An integrative literature review of interventions to reduce violence against emergency department nurses

Linda Anderson, Mary FitzGerald and Lauretta Luck

Aim. To critique the evidence that underpins interventions intended to minimise workplace violence directed against emergency department nurses, to inform researchers and policy makers regarding the design, development, implementation and evaluation of emergency nursing anti-violence and counter-violence interventions.

Background. Workplace violence perpetrated against emergency department nurses is at least continuing and at worst increasing. Occupational violence has detrimental effects on job satisfaction, retention and recruitment, and the quality and cost of patient care.

Design. An integrated literature review.

Method. Searches of the Cochrane Library, CINAHL, MEDLINE and the Joanna Briggs Institute between 1986–May 2007. Included articles were appraised and then synthesised into a narrative summary.

Results. Ten primary research studies were included. Interventions were classified as environmental, practices and policies, or skills. While each study has useful information regarding the implementation of interventions, there is no strong evidence for their efficacy.

Conclusions. The weight of effort is still directed towards defining the phenomenon rather than addressing solutions. Studies that assessed the efficacy of a single intervention failed to take account of context; and participatory context-driven studies failed to provide generalisable evidence. Concerted multi-site and multi-disciplinary, action-oriented research studies are urgently needed to provide an evidence base for the prevention and mitigation of violence perpetrated against emergency department nurses.

Relevance to clinical practice. The investigation of interventions rather than repeatedly redefining the problem and directing resources into debating semantics or differentiating ‘degrees’ of violence and aggression is recommended. This review unambiguously identifies the gap in research-based interventions.

Key words: accident and emergency department, aggression, emergency department, intervention, nursing, violence

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Introduction

Workplace violence perpetrated against nurses is undeniably a global issue (Stirling et al. 2001, Ferns 2005, Merecz et al. 2006) that has significant organisational and individual sequelae (McPhaul & Lipscomb 2004, Madine & Smith 2005, Royal College of Nursing Australia 2007). Nurses, as the largest component of the health care workforce (Foley 2004, Catlette 2005), experience the greatest burden of workplace violence (Fernandes et al. 1999, Peek-Asa et al. 2002, Armstrong 2006); and emergency department nurses

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Considerable research effort is devoted to describing and codifying the workplace violence phenomenon. The University of Iowa Injury Prevention Research Centre (UIIPRC) developed a classification system to assist the understanding of and to target interventions against violent events (University of Iowa Injury Prevention Research Centre 2001). A summary of the classification is:

- **Type I criminal intent** – perpetrator has no legitimate relationship to the workplace, often committing a crime in conjunction with the violence.
- **Type II customer/client** – perpetrator becomes violent while being served by the workplace.
- **Type III worker-on-worker** – perpetrator is a current or past employee of the workplace.
- **Type IV personal relationship** – perpetrator does not have a relationship with the workplace but has a personal relationship with the victim.

While nurses may experience any or all of the UIIPRC workplace violence classes, the most common is type II, where the perpetrators of violent acts are customers (patients, their relatives and/or friends) who become violent while being served by workers (nurses) (Gerberich et al. 2004, McPhaul & Lipscomb 2004, Farrell et al. 2006). Type II violence is the focus of this review. Additional to physical or psychological injuries arising from type II workplace violence, suffering or witnessing verbal or physical threats or actions erodes well-being and job satisfaction (Fernandes et al. 1999) and hampers nursing recruitment and retention (Armstrong 2006, Chapman & Styles 2006).

Violence and aggression reduce the quality while increasing the cost of patient care (Arnetz & Arnetz 2001, Lau et al. 2004, Farrell et al. 2006, International Council of Nurses 2007). Despite the plethora of literature describing workplace violence and recommending interventions to prevent or alleviate it, research evaluating these remedies is scant (Deans 2004, McPhaul & Lipscomb 2004, Catlette 2005), the success of interventions arbitrary (Lau et al. 2004, Luck et al. 2007) and research programmes uncoordinated.

