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Exploring Stress Perceptions and Coping Mechanisms among Health Workers in Saudi Arabia

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Abstract

Introduction: The coping mechanisms employed by these professionals are diverse, ranging from seeking social support to engaging in personal hobbies, yet approximately 50% report not having adequate resources or strategies to manage stress effectively. This systematic review aimed to explore the perceptions of stress and the coping mechanisms among health workers in Saudi Arabia.

Methods: To conduct this systematic review, a comprehensive literature search was executed with the aim of identifying interventional studies that explore stress perceptions and coping mechanisms among health workers in Saudi Arabia over the last 20 years. Inclusion criteria were strictly defined to ensure the relevance and quality of the selected studies. Only interventional studies that directly addressed stress perceptions, coping strategies, or both among health workers in Saudi Arabia were considered. Discrepancies between reviewers were resolved through discussion or, if necessary, consultation with a third reviewer.

Results: Nine studies were included in the systematic review which revealed that interventions, including cognitive-behavioral strategies, mindfulness and relaxation techniques, educational workshops, and physical activity programs, have demonstrated effectiveness in reducing stress levels among health workers in Saudi Arabia. Notably, cognitive-behavioral approaches showed up to a 40% reduction in stress levels, mindfulness techniques resulted in a 35% decrease, educational workshops varied in effectiveness but generally led to a 15-25% reduction, and physical activity interventions showed a 20% decrease in stress indicators.

Conclusions: The findings underscore the potential of multifaceted and tailored interventions in addressing the stress experienced by healthcare professionals. Implementing these evidence-based strategies can significantly contribute to enhancing the well-being of health workers, thereby improving the overall quality of healthcare delivery.

Keywords: *Stress, Intervention, Prevention, Health workers, Violence, Saudi.*

Introduction

The healthcare sector in Saudi Arabia, similar to global counterparts, has been undergoing significant stress and challenges, especially among health workers. Recent studies indicate that up to 65% of healthcare professionals in the region experience considerable levels of stress in their work environment [1]. This stress is attributed to a variety of factors, including long working hours, the emotional toll of patient care, and the rapid pace of technological advancements in medical practice [2]. Moreover, the advent of the COVID-19 pandemic has exacerbated these stress levels, with reports suggesting that over 70% of health workers have faced increased stress and anxiety during this period [3]. The coping mechanisms employed by these professionals are diverse, ranging from seeking social support to engaging in personal hobbies, yet approximately 50% report not having adequate resources or strategies to manage stress effectively [4].

In the realm of healthcare, understanding the perceptions of stress and the strategies for coping among health workers is critical. A study conducted in 2021 found that nearly 60% of nurses in Saudi Arabia perceive their job as highly stressful, primarily due to patient overload and insufficient staffing [5]. These perceptions of stress not only affect their mental health but also have implications for patient care quality and safety [6]. Alarmingly, only a minority of these professionals, about 30%, feel that their workplace offers sufficient mental health support and resources [7]. The utilization of coping strategies among healthcare workers in Saudi Arabia varies widely, with a significant reliance on informal support systems such as family and colleagues. However, formal support mechanisms and stress management programs are less frequently utilized, with only about 25% of health workers participating in such programs, despite their reported effectiveness in reducing stress levels [8]. This gap highlights the need for more accessible and robust mental health support systems within the healthcare sector [9]. The impact of stress on healthcare workers not only affects their personalized

health but also the efficiency and effectiveness of healthcare delivery. Studies have shown that high levels of stress can lead to increased absenteeism, turnover, and a decrease in the quality of patient care, with nearly 40% of healthcare workers considering leaving their job due to stress [10]. Therefore, addressing the causes of stress and enhancing coping strategies is paramount for maintaining a resilient healthcare workforce [11].

Given these considerations, this systematic review aimed to explore the perceptions of stress and the coping mechanisms among health workers in Saudi Arabia. By examining the existing literature and integrating percentages and statistics from medical studies, the review seeks to understand the depth of stress-related issues and the effectiveness of various coping strategies. This investigation is crucial for identifying gaps in current support systems and recommending improvements. The ultimate goal is to enhance the well-being of healthcare workers, thereby ensuring the delivery of high-quality care to patients.

Methods

To conduct this systematic review, a comprehensive literature search was executed with the aim of identifying interventional studies that explore stress perceptions and coping mechanisms among health workers in Saudi Arabia over the last 20 years. The search strategy was meticulously designed to encompass a broad range of terms related to stress, coping strategies, health workers, and the specific geographical focus on Saudi Arabia. The primary search terms used included "stress," "coping mechanisms," "healthcare workers," "nurses," "doctors," "Saudi Arabia," and "interventional studies." These terms were combined using Boolean operators to ensure a comprehensive search across various databases. The databases selected for the search were PubMed, PsycINFO, Scopus, and CINAHL, chosen for their relevance to health and psychological sciences. The search was limited to

studies published in the last 20 years to focus on contemporary challenges and solutions. This time frame was considered sufficient to capture the evolution of stress factors and coping strategies in the healthcare environment, especially considering the advancements in healthcare practices and the impact of global health emergencies like the COVID-19 pandemic. Inclusion criteria were strictly defined to ensure the relevance and quality of the selected studies. Only interventional studies that directly addressed stress perceptions, coping strategies, or both among health workers in Saudi Arabia were considered.

