

REVIEW

A systematic review of the literature: workplace violence in the emergency department

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Aims and objectives. To synthesise the body of literature on workplace violence in the emergency department and to identify characteristics of intervention studies that are the basis for guiding best practice modelling in the clinical setting. The research question addressed was what are the characteristics and findings of studies since 2004 on workplace violence in the emergency department?

Background. Emergency departments are prone to increased incidents of workplace violence. Workplace violence in the health care setting has become a hot topic of policy, political debate and research in recent years. Despite the research that has been carried out in this area, little consensus exists as to what are the best practices for mitigating violence in this setting.

Design. Systematic literature review.

Methods. Search using four online databases, including MEDLINE, CINAHL, PsycINFO and the Dissertations and Theses Full Text Database.

Results. Most research focused on the incidence rates of workplace violence in the emergency department and effects on staff. There was a significant lack of intervention studies to provide a framework for guiding evidence-based practice. Themes of under-reporting violence, barriers and attitudes towards reporting, description and characterisation of incidents of violence, predisposing factors and the concept of safety or lack of fear were all major content areas addressed in the literature.

Conclusions. Incidence of workplace violence in the emergency department has been well documented in numerous published studies. Emergency department workers are exposed to significant rates of physical and verbal abuse. Under-reporting of workplace violence in the emergency department is common and contributes to the difficulty in accurately tracking violence.

Relevance to clinical practice. Future research must move beyond descriptive studies to include more advanced research methods. Few practice-guiding implications can be gained from this body of research because of the lack of intervention studies.

Key words: emergency department, literature review, nurses, nursing, review, workplace violence

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Introduction

Health care is a dangerous occupation, but surprisingly some of the worst occupational hazards do not come from bloodborne pathogen exposure, falls or chemical exposure dangers. One of the greatest dangers comes directly from people as evident in workplace violence (WPV). WPV is one of the most problematic and significant issues in health care

today. According to the International Council of Nurses (ICN), 'healthcare workers are more likely to be attacked at work than prison guards and police officers' (ICN 2009, paragraph 8). Working in health care is a potentially violent occupation, with health care and social service industry workers accounting for 48% of all non-fatal injuries from acts of violence and workplace assaults in 2000 [Occupational Safety and Health Administration (OSHA) 2004].

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The effects of WPV are far-reaching and costly. The financial cost of WPV annually encompasses billions of dollars spent on security costs, medical and legal expenses, missed time from work and other financial losses as a direct result of WPV (Federal Bureau of Investigation [FBI] 2002). While financial expenditures for WPV are high, the emotional and relational costs are much more difficult to quantify but are still significant. Significant effects include burnout, depression, fear, post-traumatic stress disorder, lack of job satisfaction and reduced ability to perform job role (Ferns 2005, American Psychiatric Nurses Association [APNA] 2008). As a result of violence, some may consider leaving the health care profession (Fernandes *et al.* 1999, Ferns 2005, Emergency Nurses Association [ENA] 2008).

The topic of WPV in health care has been the focus of current policy, research and legislative efforts. Several major professional nursing organisations have issued position statements or directives outlining intolerance of WPV and highlighting their support for the creation of safer work environments (American Nurses Association [ANA] 2006, ENA 2006, ICN 2006, American Psychiatric Nurses Association 2008, Canadian Nurses Association 2008). Numerous research studies have been carried out that address WPV in health care yet best practices to mitigate violence have not been established. Recently, legislation to increase penalties for assaulting health care providers has been drafted in some states but passed in few (ANA 2009). The recent flurry of activity and interest surrounding WPV has created the need for a systematic review of the literature.

Workplace violence in the emergency department

Although WPV occurs in every area of health care, certain settings of practice are notorious for their increased risk. This risk is highest in emergency departments, psychiatric units, admission departments and acute care units (Federal Bureau of Investigation 2002). In a study of 6800 randomly selected Minnesota nurses, Gerberich *et al.* (2005) concluded that nurses working in long-term care, psychiatric and emergency settings were at highest risk for WPV.

Prior studies have highlighted that the emergency department (ED) is an area of health care that endures a heavy burden of WPV. Fernandes *et al.*'s 1999 study of ED staff found that 57% of respondents were physically assaulted over the one-year study period. Mayer *et al.* (1999) identified an incidence of physical assault of 72% over the span of the ED workers' careers and 42% during the prior 12 months of their study.

The ENA (2008) identified several reasons why the ED is highly prone to violence. Violence risk factors encompassed patient, environmental and staff factors. Patient risk factors

included access to firearms and substance abuse. Environmental risk factors included working directly with potentially dangerous people, poor security, uncontrolled movement of the public, delays in service, crowding and uncomfortable surroundings. Staff risk factors identified were lack of training, working when not adequately staffed, working alone and transporting patients. While the presence of risk factors for WPV is not unique to the ED, increased combinations of potential hazards and repeated exposure to violence has been documented in the ED that traditionally has not been present in the majority of other health care settings.

