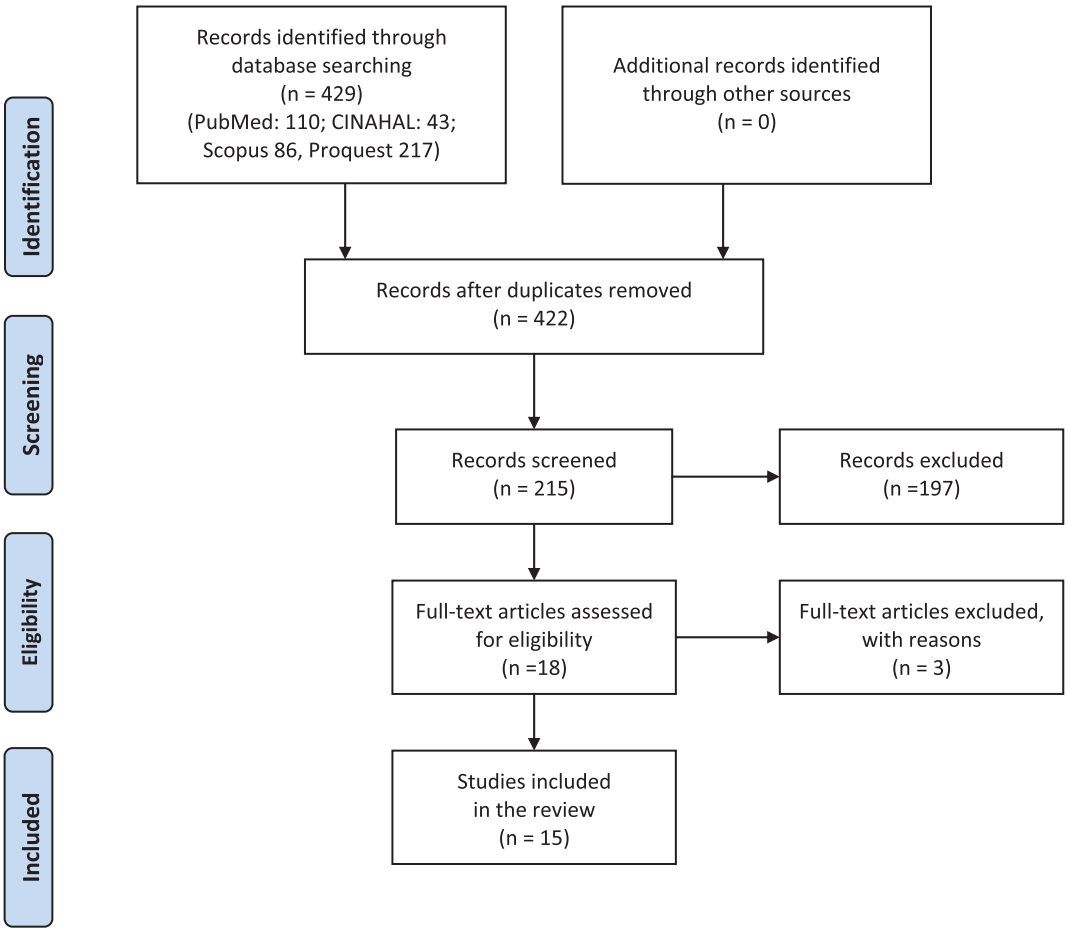

Fig. 2. Flow Diagram.

WPV phenomenon in long-term care (LTC) facilities [22]. This latter version of the model has been used by Gillespie, Gates, and Berry in a qualitative study to describe the stressful effects of physical violence against emergency nurses [23].

3.3. Broken Windows theory

In their study about the occurrence, sources and reporting of WPV among nurses in Alberta and British Columbia hospitals, Hesketh et al. proposed the Broken Windows theory borrowed from criminology, to offer some guidance in developing strategies to prevent WPV [24]. According to this theory of criminal behavior, tolerating 'lesser' criminal acts in a community (such as acts of vandalism) creates an environment where more crime takes place (such as robbery and aggressions) [25]. Similarly, it is hypothesized that if emotional abuse is tolerated in the work environment (for example, between co-workers), outsiders to the organization (like patients) are more likely to become increasingly violent and aggressive. The Canadian authors suggest that the Broken Windows theory might provide a valid basis for the development of new violence prevention strategies and policies.

