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Implementing Evidence-Based Strategies to Reduce Workplace Violence in Healthcare Settings-An Updated Review for Health Security Professionals

Hussain Ahmed Mohammed Najmi [(1)] , Abdulrahman Mohammed Aqeel Halawi [(1)] , Abdulaziz Abdullah Ali Homdi [(1)] , Yahya Jaber Ahmed Hamdi [(1)] , Abdulfattah Ali Ahmed Mobarki [(1)] , Khalid Mohammed Abdullah Sahli [(1)] , Khalid Ahmed Yahya Mobarki [(1)] , Mohammed Abdu Ebraheem Hamdi [(1)]

(1) Altawal General Hospital – Jazan,Ministry Of Health, Saudi Arabia

Abstract

Background: Workplace violence (WPV) in emergency departments (EDs) is a pervasive global problem that threatens staff safety and quality of care. ED staff experience high rates of verbal abuse, threats, and physical assaults, intensified by heavy workload, unpredictability, and high patient acuity.

Aim: This rapid review aimed to identify evidence-based interventions effective in preventing or reducing WPV perpetrated by patients and visitors against ED staff.

Methods: The review followed Cochrane Rapid Review methods and PRISMA guidelines. Studies from 2012 onward were systematically searched and screened. Included studies evaluated ED-based interventions such as education, screening, environmental modifications, and policy changes. Quality appraisal used a modified Joanna Briggs Institute checklist.

Results: Education and training improved staff confidence and self-efficacy, though effects on violence rates varied. Policy and procedural guidelines led to reductions in restraint use. Screening tools, including behavioral checklists, facilitated proactive responses and reduced reactive security interventions. Multicomponent interventions—combining education, screening, environment, and policy adjustments—were most effective, producing meaningful reductions in violent incidents and staff fear.

Conclusion: No single intervention consistently prevents WPV; however, integrated, context-specific, and sustained strategies show the strongest evidence for improving ED staff safety. Effective WPV mitigation requires combining training, early risk identification, environmental improvements, and policy support.

Keywords: Workplace violence, emergency department, staff safety, de-escalation training, violence screening, environmental modification, healthcare security, rapid review.

Introduction

The hospital emergency department (ED) represents a high-pressure and unpredictable clinical environment, where the demand for care often exceeds available resources, placing strain on both personnel and operational capacity [1, 2, 3, 4]. This strain intensified during the coronavirus disease 2019 (COVID-19) pandemic, which increased patient volume and complexity, further challenging the delivery of timely and safe care [5]. Despite their advanced training and professional dedication, ED staff are particularly vulnerable to the consequences of workplace violence (WPV) perpetrated by patients and visitors [6, 7, 8]. WPV encompasses a range of behaviors, including verbal abuse, threats, intimidation, and physical assaults, all of which can significantly impact staff well-being, performance, and retention [9, 10]. Studies indicate that approximately one in four healthcare providers experiences some form of violence from patients or visitors annually, underscoring the persistent and global nature of this challenge [11]. Accurate measurement of WPV remains difficult, as many incidents go unreported or are normalized by staff as an inherent risk of emergency care work [12, 13]. Multiple strategies have been developed to mitigate WPV in healthcare settings. These interventions include patient screening tools, targeted staff education and training programs, environmental modifications to enhance safety, and structured reporting systems to document incidents and guide prevention efforts [14, 15, 16]. Given the constraints of limited staffing, high patient volumes, and competing clinical priorities, ED leadership faces the challenge of implementing interventions that are both practical and evidence-based. Ensuring the effectiveness of these measures is critical to protecting staff while maintaining quality care delivery.

This rapid review was conducted through a collaborative partnership between academic researchers and healthcare practitioners, with the primary objective of providing evidence-informed recommendations for reducing WPV in the ED. The project was guided by the needs and experience of an organizational leader within a large urban Canadian hospital, who acted as the knowledge user on the

*Corresponding author e-mail: Hussainn@moh.gov.sa (Hussain Ahmed Mohammed Najmi).

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research team. Their practical insights ensured that the review's findings were directly applicable to the emergency department context. The review specifically addressed the question: Which interventions have evidence supporting their effectiveness in preventing or reducing patient- and visitor-perpetrated WPV against ED staff? While WPV can occur between colleagues, this review focused exclusively on client- or customer-initiated violence against healthcare workers in emergency settings, reflecting the priority concern for frontline staff safety [17]. The findings of this review provide a structured, evidence-based approach to guide healthcare leaders in implementing interventions that mitigate WPV, improve staff safety, and enhance operational resilience in high-demand emergency environments.