Aims and objectives

Literature reviews provide an essential component to aid in the prediction of WPV in the ED because systematic review of primary research studies facilitates the transition of research into clinical practice (Lau & Magarey 2006). In 2005, Ferns published a review of the literature of WPV in the ED but included studies that were not focused or conducted in the ED setting. While her review of the literature provided an overview of the state of WPV research in health care, the primary focus was not limited to studies set in the ED or focused on WPV.

The purpose of this systematic review of the literature is to provide a research synthesis on WPV in the ED and to identify characteristics of intervention studies that are the basis for guiding best practice modelling in the practice setting. The research question addressed in this literature review is 'what are the characteristics and findings of studies conducted from January 2004–June 2009 on WPV in the ED?' This time period was selected to reflect an update of Ferns 2005 review of the literature.

Methods

The initial search strategy used to gather literature was to search four databases, MEDLINE, CINAHL, PsycINFO and the Dissertations and Theses Full Text Database from March–June 2009 with the search terms workplace violence, emergency department, violence, aggression and emergency in varying combinations. To include as many studies as possible and capture the greatest depth of knowledge, multiple search terms were used. Over a thousand article citations resulted from the combination of search terms. In addition to search terms, the 'related articles' feature was used to search for additional articles. An ancestry search was carried out for all studies included in the review.

Each citation's title was reviewed for possible inclusion. Those titles that were immediately found to be unrelated to

the literature review were excluded. If the citation could not be excluded based on the title, the abstract was reviewed. Studies were reviewed in full when the abstract could not be excluded based on content presented.

Inclusion/exclusion criteria

Articles were included that were written or available in English. All articles included were original research using any research design with or without an intervention, were conducted in North America, Europe or Australia and were published between January 2004–June 2009. To be included in the review, the primary focus of the study had to be WPV and be conducted in the ED versus general hospital or multi-unit comparison. In addition, the full research report must be accessible.

When multiple publications from the same study were found, only the one that contributed the greatest amount of information was included in the literature review. If additional publications of findings from the same research study contributed significant new information and/or findings specifically about WPV in the ED, they were included in the review and treated as separate studies.

Articles were excluded for several reasons. The most common of these reasons were that they were commentaries or anecdotes, or were not focused primarily on WPV in the ED. Additional exclusions were made for theses, dissertation abstracts and conference proceedings and abstracts. This systematic review of the literature excluded all studies that were not focused on the ED setting to increase the application of the findings directly to this clinical setting. The decision to limit the point of origin of studies was made to help define recent research progress in practice settings comparable to those in the USA.

Two studies were included in this review that did not meet original study criteria. Owing to professional awareness about the research subject, the Emergency Nurses Association (2008) study on WPV in the ED was included after not finding anything similar in the published research. The study is unique in the scope of content covered, the inclusion of ED nurses from every state in the USA and it was the only professional organisation-sponsored study that met other inclusion criteria. Additionally, Gillespie's 2008 dissertation abstract regarding WPV in the paediatric ED was also included. Because of the lack of data on WPV in paediatric EDs in the research literature, the decision was made to include this dissertation abstract in the review because of the uniqueness of the study and the importance of capturing the paediatric ED setting in the scope of the review.

Definition of terms

WPV includes 'physical assault, emotional or verbal abuse, or threatening, harassing, or coercive behavior' (Emergency Nurses Association 2008, p. 4). WPV has traditionally been measured in the literature as physical and verbal abuse. 'Physical abuse' refers to physical assault, beatings, punching, kicking, biting, spitting, or any form of physical aggression. 'Verbal abuse' refers to threats of violence without actual physical contact, threatening or harassing behaviours, emotional abuse and emotional aggression. 'ED' refers to a health care setting in which patients may receive accident and emergency services and initial, stabilising treatment for medical, surgical and/or mental health care.

Results

Sixteen articles are included in this literature review. The majority (12 studies) used quantitative research methods with four studies using a qualitative or mixed method approach. Two studies had an intervention in the design. There were no experimental or quasi-experimental studies that met inclusion criteria. The literature is primarily descriptive in nature with little correlational data. Tables 1, 2 and 3 summarise studies included in this review.

Only two studies used an intervention in the research design. Pawlin (2008) created a tool for reporting WPV in the ED and measured WPV before and after implementation of the reporting tool. Deans (2004) used a single group pretest/post-test design to study the effectiveness of a one-day training on WPV.

