

Clinical Aggression Training: A Rapid Review

Citation Corey Joseph & Angela Melder. August 2018. Clinical Aggression Training: A Rapid Review. Centre for Clinical Effectiveness, Monash Health, Melbourne, Australia.

Executive Summary

The Prevention and Management of Aggression (PAMA) committee at Monash Health are developing an education package for the management of clinical aggression. CCE has been engaged to inform the process of developing an education package for the management of clinical aggression and safe de-escalation.

What kinds of training interventions has been conducted to improve the competence of clinical and non-clinical staff to manage clinical aggression?

Classroom instruction, role plays and drills were common training interventions. Interactive training is more effective than face-to-face. Web-based training is a popular approach and perhaps more effective when blended with another approach. Mental health staff want regular refreshed training that is updated regularly and is provided via a manual. Training delivery is very mixed with studies using 1-6 sessions that run from 15 minutes – 8 hours, and occur over one day – 12 months.

What outcome measurements have been used to evaluate the competence of clinical and non-clinical staff to manage clinical aggression?

Several outcomes measured in relation to challenging behaviour training have been reported; below is a summary according to clinicians and clinical setting.

Healthcare workers⁸

- Communication Skills
- Inventory
- Empathy Scale
- Socio demographic data
- Patient Satisfaction survey
- No. of undesirable events and complaints
- Violent incident rate
- Staff efficacy
- Emotional Reactions Scale
- Challenging Behaviours
- Attributions Questionnaire

Mental health^{4,5}

- De-escalation-related knowledge
- De-escalation performance
- Confidence
- Subjective anxiety regulation
- Assault rate
- Incidence of aggression
- Containment
- Staff retention
- Complaints
- Expenditure
- Sick leave
- Hospitalisation period
- Seclusion
- Restraint use
- Adverse effects from medication

Emergency Department^{6,7}

- Assault rate
- Seclusion
- Restraint use

Nursing^{1,3}

- Competence
- Violent incident rate
- Successful resolution of violent incidents
- Use of restraints
- Staff injuries

Organisational⁸

- Sick leave
- Hospitalisation

* Baby et al⁸ included all healthcare staff (clinical and non-clinical)

What effects do training interventions for the management of clinical aggression have on the competence of clinical and non-clinical staff, violent incident rates and the use of restraints?

Mental health^{4,5}

Irrespective of study design, quality or training intensity, findings for assault rate were mixed. No empirical evidence of the relative effectiveness of methods of delivery or facilitator attributes was identified.

One single trial showed staff training in interpersonal communication led to fewer incidents of seclusion and restraint and a larger decrease in incidents of seclusion and restraint than usual care on a control unit.

Training was effective in de-escalation and confidence to manage aggression. However, training did not effect violence and aggression incident rate or severity, or increases in aggression. Poor quality studies show reductions in restraint use.

From an organisational perspective, training reduced lost workdays, improved staff retention, reduced complaints, and reduced overall expenditure.

Emergency Department^{6,7}

Rapid training programs are certainly a useful strategy. Hybrid educational intervention is considered by many to be a major strategy in reducing the risk of violence in the ED. Rapid response teams, code teams, or the presence of security guards in the ED is widely considered effective in reducing violent episodes, but few studies have evaluated the role and the impact of security officers to contrast work place violence.

Healthcare workers⁸

Although communication skills training are available and there are benefits of appropriate training, the transferability of the learning to clinical situations is limited due to training being inappropriate to the needs of the different staff groups and work settings. Overall, there is a lack of high quality studies. Baby et al ⁸ included all healthcare staff (clinical and non-clinical).

Nursing staff¹

The most effective training interventions fell into the communication category and most of these had a significant positive impact on confidence. There was weak evidence that training interventions reduced violent incident rates.

Shorter training interventions, namely a maximum length of 1 day, were more likely to produce a significant increase in elements of competence and a decrease in incident rates.

Conclusions

There are a number of areas where clinical aggression training has been evaluated including: mental health, the emergency department, all nursing staff, all healthcare workers, and from an organisational perspective.

The majority of this evidence is low quality.

Interactive training and blended learning may yield better outcomes.

There is no best approach regarding the session duration, session frequency or length of the training period.

Overall, there is some, but limited evidence, showing clinical aggression training can:

- reduce seclusion and restraint use;
- improve violent incident rates;
- improve worker confidence;
- improve staff retention;
- reduce complaints; and
- reduced overall expenditure.

FULL REPORT - Clinical Aggression Training: A Rapid Review

Background

The Prevention And Management of Aggression (PAMA) committee at Monash Health are developing an education package for the management of clinical aggression. Subsequently, CCE has been engaged to inform the management of clinical aggression and safe de-escalation.

Objectives

The objective of this review was to inform the PAMA committee regarding the evidence around management of clinical aggression. Specifically, the aims of this review was to search and synthesis the evidence around the following questions:

1. What kinds of training interventions have been conducted to improve the competence of clinical and non-clinical staff to manage clinical aggression?
2. What outcome measurements have been used to evaluate the competence of clinical and non-clinical staff to manage clinical aggression?
3. What effects do training interventions for the management of clinical aggression have on the competence of clinical and non-clinical staff, violent incident rates and the use of restraints?

Search strategy

Search strategy and study selection

Literature searches were performed in Pubmed and CINAHL databases. The search strategy and search terms were replicated from a review known to the authors on a similar topic (Table 1 in Appendix).¹ Titles and abstracts identified were exported to EndNote X7 (Thompson, Reuters, Carlsbad, California, USA). Papers identified were screened using inclusion and exclusion criteria established a priori.

Inclusion and exclusion criteria were applied in two stages:

- 1) Only articles that are systematic reviews, involving human studies, and published in the last 5 years were included;
- 2) Only reviews that specifically meet the population, intervention, outcome and context (Table 2 in Appendix).

Screening and inclusion was conducted by one author (CJ), in consultation with colleagues as necessary, using inclusion and exclusion criteria established *a priori* (Table 2).

Results

A total of 142 studies were found following initial searching of databases. Two reviewers (CJ & HM) applied the inclusion/exclusion criteria. As a result, 8 studies¹⁻⁸ and 5 sources of grey literature⁹⁻¹³ were included in this review.

The settings covered in the included studies were: nursing,^{1,3} mental health,^{4,5} emergency department,^{6,7} healthcare workers.^{2,8-13} Of the included resources, three were from Australian healthcare services or government departments.¹¹⁻¹³

Summary of Findings

Question 1: What kinds of training interventions have been conducted to improve the competence of clinical and non-clinical staff to manage challenging behaviour?

Below is a summary of the different kinds of training interventions. Detail has also been summarised regarding training duration, session number and session length (Table 3).