Methods

This rapid review followed the Cochrane Rapid Review Methods Group recommendations, which streamline systematic review processes to provide timely evidence for decision-making [18]. Rapid reviews condense traditional review steps to accommodate resource and time constraints while still maintaining methodological rigor. Given the six-month study timeline and the practical needs of the knowledge user, this approach was selected. Reporting adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines [19]. The research team included four academic researchers, two patient partners, an academic librarian, and the knowledge user, an emergency department organizational leader. Two researchers led the project, with oversight and consultation from the remaining academic members. Patient partners contributed lived experiences and emphasized patient- and family-centered perspectives. The librarian guided search strategy development, ensuring precision and comprehensiveness, while the knowledge user provided practical insights into emergency department contexts and workplace violence (WPV) experiences. Team members engaged through regular meetings, synchronous and asynchronous discussions, and content review.

Studies were included if they described interventions implemented and evaluated for mitigating WPV from patients or visitors in hospital emergency departments. Eligible interventions included programs, policies, or strategies aimed at prevention, mitigation, or de-escalation. Studies needed to report outcomes such as incident rates, staff perceptions, or restraint use. Exclusion criteria encompassed studies on other violence types or settings irrelevant to the emergency department context. A systematic search was conducted in MEDLINE, Cochrane CENTRAL, Embase, PsycINFO, CINAHL, and Google Scholar, using key concepts of WPV, interventions, emergency department settings, patients/visitors, and staff. Searches were limited to English-language publications from 2012 onwards. Screening of titles, abstracts, and full texts was conducted independently by two reviewers using Covidence software, with calibration and consensus for discrepancies. Data extraction used a standardized form capturing study characteristics, interventions, outcomes, and equity-related PROGRESS-Plus variables [21, 22]. Studies were critically appraised with a modified Joanna Briggs Institute checklist for quasi-experimental and systematic review studies [23], with items adjusted for reliability reporting and weighted scoring for pre/post-data collection. Scores were categorized as low, moderate, or high quality, enabling a systematic assessment of evidence robustness across heterogeneous studies.

Results

Education and training interventions were a commonly studied approach for mitigating workplace violence (WPV) from patients and visitors in emergency departments (EDs). Among the 14 studies implementing single-intervention strategies, seven focused primarily on educational initiatives designed to improve staff knowledge, skills, and confidence in managing aggressive behaviors [24, 27, 30, 32, 34, 41, 42]. These interventions varied in duration, format, and intensity, ranging from brief workshops to multi-day programs, and targeted a spectrum of ED personnel, including nurses, physicians, medical students, and security staff. Short-duration interventions, such as the 4-hour de-escalation training conducted in Pakistan, demonstrated that participants reported significantly higher confidence in coping with violence compared to controls after four months [24]. Similarly, Khan et al. evaluated the same intervention and found that, although the rate of violent incidents did not significantly change, participants who received training reported markedly greater confidence in managing patient aggression [33]. These findings highlight that educational interventions can improve self-efficacy and perceived readiness even when incident rates remain unchanged. More intensive programs, such as the 4-day management-of-aggression course led by security agent peer trainers, did not demonstrate statistically significant reductions in seclusion or restraint usage [30], suggesting that extended training alone may not directly reduce the occurrence of violent incidents. A randomized controlled trial in Taiwan tested a 12-session, one-hour video conference program for nurses and reported increased self-efficacy and confidence in managing WPV among intervention participants relative to controls [27].

Workshop-based approaches employing varied teaching methods also showed promising results. For instance, Kalbali et al. found that a 4-hour interactive workshop led to a significant decrease in reported physical and sexual violence within two months, though verbal abuse remained unaffected. Control groups in the same study showed no improvement in physical or sexual violence and

experienced a significant increase in verbal abuse reports [32]. Quality improvement initiatives further explored training effectiveness by integrating incident data. One study evaluated nonviolent crisis intervention training through an 8-hour interdisciplinary session, finding a delayed reduction in security team responses to violent events, emerging approximately 90 days post-training but diminishing after six months [42]. The authors suggested that single-session interventions may be insufficient and recommended semi-annual repetition to sustain outcomes. Simulation-based education also demonstrated benefits. Wu et al. implemented experiential training with situational simulations following lectures for interdisciplinary ED staff, which significantly improved participants' self-efficacy in responding to WPV [41]. Collectively, these findings indicate that education and training interventions can enhance staff confidence and preparedness in managing violence, though effects on actual incident rates may require repeated sessions, practical reinforcement, and integration with broader WPV prevention strategies.