Four literature reviews addressing violence and aggression in the emergency department were accessed. Stirling et al. (2001) and Lau et al. (2004) broadly identify contemporary research. Doughty (2005) more specifically investigates research related to training, and Wand and Coulson (2006) consider zero tolerance as an intervention. These reviews confirm there is little evidence that evaluates the feasibility, appropriateness, meaningfulness and effectiveness (FAME) (Pearson et al. 2007) of the interventions recommended to reduce or at least mitigate workplace violence and aggression, despite years of effort. Moreover, the literature is dominated by works referring to violence in psychiatric settings and people with mental illnesses. Thus, it is prudent to undertake an integrative review of the evidence that evaluates the interventions specifically intended to reduce violence against EDNs. The resulting synthesis will help transfer extant research into the workplace and more accurately target future research.

**Aim**

The aim of this integrative review is to critique the evidence that underpins interventions intended to minimise workplace violence perpetrated against EDNs to inform researchers and policy makers regarding the design, development, implementation and evaluation of emergency nursing anti-violence and counter-violence interventions.

**Method**

A comprehensive search strategy was developed to identify both published and unpublished works, written in English, between 1986–May 2007. An initial limited search of CINAHL and MEDLINE using the following intuitive key words was undertaken to distil suitable medical subject headings (MeSH) vocabulary and other relevant terms:

- nurse, nurses, nursing;
- emergency department, accident and emergency department;
- violent, violence;
- aggression, aggressive; and
- abuse.

To ensure that the search results were comprehensive, multiple electronic databases were interrogated (Nicholson 2007). Identified key words and appropriate MeSH terminology were selectively applied for the following:

- the Cochrane Library;
- CINAHL;
- MEDLINE; and
- the Joanna Briggs Institute (JBI).

The search strategies for the Cochrane Library, CINAHL and MEDLINE are provided in the full report (Anderson 2007). To avoid publication bias, grey literature was sourced via the subsequent specialised databases.

- ISI Current Contents;
- First Search; and
- Digital Dissertations.
Ten specialist journals were hand searched for the past 10 years and ancestry searching, appraising reference lists from articles, was undertaken. The CINAHL and MEDLINE searches were undertaken for a second time (September 2007) to check for any recently published materials not available for the first search run (May 2007).

Inclusion criteria were any research study considering:
- type II workplace violence only,
- investigating the FAME of interventions (intended to reduce the frequency and impact of type II violence),
- set in an emergency department, with
- nurses or emergency department clientele as subjects/participants.

Exclusion criteria for studies inappropriate to this review were as follows:
- types I, III or IV workplace violence, set outside an emergency department, where
- nurses or their clientele were not the primary subjects/participants.

Two researchers working independently appraised retrieved articles. The JBI appraisal tool for observational studies supported this process (Pearson et al. 2007). The included articles were rated according to the JBI levels of evidence on FAME (http://www.joannabriggs.edu.au/pubs/approach.php, retrieved 1 September 2008).

Results
One hundred and three articles were identified from the searches of MEDLINE and CINAHL. Grey literature searches identified one relevant retrievable thesis. Despite a comprehensive and systematic search, there were few primary research studies related to the evaluation of interventions intended to minimise violence and aggression for EDNs.

After independent review by two researchers, 82 of the articles were rejected, as their titles or abstracts described contexts other than emergency department nursing or failed to identify and/or evaluate interventions. Twenty-one documents were subsequently called for appraisal and retrieved as full text. Of these, seven were later excluded as their abstracts were misleading, and examination revealed that interventions were not evaluated or the intent of the research was other than the reduction in violence against EDNs (Anderson 2007).

Of the remaining 14 articles, 10 were primary research studies and the other four were reviews. All the included primary studies were described by their authors as quantitative studies. All articles were designated level IV, according to the JBI levels of evidence (http://www.joannabriggs.edu.au/pubs/approach.php, retrieved 2 September 2008), equivalent to expert opinion. Given the inclusive nature of this integrative review, it was deemed important to continue the process despite the low evidence rating and to comment in a narrative form on appropriateness, feasibility and meaning of interventions tested in the studies.