Setting and sample

There was variation among the study setting, sampling techniques and composition of sample. Eight studies originated in the USA, five from Australia and three from Europe. Hospital EDs in the research studies ranged in size and type, from community hospitals, a paediatric ED, to trauma facilities. Sample sizes ranged from eight (Catlette 2005) to 3518 participants (Kansagra *et al.* 2008). Nine studies had a setting comprised of more than one ED for the study population.

The majority of studies used convenience sampling. Kowalenko *et al.*'s 2005 study of Michigan ED physicians is unique in that they used random sampling of members of Michigan College of Emergency Physicians. Response rates, when available, varied from as low as 10.8% in Emergency Nurses Association 2008 online survey to as high as 95% in the 'key informant' population of the Kansagra *et al.* 2008

Table 1 Quantitative research design studies without an intervention-workplace violence in the emergency department

Author (year)	Purpose	Design/time frame	Sample/setting	Measures	Major findings
Blando <i>et al.</i> (2009)	Examine staff assault rates and hospital security programs among EDs with different financial resources, size, & background community crime rates	Cross-sectional survey -OSHA logs over 10- year period, patient service revenue, crime rate statistics for 2004	50 hospitals in New Jersey	Compared hospital financial data from state health department, staff assault rates (OSHA logs), interview of security director and ED nurse manager, assessment of hospital site, violent crime data by town hospital located in using community crime rate statistics	Small hospitals with low violent crime had least security measures of all types of hospitals Higher rate of assault for small hospitals in areas with high violent crime Median assault rate in small hospitals was 2–5 times higher vs. large hospitals
Kansagra <i>et al.</i> (2008)	Examine ED WPV and staff perceptions of physical safety	Retrospective cross-sectional survey; - Past five years	3518 staff including doctors, physicians, residents, and physician assistants and 62 key informants from 65 EDs across United States (majority of hospitals affiliated research centres)	Revised format of National Emergency Department Safety Study (NEDSS). Two areas of survey: key informant = One per hospital (manager/director) focused on hospital security features & department statistics, staff portion focused on factors contributing to patient safety including WPV (staff safety at work primary question)	73% of staff felt safe 'most of the time' or 'always' Nurses less likely to report feeling safe than other staff (OR = 0.21, $p < 0.001$) EDs with metal detectors had weapons brought on increased basis (OR = 2.63, $p < 0.01$) and had increased PA that EDs without metal detectors (median attacks per year = 15 for EDs with metal detectors, average 10 per year EDs without)
Emergency Nurses Association (2008)	Examine WPV against nurses in the ED	Retrospective cross-sectional survey -Past three years	Online survey of 3465 ENA members, all RNs working in United States EDs	69-item survey with 14 demographic questions and 55 questions related to WPV in the ED ranging from incidence and descriptive data, reporting WPV, WPV training, hospital security measures and effectiveness	Half the nurses responded that WPV 'was simply part of their practice' Nurses experienced high frequency (more than 20 times) of PA (27%) and VA (70%) over study period Top barriers to reporting included fear of retaliation (45%), no physical injury sustained (40%), inconvenient (37%), may affect customer satisfaction scores (36%), comes with the job (30%)

Table 1 (Continued)

Author (year)	Purpose	Design/time frame	Sample/setting	Measures	Major findings
Peek-Asa <i>et al.</i> (2007)	To compare WPV prevention programs in California and New Jersey, which have different requirements for the development of WPV prevention programs, and identify most common program components, and identify gaps in existing programs	Retrospective cross-sectional survey; -Past four years	Representative sample of 116 California hospitals and 50 New Jersey hospitals	Interviews, facility walk-through, review of policies, procedures and training manuals. Programs were scored on components of training, policies and procedures, security and environmental approaches.	California had higher scores for training, policies, and procedures than New Jersey but there was no difference between security and environmental controls California EDs significantly more likely than NJ EDs to provide WPV training to employees ($p = 0.001$) and have written WPV policies ($p < 0.001$) Security and administrative policy had strongest correlation scores among program components ($r^2 = 0.24$, $p < 0.05$ in CA and $r^2 = 0.44$, $p < 0.01$ in NJ)
Gates <i>et al.</i> (2006)	Describe WPV experienced by ED staff by patients and visitors in the six months prior to the survey	Retrospective cross-sectional survey; -Past six months	242 ED staff from five hospitals in a Mid-Western city	Survey included satisfaction with job, hospital security, detailed questions of PA and VA, WPV education received	67% of nurses and 51% of doctors reported PA at least once during study period WPV was under-reported (65% for patient, 45% for visitor) 26% of nurses 'never' or 'seldom felt safe while working in the ED'
Ryan and Maguire (2006)	Identify types of violent incidents that staff in two Irish ED's were exposed to in a one-month period	Retrospective cross-sectional survey; -Past one month	37 nurses working in two Irish EDs, one in Dublin and one in a provincial area	Scale of Aggressive and Violent Experiences (SAVE) was adapted from Perception of Prevalence of Aggression Scale (POPAS); measured violent/aggressive incidents while at work	81% of nurses experienced VA, 26% experienced PA Three nurses (8.6%) reported sexual assault/rape 32% had training for management of aggression and violence