Policies and Procedures

Policy and procedural interventions represent a structured approach to mitigating workplace violence (WPV) in emergency departments by providing clear guidelines and standardized practices for staff. Two studies conducted in the United States assessed the impact of such interventions on staff responses to violent or aggressive behaviors from patients. Bailey implemented an evidence-based guideline specifically designed to train nurses in recognizing early signs of assaultive behavior and applying de-escalation techniques to prevent violence before it escalated [25]. Following the introduction of this guideline, a significant reduction in the use of restraints was observed when comparing the four weeks after implementation to the four weeks prior. This finding indicates that formalized policies, when paired with staff training, can positively influence clinical practice and reduce reliance on restrictive interventions. Similarly, Winokur et al. evaluated the effectiveness of a standardized procedural protocol that guided nurses in assessing patient agitation and administering medication in a structured and consistent manner [39]. Implementation of this procedure resulted in a measurable decrease in restraint use, demonstrating that clear, evidence-based procedures can improve staff decision-making and reduce the need for reactive measures. Both studies emphasize that policy and procedural frameworks provide staff with defined expectations and actionable steps for managing aggression, thereby enhancing workplace safety and promoting patient-centered care. These findings suggest that integrating policies and procedural interventions with training programs may produce synergistic effects, improving staff confidence, consistency in response, and overall safety in the emergency department. The structured nature of these interventions ensures that preventive strategies are applied consistently, reducing variability in practice and supporting ongoing quality improvement in WPV management.

Violence Screening and Assessments

Violence screening and assessment tools have been implemented in emergency departments as proactive strategies to identify patients at risk of aggressive behaviors and guide appropriate interventions. Three studies examined the impact of structured screening instruments on staff responses and patient outcomes. In Australia, Senz et al. implemented the 6-item Brøset Violence Checklist, which evaluates patient characteristics and behaviors and pairs the assessment with a score-based notification system and multidisciplinary de-escalation strategies [36]. Following implementation, the study observed a significant decrease in unplanned, reactive responses by security personnel and an increase in planned, proactive interventions. This suggests that structured screening can help shift responses from reactive to preventative, potentially reducing escalation of violent incidents. However, the checklist did not significantly affect nurses' confidence in preventing violence or their subjective feelings of safety, indicating that behavioral tools alone may not address all dimensions of staff preparedness [36]. Legambi et al. employed the Behavioral Activity Rating Scale, a seven-item instrument designed to monitor changes in patient activity and agitation [34]. The aim was to support timely interventions and reduce the use of restraints. Despite structured monitoring, the study found no significant difference in restraint incidents, highlighting that while behavioral assessment tools provide useful observational data, their effectiveness in altering immediate clinical outcomes may depend on accompanying interventions or staff training.

Campbell et al. tested the Emergent Documentation Aggression Rating Tool, which categorizes patient behaviors based on aggression levels and was used for all patients at admission and discharge [26]. Integrated as a quality improvement initiative, the tool facilitated early identification of escalating behaviors and supported targeted interventions. One year after implementation, restraint use decreased, and nurses found the tool feasible for routine practice. This suggests that systematic documentation combined with clear intervention guidelines can enhance the management of patient aggression over time. Collectively, these studies indicate that violence screening and assessment tools can support proactive management of aggression in emergency settings. While some tools may not immediately influence restraint rates or staff perceptions, their consistent use enables early identification of risk, informs multidisciplinary responses, and contributes to long-term reductions in

violent incidents. Integration with training programs and procedural policies appears essential to maximize the effectiveness of screening instruments in improving workplace safety.

Other Interventions

Several studies have explored unique and multifaceted interventions aimed at reducing workplace violence (WPV) from patients and visitors in emergency departments. Choe et al. evaluated the impact of a multidisciplinary violence response team tasked with assessing, de-escalating, and treating acutely agitated patients [28]. The implementation of this team significantly reduced the number of attempted assaults on staff, demonstrating the effectiveness of coordinated, specialized response units in mitigating immediate risks of violence. Another study focused on environmental interventions, providing patients and visitors with clear information about wait times and emergency department procedures through large signs and pamphlets [29]. This approach appeared to reduce aggressive behaviors, though its effectiveness was limited when patient expectations regarding wait times were exceeded, emphasizing the importance of managing patient perception in addition to physical interventions. Multicomponent strategies were evaluated in seven studies and typically combined education, policy changes, environmental modifications, screening tools, and communication processes [31,35,37,38,39,41,43]. Gillespie et al. implemented a combination of policy, education, and environmental changes, resulting in a decrease in violent incidents after nine months [43]. However, similar decreases were observed in control groups, making it difficult to isolate the effects of the intervention. Hemati-Esmaeili et al. integrated education, dissemination of emergency department guidelines to patients, and a dedicated nursing role focused on violence prevention. While physical assaults did not decrease, verbal abuse toward nurses and staff fear of violence were reduced [31].

