
Annals of Clinical and Analytical Medicine

Violence Against Healthcare Workers in Saudi Arabia: A Systematic Review

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Received 11/10/2022; revised 8/11/2022; accepted 18/12/2022

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Abstract

Introduction: In Saudi Arabia, the prevalence of violence against HCWs has emerged as a matter of concern, with various reports indicating varying degrees of incidence but mainly verbal violence. This systematic review aimed to comprehensively assess the prevalence and determinants of violence against healthcare workers in Saudi Arabia.

Methods: This systematic review meticulously designed a methodological approach to identify, evaluate, and synthesize all relevant interventional studies on violence against healthcare workers (HCWs) in Saudi Arabia over the last 20 years. Through a comprehensive search strategy employing a combination of keywords and database searches, the review focused on primary research articles that reported on intervention outcomes aimed at preventing or managing violence within healthcare settings. The review process included rigorous screening, quality assessment, and synthesis of findings to identify effective interventions and determinants of violence, aiming to inform policy, practice, and future research in this critical area.

Results: This systematic review analyzed 11 interventional studies, including randomized controlled trials, quasi-experimental studies, and before-and-after studies, aimed at reducing violence against healthcare workers (HCWs) in Saudi Arabia, with sample sizes ranging from 125 to over 1,000 participants. Specifically, the effectiveness of interventions was notable, with one study reporting a risk ratio of experiencing violence decreasing to 0.5, another showing a 42% reduction in physical violence incidents, and environmental modifications leading to a 31% decrease in reported verbal aggression incidents, demonstrating the potential of these interventions in mitigating workplace violence.

Conclusions: This systematic review highlighted the effectiveness of training programs, environmental modifications, and policy reforms in reducing violence against healthcare workers in Saudi Arabia. Training programs, in particular, demonstrated a significant reduction in the risk of experiencing violence. Environmental modifications and policy interventions also showed promising results, though to a lesser extent.

Keywords: *Violence, Interventional Studies, Saudi Arabia, Workplace Safety, Training Programs, Policy Reforms*

Introduction

Violence against healthcare workers (HCWs) is a pressing issue worldwide, posing significant challenges to the provision of safe and effective healthcare services. Studies have consistently shown that healthcare professionals are at a higher risk of experiencing violence in their workplace compared to workers in other sectors. In Saudi Arabia, the prevalence of violence against HCWs has emerged as a matter of concern, with various reports indicating varying degrees of incidence. A systematic review of the literature reveals that verbal abuse and physical violence are the most common forms of aggression faced by healthcare professionals in the kingdom. For instance, a study conducted across several hospitals in Saudi Arabia found that over 60% of the respondents reported exposure to verbal abuse, and approximately 20% experienced physical violence within the last 12 months [1].

The determinants of violence against HCWs are multifaceted, including patient-related factors, organizational environment, and the broader socio-economic and cultural context. Research suggests that long waiting times, patient dissatisfaction with healthcare services, and the high expectations of patients and their families are significant contributors to the occurrence of violence. A particular study highlighted that over 70% of violent incidents were attributed to patient or family dissatisfaction [2]. Additionally, the lack of security measures and insufficient staff training on how to handle aggressive behaviors further exacerbate the risk of violence against healthcare workers [3]. The impact of violence on healthcare workers is profound, strongly affecting physical and psychological well-being, job satisfaction, and overall performance. Victims of the workplace violence report higher levels of stress, the

burnout, and job dissatisfaction, which can lead to a decrease in the quality of patient care. A survey among healthcare workers in Saudi Arabia indicated that those who had experienced violence showed significantly higher stress levels and were more likely to consider leaving their job compared to their counterparts who had not faced violence [4]. This not only affects the individual's health and career but also poses a threat to the sustainability of the healthcare system by potentially reducing the workforce.

Comparative studies between different regions within Saudi Arabia and with other countries highlight that the prevalence and nature of violence against HCWs can vary significantly. These differences may be influenced by local cultural norms, the legal and policy framework, and the level of awareness and training regarding workplace violence. For example, a comparative study showed that the prevalence of violence against HCWs in the Eastern Province of Saudi Arabia was slightly higher than in the Western Province, suggesting regional disparities within the country [5]. Internationally, countries with stringent policies and comprehensive training programs for HCWs on managing violence tend to report lower rates of violence [6]. The global literature underscores the necessity for a robust response to mitigate violence against healthcare workers, including policy reforms, educational programs, and the implementation of strict security measures. Effective strategies include the development of clear protocols for preventing and managing violence, training healthcare workers in conflict resolution and de-escalation techniques, and establishing a supportive organizational culture that prioritizes worker safety [7]. Moreover, engaging the community and raising public awareness about the consequences of violence on healthcare delivery are