A summary of the design, level of evidence, sample, characteristics of the intervention and results for each of the 10 included primary studies is provided in Tables 1–3. The articles are organised chronologically and classified into the following three groups, based on the nature of the intervention they evaluate (American Nurses Association 2002, Emergency Nurses Association 2006):
- workplace environment,
- workplace practices and policies and
- individual and collective skill sets.

Table 4 summarises the demographical features of the studies, demonstrating the weight of global research effort and reflecting the national, cultural and healthcare system contexts that influence the transferability of the research.

Workplace environment
Three studies dealt with interventions influencing the emergency department environment with the intent of changing human behaviour (see Table 1). All involved the use of metal detectors, as recommended by the American Medical Association and the American Psychiatric Association. Concerns about metal detectors creating a poor impression with the public and fear that metal detectors could provoke anxiety among emergency department consumers led to mixed feelings about their suitability (McNamara et al. 1997, Meyer et al. 1997).

Meyer et al. (1997) and McNamara et al.’s (1997) research investigating attitudes to metal detectors provide insights into the applicability of perception-management strategies that are meaningful when considered in a crisis-management context. Some characterisations of a crisis comprise a trilogy definition: the precipitating event, participants’ perceptions and subjective distress (Kanel 2003). As the presence of metal detectors appears to increase staff and clientele perceptions of safety, this should be viewed as a positive. Neither McNamara et al.’s (1997) nor Meyer et al.’s (1997) research measured events, so the actual deterrent effect of the metal detectors was not quantified.

Rankins and Hendey’s (1999) conclusion that other interventions are required to make the emergency department safer is not unexpected. Given the fewer weapon-based assaults compared to verbal assaults (Presley & Robinson 2002), it is not surprising that metal detector use caused
insignificant reductions in assault frequency, although it may reduce assault severity (Keely 2002).

McNamara et al. (1997) and Meyer et al. (1997) address feasibility in terms of a need to site metal detectors at all points of entry (or restrict entry, with the commensurate workflow consequences) and provide workable contingency planning for non-ambulant patients brought directly into the emergency department without security screening. Rankins and Hendey’s (1999) conclusions that interventions additional to metal detectors were required to make the emergency departments safer provoked insights into the feasibility, or otherwise, of the metal detectors.

McNamara et al. (1997) recognise that equipment interventions require funding for equipment purchases and the training liability to operate, respond to and report on the equipment. They also identify the need to institute a system for confiscating discovered weapons. Through-life costs are not discussed in any detail.

McNamara et al.’s (1997) and Meyer et al.’s (1997) research into attitudes touches on the appropriateness of metal detectors. Although Meyer et al.’s (1997) and McNamara et al.’s (1997) investigations are limited, ask different questions and are undertaken in different socio-economic contexts, they suggest that the presence of metal detectors does not deter most people from coming to the emergency department nor do they create a climate of fear. Moreover, they make most staff and consumers feel safer.