Okundolor et al. applied a multifaceted approach involving risk screening, communication through chart labels and shift huddles, and postincident debriefing, which resulted in sustained reductions in assaults over a one-year period [35]. Shaikh et al. tested low-cost interventions, including patient education materials, staff training, and policy modifications across two sites, achieving decreased physical violence at both locations [37]. Sharifi et al. combined education, violence screening, and preventive protocols, reporting reduced exposure to violence among nurses and recommending integration of screening into triage procedures [38]. Henderson and Colen-Himes implemented crisis management training alongside procedural changes to reduce overcrowding, which increased staff perceptions of safety, though the impact of additional measures such as risk assessment tools, enhanced security, or patient support services was not clearly documented [44]. In an ophthalmological emergency department, Touzet et al. implemented a comprehensive program with a computerized triage system, video surveillance, enhanced signage, and the addition of a mediator [39]. The study found a significant reduction in violent acts, with the largest decrease occurring immediately after the introduction of the computerized triage system. Collectively, these studies highlight that single interventions can be effective, particularly when targeting immediate risks, but multifaceted strategies integrating education, environmental adjustments, risk communication, and structured response systems tend to produce more sustainable reductions in WPV. Successful interventions often combine proactive measures with responsive strategies to address both patient and staff behaviors while fostering a culture of safety.

Discussion

This review analyzed the effectiveness of interventions aimed at mitigating workplace violence (WPV) from patients and visitors toward staff in emergency departments (EDs). The included studies revealed a wide range of strategies, including education, training, screening tools, policy and procedural changes, environmental modifications, and multidisciplinary response teams. However, no single intervention emerged as definitively superior, and evidence regarding long-term effectiveness remains limited. Education and training were the most commonly implemented interventions. Studies reported improvements in staff confidence and self-efficacy in managing aggressive behaviors [24,27,30,32,34,41,42]. For example, short workshops, simulation exercises, and video-based sessions improved staff knowledge and confidence in handling violent situations. Despite these positive outcomes, the literature frequently lacked detailed descriptions of the curriculum, delivery methods, and assessment measures, making replication challenging. Furthermore, follow-up periods were often brief, limiting understanding of whether improvements in confidence translated into sustained reductions in WPV incidents or changes in staff behavior over time. Gillespie et al. highlighted this concern, noting that even with an 18-month evaluation period, organizational adoption and reinforcement of interventions remained uncertain [43]. Continuous monitoring, feedback, and adaptation were recommended to ensure long-term impact.

Screening and assessment tools, such as the Brøset Violence Checklist or aggression rating scales, provided structured ways to identify at-risk patients [26,34,36]. These interventions were associated with more proactive responses from staff and reductions in unplanned security interventions. However, the studies often failed to provide comprehensive guidance on how screening should be integrated into workflow or linked with subsequent preventive measures, reducing their practical utility. Multicomponent approaches combining education,

screening, environmental modifications, policy updates, and specialized staff roles appeared promising in several studies [37,39,43,44]. These interventions often resulted in reductions in physical assaults, verbal abuse, or staff perceptions of fear. Nevertheless, disentangling the impact of individual components was difficult, as interventions were applied concurrently. This makes it challenging to identify which specific strategies are essential versus supplementary. Finally, contextual factors that may influence WPV, including cognitive impairments, socioeconomic disparities, and racial biases, were rarely addressed. Such factors are critical for developing interventions that are equitable and effective across diverse patient populations. Future research should examine these dimensions to design interventions that not only reduce incidents of violence but also address underlying social and systemic contributors. In conclusion, the review indicates that a combination of strategies, tailored to the specific context of the ED, may be more effective than single interventions. Ongoing evaluation, clear implementation guidelines, and consideration of contextual factors are essential for promoting a sustainable culture of safety and reducing WPV from patients and visitors.

