

UNDERSTANDING STRESS, STRESS MANAGEMENT INTERVENTIONS FOR HEALTHCARE PROFESSIONALS IN PAKISTAN: A META-SYNTHESIS APPROACH

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Abstract

Background

The research study explores stress management interventions (SMIs) employed in the healthcare industry of Pakistan; with a focus on existing stressors and their relevant effectiveness.

Methodology

By employing systematic review, a thematic synthesis emerges on stress and SMIs implemented in healthcare organizations; after scrutinizing various databases systematically and relevant key themes and different perspectives.

Findings

Various stress factors and SMIs were highlighted; including organizational support, mindful practices, cognitive-behavioral approaches, etc. The effects of interventions varied among different settings of the healthcare industry.

Conclusion

Thematic analysis delineates the significance of adopted SMIs by Pakistani healthcare staff and also emphasizes policy-making and organizational support in the industry.

INTRODUCTION

Stress management strategies are vital in the performance of healthcare workers and their daily life health issues. This is more prevalent in Pakistan; which is facing a complex nature of challenges in the healthcare sector (Siddiqui et al., 2020). The healthcare sector functions accompanied by several patients, restraints of resources, and socio-political unpredictability; thus escalating stress phenomenon among the healthcare staff (Ahmed et al., 2020). Therefore, prioritizing and implementing stress management strategies becomes inevitable to boost the health and acquire resilience of HCPs, ultimately

ensuring the provision of the required quality patient care in the community.

1.1 Background and Rationale

The stressful nature of the healthcare sector in Pakistan hints at increased stress levels among healthcare staff. This is compounding situations at organizational levels and affiliated societal pressures (Zaidi et al., 2023; Akbar et al., 2020). There are many factors such as resource paucity, heavy workloads, and experience of traumatic situations that contribute to this stress (Awan et al., n.d.-a). Furthermore, stress levels have increased manifold due to some pandemic

Aspects	Known in Literature	Not known	Knowledge Gap	References
Prevalence of Stress	High prevalence among healthcare workers (Ahmed et al., 2020; Khan et al., 2019)	Nuanced experiences of healthcare workers, coping mechanisms, and effectiveness of interventions	Lack of synthesized qualitative evidence addressing unique stressors and effectiveness of interventions adapted to Pakistan's context	Ahmed et al., 2020; Khan et al., 2019
Stressors faced by Healthcare Workers (HCPs)	Identified stressors: resource constraints, staffing shortages, and security risks (Khan et al., 2019)	A comprehensive exploration of stressors within the local healthcare context	Limited understanding of nuanced experiences of healthcare workers	Khan et al., 2019
Cultural and Organizational Factors	Some exploration into the influence on stress levels and intervention effectiveness (Saeed et al., 2018; Shafique et al., 2021)	Interaction's role in stress levels and intervention effectiveness	Insufficient exploration of cultural and organizational interactions	Saeed et al., 2018; Shafique et al., 2021

situations and other diseases globally, including in Pakistan. Resultantly, frontline staff of the healthcare industry face exceptional challenges (I. Khan et al., 2021).

Even though there is an acknowledged and established importance of the stress phenomenon among healthcare workers, yet there is limited research on stress management and related strategies in Pakistan (Deen et al., 2023; Rafique et al., 2022). Also, there is a dearth of knowledge of inclusive studies that evaluate the interventions and their effectiveness in the healthcare sector. Moreover, they are unable to explain the institutional factors and unique socio-cultural that influence the phenomenon (Alkhaldeh et al., 2020). Additionally, there are disintegrated pieces of studies that address the need for synthesized findings; producing evidence-based practices and policy development (Nazir et al., 2022). This is an inherited issue for HCPs all over the world where they face this sort of stress at their workplace. It influences both facets like patient care, work environment as well as the well-being of the workers (Anjum et al 2019., Jan et al., 2012; Zaidi et al., 2023). In Pakistan, limited resources are facilitating the

healthcare sector, and there exists a high level of stress among the staff. Additionally, they face various types of environmental challenges to perform their duties (Ahmed et al., 2020). Thus, It becomes imperative to address this kind of issue prevailing in the healthcare industry. Furthermore, job dedication and job satisfaction can be improved which can lead to high-quality healthcare services (Mushtaq et al., 2012).