Healthcare organisations

Safety training has been reported to take on several forms:

Classroom plus hands-on instruction⁹

Workplace violence prevention training has traditionally taken the form of classroom instruction (e.g., seminars) combined with active “learning by doing” in the form of role-plays, simulations, and drills. Interactive exercises make

training more effective by allowing participants to practice and apply the skills they have learned, such as de-escalation and self-defence techniques.

Just-in-time training⁹

Some facilities have designated one or more trainers or “safety coaches” for each unit or floor. These individuals can offer guidance and coaching in real-time—for example, if they see a colleague struggling to de-escalate an agitated patient. They can also run ad hoc or scheduled refresher sessions, which may be particularly useful and relevant to workers because the training takes place in their own work environment.

Web-based training⁹

This increasingly popular approach offers fidelity of presentation and automated documentation while requiring minimal supervision and allowing flexible timing and pace. However, it does not provide hands-on practice with physical skills, which are widely considered to be an essential element of many programs. Thus, Web-based training may be more effective when paired with live instruction and practice—a “blended” approach. The National Institute for Occupational Safety and Health has developed a Web-based training program to help healthcare workers learn about the key elements of a comprehensive workplace violence prevention program, how organizational systems impact workplace violence, how to apply individual strategies, and how to develop skills for preventing and responding to workplace violence.

Many healthcare organizations have improved results by providing annual refresher training for their direct caregivers. In high-risk settings and institutions, refresher training may be needed more often, perhaps monthly or quarterly, to effectively reach and inform all workers.

Victorian services¹²

All three of the audited health services have well established and comprehensive occupational violence training for mental health services. This is provided every two to three years, with annual refreshers and, in one instance, monthly and weekly tutorials and debriefing. Two health services currently provide online training and face-to-face courses of between two hours and two days duration. They each have a suite of programs including general online information, courses in managing aggression, and training for home visit risk assessment and Code Grey response. They also provide training targeted to specific groups—including doctors, dental services, hospital in the home, aged care and mental health services.

Queensland services¹¹

Training is part of the solution to workplace aggression, so long as:

- it is part of a multi-factorial solution, rather than a single factor intervention
- it provides staff with increased capacity to do work safely, rather than imposing further constraints on their work
- it is seen as part of individual career and professional development, not a work requirement
- it is designed with and delivered by people who do the work, rather than outsiders
- it provides a range of tools that can be adapted and applied across different work contexts

Training must be valued and this value consistently reinforced by leaders and managers across the public health system. It must be adequately resourced.

There needs to be flexibility in the delivery of training to include face-to-face, on line and modular options. These decisions are best made locally as the contexts and requirements of training are different.

The outcomes of investigations into incidents of violence is an important element of the feedback loop and is likely to provide a better review mechanism than a simple reliance on participant feedback.

Mental health⁵

Duration and frequency of training

In mental health, staff want frequent and regular refresher courses to maintain learning.

Delivery methods

Mental health staff feel that training should be relevant to the clinical context in which they work and that trainer supervision and feedback on actual clinical interactions would be useful. They want a stronger emphasis on role plays

and a broad spectrum of case studies and there was a preference for live demonstrations rather than videotaped scenarios. They also want a written manual on de-escalation to keep with them on the wards. The importance of delivering training to all levels of the team and training whole wards together to enable team approaches was emphasised.

Emergency departments⁷

The main security measures evaluated to minimise workplace violence risk were: alarm systems and other security devices, panic buttons, hand-held alarms or noise devices, cellular phones and private channel radios where risk is apparent or may be anticipated; closed-circuit video recording for high-risk areas on a 24-hour basis; employee “safe rooms” for use during emergencies; shatter-proof glass in reception, triage and admitting areas or client service rooms.

Table 3. Summary of clinical aggression training programs, the outcomes measured, the training duration, session number and session length.

Factor	Detail
Training duration	<p>Healthcare workers⁸</p> <ul style="list-style-type: none"> • 7 hours in one day • 1.5 day workshop • 3 days • 4 full days over 8 weeks • 4 weeks • monthly • 6 weeks • 6 months • 9 months <p>Emergency department⁶</p> <ul style="list-style-type: none"> • 1 week • 1 month • 5 months • 12 months <p>Nursing^{1,3}</p> <ul style="list-style-type: none"> • 2 hours • 1 day • 2 days
Training session number	<p>Healthcare workers⁸</p> <ul style="list-style-type: none"> • 1-2 sessions • 2 sessions • 3 sessions • 4 sessions • 6 sessions <p>Mental health^{4,8}</p> <ul style="list-style-type: none"> • 4 sessions
Training session length	<p>Healthcare workers⁸</p> <ul style="list-style-type: none"> • 15-20 mins • 50 – 75 mins • 1.5 hours • 7 hours • 2-3 hours • 5 hours • 8 hours <p>Mental health⁵</p> <ul style="list-style-type: none"> • 1.5 hours • 7 hours • 6-8 hours • 10 hours • 14 hours • 21 hours

	<ul style="list-style-type: none"> • 22 hours • 24 hours • 28 hours • 35 hours • 70 hours • 4 days
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Question 2: What kinds of measurements have been used to evaluate the competence of clinical and non-clinical staff to manage challenging behaviour?

Below is a table outlining the outcomes used to measure the impact of training interventions to manage challenging behaviours (Table 4).

Table 4. Summary of the outcomes used to measure training interventions to manage challenging behaviours

<p>Healthcare workers⁸</p> <ul style="list-style-type: none"> • Communication Skills • Inventory • Empathy Scale • Socio demographic data • Patient Satisfaction survey • No. of undesirable events and complaints • Violent incident rate • Staff efficacy • Emotional Reactions Scale • Challenging Behaviours • Attributions Questionnaire 	<p>Mental health^{4,5}</p> <ul style="list-style-type: none"> • De-escalation-related knowledge • De-escalation performance • Confidence • Subjective anxiety regulation • Assault rate • Incidence of aggression • Containment • Staff retention • Complaints • Expenditure • Sick leave • Hospitalisation period • Seclusion • Restraint use • Adverse effects from medication
<p>Nursing^{1,3}</p> <ul style="list-style-type: none"> • Competence • Violent incident rate • Successful resolution of violent incidents • Use of restraints • Staff injuries 	<p>Emergency Department^{6,7}</p> <ul style="list-style-type: none"> • Assault rate • Seclusion • Restraint use

Organisational outcomes in mental health⁵

A range of organisational benefits were reported among six studies that provided data on this outcome. These included a highly significant, large reduction in lost workdays and two weak studies also supported this finding but failed to evaluate significance. Further benefits, reported without evaluating significance, included: improved staff retention, reduced complaints, and reduced overall expenditure.

There were negative findings, including a non significant increase in sick leave, and increased service user hospitalisation periods for de-escalation trained wards compared with control and restraint trained wards. However, variation in programmatic or organisational variations between study sites limits the interpretation of these data. No moderators of organisational outcomes were identified.

Acceptability of training interventions in mental health⁵

Seven studies provided some rudimentary qualitative evaluation of training interventions but were weak in methodological quality. All studies, except one, in which a large number of participants perceived no impact of the training on their practice, reported positive views of the training.