Recommendations

Mitigating workplace violence (WPV) from patients and visitors in emergency departments (EDs) requires a structured, multicomponent approach that reflects the complex and high-pressure environment of emergency care. The current evidence does not support any single intervention as universally effective, but the collective findings from studies provide meaningful guidance for practice, policy, and future research. Professional organizations and experts have also developed recommendations that can be integrated into ED safety strategies, emphasizing both prevention and response to WPV [6,47]. A central consideration is sustainability and long-term effectiveness. Interventions should not place additional burdens on ED staff, who are already managing high patient volumes, urgent clinical decisions, and resource constraints. Sustainable approaches must be integrated into routine ED operations rather than applied as isolated or episodic measures. Interventions should be dynamic, capable of adapting to fluctuations in patient volume, acuity, and risk of violence, and they should address both low-level, chronic exposure to verbal abuse as well as acute, high-intensity incidents. The cumulative effects of repeated exposure to verbal aggression, threats, and harassment are substantial and can impair staff well-being, morale, and patient care [48]. Addressing WPV effectively requires embedding safety as a core operational priority rather than treating incidents reactively.

A comprehensive approach should target all stages of violence, from prevention and early detection to de-escalation and post-incident debriefing. Strategies should engage multiple groups within the ED, including leadership, nurses, physicians, allied health providers, security personnel, and patients and families. Evidence-based components that show promise include staff education on de-escalation techniques, patient/visitor education on expected behaviors, risk screening for violence, staffing adjustments, and environmental modifications such as signage, visibility improvements, and crowd management strategies. Education-based interventions should focus not only on procedural skills but also on staff attitudes, emotional responses, and behavioral strategies for safe interaction with potentially aggressive individuals. Incorporating patient perspectives is critical for effective WPV mitigation. Patient partners in research and intervention design provide insights into cultural sensitivity, social determinants of health, and systemic challenges faced by marginalized populations, which are often overlooked in intervention planning [49]. Considering these factors promotes interventions that are equitable, respectful, and relevant to both patients and families while enhancing staff safety. Engaging patients in co-design helps ensure that measures address the root causes of aggression, such as frustration due to wait times or misunderstanding of ED processes, rather than solely targeting staff behavior. Finally, more rigorous research is required to guide best practices. Effectiveness of interventions should be assessed using multiple data sources over extended periods, including incident reports, staff perceptions, patient experiences, staff turnover, wait times, and temporal patterns of violence. Robust longitudinal designs and mixed-method approaches will clarify which interventions work, under what circumstances, and how they can be sustained. This evidence will enable nurse leaders, clinical managers, and organizational policymakers to implement strategies that reliably improve staff safety, reduce WPV, and foster a resilient, patient-centered ED environment. In conclusion, a multicomponent, context-sensitive, and sustained approach that includes education, risk assessment, environmental adjustments, staff support, and patient engagement is recommended to address WPV effectively. Emphasis on system-level integration, continuous evaluation, and inclusion of patient perspectives will maximize the impact of interventions and promote a safer, more responsive emergency care setting.

Roles of Healthcare Security Personnel

Healthcare security personnel play a crucial role in maintaining safety within medical facilities, particularly in high-risk areas such as emergency departments (EDs), where workplace violence (WPV) from patients and visitors is common. Security staff serve as the first line of defense in preventing, managing, and responding to incidents of aggression, assault, or disruptive behavior. Their responsibilities

extend beyond physical protection to include supporting clinical staff, monitoring environmental risks, and facilitating interventions aimed at minimizing harm. One primary responsibility of healthcare security personnel is responding to immediate threats of violence. This includes assessing situations, de-escalating potentially aggressive behaviors, and physically intervening when necessary to protect patients, visitors, and staff. Choe et al. [28] demonstrated the effectiveness of a multidisciplinary violence response team, which included security personnel, in reducing incidents of assaults on ED staff. By being integrated into care teams, security staff can provide rapid, coordinated responses that reduce the risk of escalation and improve staff confidence in managing violence. Security personnel also contribute to prevention through environmental management. This includes monitoring entry and exit points, enforcing access control, and providing visibility in areas where aggressive incidents are more likely to occur. Environmental interventions, such as signage about expected behaviors and wait times, have been shown to reduce patient and visitor aggression when combined with other measures [29]. Security staff play a central role in implementing and monitoring these strategies, ensuring adherence to policies designed to maintain a safe care environment.

Healthcare security teams are integral to training and education initiatives. They often participate in staff education programs on de-escalation, crisis intervention, and nonviolent crisis management. Wu et al. [41] highlighted the benefits of simulation training involving interdisciplinary learners, including security personnel, which improved participants' self-efficacy in responding to WPV. Security staff provide practical insights during training and help reinforce protocols that are feasible in real-time situations, bridging the gap between theory and practice. In addition, security personnel support post-incident processes. This includes documenting incidents, assisting in debriefings, and contributing to quality improvement initiatives aimed at reducing future risk. Campbell et al. [26] emphasized that tools for assessing aggression and documenting behaviors are most effective when security personnel are actively involved in interpretation and follow-up, ensuring accurate records and timely interventions. Finally, healthcare security staff collaborate closely with leadership, clinical teams, and patient relations personnel to develop policies and protocols for mitigating WPV. Policies on restraint use, patient agitation management, and risk assessment rely on security expertise to ensure practical implementation and compliance [25,39]. Their involvement is critical for creating a culture of safety where staff feel supported and empowered to address incidents of violence effectively. In conclusion, healthcare security personnel serve multiple roles: immediate responders to threats, enforcers of environmental and policy-based safety measures, educators in de-escalation and crisis management, documenters and facilitators of post-incident processes, and collaborators in organizational safety planning. Their presence and engagement are essential for reducing WPV from patients and visitors, supporting clinical staff, and fostering a safer, more secure healthcare environment.