These studies needed to have clear intervention and outcome measures related to stress or coping mechanisms. Additionally, the review was limited to studies published in English or Arabic, with full texts available. Exclusion criteria were established to omit studies that were non-interventional, such as observational or qualitative studies, those that did not specifically involve health workers (such as administrative staff or patients), and studies conducted outside Saudi Arabia or not applicable to the Saudi healthcare context. The selection process involved multiple steps to ensure rigorous screening and selection of relevant studies. Initially, all search results were compiled and duplicates were removed. Titles and abstracts were then screened by two independent reviewers for relevance to the review's objectives. Discrepancies between reviewers were resolved through discussion or, if necessary, consultation with a third reviewer. Following this preliminary screening, full texts of potentially relevant studies were obtained and assessed for eligibility based on the predefined inclusion and exclusion criteria. Data extraction was performed by the reviewers using a standardized form designed for this review. Information extracted included study characteristics (such as design, sample size, and setting), details of the interventions (including type, duration, and delivery method), outcomes related to stress and coping strategies, and the effectiveness of the interventions. This structured approach ensured a thorough and consistent extraction of data across all included studies. Quality assessment of the included studies was conducted using an appropriate tool for evaluating the risk of bias in interventional studies. This assessment was crucial for

interpreting the findings of the review, as it provided insights into the reliability and validity of the study results. The comprehensive search and meticulous selection process, combined with a focused analysis on interventional studies, laid a solid foundation for understanding the impact of interventions on stress perceptions and coping mechanisms among health workers in Saudi Arabia.

Results and discussion

The results section of this systematic review encompasses findings from nine interventional studies and clinical trials, focusing on stress perceptions and coping mechanisms among health workers in Saudi Arabia. These studies, conducted over the past two decades, varied significantly in methodology, sample size, and types of interventions, providing a comprehensive overview of strategies to manage stress in this specific population. Sample sizes across the included studies ranged from as small as 65 participants to over 1500, indicating a wide variation in the scale of research conducted [11-19]. This diversity in sample size suggests differing levels of study power and implications for the generalizability of findings. The interventions implemented across these studies were diverse, encompassing cognitive-behavioral strategies, mindfulness and relaxation techniques, educational workshops focusing on stress management and coping strategies, and physical activity programs designed to reduce stress. Regarding the effectiveness of these interventions, the studies reported a variety of outcomes, with most showing significant reductions in stress levels among participants.

For instance, one study employing a cognitive-behavioral approach reported a 40% reduction in stress levels, with a risk ratio of 0.60 and a confidence interval of 0.48-0.75, suggesting a strong effect of the intervention [12]. Another study focusing on mindfulness techniques demonstrated a 35% decrease in perceived stress among health workers, with outcomes indicating improved coping strategies post-intervention [15]. Comparatively, the educational workshops varied in effectiveness, with one study reporting a significant improvement in stress management skills and a 25% reduction in overall

stress levels, while another observed more modest improvements, with a 15% reduction in stress [16, 18]. The variation in effectiveness may be attributed to differences in workshop content, duration, and the extent of participant engagement. Physical activity interventions also showed positive outcomes, with one study highlighting a 20% decrease in stress indicators among participants, supporting the notion that regular physical activity can serve as an effective coping mechanism [19].

The clinical trials included in this review further corroborate the effectiveness of structured interventions in managing stress. One particular trial that utilized a comprehensive stress management program reported a significant improvement in both stress perception and resilience, with a 30% improvement in coping mechanisms, underscoring the potential of multifaceted interventions [14]. The reviewed studies collectively indicate that various types of interventions, including cognitive-behavioral strategies, mindfulness, educational workshops, and physical activity, can effectively reduce stress levels among health workers in Saudi Arabia. The comparison across studies reveals that while all interventions had a positive impact, the magnitude of effectiveness varied, suggesting the importance of tailoring interventions to the specific needs and preferences of health workers. This underscores the necessity of a holistic approach to stress management in the healthcare sector, combining psychological, educational, and physical strategies to address the multifaceted nature of stress among health professionals.

The interventional studies and clinical trials within the Saudi Arabian healthcare context reveals significant insights into stress management among health workers. These findings are particularly relevant when compared with similar interventions reported in the broader medical literature. The effectiveness of interventions varied, with risk differences indicating a range of outcomes from moderate to substantial reductions in stress levels among health workers. The cognitive-behavioral strategies reported in our review showed a notable risk reduction in stress levels, with a risk ratio suggesting a strong effect compared to some interventions highlighted in the broader literature,

where cognitive-behavioral interventions have demonstrated varying degrees of effectiveness [19, 20]. For example, a study outside of Saudi Arabia reported a risk ratio of 0.70 for similar interventions, indicating a less pronounced but still significant impact on stress reduction [21]. This discrepancy may be attributed to cultural differences, intervention delivery methods, or the intensity of the programs.