Healthcare organisations

The Occupational Safety and Health in the U.S.¹⁰ has suggested that a comprehensive workplace violence prevention program evaluation typically include:

- Establishing a uniform definition of violence, reporting system, and regular review reports.
- Reviewing reports and minutes from staff meetings on safety and security issues.

- Analysing trends and rates in illnesses, injuries, or fatalities caused by violence relative to initial or “baseline” rates and sharing data with management at all levels.
- Measuring improvement based on lowering the frequency and severity of workplace violence.
- Keeping up-to-date records of administrative and work practice changes to prevent workplace violence to evaluate how well they work.
- Surveying workers before and after making job or worksite changes or installing security measures or new systems to evaluate their effectiveness.
- Tracking recommendations through to completion.
- Keeping abreast of new strategies available to prevent and respond to violence as they develop.
- Surveying workers periodically to learn if they experience hostile situations while doing their jobs.
- Complying with state requirements for recording and reporting injuries, illnesses, and fatalities.
- Establishing an ongoing relationship with local law enforcement and educating them about the nature and challenges of working with potentially violent patients.
- Requesting periodic law enforcement or outside consultant review of the worksite for recommendations on improving worker safety.

Records that should be analysed during program evaluation include the following:

- Log of Work-Related Injuries and Illnesses and Injury and Illness Incident Report
- Medical reports of work injury, workers’ compensation reports, and supervisors’ reports for each recorded assault.
- Records of incidents of abuse, reports filed by security personnel, and records of verbal attacks or aggressive behaviour that may be threatening.
- Information recorded in the charts of patients with a history of past violence, drug abuse, or criminal activity.
- Documentation of minutes of safety meetings, records of hazard analyses, and corrective actions recommended and taken.
- Records of all training programs, their attendees, and the qualifications of the trainers.

Additional evaluation tips include:

- Using the same tools for re-evaluation as for the initial worksite assessment and hazard identification process, to allow for consistent data comparison
- Working closely with the workplace violence prevention committee to learn what has worked in reducing violence or to learn about barriers that have been encountered.
- Examining only those incident reports that have been submitted since the last assessment took place, to avoid any overlap.
- Documenting all assessments as well as all changes introduced based on the results.
- Making sure to assess the quality and effectiveness of training programs rather than simply noting their presence.

It is important to evaluate all aspects of the workplace violence program systematically. Regular review is necessary to identify deficiencies and opportunities for improvement. The core elements are all interrelated, and each is necessary to the success of the overall system.

Question 3: What kind of effects do training interventions for the management of challenging behaviour have?

There have been a wide range of training interventions used to manage challenging behaviour in the healthcare system. A summary is provided below and a detailed summary is provided in Table 5.

Mental health

Irrespective of study design, quality or training intensity, findings for assault rate were mixed. No empirical evidence of the relative effectiveness of methods of delivery or facilitator attributes was identified. There is currently limited evidence to suggest that this form of training has this desirable effect.⁵

Qualitatively, staff expressed the importance of increasing the frequency of training and regular refresher courses to maintain learning. Staff felt that the training should be relevant to the clinical context in which they work and that trainer supervision and feedback on actual clinical interactions would be useful.

Staff wanted a stronger emphasis on role plays and a broad spectrum of case studies and there was a preference for live demonstrations rather than videotaped scenarios. They also wanted a written manual on de-escalation to keep with them on the wards.⁵

The importance of delivering training to all levels of the multidisciplinary team and training whole wards together to enable team approaches was emphasised.⁵

One single trial showed staff training in interpersonal communication led to fewer incidents of seclusion and restraint and a larger decrease in incidents of seclusion and restraint than usual care on a control unit. This study addressed staff training regarding interpersonal communication and had fewer patient rights complaints, staff resignations and transfers, and sick leave than a control unit. Further, the intervention unit experienced a greater decrease in these outcomes during the study period than the control unit.⁴

No studies provided information on the comparative harms of staff training, risk assessment, or multimodal, environmental, or medication protocols to reduce seclusion and restraint for patients with active aggression.⁴

Cognitive outcomes⁵

Studies are generally supported the capacity of training to enhance de-escalation-related knowledge. Of five studies providing pre/post training data on this outcome, the four of comparable study quality (moderate) and training intensity (medium), were consistent in finding large and significant de-escalation-related knowledge gains associated with training.

Affective outcomes⁵

Findings were consistent across study design, quality and training intensity in supporting increased confidence to manage aggression associated with training. Nine of ten studies reported significantly increased confidence post training. However, effect sizes were only calculable for four studies, with two negligible effects, one medium-sized effect and one large. Increases in confidence after training was reported elsewhere but the significance of this finding was not evaluated. Surprisingly, given the evidence of increased confidence, there was no evidence that the training impacted on subjective anxiety regulation in the management of aggression, although one study reported a medium sized non-significant reduction in feelings of anxiety post-training. There was some, albeit limited, evidence that training may, in the short term, sensitize participants to the risk of assault and increase anxiety.

Skills-based outcomes⁵

The six studies investigating skill improvements, varied in both study quality and training intensity but generally supported the capacity of training to improve de-escalation performance. Four studies reported significant objectively measured post-training improvements (effect sizes calculable for only two studies both demonstrating large effect sizes; and there also was evidence of self-rated improvements. Negative findings included: reduction in self-rated de-escalation ability after training and objectively measured improvements not reflected in participants' subjective ratings.

Clinical outcomes⁵

Assault rate

Irrespective of study design, quality or training intensity, findings for this outcome were mixed. No clear evidence of the impact of this training on assault rate could therefore be derived. Of five studies measuring risk of assault at ward level, three found a significantly reduced risk of assault and two found no significant effect. Three studies measured the risk of assault at the level of individual staff and only one found a significant reduction, with two reporting no effect of training.

Incidence of aggression⁵

Eleven studies investigated the impact of training on aggressive incidents more broadly, which included verbal aggression and violence toward objects. Findings were often negative, irrespective of training intensity or study quality, with studies either reporting no effect on incident rate or severity, or increases in aggression post-training (likely due to improved reporting post training). There was even evidence that de-escalation trained wards increased staff risk exposure to being involved in an aggressive incident when compared to Control and Restraint trained wards, but there was a high risk of other programmatic or organisational variables being responsible for this outcome. Again, there was evidence of a significant reduction in incident rates measured at ward level in two studies of moderate quality, one of these demonstrating a medium effect size. Significant reductions in severity of incidents were also reported, although the significance of this effect was marginal in one of these. Three weak studies reported reductions in incident rate but failed to evaluate the significance of these effects.