3.4. Culture care theory

A phenomenological study by Early and Hubbert [26] use Leininger's Holistic Culture Care theory [27]to identify separate cultures to which individuals who are concerned with the ED environment belong. This study identified four subcultures, within the larger healthcare system, involved in the phenomenon of WPV in the emergency department: ED nurses, the institutions' administration departments, clients with violent behaviors, and the clients without violent behaviors. The authors also identified three themes: hospital policies that are not conducive to supporting a safe ED environment, cases in which the ED staff are not valued as important by the hospital administration as much as the hospital's public image, and cases in which anxiety, fear, and negative emotions due to violence in their work environment impact the nurses' quality of nursing practice. The authors consider that further ethno-nursing studies can expand this theoretical research line.

3.5. STAMP violence assessment framework

In 2005 Luck, Jackson, and Usher, by adopting a mixed method case study design in a 33-bed emergency department of a public hospital in Australia, identified five key elements of behavior potentially conductive to violence in patients, their relatives and visitors when presenting at an emergency department [28]. These elements described through the acronym STAMP (Staring and eye contact, Tone and volume of voice, Anxiety, Mumbling and Pacing) were conceptualized as a practical, useful violence assessment framework to assist nurses in quickly identifying patients, their family and friends who have a potential for violence. The utilization of the STAMP "technique" has been indicated by Child and Mentes as one recommendations to potentially decrease WPV [29], and by Taylor and Rew as an excellent instrument and resource for the ED nurses [12]. This framework was further developed by Chapman et al. through the inclusion of additional factors (Emotions, Disease processes, Assertive, Resources) and altogether labelled as STAMPEDAR, for use not only in the emergency department, but in all hospital areas [30]. The authors of STAMP also subsequently developed their framework with a comprehensive list of 18 behavioral cues for a Violence Assessment Tool (VAT) designed to extend the use of

Table 2
Selected studies.

Title article, Authors, (Publication year)	Study design	Theory/framework	Implication for intervention
Violence to staff in a general hospital setting. Whittington R, Shuttleworth S, Hill L. (1996)	Exploratory study	Poyner & Warne's model of workplace violence (Poyner and Warne)	Training in the management of violence: verbal de-fusion strategies, physical breakaway techniques and guidance on strategies for coping following an assault
Insights of nurses about assault in hospital-based emergency departments. Levin PF, Hewitt JB, Misner ST. (1998)	Descriptive study	Ecological occupational health model of workplace assault	Policy enactment, departmental redesign, and program development: (as management commitment and employee involvement; worksite analysis; hazard prevention and control; training and education of employees, supervisors, managers, and security personnel about aggression management, de-escalating techniques, gang awareness and cultural sensitivity; record keeping and program evaluation)
Workplace violence in Alberta and British Columbia hospitals. Hesketh KL, Duncan SM, Estabrooks CA, et al. (2003)	Quasi-experimental study	Broken Windows theory (Wilson and Kelling)	Systemic interventions focused on Zero-tolerance Policy (not on overt 'anti-violence' protocols), and on fostering environments where courtesy, civility, and decency are expected at all levels in everyday practice
Violence in the emergency department: a literature review. Lau JBC, Magarey J, McCutcheon H. (2004)	Literature review	Biological theory (Volavka; Davidson, Putnam and Larson) Social learning theory (Bandura) Frustration-aggression theory (Berkowitz)	Two major types of violence management strategies: at micro level of patients and staff and at macro or hospital wide level. Patient: a medical approach in dealing with violence, observing the patient closely, taking detailed history, teaching patient appropriate ways to cope with stress, effective verbal and nonverbal skills. Staff: staffs training in interpersonal and communication skills, violence-related specific skills, employee-victim debriefing and formal counselling to address the psychological sequelae of patient violence. Hospital: administrative measures, (as proper reporting systems, effective security training, and 24-h, on-site security) and environmental measures (such as security doors, security cameras, controlled access, metal detector, protective acrylic window and panic alarms)
Violence in the emergency department: a culture care perspective. Early MR; Hubbert AO. (2006)	Phenomenological study	Culture care theory (Leininger)	Improve nurses' personal safety and that of all clients and families. Facilitate their positive feelings towards nursing practice. Increase the administration's support
STAMP: components of observable behavior that indicate potential for patient violence in emergency departments. Luck L, Jackson D, Usher K. (2007)	Mixed method case study	STAMP violence assessment framework	The clinical use of the framework may facilitate early recognition of risk situations and enable a faster application of de escalation actions
Considering theories of aggression in an emergency department context. Ferns T. (2007)	Theory analysis	Psychoanalytical theory (Freud) Personality theories (Glass; Holmes and Will; Snyder; Dodge and Coie; Eysenck and Gudjonsson; Harrower) Biological theories (Eysenck; Harrower; Price et al.; Witkin) Altered biochemistry (Myers; Moyer; Harrower; Eysenck) Altered neurology (Harrower; Davidson et al.; Myers) The frustration/aggression hypothesis (Dollard et al.) Rational choice theory (Elster) The negative affect escape model (Baron and Bell) Excitation-transfer theory (Zillermann) The ethnological approach (Lorenz) Social learning theory (Bandura)	Increase knowledge on risk factors related to: unintentional provocation (Personality theories), genetic or biological conditions (Biological theories), abnormalities in biochemical substances level (Altered biochemistry), patient with a neurological deficit (Altered neurology), effects of negative stimuli on service users (Excitation-transfer theory). Reduce waiting times (The frustration/aggression hypothesis). Zero-tolerance Policy: prosecuting aggressive service users, employing security guards, implementing closed circuit TV (Rational Choice theory). Creating an attractive ED waiting area, with televisions and drink facilities, along with controlling access (Negative affect escape model). Promote a feeling of ownership to workplace, staff should be encouraged to view the department as "our department" rather than "my department" (Ethnological approach). Health care facility security is a public health issue (Social learning theories)
Personnel Exposure to Violence in Hospital Emergency Wards: A Routine Activity Approach. Landau SF, Bendalak Y (2008)	Descriptive study	The routine activity theory (Cohen and Felson)	Reduce exposure to potential aggressors, improve levels of protection over possible targets, more engaging target, and greater closeness to offenders
Workplace violence experienced by registered nurses: a concept analysis. Ventura-Madangeng J, Wilson D.	Concept analysis	The concept of workplace violence against registered nurses	Identifying and understanding the essential characteristics of WPV: external systemic and