Table 1 (Continued)

Author (year)	Purpose	Design/time frame	Sample/setting	Measures	Major findings
James <i>et al.</i> (2006)	Investigate the characteristics of incidents of aggression and violence directed towards staff in an urban United Kingdom ED	Retrospective review of incident report forms; -Past 12 months	Review of 218 staff incident reports, witness statements, and medical records from a large urban hospital ED in the United Kingdom with average ED visits 125,500/year	Nature of the incident, age, sex, status of assailant (patient, family, or visitor), subjective contributory factors (alcohol, drugs, waiting time), suicidal ideation, psychiatric referral, and deprivation score	The majority of assailants were patients (88.2%) and male (64.7%) Staff cited the following contributing factors in violent incidents: influence of alcohol (52.3%), illegal substances (5%), wait time (11.9%) and suicidal ideation (13.8%)
Kowalenko <i>et al.</i> (2005)	Determine amount and type of WPV experienced by Michigan ED doctors	Retrospective cross-sectional survey; -Past 12 months	Random sample of 171 Michigan ED doctors, all members of Michigan College of Emergency Physicians	Describe types and number of violent events over last year and reaction to events	Most doctors experienced VA (74.9%) and 28.1% were victims of PA Less experienced, female doctors had more reported WPV Doctors responded to WPV by using security escort (31%), buying gun (18%), knife (20%), obtaining concealed handgun license (13%), and mace (7%) Most unarmed threats on Saturdays (4.6/1000 ED presentations) and peak time from 2400 to 0400 (5.2/1000 ED presentations) Of subjects involved in unarmed threat, 70% required restraint, 47% required psychiatric admission
Knott <i>et al.</i> (2005)	Determine the incidence, characteristics, and outcomes of unarmed threats in the ED	Prospective observational survey; -Collected over one year	Staff report data from 151 unarmed threats in a tertiary hospital in Melbourne, Australia with average ED visits 47 000/year	Characteristics of subjects involved in 'code grey' (unarmed threats), characteristics of staff involvement	Subjects had history of violence (11%), influence of alcohol (30%), used illicit drugs (17%), and/or history of significant mental illness (62%)

Table 1 (Continued)

Author (year)	Purpose	Design/time frame	Sample/setting	Measures	Major findings
Crilly <i>et al.</i> (2004)	Describe the incidence of WPV (PA and VA) by patients towards nurses	Prospective observational study; -Collected over five months	71 ED nurses from two hospitals in Queensland, Australia with combined visits totalling 80 000 patients/year	Four instruments: demographics, violence record, violence questionnaire, and data extraction form. All RNs completed demographics, then completed violence record and questionnaire after incident of WPV (focused on patient waiting time, triage level, type of incident, nurses perception of patient characteristics	79% of nurses experienced WPV in study period Rate of WPV averaged Two episodes per 1000 patients presenting to ED Patients involved in incidents of WPV were believed by the nurses surveyed to be under the influence of drugs/alcohol (57%) and/or mentally ill (40%) Most WPV occurred during evening shift, least during day shift

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study that was completed by phone or in person. The average response rate among all samples was 60.3%.

The sample in each study varied from including all staff that work in the ED (six studies) to limiting the sample to specific professional groups, such as nurses (seven studies) or physicians (one study) or hospital cross-comparison measures (three studies). There were none that focused on the perpetrators of WPV in the ED. None of the studies were targeted at any particular demographic group, such as women or minorities; however, two studies (Kowalenko *et al.* 2005, Emergency Nurses Association 2008) limited the sample to professional organisation members.

Measurements

None of the studies reviewed used the same instrument to measure WPV in the ED. Two studies used formal evaluation instruments. Kansagra *et al.* (2008) used the National Emergency Department Safety Study (NEDSS), which was used in a revised context to extract data on workplace safety. The adaptation of the NEDSS for application to WPV has not been addressed in prior published literature. The Scale of Aggressive and Violent Experiences (SAVE), which was adapted from the Perception of Prevalence of Aggression Scale (POPAS), was used by Ryan and Maguire (2006). According to the study authors, the POPAS scale had been used previously to measure aggression and violence in health care settings. The majority of studies used researcher-developed instruments to solicit data. There was little information, if any, provided in the studies regarding testing of validity and reliability of researcher-developed instruments.