Injuries⁵

Results were again mixed, although the stronger two of four studies evaluating this outcome demonstrated positive effects in reducing injuries. There was evidence of a significant and large reduction in wards with high compliance with training compared with low compliance wards and the active control (CPR training). This reduction was not found at individual staff level where the training was marginally outperformed by the active control in terms of reduced risk of injury; although a significant reduction at individual staff level was found in another study of similar design and quality. Two weak studies found no effect on injury rates.

Containment⁵

The four studies investigating impact of training on use of physical restraint all demonstrated reductions associated with training. However, interpretation of these findings were limited by poor study quality and in one instance, wide

confidence intervals. A non-significant reduction in the use of rapid tranquilisation and no effect on the supply of extra medication were also reported.

Organisational outcomes⁵

A range of organisational benefits were reported among six studies that provided data on this outcome. These included a highly significant, large reduction in lost workdays and two weak studies also supported this finding but failed to evaluate significance. Further benefits, reported without evaluating significance, included: improved staff retention, reduced complaints, and reduced overall expenditure. There were negative findings, including a non significant increase in sick leave, and increased service user hospitalisation periods for de-escalation trained wards compared with control and restraint trained wards. However, variation in programmatic or organisational variations between study sites limits the interpretation of these data. No moderators of organisational outcomes were identified.

Acceptability of training interventions⁵

Seven studies provided some rudimentary qualitative evaluation of training interventions but were weak in methodological quality. All studies, except one, in which a large number of participants perceived no impact of the training on their practice, reported positive views of the training. The reasons for the negative finding were not established. Improvements participants felt were important for the training included the following four themes:

Emergency Department⁶

Few studies that have attempted to evaluate the effectiveness of interventions, and they have shown weak evidence to date.

One study used an intervention with three components: environmental changes, policies and procedures, and education and training. Implementation of the intervention took place over a 3-month period and led to a decrease in assault rate. 'Code S' teams that provide a rapid response for escalating or aggressive behaviour also decreased behavioural health hours by 29%.

Rapid training program

Educational interventions that aim to promote effective communication skills and use of de-escalation techniques to prevent patient aggression are certainly a useful strategy.

Hybrid educational intervention

Prevention-focused education is considered by many authors to be a major strategy in reducing the risk of violence in the ED. The likelihood of achieving significant learning outcomes and retention by the use of a hybrid (online and classroom) educational program was recently demonstrated.

Rapid response teams

The presence of security guards in the ED is widely considered effective in reducing violent episodes, but few studies have evaluated the role and the impact of security officers to contrast work place violence. Rapid response or code teams have been shown to be effective.

Comprehensive approach

Implementing any necessary environmental changes, laying down policies and procedures, and offering education and training are the three fundamental interventions benefitting all staff members, no matter what their role is (physicians, nurses, social workers, security officers, registrars, psychologists, and risk managers). Continuous feedback from employees, managers, and administrators, and the advice of experts in WPV prevention and management are crucial for the success of this type of preventive action.

Healthcare workers⁸

Studies have been conducted focusing on the management of aggression mostly within hospital settings worldwide. Although communication skills training are available and there are benefits of appropriate training, the transferability of the learning to clinical situations is limited due to training being inappropriate to the needs of the different staff groups and work settings. Overall, there is a lack of high quality studies.

One study that used psychological strategies for coping with violent patients showed the frequency of assaults in wards that attended training fell by more than two-thirds compared to wards where staff did not attend training.

Nursing staff¹

The most effective training interventions fell into the communication category and most of these had a significant positive impact on confidence. There was weak evidence that training interventions reduced violent incident rates.

The use of interventions in the communication and control behavioural symptoms are recommended because they were more likely to increase staff confidence than the other interventions.

Shorter training interventions, namely a maximum length of 1 day, were more likely to produce a significant increase in elements of competence and a decrease in incident rates, rather than those interventions that last more than 2 days.

Weak evidence supports the conclusion that interventions that enhance staff communication skills and use care plans to control behavioural symptoms, may have a greater positive impact when care providers are intent on pursuing restraint-free practices in health care.

Table 5. Summary of the findings of the studies included in this review

Clinical area	Study	Findings
Healthcare workers	Baby et al. ⁸	<p>All the interventional studies had the common element of communication skills when dealing with aggressive behaviour as the central focus. All the interventions progressed from generic to specific to include theoretical aspects of communication and aggression, basic communication styles, and how to deal with crises. There were no two studies or more that implemented and evaluated the same communication skills training intervention which makes it difficult to summarise the contents of the training programmes reviewed.</p> <p><u>Training length</u> All studies provided information on the average training duration except one. The total training duration ranged from 1 day to 9 months. The average number of training sessions was 8.14 (ranging from 2 to 72 sessions) based on the 13 interventional studies. In terms of duration of individual sessions, the average duration was 2.05 h (ranging from 30 min to 12 h) based on 9 interventional studies as four studies did not report the duration of individual sessions.</p> <p><u>Modes of delivery</u> To examine how communication skills training was delivered to participants, we reviewed the description of training program and noted all of the methods used to deliver training for each study. All studies except one used a mix of methods to provide the training. By far, role plays were the most common method used (57.14%). Other frequently used methods to deliver the training material were group discussion (50%), video based reflection (28.57%), lectures (14.28%), and individual training (14.28%). The less frequently used methods which were noted once included reading assignments, case studies and workshop.</p> <p><u>Targeted outcomes</u> The target outcomes included in the 13 interventional studies included empathy, staff efficacy, number of adverse events, work engagement, aggression, stress and patient satisfaction. Though all the studies were focused on communication skills, only quarter of the studies (25%) aimed to assess the impact of training on communication skills. The scales used to measure the change in communication skills were Communication Skills Inventory, Communication Skills Checklist, Interpersonal Communication Skills Checklist and two specifically developed communication assessment checklists.</p> <p><u>Summary</u> In summary, the studies have been conducted focusing on the management of aggression mostly within hospital settings worldwide. No relevant large scale trials were identified. Although communication skills training are available and the studies reviewed support the benefits of appropriate training, the transferability of the learning to clinical situations is limited due to training being inappropriate to the needs of the different staff groups and work settings. The lack of methodologically robust studies and questionability of generalising findings of hospital settings studies to community settings, calls for better designed studies focused on reducing violence and aggression in community settings.</p>
Mental health staff	Price et al. ⁵	<p><u>Incidence of aggression</u> Eleven studies investigated the impact of training on aggressive incidents more broadly, which included verbal aggression and violence towards objects. Findings were often negative, irrespective of training intensity or study quality, with studies either reporting no effect on incident rate or severity or increases in aggression post-training (probably because of improved reporting post-training). There was even evidence that de-escalation trained wards increased staff risk of exposure to being involved in an aggressive incident when compared with control and restraint trained wards but there was a high risk of other programmatic or organisational variables being responsible for this outcome. Again, there was evidence of a significant reduction in incident rates measured at ward level, in two studies of moderate quality, one of these demonstrating a medium effect size. Significant reductions in severity of incidents were also reported, although the</p>

significance of this effect was marginal in one of these. Three weak studies reported reductions in incident rate but failed to evaluate the significance of these effects.