(continued on next page)

Table 2 *(continued)*

Title article, Authors, (Publication year)	Study design	Theory/framework	Implication for intervention
(2009)			environmental factors, stressful circumstances and/or internal characteristics of either the perpetrator or the recipient
Preventing interpersonal violence in emergency departments: Practical applications of criminology theory. Henson B. (2010)	Theory analysis	The situational crime prevention theory (Clarke)	Metal detectors at the main patient/visitor entrance, identification card scanners for all employee entrances and private areas, automatic lockdown system in the event of a violent incident, restraining devices in all rooms, extend the level of formal surveillance (police or security personnel, installation of closed circuit television (CCTV) cameras, curved mirrors on the corners of hallways and increasing lighting throughout the ED, panic/alarm buttons, glass partition). Comfortable waiting room, continuous and timely updates for patients waiting in the ED, counselor availability, removing disruptive individuals from the area, clearly display rules of conduct (posters or signs), and the consequences for violating those rules
Violence in the emergency department: An ethnographic study (part II). Lau JBC, Magarey J, Wiechula R. (2012)	Ethnographic study	Framework of cultural aspects of violence in the ED	Improve: empathetic communication skills, recognition of 'turning point', handling of waiting times (providing a rationale for further waiting) and requests made by patients/ relatives
A model to investigate workplace violence in the health sector. Rodríguez VA, Paravic TM. (2013)	Theory analysis	Interactive Model of Workplace Violence (Chappell and Di Martino)	Analyze violence from a multi-factorial view point (tool to support research linked to workplace violence in the health sector)
Using action research to plan a violence prevention program for emergency departments. Gates D, Gillespie G, Smith C, et al. (2014)	Qualitative study	The Haddon matrix (Haddon)	Intervention strategies in the before-, during-, and after-the-assault time frame (see Table 2)
Individual, relationship, workplace, and societal recommendations for addressing healthcare workplace violence. Gillespie GL, Gates DM, Fisher BS. (2015)	Theory analysis	Social-Ecological Model	Individual-level recommendations: violence screening assessment, use of universal precautions (by having a chaperone present during interactions with high risk patients and/ or visitors, maintenance of a safe distance from patients and visitors, ensuring that no person or object blocks the exit door), flagging patient known as offender, notification system for alerting co-workers when a violent person is in ED. Workplace-level recommendations: a multi-faceted approach that includes at least a zero-tolerance policy, education, surveillance, and program evaluation
Emergency primary care personnel's perception of professional-patient interaction in aggressive incidents: a qualitative study. Morken T, Alsaker K, Johansen IH. (2016)	Qualitative study	The theory of Struggle for Recognition (Honneth)	Improve the health personnel's ability to acknowledge the expectations and needs of patients. Increase awareness of the importance of interaction with patients. Improve the communication skills

STAMP in all acute health settings [31].

3.6. Routine activity theory

The routine activity theory is the guiding theoretical framework for the study of Landau and Bendalak, published in 2008 [32]. This approach supported by the criminological research was developed since 1979 by Cohen and Felson [33].

According to this theory, motivated offenders, target suitability, and guarding are the three major elements in people's everyday behavior that can lead to crime. The extent to which a person's daily activity increases or decreases opportunities for victimization influences the individual's likelihood of being victimized by crime. Therefore the victimization risk is increased by all those activities that result in greater exposure to potential aggressors, lower levels of protection over possible targets, more engaging target, and greater closeness to offenders.