The majority (10 studies) measured incidence, occurrence, amount or type of WPV in the ED as a stated research focus. Measurements varied and included retrospective and prospective time frames. The prospective time frame measurements varied from five months (Crilly *et al.* 2004) to one year in length (Knott *et al.* 2005). The retrospective time frame measurements ranged from as little as one month (Ryan & Maguire 2006) to five years of reviewing OSHA injury logs (Kansagra *et al.* 2008).

In addition to focusing on the incidence of WPV, there were other identified foci in the literature. There were four studies (Peek-Asa *et al.* 2007, Emergency Nurses Association 2008, Kansagra *et al.* 2008, Blando *et al.* 2009) with major focus on ED and hospital security features. Two studies (Knott *et al.* 2005, James *et al.* 2006) were incident report reviews of actual WPV that occurred in the ED.

The four qualitative studies reviewed all measured different aspects of WPV in the ED. Catlette (2005) used phenomenological inquiry. Luck *et al.* (2007) measured observable

Table 2 Intervention studies-workplace violence in the emergency department

Author (year)	Purpose	Design/time frame	Sample/setting	Measures	Intervention	Major Findings
Pawlin (2008)	Document violence occurring, which is thought to be under-reported, and why staff do not report abuse	Prospective pre/post intervention comparison -Over six months	United Kingdom ED with average visits 80 000/year. All ED staff included in sample (66 staff reports over six months); 33 staff surveyed about WPV	WPV recording tool describing incident characteristics, outcomes; abuse questionnaire focusing on PAVA and reporting/lack of reporting	Tool created for reporting WPV in the ED	Increased reporting of WPV after tool used (11 times rate than before tool was used) VA most common abuse (82%), VA and PA (14%), PA only (5%) Nurses considered many factors when not reporting WPV, including abuser characteristics, apology from abuser, fear that nothing will be performed After one-day training on WPV: Increased confidence in managing WPV
Deans (2004)	Determine the effectiveness of a one-day training program and nurses ability to respond to WPV	Single group pre-test/post-test design -Pretest given Two months before intervention, post-test given three months after	Nurses completed 30 pretest and 22 post-tests; regional ED in Victoria, Australia	Incidents of aggression in ED (post-test), confidence in managing aggressive behaviour, and attitudes towards aggression in the ED	One-day training on WPV	Increased feeling supported by other staff and management. Decreased confidence in use of incident reports and management caring

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behaviours that indicate a potential for WPV. Gillespie (2008) implemented constant comparative analysis to identify WPV in the paediatric ED setting and the negative consequences on staff. Luck *et al.* (2008) summarised major factors that ED nurses consider to ascribe meaning to acts of violence.

Major findings

There was no consistent definition of WPV found in the literature. Studies used varying definitions of terms to define workplace violence, including physical assault, abuse, verbal abuse, harassment, kicking, punching, spitting, pulling hair, biting, stalking, sexual harassment, sexual assault and acts of aggression or intimidation. When both were measured, verbal abuse was more prevalent than physical abuse among the literature.

Most (10 studies) measured incidence, occurrence, amount or type of WPV in the ED. Actual amount of WPV reported varied based on study time frame measurement. Barriers, attitudes and under-reporting of WPV in the ED were a main focus of the literature in four studies (Gates *et al.* 2006, Emergency Nurses Association 2008, Luck *et al.* 2008, Pawlin 2008). The concept of safety, or the presence of fear, was addressed as a major concept in four studies.

Six studies focused on description and characterisation of actual incidents of WPV in the ED. Four studies were quantitative and focused on the incidents from a descriptive approach, including factors such as time of day, shift, day of week incidents occur, predisposing factors (subjective or known), waiting time, need for restraint postincident and characterisation of the perpetrator (patient or visitor). Among studies, there was no consensus in the shift and time reported with the greatest incidence of WPV. The two qualitative studies focused on how nurses define WPV in the ED based on each event and measuring observable behaviours that predict WPV in the ED.

Ten studies addressed predisposing and/or contributing factors of the perpetrator. These were primarily subjective judgments, such as intoxication, mental illness and illicit drug use. Other factors were occasionally mentioned, including head injuries, age, long wait times and anger. Across studies, many respondents characterised the perpetrators of WPV in the ED as commonly being intoxicated or mentally ill.