Conclusion:

This review demonstrates that workplace violence in emergency departments is a persistent and multifaceted challenge requiring comprehensive, long-term strategies rather than isolated interventions. While educational programs consistently improved staff confidence and preparedness, their impact on reducing actual incidents was variable and often short-lived without reinforcement. Screening and assessment tools supported proactive violence management but were most effective when embedded within broader operational workflows. Environmental modifications and clear communication contributed to decreased aggression, especially when aligned with patient expectations and transparent ED processes. The strongest evidence supports multicomponent interventions integrating education, environmental changes, policies, screening processes, and specialized support roles. Such approaches produced notable improvements in safety, staff perceptions, and reductions in violent episodes. However, success depends on sustained implementation, leadership engagement, and continuous monitoring to ensure interventions remain relevant and effective in the dynamic ED environment. Moreover, patient perspectives and contextual factors—including cognitive, social, and systemic contributors—must be incorporated to achieve equitable and meaningful outcomes. Ultimately, WPV mitigation requires a system-level commitment to safety culture, ongoing evaluation, and adaptable, multilevel strategies that address both immediate risks and underlying contributors to violence.

References:

1. Afaya V, Bam V, Azongo TB, et al. "We are left with nothing to work with"; challenges of nurses working in the emergency unit at a secondary referral hospital: a descriptive qualitative study. PLoS One. 2021;16(2):e0247062. doi:10.1371/journal.pone.0247062
2. Liu J, Gan Y, Jiang H, et al. Prevalence of workplace violence against healthcare workers: a systematic review and meta-analysis. Occup Environ Med. 2019;76(12):927-937. doi:10.1136/oemed-2019-105849
3. Van den Heede K, Van de Voorde C. Interventions to reduce emergency department utilisation: a review of reviews. Health Policy. 2016;120(12):1337-1349. doi:10.1016/j.healthpol.2016.10.002
4. Wolf LA, Perhats C, Delao AM, Clark PR, Moon MD. On the threshold of safety: a qualitative exploration of nurses' perceptions of factors