3.7. The concept of workplace violence against registered nurses

Based on the search results of the literature published from 1990 to 2005 on the phenomenon of violence towards nurses, Ventura-Madangeng and Wilson used the data source for this model [34], according to the Walker & Avant's framework for a concept analysis [35], and the Rodgers & Knafl's techniques for concept development in nursing [36]. These authors identified four components of WPV against nurses: antecedents, empirical referents, defining attributes, consequences. Fig. 3 offers an overview of various components of the concept of WPV against registered nurses.

3.8. The situational crime prevention theory

Published in 2010, Henson proposes the adoption of concepts from environmental criminology in order to develop crime prevention strategies for hospital EDs [37]. The situational crime prevention theory, originally developed by Clarke [38], is based on rational choice theory which assumes that the offenders weigh the perceived risks and rewards

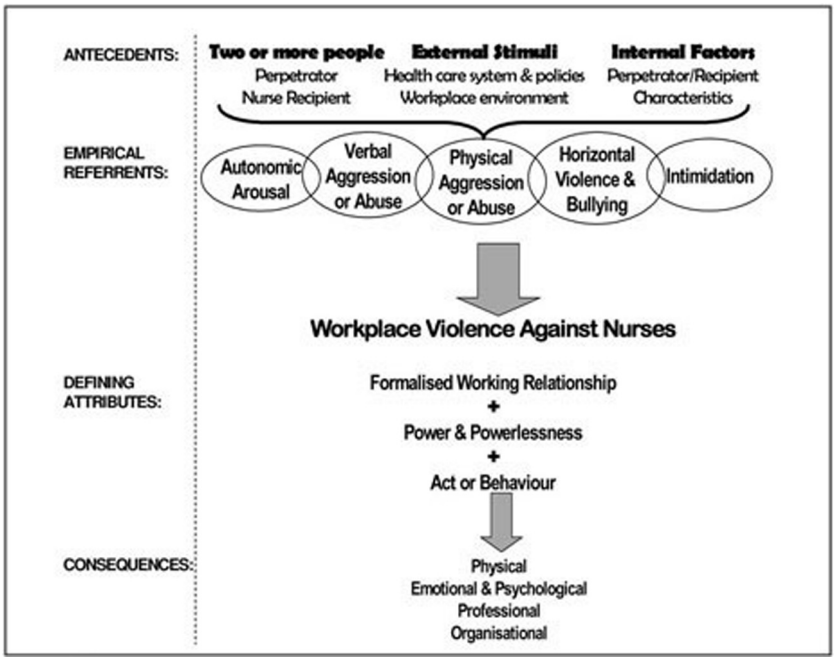

Fig. 3. Components of workplace violence against nurses.

associated with committing a crime. Starting from the study of Mair and Mair who discussed the potential effectiveness of situational crime prevention in healthcare settings [39], Henson emphasizes the effectiveness of the "technique" derived from this theory and the importance of environmental modification as a means of crime reduction in the ED setting. The application of situational crime prevention techniques that would increase the risk of getting caught during criminal activity, is expected to reduce the rewards for aggressive behavior, reduce the provocation for violent acts, and remove excuses for abuse and violence.

3.9. Framework of cultural aspects of violence in the ED

The complexity of the WPV phenomenon in the emergency department was studied using an ethnographic approach by Lau, Magarey and Wiechula with the aim of exploring cultural aspects of violence in this specific context [40]. Completed at a major Australian metropolitan ED over a period of 3 months, the study identified three critical cultural themes: 'problems and solutions', 'requests and demands' and 'them and us', related to seven cultural aspects: perceptions of violence, indicators of violence, responses to violence, requests of patients/relatives, waiting time, patients/relatives' behaviors, nurses' behaviors.

3.10. Interactive model of workplace violence

Multifactorial perspectives on the phenomenon of violence due to intrinsic high complexity is considered essential by many authors. Rodríguez and Paravic consider the interactive model of Chappell and Di Martino a useful tool for research studies, capable of providing evidence for improving preventive strategies for WPV [41]. This conceptual model, developed by Chappell and Di Martino [42], can be seen as a development of Poyner and Warne's model (see Fig. 4).

3.11. The Haddon matrix

Gates and colleagues [43], in a qualitative study based on focus groups, used the Haddon matrix [44] to identify a list of primary, complementary, and practicable intervention strategies for preventing violence perpetrated by patients and visitors in emergency department before, during, and after an assault. Table 3 illustrates the Haddon matrix applied to ED violence prevention.