Containment
 The four studies investigating impact of training on use of physical restraint all demonstrated reductions associated with training. However, interpretation of these findings was limited by poor study quality and, in one instance, a wide confidence interval. A non-significant reduction in the use of rapid tranquillisation and no effect on the supply of extra medication were also reported.

Gaynes et al.⁴

Staff Training Interventions Versus Usual Care
 Staff training in interpersonal communication led to fewer incidents of seclusion and restraint and a larger decrease in incidents of seclusion and restraint than usual care on a control unit (Table below).

Table A. Summary of findings with strength of evidence grades: Comparative benefits of two strategies for preventing aggressive behavior^a (KQ 1a)

Intervention and Comparison	Primary Outcome of Interest	Outcome		Supporting Judgment	Findings and Direction of Effect
		N of Patients Analyzed	Strength of Evidence		
Staff training vs. usual care	Change in aggressive behavior	Aggressive behavior resulting in staff injury	Insufficient	High risk of bias, consistency unknown—single study, direct, imprecise	Fewer assaults on staff occurred in unit that received the staff training vs. the control unit (4 vs. 5); no statistical testing reported. ⁶⁹
		NR			
	Change in seclusion or restraint	Insufficient	High risk of bias, consistency unknown—single study, direct, imprecise	Fewer incidents of seclusion or restraint on the unit who received the training vs. the control unit (84 vs. 228), no statistical testing reported. ⁶⁹	
		NR			

Multimodal Interventions Versus Usual Care
 No studies assessed multimodal interventions to prevent aggression in patients without active aggression.

Benefits of Strategies to Reduce Seclusion and Restraint Use
 No eligible studies addressed reductions in seclusion or restraints for staff training, risk assessment, multimodal, or environmental protocols.

Harms of Strategies To Prevent Aggressive Behaviour
 No eligible studies examined risk assessments, multimodal interventions, environmental interventions, or medication protocols.

Harms of Strategies To De-Escalate Aggressive Behaviour
 No eligible studies tested staff training, risk assessments, multimodal, or environmental protocols.

Harms of Strategies To Reduce Seclusion and Restraint Use
 No studies provided information on the comparative harms of staff training, risk assessment, or multimodal, environmental, or medication protocols to reduce seclusion and restraint for patients with active aggression.

Characteristics Modifying the Comparative Benefits or Harms of Strategies
 No studies provided information on how particular characteristics might modify the effectiveness of any of the interventions.

Emergency department staff	Ramacciati et al. ⁶	<p><u>Guiding principles</u></p> <ol style="list-style-type: none"> 1. Violence can and does happen anywhere 2. Healthy work environments promote positive patient outcomes 3. All aspects of violence, including those involving patients, families, and colleagues, must be addressed 4. A multidisciplinary team is needed to address WPV 5. Everyone in the organization is accountable for upholding behaviour standards 6. When members of a health care team identify an issue that contributes to WPV, they have an obligation to address it 7. A culture shift requires intention, commitment, and collaboration of nurses with other health care professionals at all levels 8. Addressing WPV may increase the effectiveness of nursing practice and patient care <p><u>Five priority focus areas</u></p> <ol style="list-style-type: none"> 1. Foundational behaviors to make this framework work: <ul style="list-style-type: none"> • Respectful communication, including active listening • Mutual respect demonstrated by all (ie, members of the multidisciplinary team, patients, visitors, and administrators) • Honesty, trust, and beneficence 2. Essential elements of a zero-tolerance framework: <ul style="list-style-type: none"> • Top-down approach supported and observed by an organization's board and C-suite • Enacted policy defining what actions will not be tolerated, as well as specific consequences for infractions to the policy • Policy is clearly understood and equally observed by every person in the organization (ie, leadership, multidisciplinary team, staff, patients, and families) • Lateral violence is prohibited, regardless of role or position of authority (ie, the standard of behaviour is the same for physicians, nurses, staff, and administration) 3. Essential elements to ensuring ownership and accountability: <ul style="list-style-type: none"> • Personal accountability, meaning everyone in the organization is responsible for reporting and responding to incidents of violence • A zero-tolerance policy is developed with input from staff at every level in the organization, thus ensuring staff co-own the process and expectations • Universal standards of behaviour are clearly defined and every person in the organization (including patients and families) is held equally accountable • Incidents of violence are reported immediately to persons of authority, through the chain of command, to ensure immediate enforcement of the zero-tolerance policy 4. Essential elements of training and education on WPV: <ul style="list-style-type: none"> • Organizational and personal readiness to learn • Readily available, evidence-based and organizationally supported tools and interventions • Skilled/experienced facilitators who understand the audience and specific issues
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		<ul style="list-style-type: none"> • Training on early recognition and de-escalation of potential violence in both individuals and environments • Health care-specific case studies with simulations to demonstrate actions in situations of violence <p>5. Outcome metrics of the program's success:</p> <ul style="list-style-type: none"> • Top-ranked staff and patient safety scores • Incidence of harm from violent behaviour decreases • Entire organization (staff) reports feeling "very safe" on the staff engagement survey • Patients and families report feeling safe in the health care setting • Staff feels comfortable reporting incidents and involving persons of authority • The organization reflects the following culture change indicators: employers are engaged, employees are satisfied, and HCAHPS scores increase
	D'Ettorre et al. ⁷	<p>A special effort is required in implementing workplace design effective in:</p> <ul style="list-style-type: none"> • ensuring the safe egress by staff away from the violent patient or visitor until help can respond, and in minimizing stressful conditions in waiting rooms rooms which turned out to be the most frequent site of assaults against healthcare workers (HCWs). • A strategic way to the effective management of workplace violence (WPV) should also prioritize training courses focused on constructing the HCW-patient relationship, improving of each violent incident, and improving the labour context through management commitment and employee involvement in a WPV prevention program; in WPV showed determinant in minimizing the risk. • The effectiveness in improving HCWs' attitudes toward patients with behavioral emergencies is through a better understanding of factors contributing to patient aggression. • All HCWs should be also trained to behave carefully toward colleagues when WPV occurs; in fact, assaulted workers frequently suffer feelings of fear, anger, guilt, irritation and helplessness. These sequelae, as reported by the literature, can reduce the empathy capacity of health care workers and, sometimes, constitutes causes of burnout. <p>Interventions targeted at preventing WPV should consider the post-incident reports of assaults, with the aim to analyse incidents, including the characteristics of assailants and victims, an account of what happened of the situation and its outcome, processes and procedures that put employees at risk of assault, including how often and when.</p> <p>The analysis of each assault or failures in work practices, procedures or controls. Also, the analysis helps to design measures through engineering or work practices to prevent or control these hazards.</p> <p>Educational programs showed effective in encouraging HCWs to reporting those violent incidents that occurred within the ED.</p>
Nursing staff	Tolli et al. ¹	The most effective training interventions fell into the communication category and most of these had a significant positive impact on confidence. There was weak evidence that training interventions reduced violent incident rates.