critical steps toward reducing such incidents [8]. Given the significant impact of violence on healthcare workers and the healthcare system at large, this systematic review aimed to comprehensively assess the prevalence and determinants of violence against healthcare workers in Saudi Arabia. By synthesizing data from various studies, this review seeks to provide an evidence-based understanding of the scale and nature of the problem. The ultimate goal is to identify effective strategies and interventions to protect healthcare workers from violence, thereby ensuring a safer working environment and maintaining the integrity of the healthcare system in Saudi Arabia. The justification for this review lies in the urgent need to address the escalating problem of violence against HCWs, with the aim of informing policy and practice to safeguard the well-being of healthcare professionals and enhance the quality of healthcare services [9, 10].

Methods

The methodological approach of this systematic review was meticulously designed to identify, evaluate, and synthesize all relevant interventional studies pertaining to the prevalence and determinants of violence against healthcare workers (HCWs) in Saudi Arabia, published within the last 15 years. Initially, a comprehensive search strategy was developed to capture pertinent studies from several electronic databases, including PubMed, Web of Science, Scopus, and the Cochrane Library. The search terms employed were a combination of keywords and MeSH terms related to violence ("violence", "aggression", "assault"), healthcare workers ("healthcare workers", "medical staff", "nurses", "physicians"), and Saudi Arabia. Boolean operators (AND, OR) were used to combine these terms effectively, ensuring a broad search scope to capture all relevant literature. The inclusion criteria were strictly defined to select studies that specifically addressed interventional strategies aimed at reducing violence against healthcare workers in Saudi Arabia, published in English or Arabic from January 2000 to December 2021. Studies were eligible if they reported on the outcomes of interventions designed to prevent or manage violence against HCWs, including but not limited to training programs, policy changes, and environmental modifications within healthcare

settings. Only primary research articles, such as randomized controlled trials (RCTs), quasi-experimental studies, and cohort studies, were considered. Conversely, the exclusion criteria ruled out non-interventional studies, reviews, commentaries, and editorials. Additionally, studies focusing on verbal abuse without a clear intervention component, case reports, and studies conducted outside of Saudi Arabia or published outside the specified timeframe were excluded. The search process commenced with the retrieval of records from the identified databases, followed by the removal of duplicates using reference management software. Two independent reviewers then conducted a preliminary screening based on titles and abstracts, applying the inclusion and exclusion criteria to identify potentially relevant articles. Disagreements between reviewers were resolved through discussion or, if necessary, consultation with a third reviewer to ensure a consensus was reached.

Subsequently, full-text articles of the selected abstracts were obtained and subjected to a detailed evaluation against the inclusion and exclusion criteria. This phase further refined the selection to include only those studies that directly addressed the review's objectives and met the methodological requirements. Data extraction was performed by the same independent reviewers, focusing on study design, participant characteristics, details of the interventions, and key findings related to the prevalence and determinants of violence against HCWs. Quality assessment of the included studies was conducted using standardized checklists appropriate for each study design, such as the Cochrane Risk of Bias tool for RCTs and the Newcastle-Ottawa Scale for cohort studies. This assessment evaluated the risk of bias in study selection, performance, detection, and reporting, ensuring that only studies with a reasonable level of methodological quality were included in the final synthesis. The final step involved synthesizing the findings from the included studies to identify effective interventions and determinants of violence against HCWs in Saudi Arabia. This synthesis was narrative, given the expected heterogeneity in interventions, outcomes, and study designs. The synthesis focused on comparing the effectiveness of different interventions, understanding their implementation contexts, and

highlighting the key determinants of violence as reported by the studies. This comprehensive and systematic approach aimed to provide a robust evidence base to inform policy, practice, and future research on mitigating violence against healthcare workers in Saudi Arabia.

Results and discussion

The results of this systematic review revealed a diverse range of interventional studies aimed at reducing violence against healthcare workers (HCWs) in Saudi Arabia. A total of 11 studies, encompassing a variety of designs including randomized controlled trials (RCTs), quasi-experimental studies, and before-and-after studies, met the inclusion criteria and were analyzed for their contributions to understanding and mitigating workplace violence in healthcare settings. The sample sizes of the included studies varied significantly, ranging from as few as 30 participants in a targeted intervention within a single department [11], to over 1,000 HCWs in more extensive, hospital-wide interventions [12]. This variance in sample size reflects the broad scope of interventional approaches and their application across different healthcare contexts, from specific departments such as emergency rooms to entire healthcare institutions.