3.12. Social-ecological model

Recommendations for protecting healthcare workers from being victimized and exposing themselves to the negative consequences of the WPV experience were highlighted by Gillespie, Gates, and Fisher who applied the four categories of the Social-Ecological Model (individual, relationship, community, and societal factors) [45]. This framework is considered by the Centres for Disease Control and Prevention as helpful for identifying and implementing effective preventive measures against violence [46].

3.13. Honneth's theory of struggle for recognition

Honneth's Struggle for Recognition theory was recently used in a study of client-on-worker violence by Morken, Alsaker, and Johansen [47]. Three main themes regarding the interaction between health workers and patients (or visitors) in aggressive situations are identified: unmet needs, involuntary assessment, and unsolicited touch. Therefore, aggressive behavior might be understood as a struggle for recognition in all interactions. According to this theory, non- and mis-recognition can become a potential incentive for interpersonal conflicts. Violence can thus be felt as a demand for rights and a demand for recognition as a unique person [48]. The authors concluded that training interventions aimed at realizing the relevance of knowledge about these types of interaction are a useful approach which increases the health professionals' alertness and their ability to react in a more expedient manner.

3.14. Biological theories: biological conditions, altered neurology, altered biochemistry

Two articles were found in our research of literature reviews. Published by Lau, Magarey, and McCutcheon in 2004 [49], and Ferns in 2007 [50], both articles presented and analyzed the main theories on violence (see Table 2), including some of those described above. These two reviews present theories that focus exclusively on the biological or psychological conditions of the assailant. Eysenck proposed four variables (Inherited defects/genetic abnormalities, neuro/biochemical