involved in safe staffing levels in emergency departments. J Emerg Nurs. 2017;43(2):150-157. doi:10.1016/j.jen.2016.09.003
5. Ramzi ZS, Fatah PW, Dalvandi A. Prevalence of workplace violence against healthcare workers during the COVID-19 pandemic: a systematic review and meta-analysis. Front Psychol. 2022;13:896156. doi:10.3389/fpsyg.2022.896156
6. Drummond A, Chochinov A, Johnson K, Kapur A, Lim R, Ovens H. CAEP position statement on violence in the emergency department. CJEM. 2021;23(6):758-761. doi:10.1007/s43678-021-00182-z
7. Hassankhani H, Parizad N, Gacki-Smith J, Rahmani A, Mohammadi E. The consequences of violence against nurses working in the emergency department: a qualitative study. Int Emerg Nurs. 2018;39:20-25. doi:10.1016/j.ienj.2017.07.007
8. Havaei F, MacPhee M, Ma A. Workplace violence among British Columbia nurses across different roles and contexts. Healthcare (Basel). 2020;8(2):98. doi:10.3390/healthcare8020098
9. Canadian Centre for Occupational Health and Safety. Violence and harassment in the workplace [Internet]. Updated 2023 Jan 25. Available from: https://www.ccohs.ca/oshanswers/psychosocial/violence.html
10. National Institute for Occupational Safety & Health. Violence occupational hazards in hospitals [Internet]. Atlanta: CDC; 2002 Apr. Available from: https://www.cdc.gov/niosh/docs/2002-101/
11. Li YL, Li RQ, Qiu D, Xiao SY. Prevalence of workplace physical violence against health care professionals by patients and visitors: a systematic review and meta-analysis. Int J Environ Res Public Health. 2020;17(1):299. doi:10.3390/ijerph17010299
12. Gates DM. The epidemic of violence against healthcare workers. Occup Environ Med. 2004;61(8):649-650. doi:10.1136/oem.2004.014548
13. Hollywood L, Phillips KE. Nurses' resilience levels and the effects of workplace violence on patient care. Appl Nurs Res. 2020;54:151321. doi:10.1016/j.apnr.2020.151321
14. MohammadiGorji S, Bosch SJ, Valipoor S, De Portu G. Investigating the impact of healthcare environmental design on staff security: a systematic review. HERD. 2021;14(1):251-272. doi:10.1177/1937586720921407
15. Somani R, Muntaner C, Hillan E, Velonis AJ, Smith P. A systematic review: effectiveness of interventions to de-escalate workplace violence against nurses in healthcare settings. Saf Health Work. 2021;12(3):289-295. doi:10.1016/j.shaw.2021.04.004
16. Wirth T, Peters C, Nienhaus A, Schablon A. Interventions for workplace violence prevention in emergency departments: a systematic review. Int J Environ Res Public Health. 2021;18(16):8459. doi:10.3390/ijerph18168459
17. National Institute for Occupational Safety & Health. Workplace violence prevention course for nurses [Internet]. Atlanta: CDC. Available from: https://wwwn.cdc.gov/WPVHC/Nurses/Course/Slide/Home
18. Garritty C, Gartlehner G, Nussbaumer-Streit B, et al. Cochrane Rapid Reviews Methods Group offers evidence-informed guidance to conduct rapid reviews. J Clin Epidemiol. 2021;130:13-22. doi:10.1016/j.jclinepi.2020.10.007
19. Page MJ, McKenzie JE, Bossuyt PM, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ. 2021;372:n71. doi:10.1136/bmj.n71
20. Covidence systematic review software. Veritas Health Innovation, Melbourne, Australia. Available from: https://support.covidence.org/help/how-can-i-cite-covidence
21. O'Neill J, Tabish H, Welch V, et al. Applying an equity lens to interventions: using PROGRESS ensures consideration of socially stratifying factors to illuminate inequities in health. J Clin Epidemiol. 2014;67(1):56-64. doi:10.1016/j.jclinepi.2013.08.005
22. Cochrane Methods Equity. PROGRESS-Plus [Internet]. Available from: https://methods.cochrane.org/equity/projects/evidence-equity/progress-plus
23. JBI. Critical appraisal tools [Internet]. 2020. Available from: https://jbi.global/critical-appraisal-tools
24. Baig L, Tanzil S, Shaikh S, Hashmi I, Khan MA, Polkowski M. Effectiveness of training on de-escalation of violence and management of aggressive behavior faced by health care providers in a public sector hospital of Karachi. Pak J Med Sci. 2018;34(2):294-299. doi:10.12669/pjms.342.14432
25. Bailey HE. Violence Against Nurses and Patient Behavior Management in the Emergency Department [dissertation]. Grand Canyon University; 2022.
26. Campbell E, Jessee D, Whitney J, Vupputuri S, Carpenter J. Development and implementation of an emergent documentation aggression rating tool: quality improvement. J Emerg Nurs. 2021;47(5):696-706. doi:10.1016/j.jen.2021.04.011
27. Chang YC, Hsu MC, Ouyang WC. Effects of integrated workplace violence management intervention on occupational coping self-efficacy, goal commitment, attitudes, and confidence in emergency department nurses: a cluster-randomized controlled trial. Int J Environ Res