<table>
<thead>
<tr>
<th>Primary study, country</th>
<th>Design, level of evidence, sample</th>
<th>Characteristics of intervention</th>
<th>Results</th>
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<tbody>
<tr>
<td>McNamara et al. (1997)</td>
<td>Survey interview, Level IV</td>
<td>Metal Detector (MetD). Sought public opinion about perceptions of safety and willingness to use the ED if a MetD was employed.</td>
<td>75% felt safe</td>
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<tr>
<td>United States of America</td>
<td>n = 303</td>
<td>Aimed to determine whether the perception that MetD created bad public relations was accurate</td>
<td>68% satisfied with security</td>
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<td>66% would feel better with MetD</td>
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<td>11% worried that they may be physically harmed in ED</td>
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<td>10% less likely to use ED with MetD</td>
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<td>Meyer et al. (1997)</td>
<td>‘Descriptive observational study’, Level IV n = 271 (≥18 years old)</td>
<td>Metal detector (MetD). Investigated gated attitudes towards the use of a Metor 120 metal detector, costing approximately $4500 USD, installed at ED entrance under 24-hour surveillance by a security guard</td>
<td>80% patrons and 85% employees liked MetD</td>
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<td>United States of America</td>
<td>62 patients; 114 family or friends; 30 doctors; 35 nurses; 16 security officers; 14 other ED staff</td>
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<td>90% patrons and 73% employees felt safer</td>
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<td>12% patrons and 10% employees felt their privacy was invaded</td>
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<td>11% more likely and 8% less likely to return</td>
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<td></td>
<td>No significant difference in opinion was identified based on age, sex or race</td>
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<tr>
<td>Rankins and Hendey (1999)</td>
<td>Retrospective Chart review, Level IV</td>
<td>No direct intervention applied. Investigated weapon confiscation (WPN) and assaults (ASLT) before and after security system installation from 1992–1996. Aimed to determine the number and frequency of WPN confiscations and ASLT in the ED before and after the implementation of a security system. Compared triage or security (TorS) and patient care areas (PCa)</td>
<td>WPN confiscation (actual &amp;/10 000): Pre: TorS = 2 [0–1]; PCa = 22 [1-4]; Total = 24 [1–5]; %before PCa = 8</td>
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<tr>
<td>United States of America</td>
<td>Number of months reviewed: Pre – 29; Post – 25</td>
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<td>Post: TorS = 23 [2–1]; PCa = 17 [1-6]; Total = 40 [3–7]; %before PCa = 58</td>
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<td>Number of patients treated: Pre – 155 976; Post – 108 994</td>
<td>7/17 WPN in PCa were from patients arriving by ambulance who bypassed security booth and fixed MetD</td>
<td>7/17 WPN in PCa were from patients arriving by ambulance who bypassed security booth and fixed MetD</td>
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<td>AsLTs (actual &amp; /10 000): Pre: ED = 73 [4–7]; WPN = 5 [0–3]</td>
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<td>Post: ED = 65 [5–8]; WPN = 1 [0–1]</td>
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<td>WPN confiscations before entering PCa increased more than tenfold with the security system. The total number of ASLT was not affected by the security, indicating that other interventions are required to make the ED a safer place to work</td>
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Table 2 Primary studies – practices and policy

<table>
<thead>
<tr>
<th>Primary study, country</th>
<th>Design, level of evidence, sample</th>
<th>Characteristics of intervention</th>
<th>Results</th>
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<tr>
<td>Practices and policy (intended to facilitate practice that will change the behaviour of patients, family and friends, and nurses)</td>
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<td>Peek-Asa et al. (2002) United States of America</td>
<td>'Quasi-experimental control group before-after design’ Level IV Pre (1990): 103/not specified Post (2000): 95/180 (53.8%)</td>
<td>No direct intervention applied. Investigated effects via survey. Aimed to identify changes in security programmes and violent events following the passage of the 1993 Hospital Security Act AB508</td>
<td>Increased reports of patients with knives ($p &lt; 0.001$). There were no significant changes in the nature of threats (verbal, physical unarmed and armed) and frequency of violent events per month between surveys. Injuries to visitors, as consequences of violence, decreased significantly. No statistically significant differences in the time lost to staff injury because of violence. Insignificant increase in the staff injuries sustained and time lost. The number of hospitals reporting violent events related to alcohol, drugs, anger/high stress/illness, waiting times and access control problems all decreased. Alcohol related events decreased significantly 88.4–75.8 ($p = 0.02$) and access control decreased from 40.08–11.6% ($p &lt; 0.01$). There were increases in employee training (34.0–95.6%, $p &lt; 0.01$) and policies on violence (66.0–77.5%, $p = 0.07$). Protective measures increased overall (54.2–88.8%, $p &lt; 0.01$) with commensurate increases in hospital entrance security (49.0–95.6%, $p &lt; 0.01$) and surveillance cameras (26.0–69.5%, $p &lt; 0.01$). Searching (10.7–25.3%, $p &lt; 0.01$), secluding (27.2–32.6%) and having security on standby (67.0–81.1%, $p &lt; 0.05$) for aggressive patients also increased. While respondents’ perceptions of security officer adequacy improved (23.8–33.7%), more than 66% felt them inadequate for their job.</td>
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<td>Gray (2006) Australia</td>
<td>‘Non-experimental one group pre-test post-test design’ Level IV</td>
<td>Violence and Aggression Incident Report (VAIR), ED Critical Incident Committee, monthly feedback to ED staff and as required education sessions regarding correct usage of the form were undertaken to increase the report rate for incidents of violence and aggression in the ED</td>
<td>Incident reporting for Jul–Sep was compared for 2003 and 2004. When VAIR was in place, incident reporting increased between 25–270% (per month). Incident reporting for 2004 and 2005, comparing VAIR and CB, showed improvement in VAIR: $\approx 30%$ in 2004 &amp; $\approx 50%$ in 2005. Overall improvement between 2003–2005 was $\approx 100%$. ED presentations increased from 2003–2005, $\approx 8%$ pa, with a total increase in the period of 17–22%. VAIR per 1000 ED presentations increased from 6.5 in 2003–10.9 in 2005.</td>
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Practices and policies