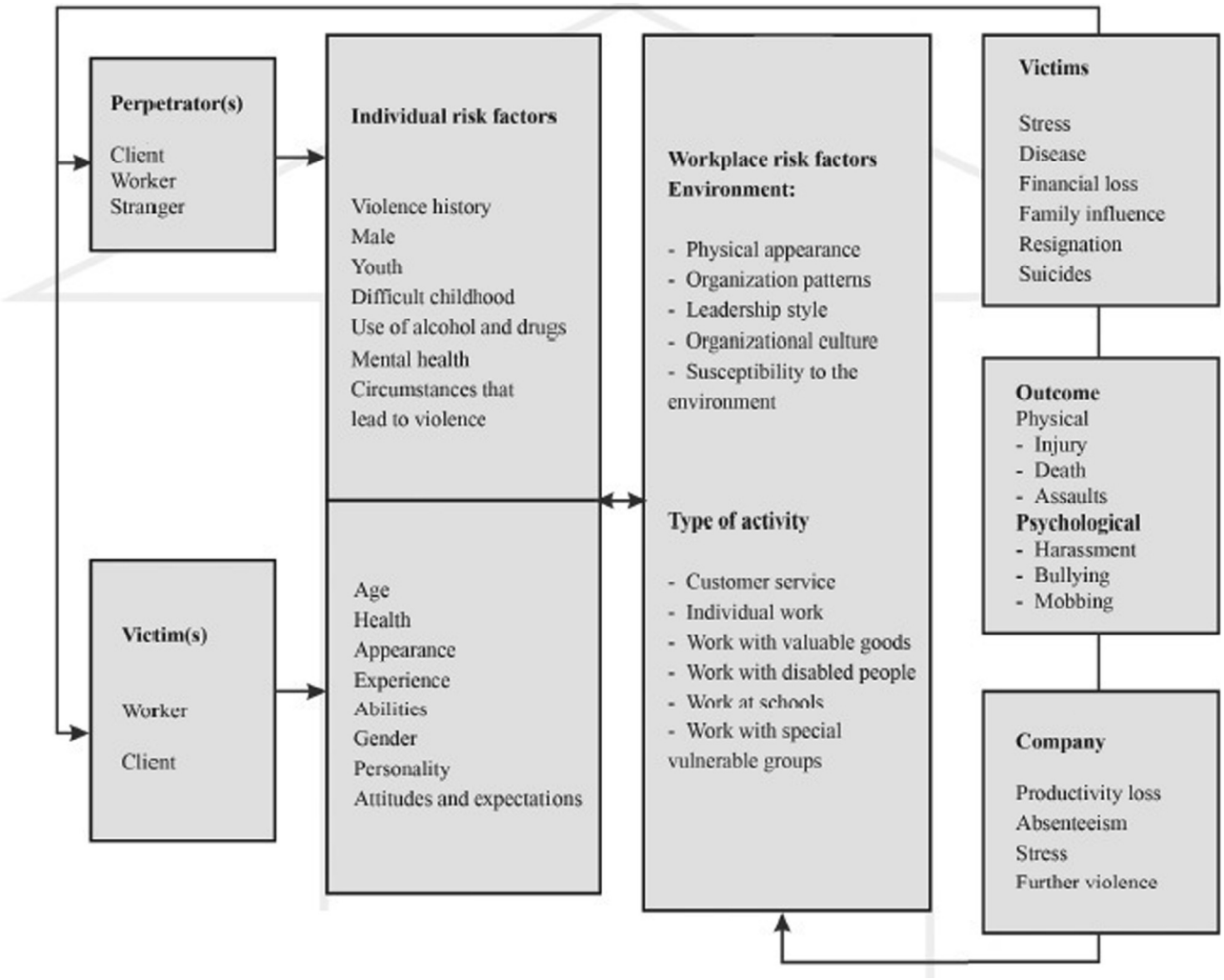

Fig. 4. Interactive model of Workplace Violence.

Table 3
The Haddon matrix applied to ED violence prevention.

	Host (employee) factors	Vector and vehicle(patient/visitor) factors	Physical/social environmental factors
Before assault	- Education and training - Policy and procedures - Preventing aggressive - Behavior De-escalation and conflict resolution - Managing aggression	- Communication to patients and visitors of policy that violence will not be tolerated and potential consequences of violent behavior - Minimize anxiety for waiting patients and visitors by communicating with them every 30 min	- Develop and communicate policy to employees and management that violence is never acceptable - Development and implementation of violence policies and procedures - Manager education - Security/police response/policies and education - Monitor access to emergency department - Develop mechanism to alert staff when patients and visitors who were previously violent visit the emergency department again - Quiet environment/areas - Special area for aggressive individuals/safe room for criminals - Enforce visitor policies (ie number of visitors)
During Assault	- Education and training - Nonviolent crisis intervention	- Isolate perpetrator from others	- Security/police plan - Implement procedures for dealing with violent event - Create procedure for investigating physical threats
After Assault	- Critical incident debriefing - Mandatory reporting of all physical assaults and physical threats	- Reporting to security/police - Maintain patient's/visitor's name for alerting staff upon return visit	- Create procedure for reviewing violent event

Note: Reprinted from The *Journal of Emergency Nursing*; 37(1); Gates D, Gillespie G, Smith C, Rode J, Kowalenko T, Smith B. Using action research to plan a violence prevention program for emergency departments; 32–39; Copyright © 2011 Emergency Nurses Association. Published by Elsevier Inc. All rights reserved; with permission from Elsevier.60.
Abbreviation: ED, emergency department.

Table 4
Factors/dimensions of theories and frameworks.

Theory-framework	Factors							
	Aggressor (patient, visitor)	Victim (Nurse)	Situation	Relationships	Outcome	Organization	Internal Environment (Emergency Dept)	External Environment (Community/Social factor)
Poyner & Warne's model of workplace violence	✓	✓	✓	✓	✓			
Ecological occupational health model of workplace assault		✓	✓				✓	✓
Broken Windows theory								✓
Biological theories	✓							
Altered neurology	✓							
Altered biochemistry	✓							
Social learning theory								✓
Culture care theory	✓	✓			✓	✓		
STAMP violence assessment framework	✓							
Psychoanalytical theory	✓							
The routine activity theory	✓	✓					✓	
Personality theories	✓							
The frustration-aggression model			✓					
Rational choice theory	✓							
The negative affect escape model			✓					
Excitation-transfer theory			✓					
The ethnological approach				✓				
The concept of workplace violence against registered nurses	✓	✓				✓	✓	
The situational crime prevention theory	✓							
Framework of cultural aspects of violence in the ED	✓	✓	✓					
Interactive Model of Workplace Violence	✓	✓		✓	✓		✓	
The Haddon matrix	✓	✓				✓	✓	
Social-Ecological Model	✓			✓		✓		✓
The theory of Struggle for Recognition				✓				

factors, trauma and infection) to explain the aggressive behavior [51]. Ferns highlights the fact that several authors view biochemical, physiological or biological causes as predisposing factors leading to service users displaying aggressive behaviors [52–55], as well as, neurological [52,56,57] and biochemical [50,52,57,58] conditions.

3.15. Psychological frameworks: Freud's Psychoanalytical model, Personality theories, and Frustation-aggression hypothesis

In the overview proposed by Ferns there are also theories that explain the aggressive behavior as innate and unconscious forces as in Freud's Psychoanalytical model [59], aggressive tendencies due to certain personality types [52,60–64], or to exacerbation of frustration when an individual's goal is blocked by an external factor as proposed by Dollard et al., or by Berkowitz [65,66]. According to Ferns it is impossible to have control over the type of people who present to the emergency department, so it is essential for nurses to remain calm in these situations and to have a very professional approach.