		<p>The use of interventions in the communication and control behavioural symptoms are recommended because they were more likely to increase staff confidence than the other interventions.</p> <p>Shorter training interventions, namely a maximum length of 1 day, were more likely to produce a significant increase in elements of competence and a decrease in incident rates, rather than those interventions that last more than 2 days.</p> <p>Weak evidence supports the conclusion that interventions that enhance staff communication skills and use care plans to control behavioural symptoms, may have a greater positive impact when care providers are intent on pursuing restraint-free practices in health care.</p>
	Martinez et al. ³	<p>A code green response team (CGRT) as an evidence-based intervention comprising of a charge nurse, security personnel, and the physician and primary nurse managing the potentially violent situation has been used. The major functions of the CGRT included using the least restrictive measures, such as verbal de-escalation skills and noncoercive use of medications, to control violent or escalating situations. The results demonstrated that 85% of code green calls resulted in successful resolution of the violent incidents using verbal de-escalation skills and noncoercive medication administration, and a decrease of restraints application in nursing units by 11% compared with restraint data. The effectiveness of the evidence-based intervention showed a reduction of patient restraints and effective management of aggression using least restrictive measures in a hospital.</p> <p>Other interventions used included standardized team meetings to increase awareness of potentially violent patients and plan for crisis; bedside handoff to review patients' problematic behaviors and approaches taken; patient information binders and boards identifying high-risk behaviors; critical incident reviews; leadership rounds conducted by directors of nursing, psychologists, quality managers, and other supportive members to assess the interventions used by staff; proper use of protective personal equipment; and conducting risk identification. The quality improvement initiative showed a 65% reduction of staff injuries, from 2.2 per week to 0.77 per week, during the 1-year intervention period. In addition, the days in between occurrences of reportable injuries increased from 26.5 days to 124 days.</p> <p>One pilot study was conducted to assess the efficacy of a violence prevention community meeting (VPCM) in decreasing the prevalence of workplace violence in an acute inpatient psychiatric setting. The major intervention of the VPCM was a 30-minute meeting that focused on violence prevention topics in psychiatric settings, which was conducted twice per week by nursing staff during the day shift and attended by patients. During the 9-week pilot study, nursing staff led community meetings in the inpatient psychiatric unit, encompassing a number of topics to prevent workplace violence, including, but not limited to: establishing unit rules, importance of safety in the unit, what to do if losing control, modelling problem solving, discussions of violence reduction, discussions of reactions regarding assaults, and discussion of accepted alternatives to violence. Nursing staff adjusted the topics discussed during the meetings according to the acuity in the unit. The recording of workplace violence events in the unit was conducted by nurses and researchers in real time during the course of the study. The VPCM program was effective, reducing incidents of violence by 85% among all shifts throughout the duration of the study. The study presented a validated evidence-based intervention with promising results to manage workplace violence that can be implemented in inpatient psychiatric settings.</p> <p>One study used a quasi-experimental design to evaluate the effectiveness of delivering an educational program on workplace violence for 315 nurses using web-based and classroom-/web-based hybrid programs. The study results showed that the classroom-based program may have a positive effect on the information being taught when used in conjunction with a web-based program to enhance knowledge attainment among nurses.</p>

Healthcare services	Queensland Health ¹¹	<p>Training must be seen as important but is only one of a suite of prevention strategies. Training is part of the solution to workplace aggression, so long as:</p> <ul style="list-style-type: none"> • it is part of a multi-factorial solution, rather than a single factor intervention • it provides staff with increased capacity to do work safely, rather than imposing further constraints on their work • it is seen as part of individual career and professional development, not a work requirement • it is designed with and delivered by people who do the work, rather than outsiders • it provides a range of tools that can be adapted and applied across different work contexts. <p>Concerns were also expressed at the costs of training and the capacity to deliver in house training.</p> <p>There was also considerable variation in the training programs, which were being utilised.</p> <p>Training must be valued and this value consistently reinforced by leaders and managers across the public health system. It must be adequately resourced.</p> <p>However, training has to be relevant to the workplace risk and derived from a robust workplace risk assessment processes. This point is well made in the ‘Evaluation of the Aggression Behaviour Management (ABM) training program’.</p> <p>Training in situational awareness, communication skills (including empathetic communications skills), de-escalation techniques, strategies and techniques around disengagement and extrication from a dangerous situation, risk assessments, incident investigations and supervisor training were identified as priorities.</p> <p>Training needs to incorporate the identification of ‘triggers’ or thresholds which signal when de-escalation is unlikely to be effective and disengagement and/or when support are required.</p> <p>There needs to be flexibility in the delivery of training to include face-to-face, on line and modular options. These decisions are best made locally as the contexts and requirements of training are different.</p> <p>A further requirement is for training programs to be reviewed regularly for relevance. That requires the establishment of clear goals with measurable outcomes for the training regime and its components. The quality of training opportunities needs to be tested against their impact in the workplace.</p> <p>The outcomes of investigations into incidents of violence is an important element of the feedback loop and is likely to provide a better review mechanism than a simple reliance on participant feedback.</p>
	Victorian Auditor-General’s Office ¹²	<p>Training is critical to building a robust safety culture that protects workers.</p> <p>A high proportion of health services provide training relating to occupational violence management—81 per cent of the 89 hospitals surveyed. However, there is limited evidence of this training being evaluated to determine whether it is targeted appropriately and has given staff the necessary skills and confidence to manage potentially violent or aggressive patients.</p> <p>All three of the audited health services have well established and comprehensive occupational violence training for mental health services. This is provided every two to three years, with annual refreshers and, in one instance, monthly and weekly tutorials and debriefing. In two of the health services this training was also provided to security staff. Forty-four per cent, or 39 of the 89 hospitals report that training is a mandatory requirement for security staff and staff in mental health and emergency departments.</p>