Public Health. 2022;19(5):2835. doi:10.3390/ijerph19052835
28. Choe BJ, Connor M, Riley-Gonzales T, Briggs-Malonson M. 134 a code staff assist for acutely agitated patients reduces the incidence of patient and staff safety events. Ann Emerg Med. 2021;78(4):S54-S55. doi:10.1016/j.annemergmed.2021.09.144
29. Efrat-Treister D, Moriah H, Rafaeli A. The effect of waiting on aggressive tendencies toward emergency department staff: providing information can help but may also backfire. PLoS One. 2020;15(1):e0227729. doi:10.1371/journal.pone.0227729
30. Geoffrion S, Goncalves J, Giguère CÉ, Guay S. Impact of a program for the management of aggressive behaviors on seclusion and restraint use in two high-risk units of a mental health institute. Psychiatr Q. 2018;89(1):95-102. doi:10.1007/s11126-017-9519-6
31. Hemati-Esmaeili M, Heshmati-Nabavi F, Pouresmail Z, Mazlom S, Reihani H. Educational and managerial policy making to reduce workplace violence against nurses: an action research study. Iran J Nurs Midwif Res. 2018;23(6):478-485. doi:10.4103/ijnmr.IJNMR_77_17
32. Kalbali R, Jouybari L, Derakhshanpour F, Vakili MA, Sanagoo A. Impact of anger management training on controlling perceived violence and aggression of nurses in emergency departments. J Nurs Midwif Sci. 2018;5(3):89-94. doi:10.4103/JNMS.JNMS_46_18
33. Khan MN, Khan I, Ul-Haq Z, et al. Managing violence against healthcare personnel in the emergency settings of Pakistan: a mixed methods study. BMJ Open. 2021;11(6):e044213. doi:10.1136/bmjopen-2020-044213
34. Legambi TF, Doede M, Michael K, Zaleski M. A quality improvement project on agitation management in the emergency department. J Emerg Nurs. 2021;47(3):390-399. doi:10.1016/j.jen.2021.01.005
35. Okundolor SI, Ahenkorah F, Sarff L, et al. Zero staff assaults in the psychiatric emergency room: impact of a multifaceted performance improvement project. J Am Psychiatr Nurs Assoc. 2021;27(1):64-71. doi:10.1177/1078390319900243
36. Senz A, Ilarda E, Klim S, Kelly AM. Development, implementation and evaluation of a process to recognise and reduce aggression and violence in an Australian emergency department. Emerg Med Australas. 2021;33(4):665-671. doi:10.1111/1742-6723.13702
37. Shaikh S, Shahzad H, Khan M, et al. Effect of low-cost interventions to reduce the incidence of violent events in two public sector tertiary-care emergency departments, Pakistan. East Mediterr Health J. 2022;28(2):144-151. doi:10.26719/emhj.22.026
38. Sharifi S, Shahoei R, Nouri B, Almvik R, Valiee S. Effect of an education program, risk assessment checklist and prevention protocol on violence against emergency department nurses: a single center before and after study. Int Emerg Nurs. 2020;50:100813. doi:10.1016/j.ienj.2019.100813
39. Touzet S, Occelli P, Denis A, et al. Impact of a comprehensive prevention programme aimed at reducing incivility and verbal violence against healthcare workers in a French ophthalmic emergency department: an interrupted time-series study. BMJ Open. 2019;9(9):e031054. doi:10.1136/bmjopen-2019-031054
40. Winokur EJ, Loucks J, Raup GH. Use of a standardized procedure to improve behavioral health patients' care: a quality improvement initiative. J Emerg Nurs. 2018;44(1):26-32. doi:10.1016/j.jen.2017.07.008
41. Wu JC, Chen HY, Lee Hsieh J, Clinciu DL, Tung HH. Enhancing health care personnel's response to ER violence using situational simulation. Clin Simul Nurs. 2019;28:6-14. doi:10.1016/j.ecns.2018.12.003
42. Gillam SW. Nonviolent crisis intervention training and the incidence of violent events in a large hospital emergency department: an observational quality improvement study. Adv Emerg Nurs J. 2014;36(2):177-188. doi:10.1097/tme.0000000000000019
43. Gillespie GL, Gates DM, Kowalenko T, Bresler S, Succop P. Implementation of a comprehensive intervention to reduce physical assaults and threats in the emergency department. J Emerg Nurs. 2014;40(6):586-591. doi:10.1016/j.jen.2014.01.003
44. Henderson A, Colen-Himes F. Save our staff: creating a safe. Nursing. 2013;43(7):25-27. doi:10.1097/01.NURSE.0000431145.20651.23
45. Weiland TJ, Ivory S, Hutton J. Managing acute behavioural disturbances in the emergency department using the environment, policies and practices: a systematic review. West J Emerg Med. 2017;18(4):647-661. doi:10.5811/westjem.2017.4.33411
46. Ramacciati N, Ceccagnoli A, Addey B, Lumini E, Rasero L. Interventions to reduce the risk of violence toward emergency department staff: current approaches. Open Access Emerg Med. 2016;8:17-27. doi:10.2147/OAEM.S69976
47. Registered Nurses' Association of Ontario. Preventing Violence, Harassment and Bullying Against Health Workers. 2nd ed. RNAO; 2019.
48. Rosenthal LJ, Byerly A, Taylor AD, Martinovich Z. Impact and prevalence of physical and verbal violence toward healthcare workers. Psychosomatics. 2018;59(6):584-590. doi:10.1016/j.psym.2018.04.007

49. Forsythe LP, Carman KL, Szydlowski V, et al. Patient engagement in research: early findings from the Patient-centered Outcomes Research Institute. Health Aff (Millwood). 2019;38(3):359-367. doi:10.1377/hlthaff.2018.05067.

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