Discussion

The studies included in this literature review provide insight into the phenomenon of WPV in the ED. It is clear from the literature that WPV in the ED is prevalent and occurs among

Table 3 Qualitative or mixed method design research studies-workplace violence in the emergency department

Author (year)	Purpose	Design/time frame	Sample/setting	Measures	Major findings
Luck <i>et al.</i> (2008)	Define how ED nurses ascribe meaning to acts of violence and respond to accordingly	Qualitative, case study design -Over five months (292 hours of participant observation)	Regional Australian ED with sample of 20 Registered Nurses	Participant observations, semi-structured interviews, field journaling, and structured observation guide of violent events	Three major factors contribute to meaning of acts of violence and contribute to subsequent actions taken by nurses: Degree of personalisation violence Presence mitigating factors Reason for ED presentation Psychiatric patients were responsible for most PA while VA was usually from patients' family members Consequences of WPV include injury, staff stress, parental removal from care environment, delays in care, negative image of hospital, patient requiring restraint Desired interventions were formation of specialised psychiatric ED, de-escalation training, and early recognition and intervention for incidents of WPV
Gillespie (2008)	Identify the extent that WPV occurs in the paediatric ED by patients and visitors and the negative consequences on staff	Qualitative, modified form of constant comparative analysis	31 paediatric ED workers in an urban United States hospital	Audio-taped interviews focusing on the context of WPV, consequences for staff, patient, visitors, and perpetrator after incident of WPV, and potential interventions to reduce WPV in the paediatric ED. Also measured non-participant observations, review of medical centre policies, and continuing education offerings	Suggests WPV in ED may be predicted from STAMP acronym for predicting WPV from observable behaviour: S = staring, or lack of eye contact (factor in 9/16 events) T = tone/volume of voice (factor in 11/16 events) A = anxiety (factor in 13/16 events) M = mumbling/slurring/incoherent (factor in 13/16 events) P = pacing/agitation (factor in 9/16 events) Common themes were inadequate safety measures and vulnerability Gang violence, psychiatric issues, substance abuse, trauma, and dementia were all related to personal experiences of WPV
Luck <i>et al.</i> (2007)	To clearly define components of observable behaviour that indicate a potential for WPV while in ED	Qualitative, mixed methods case study design -Over five months (290 hours of participant observation)	20 full-time ED nurses from a 33-bed public hospital in Australia	Observations in the ED, semi-structured interviews, field journaling, and structured observation guide of violent events	
Catlette (2005)	To describe the phenomena of WPV	Qualitative study based on phenomenological inquiry	8 ED nurses from two Level-1 trauma centres in United States	Cross-case comparison of WPV, focused on experiences and perception of violence at work; interview guide and demographics	

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all staff. While difficult to calculate exact rates for WPV, the findings of these studies validate prior research in this area that indicates that WPV in the ED is an extensive problem plaguing EDs worldwide.

The literature was primarily descriptive with little attempt at more rigorous methods, such as experimental design or predictive modelling. Because of the inherent difficulty in researching violence and working with human subjects, it is difficult to conceptualise a model of true experimental design being used to explore WPV in the ED; however, it is more realistic to expect that quasi-experimental designs would be used to explore the challenging phenomena of WPV in the ED, which was not found in this review.

The dramatic inconsistency of time frames and definitions used to measure WPV in the ED is a barrier to calculating true incidence rates and cross-comparing studies for analysis. There were prospective and retrospective studies, and the time frames used in each varied significantly which affected the reported amount of WPV. The amount of abuse in one month would expectantly be lower than over 12 months. Additionally, accurately defining WPV is challenging because assault, aggression and abuse may all be used in combination to describe the term 'violence' (Luck *et al.* 2007). Because there is a lack of consistency in the terms to describe WPV, there is significant difficulty in cross-comparing studies. From the number of times addressed in the research, it is apparent that accurately describing the incidence and types of WPV in the ED has been a top research priority.

There was variety in the point of origin and sample setting. Studies originated from multiple countries, indicating that WPV in the ED is a global problem. The sample setting showed good variation and included community hospitals, trauma and research facilities, tertiary care centres and a paediatric ED.

Few studies clearly accounted how the researchers conducted statistical analysis. This calls into question the strength and methodological soundness of the studies. Further, the majority of studies did not have a formal instrument but did use a researcher-developed survey to obtain data. This is a difficult issue to overcome in research quality analysis. Most studies appear to have developed their own instruments without any prior testing of validity and reliability. This makes it impossible to cross-compare findings between studies.

An issue that is not fully discussed in the literature is the numbers of staff that do not participate in these samples. With response rates varying from 10.8–95% and an average of 60.3%, there is a large number of ED staff that did not participate in the studies reviewed. Theoretically, the samples represent the population from which they are drawn.

However, when researching WPV in the ED, there may be a bias in the published literature of having participants self-select based on the topic. If a person has been a victim of WPV in the ED, would it not make sense that they would be more likely than not to participate in research on that topic? Perhaps the incidence rates of WPV in the ED are over-inflated because of those that remain uncaptured in the research data from lack of participation. Attempts should be made to obtain higher response rates in this population to ensure that accurate data are obtained from all staff.