Two studies dealt with interventions influencing organisational practice with the intent of modifying human behaviour (Table 2). One involves legislative change – the introduction of AB508 – 1993 Hospital Security Act, which compels hospitals to create systems and processes that increase hospital physical security measures. The second concerns practice transformation – the use of an improved reporting form; processes that support the use of the form, data and information it generates; and changes in systems that provide feedback to the personnel who report the incidents of violence and aggression.

Gray’s (2006) intervention addressed more than the effectiveness domain, although only effectiveness was reported. The ongoing modification of the Violence and Aggression Incidence Report (VAIR) form throughout the study occurred in response to nurses’ unwillingness to undertake reporting, because the form was not sufficiently user friendly given the time constraints of the busy emergency department. The ongoing improvement to the form is an example of the feasibility dimension of the intervention being actively investigated and enhanced. Instituting policy that mandated incident investigations and subsequent feedback to nurses also made completing the VAIR more meaningful for the nursing staff. The concurrent changes to the systems via...
Table 3  Primary studies – individual and collective skill sets

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<tr>
<th>Primary study, country</th>
<th>Design, level of evidence, sample</th>
<th>Characteristics of intervention</th>
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<tr>
<td><strong>Individual and collective skill sets (intended to change the behaviour of either perpetrators or victims)</strong></td>
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<td>Lee (2001) New Zealand</td>
<td>‘Cross-sectional mixed-model observational survey’</td>
<td>No direct intervention applied.</td>
<td>No significant difference in measures of experience: nurses were qualified over 12 years [t (71) = 0.01, p &gt; 0.1] with more than 6 years’ A&amp;E experience [t (73) = 0.57, p &gt; 0.1] and over 5 weeks’ psychiatric experience during training [t (72) = 0.67, p &gt; 0.1]. While 21% had not experienced physical violence, only 4% had not experienced verbal aggression. The sample’s mean self-efficacy was ‘average’ [mean = 20.38, sd = 5.50, range = 5–34]. Higher self-efficacy was associated with recent (3 months) experience of verbal aggression [t = 2.77, df = 74, p &lt; 0.01] and being of management grade [t = 3.08, df = 69, p &lt; 0.01]. Rates of all types of violent events (experienced and witnessed, verbal and physical) decreased from baseline to period 2 and increased from period 2 to period 3. Perceptions of safety during violent events were reported by 621 surveys. These perceptions were mostly aggregated across all three periods. Levels of physical violence decreased in period 2 but increased in period 3. While the increase in physical violence was not significantly different than baseline, the increased verbal violence remained significantly lower than baseline levels. Despite the increased violent events from periods 2–3, staff perceived the ED to be safer in period 3 compared to baseline [(OR) 2.78; 95% CI 1.69–4.55; p = 0.0001] than in period 2 compared to baseline [(OR) 1.41; 95% CI 0.88–2.26; p = 0.15]. Only results for the ED nurses are summarised here. A numerical but not statistical increase was obtained in the total mean score from T1 (41.18)–T2 (42.43). The authors state this suggests some positive effect from the intervention. However, increases were not consistent throughout all survey items, suggesting other factors may affect de-escalation knowledge and awareness. The mean score was higher (by as much as 0.75 to as little as 0.04) in five of the 11 items, but lower (by as much as 0.42 and as little as 0.02) in the remaining six items.</td>
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<td></td>
<td>Level IV</td>
<td>Investigated effects via survey. Aimed to explore the effect of aggression management training (AMT) and exposure to violence on nurses’ self-efficacy perceptions when dealing with patient aggression</td>
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<td>A&amp;E department nurses: 76/130 (58%) responded</td>
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<td>12/18 male (67%)</td>
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<td>64/112 female (57%)</td>
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<td>Fernandes et al. (2002) Canada</td>
<td>‘Cross-sectional prospective survey’</td>
<td>The Prevention and Management of Aggressive Behaviour Programme (PMABP) – a 4-hour programme based on the Non-violent [sic] Crisis Intervention model – intended to facilitate acquisition of skills in assessing and preventing aggressive behaviour to increase care, safety and security of clients and staff</td>