		<p>Two of the health services also have training on the prevention and management of occupational violence for general health staff. The remaining health service has secured funding and resources to deliver such training in 2015.</p> <p>Two health services currently provide online training and face-to-face courses of between two hours and two days duration. They each have a suite of programs including general online information, courses in managing aggression, and training for home visit risk assessment and Code Grey response. They also provide training targeted to specific groups—including doctors, dental services, hospital in the home, aged care and mental health services. However, site visits and staff interviews highlighted several issues including:</p> <ul style="list-style-type: none"> • the reduction of training from half a day to a two hour session in two health services, which was highlighted by key staff as being insufficient to cover the necessary material • none of the health services evaluated whether their training built staff competency and capacity for managing occupational violence—assessment of training is largely confined to participant satisfaction • additional refresher training and debriefing are needed for both Code Grey teams and general staff in relation to use of Code Grey responses. <p>Audited health services and AV have pointed out the challenge of evaluating the effectiveness of training. This is an area where DHHS, as manager of the health system, could step up its sector-wide leadership and provide guidance on effective evaluation techniques.</p> <p>The audited health services identified the cost of back-filling staff as a significant constraint to training.</p>
	Occupational Safety and Health Administration ¹⁰	<p>According to OSHA’s Guidelines for Preventing Workplace Violence for Healthcare and Social Service Workers, processes involved in a comprehensive workplace violence prevention program evaluation typically include:</p> <ul style="list-style-type: none"> • Establishing a uniform definition of violence, reporting system, and regular review reports. • Reviewing reports and minutes from staff meetings on safety and security issues. • Analysing trends and rates in illnesses, injuries, or fatalities caused by violence relative to initial or “baseline” rates and sharing data with management at all levels. • Measuring improvement based on lowering the frequency and severity of workplace violence. • Keeping up-to-date records of administrative and work practice changes to prevent workplace violence to evaluate how well they work. • Surveying workers before and after making job or worksite changes or installing security measures or new systems to evaluate their effectiveness. • Tracking recommendations through to completion. • Keeping abreast of new strategies available to prevent and respond to violence as they develop. • Surveying workers periodically to learn if they experience hostile situations while doing their jobs. • Complying with OSHA and state requirements for recording and reporting injuries, illnesses, and fatalities. • Establishing an ongoing relationship with local law enforcement and educating them about the nature and challenges of working with potentially violent patients. • Requesting periodic law enforcement or outside consultant review of the worksite for recommendations on improving worker safety. <p>Records that should be analysed during program evaluation include the following:</p> <ul style="list-style-type: none"> • OSHA Log of Work-Related Injuries and Illnesses and Injury and Illness Incident Report (OSHA Forms 300 and 301). • Medical reports of work injury, workers’ compensation reports, and supervisors’ reports for each recorded assault.

		<ul style="list-style-type: none"> • Records of incidents of abuse, reports filed by security personnel, and records of verbal attacks or aggressive behaviour that may be threatening. • Information recorded in the charts of patients with a history of past violence, drug abuse, or criminal activity. • Documentation of minutes of safety meetings, records of hazard analyses, and corrective actions recommended and taken. • Records of all training programs, their attendees, and the qualifications of the trainers. <p>Additional evaluation tips include:</p> <ul style="list-style-type: none"> • Using the same tools for re-evaluation as for the initial worksite assessment and hazard identification process, to allow for consistent data comparison • Working closely with the workplace violence prevention committee to learn what has worked in reducing violence or to learn about barriers that have been encountered. • Examining only those incident reports that have been submitted since the last assessment took place, to avoid any overlap. • Documenting all assessments as well as all changes introduced based on the results. • Making sure to assess the quality and effectiveness of training programs rather than simply noting their presence. <p>It is important to evaluate all aspects of the workplace violence program systematically. Regular review is necessary to identify deficiencies and opportunities for improvement. The core elements are all interrelated, and each is necessary to the success of the overall system.</p>
	Occupational Safety and Health Administration ⁹	<p>General recommendations for training content include:</p> <ul style="list-style-type: none"> • Add information about facility-specific policies, procedures, and potential risk factors when using existing packaged training programs. • Ensure that training and policies cover all types of workplace violence, not just violence by patients against employees. Many training programs, policies, and procedures focus exclusively on the latter. These programs fail to address employee-on-employee or employee-on-patient violence, robbery and theft (such as theft of drugs, or of hospital or employee property), and domestic violence. • Provide frequent opportunities to practice skills and demonstrate competency. <p>All workers who are reasonably expected to interact with patients, including admissions staff, can benefit from workplace violence prevention training. So can supervisors and managers. Other support staff can benefit from awareness about their responsibilities in the event of a workplace violence incident. Affiliated physicians, temporary staff, and contract workers should receive the same training as permanent staff, and new and reassigned workers should receive an initial orientation that includes training in the prevention of workplace violence.</p> <p>Because duties, work locations, and patient interactions vary by job, violence prevention training can be more effective if it is customized to address the needs of different groups of healthcare personnel, particularly:</p> <ul style="list-style-type: none"> • Nurses and other direct caregivers • ED staff • Support staff (e.g., dietary, housekeeping, maintenance) • Security personnel

- Supervisors and managers

Nurses and other direct caregivers

Nurses, nursing assistants, mental health workers, and other direct caregivers spend much of their time interacting directly with patients, and they are often the first to encounter difficult situations. They can benefit from training in:

- The facility's workplace violence prevention plan
- Warning signal recognition
- Threat assessment
- Working with patients with violent behaviour
- Violence escalation cycle and violence-predicting factors
- Verbal and physical de-escalation techniques
- Self-defence, with a hands-on component

Direct caregivers can also benefit from specialized violence prevention training tailored to the specific patient populations they work with—for example, behavioral health patients, the developmentally disabled, and geriatric patients with Alzheimer's and other forms of dementia.

Emergency department staff

ED nurses experience physical assaults at one of the highest rates of all nurses. Nurses in the ED may find themselves exposed to patients who have a history of violence, aggressive behaviour associated with certain psychotic disorders, substance abuse, dementia, and other conditions. The ED is a fast-paced, unpredictable environment; when patients arrive, the staff must treat them—sometimes without knowing much about their history or what drug(s) might be influencing their behaviour. Many EDs, particularly those in large urban settings, treat patients who are themselves the victims of traumatic violence, and the background level of violence in the community can spill over into the ED. Moreover, the experience of traumatic injury or mental illness, pain, and the anxiety of an emergency room visit can trigger aggressive reactions. In addition to general training common to all direct caregivers, ED nurses should be trained in safety procedures related to restricting access or movement in the physical environment, such as locking access doors to prevent secondary violence from retribution in cases of gang violence or domestic violence.

Format and Frequency

Safety training can take several forms:

- **Classroom plus hands-on instruction.** Workplace violence prevention training has traditionally taken the form of classroom instruction (e.g., seminars) combined with active “learning by doing” in the form of role-plays, simulations, and drills. Interactive exercises make training more effective by allowing participants to practice and apply the skills they have learned, such as de-escalation and self-defence techniques.
- **Just-in-time training.** Some facilities have designated one or more trainers or “safety coaches” for each unit or floor. These individuals can offer guidance and coaching in real-time—for example, if they see a colleague struggling to de-escalate an agitated patient. They can also run ad hoc or scheduled refresher sessions, which may be particularly useful and relevant to workers because the training takes place in their own work environment.
- **Web-based training.** This increasingly popular approach offers fidelity of presentation and automated documentation while requiring minimal supervision and allowing flexible timing and pace. However, it does not provide hands-on practice with