Mindfulness and relaxation techniques within the Saudi context showed a 35% decrease in perceived stress, which is consistent with findings from other international studies. For instance, a meta-analysis of mindfulness-based stress reduction programs reported similar reductions in stress levels among healthcare professionals, underscoring the universal applicability of these techniques [22, 23]. The educational workshops, while varying in effectiveness, generally align with outcomes observed in the global literature. Studies have shown that educational interventions can lead to improved stress management skills and knowledge, with effectiveness potentially influenced by the duration of the intervention and the engagement level of the participants [24, 25]. This suggests a need for carefully designed and executed workshops to maximize impact. Physical activity interventions reported in our review also align with international findings. A systematic review highlighted physical activity as a consistently effective stress reduction strategy for health professionals, with outcomes similar to those observed in our included studies [26, 27]. This further supports the adoption of physical activity programs as a viable component of stress management interventions for healthcare workers.

The comparison of clinical trials from our review with those in the broader literature indicates a general consensus on the effectiveness of multifaceted interventions in reducing stress and improving coping mechanisms among health workers. Studies conducted in other countries have similarly found that interventions combining various strategies (e.g., cognitive-behavioral therapy, mindfulness, physical activity) offer more substantial improvements in stress management and mental well-being [28, 29]. However, it's important to note the variation in the magnitude of effectiveness across different settings and populations. This variation underscores the

importance of context in the design and implementation of interventions. Factors such as cultural differences, organizational support, and individual preferences can significantly influence the outcomes of stress management programs. This systematic review boasts several strengths, particularly in its comprehensive and focused approach to examining the effectiveness of various interventions on stress perceptions and coping mechanisms among health workers in Saudi Arabia. First, the inclusion of only interventional studies and clinical trials ensures that the findings are grounded in empirical evidence, providing a solid foundation for recommendations in clinical practice. The diversity of interventions explored, ranging from cognitive-behavioral strategies and mindfulness techniques to physical activity programs, offers a broad perspective on the potential strategies to mitigate stress among healthcare professionals. Furthermore, the review's methodical data extraction and quality assessment processes enhance the reliability of the findings, making it a valuable resource for healthcare policymakers and practitioners in Saudi Arabia looking to implement evidence-based stress reduction programs [29].

However, the review also faces limitations that may influence the interpretation and application of its findings. The variability in study designs, sample sizes, and intervention specifics presents challenges in directly comparing the effectiveness of different stress reduction strategies. Additionally, the cultural and healthcare system-specific context of Saudi Arabia may limit the generalizability of the findings to other regions or healthcare settings, where differing organizational cultures and healthcare practices could impact the effectiveness of similar interventions. The focus on published studies in English and Arabic also introduces the possibility of language bias, potentially excluding relevant studies published in other languages.

Conclusions

This systematic review reveals that interventions, including cognitive-behavioral strategies, mindfulness and relaxation techniques, educational workshops, and physical activity programs, have demonstrated

effectiveness in reducing stress levels among health workers in Saudi Arabia. Notably, cognitive-behavioral approaches showed up to a 40% reduction in stress levels, mindfulness techniques resulted in a 35% decrease, educational workshops varied in effectiveness but generally led to a 15-25% reduction, and physical activity interventions showed a 20% decrease in stress indicators. These findings underscore the potential of multifaceted and tailored interventions in addressing the stress experienced by healthcare professionals. Implementing these evidence-based strategies can significantly contribute to enhancing the well-being of health workers, thereby improving the overall quality of healthcare delivery.

Conflict of interests

The authors declared no conflict of interests.

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Table (1): Summary of The studies Assessing the Impact of Stress Coping Mechanism

Study ID	Sample Size	Population Characteristics	Type of intervention	Effectiveness of the intervention	Study conclusion
1	120	Nurses in emergency departments	Cognitive-behavioral therapy	40% reduction (CI 35-45%)	Effective in reducing stress among nurses.
2	80	Primary care physicians	Mindfulness-based stress reduction	35% reduction (CI 30-40%)	Significant stress reduction in physicians.
3	1150	Hospital nurses	Educational workshops on stress management	25% reduction (CI 20-30%)	Moderately effective; recommends longer duration.
4	200	Mental health professionals	Physical activity program	20% reduction (CI 15-25%)	Beneficial for physical and mental health.
5	56	Community health workers	Mindfulness and relaxation techniques	30% reduction (CI 25-35%)	Improves coping mechanisms significantly.
6	250	Medical and surgical nurses	Comprehensive stress management program	45% reduction (CI 40-50%)	Highly effective in comprehensive stress management.
7	100	Pediatric healthcare staff	Resilience training workshops	30% reduction (CI 25-35%)	Enhances resilience among pediatric staff.
8	75	General hospital staff	Psychoeducation sessions	15% reduction (CI 10-20%)	Mild improvement; suggests additional support.
9	30	Intensive care unit nurses	Yoga and meditation	50% reduction (CI 45-55%)	Very effective in stress reduction among ICU nurses.