3.16. Environmental stimuli theories: The negative affect escape model, and Excitation-transfer theory

Ferns also cited Baron and Bell, and their Negative affect escape model. A long time ago these authors proposed that unpleasant environmental stimuli increasing in intensity can often lead to aggression [67]. Similarly Zillerman proposed in his Excitation-transfer theory, that one stimulus can build on another and trigger a situation that can develop aggressive behavior [68].

3.17. Rational choice theory

This theory suggests that the human being is a reasoning actor who freely chooses all behaviors based on a rational calculation between costs and benefits (pain versus enjoyment), thus seeking to maximize pleasure. The social contract preserves the common good through a system of laws that punished an act seen as a violation of the social good. The perception and understanding of the potential pain caused by the punishment drives the choice [69].

3.18. Ethnological theory

According to this theory, proposed by Konrad Lorenz in 1966, human behavior is instinctively and naturally aggressive. The fight serves, as it does in the animal kingdom, to establish social hierarchies and to control the territory. The high level of neurotransmitters found in animals associated with fighting and aggression shows that this behavior is based on biological mechanisms [70].

4. Discussion

The complexity of the phenomenon of violence is well highlighted by the extensive amount of theory developed in this field attempting to explain this problem. Some of these theories are focused on a single dimension (with one or two factors), others are based on multiple-dimensions (with many factors). There are thus common themes across the models, as shown in Table 4.

The mono-dimensional theories are mainly centered on the attacker, which in the case of Type 2 Violence is the patient, a family member or a visitor. In the Biochemical, Neurological and Biological theories, the

Table 5
Theories and frameworks usage.

Theory-framework	Usage		
	Publication Authors, *Title*, (Year)	Type of study	Evidence
Poyner & Warne's model of workplace violence	Whittington R, Shuttleworth S, Hill L. *Violence to staff in a general hospital setting.* (1996)	The interpersonal perspective offered by this model was used to analyse the reasons for violence in an exploratory study	**The theory is not tested**
Ecological occupational health model of workplace assault	Levin PF, Hewitt JB, Misner ST. *Insights of nurses about assault in hospital-based emergency departments.* (1998)	The framework was used in a descriptive study to guide the focus group interview and data analysis.	**The theory is not tested**
	Gillespie GL, Gates DM, Berry P. *Stressful incidents of physical violence against emergency nurses*. (2013)	The framework was used in a qualitative descriptive study, to guide the narrative descriptions analysis in a qualitative descriptive study	**The theory is not tested**
Culture care theory	Early MR; Hubbert AO. *Violence in the emergency department: a culture care perspective.* (2006)	Culture Care Theory proved to offer a valuable framework for the analysis in a phenomenological study	**The hypothesis underlying the theory is confirmed**. There are multiple subcultures that interacting within the environment of the identified ED site
The Routine activity theory	Landau SF, Bendalak Y *Personnel Exposure to Violence in Hospital Emergency Wards: A Routine Activity Approach.* (2008)	The four key concepts of routine activity theory were used as major independent variables to predict victimization and to test this theory in a quasi-experimental study	The hypothesis that specific training on management of violence reduces victimization has not been confirmed **Conclusion: using this approach alone is not enough, a wider contextual analysis is needed**
The Concept of workplace violence against registered nurses	Ventura-Madangeng J, Wilson D. *Workplace violence experienced by registered nurses: a concept analysis.* (2009)	The theory was developed by using the Walker & Avant's framework for a concept analysis	**The authors declare that they have tested the theory by the Rodgers & Knafl's techniques**
The Situational crime prevention theory	Henson B. *Preventing interpersonal violence in emergency departments: Practical applications of criminology theory*. (2010)	After an analysis of this criminal theory, has been offered a practical application. Five recommendations on preventive measures were proposed	**The level of evidence is not indicated** Conclusion: **the next step would be test the effectiveness of a crime prevention strategy in a healthcare setting**
Framework of cultural aspects of violence in the ED	Lau JBC, Magarey J, Wiechula R. *Violence in the emergency department: An ethnographic study (part I)*. (2012) Lau JBC, Magarey J, Wiechula R. *Violence in the emergency department: An ethnographic study (part II)*. (2012)	The framework was used in an ethnographic study	**Conclusion: this study has contributed to an in-depth and rich understanding of cultural aspects of violence in the ED**
Interactive Model of Workplace Violence	Rodríguez VA, Paravic TM. *A model to investigate workplace violence in the health sector*. (2013)	The authors propose this model as a very useful tool for research studies of violence in the health sector	**The theory is not tested**
The Haddon matrix	McPhaul, K, Lipscomb J. *Workplace Violence in Health Care: Recognized but not Regulated*. (2004)	Critiques analysis of the conceptual frameworks on WPV in Health Care	**The theory is not tested**
	Gates D, Gillespie G, Smith C, et al. *Using action research to plan a violence prevention program for emergency departments.* (2014)	Qualitative study	Conclusion: **research needs to be conducted to test the strategies posed in this study**
Social-Ecological Model	Gillespie GL, Gates DM, Fisher BS. *Individual, relationship, workplace, and societal recommendations for addressing healthcare workplace violence.* (2015)	Theory analysis	**The theory is not tested**
	Arnetz JE, Hamblin L, Essenmacher L, Upfal MJ, Ager J, Luborsky M. *Understanding patient-to-worker violence in hospitals: a qualitative analysis of documented incident reports*. (2015) [97]	Qualitative content analysis	Conclusion: **the authors suggest an adaptation of the four-level Social–Ecological Model, based on the findings in the current study**