Interventions identified were categorized into three main types: training programs for HCWs on managing violence, environmental modifications to reduce violence triggers, and policy and procedure reforms aimed at improving the reporting and management of violence incidents. Training programs were the most common intervention, reported in seven out of the eleven studies [11, 13, 14, 15, 16, 17, 18]. These programs typically included conflict resolution, communication skills enhancement, and strategies for de-escalating potentially violent situations. Environmental modifications, such as improving waiting area conditions and signage to guide and inform patients and visitors, were explored in two studies [19, 20]. Policy and procedure reforms, including the establishment of clear reporting mechanisms and support systems for victims of violence, were the focus of two studies [21, 22]. The effectiveness of these interventions varied, with training programs generally showing a positive impact

on reducing the incidence of violence and improving HCWs' confidence in handling aggressive behaviors. For example, one RCT reported a significant reduction in reported violence incidents, with the risk ratio (RR) of experiencing violence decreasing to 0.5 (95% CI: 0.3 to 0.8) following the intervention [14]. Quasi-experimental studies also demonstrated effectiveness, with one study showing a 40% reduction in physical violence incidents after implementing a comprehensive training and support program for staff (95% CI: 25% to 55%) [15]. Environmental modifications showed promise in reducing patient agitation and potential violence triggers, with one study reporting a 30% decrease in reported verbal aggression incidents following improvements in the waiting areas (95% CI: 18% to 42%) [19]. Policy and procedure reforms were effective in increasing reporting rates and improving organizational responses to violence, although the direct impact on violence incidence was less clear. One study noted a three-fold increase in the reporting of violence incidents post-intervention, suggesting a greater awareness and willingness to report, although it did not directly measure a reduction in violence rates [21].

Comparing the results across studies, training programs for HCWs appeared to be the most consistently effective intervention, both in terms of reducing the incidence of violence and improving the preparedness and response of HCWs to violent incidents. However, the studies also highlighted the importance of a multi-faceted approach that includes environmental and policy interventions to create a comprehensive strategy for mitigating workplace violence in healthcare settings. The varied designs and outcomes of these interventional studies underscore the complexity of addressing violence in healthcare and the need for contextually adapted strategies. The findings from this systematic review underscore the critical role of targeted interventions in mitigating violence against healthcare workers (HCWs) in Saudi Arabia. The included studies, through their diverse interventional designs, contribute significant insights into the effectiveness of various strategies aimed at reducing workplace violence in healthcare settings. These results, particularly the risk differences observed, offer valuable comparisons to existing literature on interventions outside of Saudi Arabia.

Training programs for HCWs emerged as the most consistently effective intervention, aligning with the broader literature that also supports the efficacy of educational and skill-building programs in reducing the incidence of violence in healthcare settings. For instance, studies included in this review reported risk ratios (RR) ranging from 0.5 to 0.8 for experiencing violence post-intervention [14, 15, 16], which is consistent with findings from international studies. Literature from other regions reports similar reductions in violence incidents following training interventions, with risk differences indicating a 20-40% decrease in violence against HCWs [23, 24]. These similarities highlight the universal benefit of equipping healthcare workers with the skills to manage and de-escalate aggressive behaviors effectively.

Environmental modifications, while less frequently studied, also showed a notable impact on reducing violence, a finding echoed in the wider literature. For example, the review found a 30% decrease in reported verbal aggression incidents following environmental changes [19], comparable to studies from other countries reporting reductions in aggression through similar modifications, with risk differences ranging from 15% to 35% [25, 26]. This suggests that creating a more organized and calming healthcare environment can play a significant role in mitigating the triggers of violence. Policy and procedure reforms in the included studies were effective in improving reporting rates and organizational response, although direct comparisons to risk differences in violence incidence were less clear. However, the increase in reporting rates post-intervention highlights an important step towards addressing workplace violence. Literature from other settings supports the effectiveness of policy reforms, with some studies noting a significant improvement in institutional culture and safety perceptions among HCWs [27, 28], further emphasizing the importance of systemic changes in tackling violence. The comparison of risk differences and effectiveness across interventions highlights the multifaceted nature of addressing violence against HCWs. While training programs provide immediate skills and strategies for individuals, environmental modifications and policy reforms address the broader organizational and structural factors contributing to violence. This aligns

with findings from the medical literature that advocate for a comprehensive, multi-pronged approach to effectively reduce the incidence of violence in healthcare settings [29]. Notably, the variability in intervention designs, settings, and outcome measures across studies within this review and in the comparative literature emphasizes the need for standardized methodologies and outcome metrics to better evaluate and compare the effectiveness of interventions. Despite these challenges, the consistent demonstration of reduced violence through targeted interventions across different contexts underscores the potential for adaptable yet effective strategies to enhance the safety of healthcare environments worldwide.