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<td></td>
<td>Level IV</td>
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<td>Inner-city hospital with 55 000 ED patient visits per annum</td>
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<td>Six hundred and sixty-seven (84%) of 798 surveys completed by ED health care workers (excluding protective service staff)</td>
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<td>Nurses represented 56, 55 and 66% of the participants per time frame</td>
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<td>Cowin et al. (2003) Australia</td>
<td>‘Quasi-experimental non-equivalent control group before-after design’</td>
<td>De-escalation Kit: comprising a poster, nursing staff survey to test preknowledge and postknowledge and awareness of de-escalation, a case-study supported in-service education session and a literature-based discussion article</td>
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<td>Level IV</td>
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<td>Before: 21 MHU nurses 33 ED nurses</td>
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<td>After: 19 MHU nurses 30 ED nurses</td>
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<td>Primary study, country</td>
<td>Design, level of evidence, sample</td>
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<td>West (2003) United States of America</td>
<td>'Quasi-experimental independent measures' Level IV 30,000 ED visits/year Convenience sample: 114 control and 86 intervention</td>
<td>Information pamphlet distributed to patients and visitors at registration – after triage but before treatment. Pamphlet clarified ED purpose and principles of triage, registration, waiting, treatment options and diagnostic tests. Overt Aggression Scale (OAS) used to capture patients' and visitors' displays of verbal and physical aggression. OAS scores increase with severity of aggressive displays, from 0–21. Total score reflects cumulative exhibited behaviours</td>
<td>Frequency data: Control: (114) 95 no aggression; 19 some displays Intervention: (86) 83 no aggression; three some displays Treatment group had fewer displays of aggression (M = 3.5) than control group (M = 16.7), reflecting a 79.1% reduction in aggressive incidents Severity data: (OAS score, n) Control: (n = 19) (1; 0, 00, 7; 2; 00, 5; 3; 00, 6; 5; 00, 1) Intervention: (n = 3) (1; 00, 0; 2; 00, 2; 3; 00, 1; 5; 00, 0) Intervention group had a lower mean OAS score (M = 0.081) than the control group (M = 0.351), representing a mean reduction of 81.3% F-test (F = 4.210) (p &lt; 0.01 &amp; critical one-tail F = 1.6211) suggests that the variances between the groups differ significantly t-test (t = 2.781, p &lt; 0.005) (p = 0.003, one-tail T-value = 2.6045) suggests that the OAS score means are significantly different Large Hartley’s F-max (4.2) suggests population heterogeneity</td>
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<td>Deans (2004) Australia</td>
<td>'Non-experimental one group pre-test post-test design' Level IV Forty of 60 ED nurses (66%) underwent training Questionnaire data were collected as follows: Pre: 30 (75%) Post: 22 (35%)</td>
<td>A one-day training programme intended to increase awareness of work environment, colleagues' strengths and weaknesses, and factors that influence effective communication; increase understanding of types of behaviour that trigger a reaction, causes and types of aggression, appropriate responses and options; and have participants demonstrate effective avoidance and deflection, and secure and escort techniques</td>
<td>The results show statistically significant effects of the training for assisting participants' knowledge and understanding of the code of practice for managing aggressive ED situations; actual knowledge of the ED code of practice; awareness of the constraints that physical limitations have on own ability to respond to aggression; and making other staff aware of own physical limitations The results were not statistically significant for team responses to aggression or duty of care questions Violence incidence was sought preintervention and postintervention, yet only pretest data is published in detail The incidence post-test incidence mean and standard are published without any of the detail provided for the pretest data. Remarkably, the author claims that the incidence of aggression has been halved in the study and attributes this to the training intervention</td>
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which the data is acquired, managed and disseminated reflect that her work is more than a quantitative study. This consultative and iterative approach empowered the nurse participants and shares characteristics of participatory action research (Polit & Beck 2006).