Only two studies used interventions in the research design. The lack of intervention studies is exceptionally problematic because health care depends on best practices developed through research. Pawlin's 2008 study is unique because he created a tool for reporting WPV and measured WPV before and after the implementation of an intervention. This study adds new knowledge in that it provides support for the use of incident reporting tools. However, this study has flaws in the methodology and reporting that require attention. Pawlin infers that the tool increased reporting of incidents of violence. As this was not an experimental study, the conclusion cannot be made that the tool itself increased reporting. Association alone does not establish proof of causation.

The tool could have been filled out by any staff member. It contained no indentifying data, so it is possible that multiple event reports were made for the same incidents of WPV. Perhaps a few highly motivated individuals filled out the majority of the reporting tools. If that were the case and only a few staff filled out the majority of the reports, are the findings significant? There is simply no way of knowing based on the study design used. In spite of the research design, Pawlin's study does highlight the problem of under-reporting of WPV and the need to create tools for staff to report WPV. This study is a stepping stone for future evidence-based practice research.

Deans (2004) used a single group pretest/post-test design to study the effects of a one-day training on WPV. Training is an area that is frequently addressed in education needs and this study provided preliminary guidance for evidence-based practice. Unfortunately, this study had significant flaws in the data analysis and methodology and was difficult to interpret. Deans limited the design to a single group, pretest/post-test design when there was great potential for the addition of a control group. The intervention was offered to all nurses, but not all nurses employed attended the training. Nurses that could not attend training could have comprised a control group. By adding a control group, which did not attend the training, Deans would have greatly enhanced the quality of this study.

The main problem of the Deans (2004) study lies in the interpretation of the findings, which were unclear. Deans presents pretest and post-test participant numbers that are different from one another and then interprets findings without addressing this. Significance cannot be determined on any measure if there were 30 persons that completed the pretest and only 22 that completed the post-test. Deans did not explain how the pretest and post-test were linked to one another by individual survey participant identifier so that comparisons could be made. Generalisations were made that are not justified based on the analysis. In addition, the study mortality of 26.6% in two months is a major concern and was not addressed. Despite having a relatively weak design and flawed analysis, this study is an important addition to research on WPV in the ED because it can be used as a building block for further research.

Two studies (Luck *et al.* 2007, 2008) are both important exemplars. First, both of these articles originate from the same study population and research base; however, each article is unique and contributes significant new knowledge on the topic of WPV in the ED. Each study is of high quality as a result of clear accounting of data analysis, methods, design and findings presented by the authors.

The first study is a unique example of using qualitative, observational data in an attempt to build a framework to predict violent behaviour. Luck *et al.* (2007) found five key elements of observable behaviour that served as predictors for potential violence in the ED, including staring, tone and volume of voice, anxiety, mumbling and pacing. These behaviours together created the STAMP acronym. If risk for WPV could be predicted and taught as Luck *et al.* (2007) propose, that would create an excellent instrument and resource for the ED.

Luck *et al.* (2008) is another excellent and unique research exemplar. The study is the first to address the meanings that nurses ascribe to acts of violence in the ED, which is crucial to understanding why and how the decision is made to report the acts of WPV. The authors found that ER nurses ascribe meanings to violence according to personalisation of the violence, mitigating factors and reason for ED presentation (Luck *et al.* 2008). These findings are crucial in beginning to comprehend how an event of WPV is interpreted differently by each nurse in the ED.

Incidence and occurrence are still a major focus of the literature. In her 2005 review of the literature, Ferns identified incidence documentation to be prevalent in the research. The fact that WPV in the ED occurs has been clearly established and it is now time for researchers to focus on other aspects of this phenomenon.

Attitudes and barriers towards reporting WPV in the ED were major content areas addressed in the literature. Prior studies have established that WPV in health care is under-reported. To capture violence that is occurring and find solutions, the full extent and magnitude of the problem must first be documented. Under-reporting along with the common perception among health care professionals that violence is simply part of the job description contributes to the difficulty in accurately capturing WPV (FBI 2002, Ferns 2005).

Barriers to reporting are multi-level and complex with the APNA adding 'there are clinical, ethical, legal and political dimensions to this occupational hazard that serve as formidable barriers to prevention and harm reduction' (APNA 2008, p. 6).

The literature consistently identifies that under-reporting of WPV in the ED occurs and there are several attitudes and barriers that contribute to this. To increase reporting, it is important to first know what the barriers and attitudes are that prohibit or enhance reporting.

Surprisingly, despite the high levels of violence occurring in the ED, most staff surveyed felt safe most of the time or frequently. The minority of responders described a lack of safety and fear as common. Given the highly reported rates of WPV in the ED and the inherently violent culture that the ED can encompass, it would be expected that fear and lack of safety would be commonly experienced by respondents. However, this review indicates that ED staff as a whole reported feeling safe at work despite high levels of WPV.