precipitating factors are to be found in some pathological conditions affecting the aggressor and thus more commonly observed in patients rather than relatives or visitors. The literature seems to confirm these theories [71–73]. Numerous studies reported the following risk factors among the predisposing conditions for violence: alcohol and illegal drug intoxication or withdrawal [74,75], head injuries [76], hypoxia [77], metabolic/endocrine disorders, seizures [78], psychiatric disorders [79], and prescribed medication side effect [80]. Although studies are discordant, gender and age of the aggressive person appear as major factors associated with violent behavior: some authors have found males to be more violent than females [81], and other studies found the contrary to be true [82] while there seems to be no doubt about the younger age of the aggressors [83,84]. The Psychoanalytic model, the Personality theories and the Rational Choice framework have also centered their focus on the assailant, but whereas Freud sees the aggressive behavior, as instinctive and the theorists of Personality type see it as due to temperament, in the Rational Choice model the individual is seen as fully aware of the consequences of his behavior. In any case, the main element in each of these theories is the cause-effect relationship between certain physical or psychological conditions of the ED users and the probability of violent acts. The STAMP violence assessment framework was devised to assist ED nurses in quickly identifying potentially violent people. However, some authors have argued that it is very difficult to predict accurately whether someone will become violent [85]. Therefore, in the Emergency Departments the use of a violence risk assessment system [86,87] or predictive tools [31,88] is useful, but by itself it is insufficient to reduce the incidence of violence [89]. Other theories, including the Frustration-aggression model, the Negative affect escape model and the Excitation-transfer theory, have focused exclusively on situational context and suggest some remedial measures. In the opinion of some authors these hypotheses are supported by reality [90,91], but others argue that they are over-simplified [51]. The latest mono-dimensional theories are the theory of Struggle for recognition and the Ethnological approach, which focus on relationships, and the social learning theory and the Broken windows theory, which are based on the social factors. The interventions and the

training for strengthening communication skills, as well as the zero-tolerance policies are based on these theories. But here, if these approaches are limited to training interventions or in formal statements of "non tolerance" only, they are not effective [51,91]. The majority of violent incidents in the ED do not arise simply from individual precipitant conditions of the perpetrator, but from the interaction of a number of factors related to the ED environment, the institutional organization, the situation, the staff member, the perpetrator and the interaction between them [92]. Over time, theories have been developed which take into consideration multiple causal factors and two or more dimensions. Table 5 shows the multidimensional and multifactorial theoretical models on WPV in the Emergency Department and the studies on cases in which they were adopted and tested.

5. Conclusion

Many international studies have explored the issue of violence against nurses, with a particular focus on ED settings [71]. Brunetti and Bambi noted that they are generally analytical and descriptive, based on a mixed qualitative/quantitative methodology [14]. Data from these studies are important in a field where the problem of under-reporting remains high. Phenomenological and qualitative studies on the experiences of nurses who have been victims of violence is another area of research that might provide further insights on the problem [93]. However, as noted by Landau and Bendalak a weakness of most studies in this field is their strong emphasis on empirical findings with very little (if any) theoretical orientation [32]. Diverse or varying points of view might contribute to a better understanding of the complexity of this phenomenon, characterized as it is by the strong interrelation of the various factors. It is reasonable to suppose that this phenomenon could be effectively faced only with a "multi-dimensional" analysis of these factors and with "multi-target" interventions [94], that is to say, with an interdisciplinary [95] and comprehensive approach [96]. Knowing the explanatory theories on violence towards ED nurses and basing corrective actions on a defined and specific theoretical framework might certainly be the key to success in effectively managing this serious problem [4]. Further studies regarding the adoption of preventive and control measures developed according to different theoretical models, might be useful in defining a universal framework.

Conflict of interest

None.

Ethical statement

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