While Gray (2006) undersells the significance of the other elements of the modified procedure, apart from the revised VAIR, her work to increase reporting has other implications. Better reporting provides more comprehensive incidence data, which informs other departmental policies, nurse education and training, and future research objectives. Thus, the VAIR indirectly helps to reduce workplace violence towards the EDN.

Peek-Asa et al. (2002) recommended ongoing research to investigate the cost effectiveness of hospital security arrangements, where costs are indicators of feasibility. Research that identifies the return on investment and cost benefits analysis of changes to organisational policy and legislative initiatives could be used to provide continued, or additional, funding. Plus, it can shore up political support as well as meeting occupational health and safety requirements while keeping employees safe and motivated, encouraging recruitment and retention, and improving patient care.

**Individual and collective skill sets**

Five studies addressed interventions intended to improve skill sets (Table 3). Four dealt with staff skills and, while occasionally involving teamwork, they were primarily directed at individual training in managing aggression. The fifth study targeted clientele – aiming to increase their understanding of how the emergency department operates, making consumers better informed and less inclined to become frustrated with, or act violently because of, functional constraints inherent in emergency department services.

To varying degrees, the nature of the training conducted in each of the individual skill set studies was based on extant research that investigated training needs. In terms of training, evaluating meaningfulness of the nature, design and intended outcomes as perceived by the targets – nurses – is warranted. Adults learn best when they sense that training is immediately valuable or relevant to them (Knowles et al. 1998) and are better motivated when they recognise that learning addresses their needs not just their employer’s agenda (Cross 2004). Matching nurses’ understanding of and preferences for learning with organisational imperatives serves to give better return on investment from finite training funds while meeting the professional development and personal satisfaction requirements of the employees (Cross 2004).

Measuring training effectiveness is always problematic; however, much of the difficulty derives from poor project design that fails to identify measures of effectiveness from the outset. Research that investigates how to measure training effectiveness in an emergency department context would be a useful step forward.

Five of the 10 primary studies in this review dealt with learning interventions, yet their aggregated recommendations are weak or dubious, given the design and execution limitations of several studies. The pre-eminence of training as a strategy could be coincidental or it could reflect the common perception that the simplest solution to most problems is training. Based on this collection of research, even if it is assumed that the gap could be remedied by training and the delivered training was appropriate, the effects of that training were unconvincing.