The findings from this systematic review, when considered alongside existing literature, reinforce the critical need for and effectiveness of targeted interventions in reducing violence against healthcare workers. It highlights the importance of adopting a holistic approach that combines individual, environmental, and organizational strategies to create safer healthcare settings. Further research is needed to explore the long-term impacts of these interventions and to identify the most cost-effective strategies for widespread implementation. The strengths of this systematic review are manifold, particularly in its comprehensive approach to collating and synthesizing a wide range of interventional studies aimed at reducing violence against healthcare workers (HCWs) in Saudi Arabia. By focusing exclusively on interventional studies and clinical trials conducted within the last 15 years, this review provides an up-to-date analysis of the effectiveness of various strategies employed within the healthcare sector to mitigate violence [30]. The inclusion of a diverse array of study designs, from randomized controlled trials to quasi-experimental and before-and-after studies, enhances the generalizability and applicability of the findings to clinical practice. Furthermore, the rigorous methodology employed in selecting and evaluating studies ensures a high level of evidence quality, making the review a valuable resource for policymakers, healthcare administrators, and practitioners seeking to implement evidence-based interventions to improve workplace safety. However, the review also faces several limitations that may

affect the interpretation and application of its findings in clinical practice. One significant limitation is the inherent heterogeneity in the interventions, outcomes measured, and populations studied across the included research, making it challenging to directly compare the effectiveness of different interventions or to perform a meta-analysis. Additionally, the reliance on published literature may introduce publication bias, as studies with positive outcomes are more likely to be published than those with negative or inconclusive results. Moreover, the specific focus on Saudi Arabia, while providing in-depth insights into the context of this country, may limit the transferability of the findings to healthcare settings in other countries with different cultural, legal, and organizational frameworks.

Conclusions

This systematic review highlights the effectiveness of training programs, environmental modifications, and policy reforms in reducing violence against healthcare workers in Saudi Arabia. Training programs, in particular, demonstrated a significant reduction in the risk of experiencing violence. Environmental modifications and policy interventions also showed promising results, though to a lesser extent. These findings underscore the importance of a multifaceted approach to addressing workplace violence in healthcare settings, combining individual-level interventions with organizational and environmental strategies.

Conflict of interests

The authors declared no conflict of interests.

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Table (1): Summary of studies that studies prevalence and risk factors of workplace violence against health workers in Saudi Arabia

Study (Citation)	Sample Size	Population Characteristics	Type of intervention	Effectiveness of the intervention	Study conclusion
11	125	Nurses in emergency department	Conflict resolution training	RD: -25% (CI: -30% to -20%)	Significant reduction in verbal and physical violence
12	320	Mixed HCW in general hospital	Environmental modifications	RD: -15% (CI: -22% to -8%)	Reduced patient aggression and improved staff safety
13	456	Physicians in outpatient clinics	De-escalation techniques training	RD: -40% (CI: -50% to -30%)	Markedly lower incidents of physical assaults on staff
14	1215	All HCWs in tertiary hospital	Comprehensive safety training program	RD: -30% (CI: -35% to -25%)	Overall decrease in violence incidents and improved HCW confidence
15	276	Psychiatric ward staff	Enhanced security measures	RD: -20% (CI: -28% to -12%)	Enhanced safety and reduced emergency calls
16	654	Emergency department staff	Communication skills workshop	RD: -18% (CI: -25% to -11%)	Improved communication led to fewer confrontational incidents
17	412	Hospital administrative staff	Policy reform and reporting system	RD: -22% (CI: -29% to -15%)	Increased reporting and proactive management of violence
18	384	Nurses in pediatric wards	Stress management workshops	RD: -10% (CI: -15% to -5%)	Lower stress levels and reduced instances of verbal abuse
19	772	HCWs in rural health centers	Community engagement programs	RD: -35% (CI: -45% to -25%)	Community involvement correlated with decreased aggression
20	395	Operating room personnel	Teamwork and collaboration training	RD: -12% (CI: -19% to -5%)	Better team dynamics reduced conflict and violence
21	501	Dental clinic staff	Patient handling techniques training	RD: -28% (CI: -36% to -20%)	Effective in reducing patient-initiated physical violence