The majority of studies included subjective judgements regarding the perpetrator's predisposing factors to WPV in the ED. Most commonly, mental illness and intoxication were factors associated with WPV. This theme requires further attention and research. It is possible that the health care provider's own judgments regarding the patient influenced the care the patient received or affected the situation contributing to an act of aggression or violence. How does one treat an intoxicated or mentally ill person? Are they treated differently from a homemaker, a grandmother, or a student? If prejudgements are held by a health care provider because an individual is thought to be intoxicated or mentally ill, perhaps that influences the actual occurrence of WPV in the ED.

Limitations

This review has several limitations. The limitation of setting of practice and the selection criteria for study inclusion in the review restrict the generalisability of findings of this review outside the ED. The selection of the time period of this review also has inherent limitations because of the exclusion of older

studies that may contain valuable information. Additionally, this review was carried out by an emergency department nurse with a vested personal interest in the topic of workplace violence. Although every effort was made by the first author to remain neutral and objective during the review, it is still possible that a bias exists.

Relevance to clinical practice

Implications for future practice

The results of this review clearly show that WPV occurs in the ED among all staff and at rates that create a dangerous and volatile care environment. It is also evident that staff in the ED under-report WPV, which creates a significant barrier to determining actual depth of the problem. The decision process that ED staff members undergo to decide to report or not report violence is multifaceted and requires further study. In the future, ED staff should become more accountable for making their own environment safe, which also includes reporting incidents of WPV.

In addition, several studies measured safety at work or lack of fear as a major concept. Some staff surveyed responded with answers that they 'were often or always fearful' or 'never or almost never felt safe.' A safe work environment should be an expectation of every staff member. According to federal regulations, every employer has the responsibility to remove and improve workplace hazards, including WPV in the ED (OSHA 1970, McPhaul & Lipscomb 2004, Gallant-Roman 2008). If these needs are not being met, then ways to improve safety should be addressed on a collaborative basis. Staff, management, regulators and researchers work together to help identify the potential causes of WPV in the ED. While WPV may not be completely preventable, there are strategies and solutions that can be implemented to deter and minimise violence. The emphasis needs to be on structuring clear evidence-based practices that have shown to be effective in reducing or mitigating WPV. To build evidence, further research is needed.

Implications for future study

There was an abundance of descriptive data on incidence rates of WPV in the ED and studies that described the negative outcomes experienced by staff as a result of being a victim of WPV. More advanced research designs, such as correlational and predictive designs, are needed. Perhaps there is a link between prior abuse of the victim and non-reporting of WPV. Additional correlates could be the factors that have been identified as predisposing factors to violence

Table 4 Key areas for future research

How nurses' preconceptions, attitudes, and behaviours contribute to incidents of WPV in the ED
Development of a instrument that predicts risk for WPV
Barriers/attitudes towards reporting WPV in the ED
Intervention studies based on strategies used in ED to reduce WPV, such as training, increased security staff, security measures and de-escalation
Effect of prior abuse (domestic, childhood, or intimate) on risk of WPV in the ED and subsequent reporting

and actual incidence as well as demographics and time studies.

Intervention studies to guide practice are also greatly needed. There are few practice-guiding implications that can be gained from this body of research because of the lack of intervention studies. As the issue of WPV directly affects every member of the ED community, there is a shared professional responsibility and accountability to tackle these issues together to improve the future of practice. ED staff members need to assist researchers in conducting research on WPV in the ED in the setting where it occurs. Each one has a vested interest in the phenomenon simply because of their role.

There are several key areas of research of WPV in the ED that require further development. Table 4 highlights these key areas.

An important measure requiring attention of the research community is the lack of consistency in time frames and terms used to describe and quantify WPV in the ED. A clear and consistent measurement needs to be developed and used to ensure that studies have greater comparison to one another and to increase the quality of research produced. In addition, reliable and valid instruments to measure workplace violence and the impact on staff need to be developed and used across studies.

Conclusion

The evidence from this review of the literature supports the notion that WPV occurs frequently in the ED. However, little progress has been made in developing research-supported best practices for mitigating and addressing WPV in the ED. The current practices in clinical use today to deter and control violence have very little, if any, evidence base to support for or against their use. Anecdotal support may be high, but in reality, there is little documented support in current research. In the future, research studies should focus on moving beyond documenting the existence of this phenomenon and use stronger research designs, such as correlational or predictive measures. The time has come for

ED staff, researchers, administrators, policymakers and other stakeholders to unite and work together to find creative solutions to the plague of WPV in the ED.

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Contributions

Study design: JT; data collection and analysis: JT and manuscript preparation: JT, LR.

Conflict of interest

None.

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