**Conclusion**

The local, cultural and healthcare system specificity, the design limitations and the small scale of the 10 included primary articles support few firm conclusions that could

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**Table 4: Study demographics**

<table>
<thead>
<tr>
<th>Nature of intervention</th>
<th>Environment</th>
<th>Policy and practice</th>
<th>Skills and training</th>
<th>Total</th>
<th>Population*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country of origin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>21</td>
</tr>
<tr>
<td>Canada</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>33</td>
</tr>
<tr>
<td>New Zealand</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>USA</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>307</td>
</tr>
<tr>
<td>Total</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

confidently be used to direct clinicians. They do, however, hold some value as expert opinion in informing other research and planning interventions.

Because metal detectors aim to remove a hazard from the workplace, ongoing investigation into their FAME may be warranted. More quantitative research projects could be undertaken to measure the effectiveness of the metal detectors; and multiple, small-scale studies with improved and homogenous designs could be synthesised as a meta-analysis. Extending the investigations into different contexts, with increased sample sizes, could discern whether the opinions from these studies are generalisable to other milieus. This situation should be investigated qualitatively to gain more insight into people’s actual behaviours to see whether they match the opinions gathered in these contexts.

Research into emergency department violence and aggression cites staff dissatisfaction with organisational and political support for their plight (May & Grubbs 2002, Emergency Nurses Association 2006). Policy and practice interventions may mitigate the risk of violence and aggression while concomitantly addressing staff dissatisfaction with the status quo. Targeting qualitative research to identify the ‘appropriateness’ of interventions may clarify the nursing workforce’s worth as an occupational resource. Investigating ‘meaningfulness’ of deliverables could shape perceptions of nurses as human capital. Research quantifying the effects of policy and practice change initiatives could give real weight to recommendations. While the included studies produced local effects, the investigations need to be replicated in other emergency departments to consider broader applicability.

Training is commonly seen as a panacea for all organisational problems; however, material, systems and environmental or cultural difficulties are unlikely to be resolved solely through training solutions. Before training interventions are initiated, thorough needs analyses to identify the sources of weaknesses should be undertaken. Problems should not be assumed to be the result of training shortfalls (Walsh 2007).

Based on the limitations of evidence revealed, the following recommendations for practice and research are made:

- Emergency nurses should be encouraged to network and critically review evidence regarding interventions to reduce violence in the emergency department.
- A national/international initiative to review and coordinate research into the reduction and mitigation of violence against EDNs should be undertaken.
- Outcome measures that are acceptable to the profession should be developed and applied to evaluate all interventions intended to reduce violence against EDNs.
- Small-scale studies should be encouraged to use participatory methods and concentrate on testing feasibility, appropriateness and meaning for a local audience. Conformity with regard to outcome measures would enable groups to benchmark and increase transferability of the results.
- Large-scale studies aimed at proving effectiveness should be properly funded, well-designed multi-site trials.

Relevance to clinical practice

The quality of the existing research is variable, and it investigates effectiveness with no specific undertaking to address the feasibility, appropriateness and meaningfulness of interventions. The paucity of research evaluating interventions demonstrates that the weight of effort, despite two decades of investigation, is still directed towards defining the phenomenon rather than addressing solutions (West 2003, Lau et al. 2004). Thus, it is appropriate to transition from definitions and descriptions of emergency department violence and aggression as a phenomenon to rigorously evaluating the applicability, or otherwise, of interventions.

The way ahead lies in investigating interventions rather than repeatedly redefining the problem and misdirecting resources into debating semantics or differentiating ‘degrees’ of violence and aggression. This review unambiguously identifies the gap in research products – ‘identifying the lack of evidence’ is ‘an important first step in developing the evidence base’ (Pearson et al. 2007). It is time to redirect the research effort, currently scoping the problem and trying to understand what causes emergency department violence and aggression, to finding out what does and does not fix it (Walsh et al. 2006).

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Study design: LA: 60%, MF: 20%, LL: 20%; data collection and analysis: LA: 70%, MF: 30% and manuscript preparation: LA: 70%, MF: 20%, LL: 10%.

Conflict of interest

There is no conflict of interest for this article.
References