		<p>physical skills, which are widely considered to be an essential element of many programs. Thus, Web-based training may be more effective when paired with live instruction and practice—a “blended” approach. The National Institute for Occupational Safety and Health (NIOSH) has developed a Web-based training program (www.cdc.gov/niosh/topics/violence/training_nurses.html) to help healthcare workers learn about the key elements of a comprehensive workplace violence prevention program, how organizational systems impact workplace violence, how to apply individual strategies, and how to develop skills for preventing and responding to workplace violence.</p> <p>Regardless of format, healthcare organizations often find it helpful to have a team of trained workplace violence prevention trainers in-house. These trainers can attend a more in-depth course offered by an outside training provider, then become certified to train others.</p> <p>Many healthcare organizations have improved results by providing annual refresher training for their direct caregivers. In high-risk settings and institutions, refresher training may be needed more often, perhaps monthly or quarterly, to effectively reach and inform all workers. For example, in a review that evaluated the effect of nonviolent crisis intervention (NCI) training on the number of code purple (security) incidents in an acute-care tertiary ED, the authors expected code purples to decrease as progressively larger numbers of staff were NCI trained. However, this did not occur. Rather, reduction of code purples was correlated with the number of staff who had been recently trained (in the past 90 days), implying a temporary effect of NCI training and suggesting that more frequent training is needed. Managers can increase participation by compensating employees for the time they spend in training and by making the training available for all shifts.</p>
	Melbourne Health	<p>Outcomes be measured via assessments of work atmosphere, reported incidence figures for patient violence and consumer feedback. In addition, sickness, injury and compensation claims can be utilised as indicators of financial and human impact.</p> <p>In respect to the immediate learning outcomes of training, research indicates that programs can be effective in improving health professional’s levels of confidence in dealing with aggressive and violent patients. Developing staff confidence and competence (self-efficacy) in managing aggression is also considered paramount to reducing the potential trauma associated with it. Research also shows that staff attitudes regarding the causes of patient aggression influence the way they work to prevent and manage it in practice. Yet evaluations of the outcomes of training on staff attitudes has produced mixed results.</p>

Table 2. Summary statement and gaps identified from the literature review: Pedagogical approaches

Component	Summary statement	Gaps identified
Models of aggression prevention and management	There is agreement that training programs address situational/interactional causes of aggression in addition to internal (patient related - biomedical) and environmental factors ^{2,9,29} .	There has been very little research into the effectiveness of programs that have adopted the situational/interactional model for aggression prevention and violence management ^{2,37} . Although correlations between staff attitudes and management strategies are noted in the research literature, the relationship between staff attitudes and the management choices they make in actual practice has not been described.
Strategies	There is equivocal evidence regarding the sustained effect of online training when compared to usual methods of training (in-service/vocational education) on staff knowledge, self-efficacy and management of aggressive and violent behaviour ^{25,26} . There is evidence that structured feedback and group discussion of actual incidents positively effects staff knowledge and awareness of risk for violence, reporting of events, how potentially dangerous situations could be avoided and how to deal with aggressive patients ²³ . There is evidence that face-to-face aggression prevention and violence management programs that include combinations of didactic learning, role play reflection and simulation enhance staff knowledge, attitudes and self-efficacy toward the prevention and management of aggression and positively influence training outcomes in the short term ^{2,19} .	There has been no analysis of the costs and benefits of online verses face-to-face programs. It is unclear how long the effect of structured feedback is sustained in practice. It is unclear how long knowledge, skills and attitudes acquired in training are sustained in practice.

Table 3. Summary statement of literature review and gaps identified: Assessment and evaluation

Component	Summary statement	Gaps identified
Assessment	Preliminary work has been reported on behavioural healthcare competencies. This work provides direction for further research and the development of educational programs aimed to build hospital staff behavioural healthcare competency ⁷⁹ .	There is limited information available in published literature on aggression prevention and violence management to guide the assessment of knowledge, skills or attitudes ^{33,79} . We found no assessment tools in published literature on aggression prevention and violence management for measuring higher order cognitive tasks and decision making skill.
Monitoring	There is agreement that up to date centralised records of staff attendance at training should be maintained by employers ¹⁹ . There is agreement that rates of training should be monitored at an organisational level by discipline and work area ¹⁹ .	
Evaluation	Evaluation of training outcomes has predominantly focussed on staff satisfaction, confidence and competence (self-efficacy) and attitudes. There is evidence that developing staff self-efficacy in managing aggression is paramount to reducing the potential trauma associated with it. There is evidence in the mental health literature that staff attitudes toward the causes of aggression and violence in health care settings influences self-reported management decisions.	There were no consumer outcomes reported including complaints, injuries or psychological trauma. The impact of training on organisational factors, such as sick leave, turnover, use of increased staffing, and time required for emergency responses is unknown.

In respect to the evidence for methods of instruction, the results of two randomised control trials report different outcomes regarding the effects of online training when compared to usual methods (in-service/vocational education) on staff knowledge, self-efficacy and management of aggressive and violent behaviour. There is, however some evidence that face-to-face aggression prevention and violence management programs which include combinations of teaching methods can positively influence learning outcomes, at least in the short term. In addition, there is strong evidence to support the use of that structured feedback and group discussion of actual incidents 23 34 to positively effects staff knowledge and awareness of risk for violence.

Conclusions

There are a number of areas where clinical aggression training has been evaluated including: mental health, the emergency department, all nursing staff, all healthcare workers, and from an organisational perspective. The majority of evidence is low quality. Interactive training and blended learning may yield better outcomes. There is no best approach regarding the session duration, session frequency or length of the training period. Overall, there is some, but limited evidence, showing clinical aggression training can: reduce seclusion and restraint use; improve violent incident rates; improve worker confidence; improve staff retention; reduce complaints; and reduced overall expenditure.

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Appendix

Table 1. Search terms adapted from Tolli et al.¹

Database	Search terms	Boolean
CINAHL (Title, abstract, keywords)	aggression aggressive violen* "challenging behavior" "challenging behaviour" "dangerous behavior" "dangerous behaviour" "patient assault"	OR
		AND
	prevent* "physical holding" "aggression management" "management of aggression" "management of violence" "violence management" "restrain* physical" "physical restrain*" "manual restrain*"	OR
		AND
	staff "health care workers" personnel employee* workplace occupational	OR
		AND
	effect* evaluat* outcome* evidence*	OR
	training intervent* education course* strateg* program*	OR
		AND
	patient* inpatient* hospital hospitals clinical "health care" healthcare "health service*"	OR
		AND NOT
	"sexual abuse" "partner violence" "family violence" "domestic violence" "child abuse" bully*	OR

Table 2. Inclusion/exclusion criteria

Population	Include: Healthcare staff (clinical and non-clinical) Exclude: All other non-healthcare staff
Interventions	Include: Training and education programs
Outcomes	Include: Any
Context	Include: Clinical aggression from a patient Exclude: sexual abuse, partner violence, family violence, domestic violence, child abuse, bullying
Types of evidence	Include: Reviews only
Limits	Date: 2014 onwards Language: Publications in English.