In the literature, there are various types of interventions and strategies mentioned to mitigate stress levels in the healthcare sector. These interventions supplement the managing skills of the employees (Rasheed et al., 2022; Fuentes et al., 2015). However, the appropriateness and the usefulness of these strategies differ significantly due to many factors. Organizational culture, system dynamics in the healthcare domain, and cultural norms are the few ones to be described in the published research (Awan et al., n.d.-b). Keeping in view the distinctive nature of challenges faced by HCPs, it is crucial to adapt and investigate SMIs concerning local background. After recognizing authenticated strategies that address the issue, these can be utilized in policy making and by CEOs of the healthcare industry. Thus, the leaders of

healthcare can target interventions for improved resilience and well-being of the staff.

Table 1: Knowledge Gap

1.2 Problem Statement

Given the above, it becomes crucial to gain and synthesize information among healthcare workers in Pakistan for their well-being (Anjum et al; 2019); and for the provision of quality healthcare services (Zaidi et al., 2023; Mushtaq et al., 2012). Although, there is an established prevalence of high levels of stress among healthcare staff, a significant gap also exists regarding the understanding and efficacy of the adapted interventions in the local context of Pakistan. Moreover, a comprehensive and holistic view of knowledge of local healthcare is missing. That is limiting our understanding of their experiences in the field. In addition to these facts, an understanding and knowledge about cultural and organizational factors influence is also lacking. Consequently, this study aims to address these gaps through the meta-synthesis approach; which will facilitate the making of adapted interventions through insights from qualitative studies; the best suited to well-being and workers' productivity in terms of quality services.

1.3 Significance

Nexus above, the role of healthcare professionals is always critical and immensely affected by stress prevailing in their working environments. Hence, there is an urgent need to conduct a systematic review to gain a comprehension of stress and stress management interventions related to healthcare staff already present in the published research in scattered form. This meta-synthesis intends to provide in-depth knowledge of the feasibility, efficacy, and contextual factors in the healthcare systems of Pakistan. Thus, evidence-based interventions and strategies will support healthcare professionals' health and their outcomes as a result.

1.4 Scope and Purpose of the Review

This methodical review focuses on investigating the prevalent literature on stress and SMIs among healthcare professionals in Pakistan. Scrutinizing the already published qualitative studies, it intends to understand HCPs's opinions, experiences, and efficacy of the SMIs. Thus evidence-based information is collected through qualitative studies that synthesize

consolidated knowledge; also linking the local contextual factors that influence the implementation of SMIs and their outcomes. The local context includes healthcare settings, cultural aspects, and socio-economic attributes. Additionally, it pinpoints the research gaps, informs about the evidence-based practices in the field, and contributes to adapted interventions that promote HCPs' well-being and resilience in Pakistan.

1.5 Aim and Objectives

The meta-synthesis review aims to integrate and assess the existing evidence on stress, and stress management interventions (SMIs) among healthcare professionals in Pakistan. The objectives are as follows:

- To identify and describe the types of stressors, and stress management interventions implemented among healthcare professionals in Pakistan.
- To examine the effectiveness of stress management interventions in mitigating stress levels and improving well-being among healthcare professionals.
- To explore the contextual factors influencing the outcomes and implementation of stress management interventions in Pakistan.
- To suggest evidence-based recommendations for practice, policy, and future research to support stress management among healthcare professionals in Pakistan.

1.6 Research Questions

The research questions are as follows:

- What are the primary sources of stress for healthcare workers in Pakistan, and how do these stressors impact their well-being and job performance?
- How do cultural and organizational factors influence the experience of stress among healthcare providers in Pakistan, and what role do these factors play in shaping effective stress management interventions?
- What are the current stress management practices implemented in healthcare facilities in Pakistan, and what is their effectiveness in mitigating stress levels among healthcare workers?
- How do perceptions of stress and coping strategies vary among different healthcare professions in Pakistan, and what implications does this have for

designing targeted interventions to support diverse healthcare roles?

2.0 Literature Review

2.1 Introduction

This chapter reviews and covers the various aspects, of the healthcare sector in Pakistan, like the prevalence of stress and key stressors among healthcare staff. Moreover, it also analyses stress management intervention and its effectiveness and consolidates the influences of organizational and cultural factors while addressing the knowledge gaps of the existing study.

2.2 Prevalence of Stress Among Healthcare Workers

The literature is full of facts that highlight and pinpoint the prevalence of stress phenomenon among healthcare workers in Pakistan (Ahmed et al., 2020; Khan et al., 2019). This particular issue originates from various elements such as organizational pressure, existing workloads, and patient care duties. Ahmed et. al. (2020) highlighted the extensive influence of stress on healthcare employees job performance and well-being.

2.3 Stressors Faced by Healthcare Workers

In 2019, qualitative research was carried out by Khan et al; that depicts prevalent stressors in the healthcare sector such as staffing shortages, security risks, and resource limitations. These stressors have a meaningful impact on organizational performance and functioning; as well as on workers individually. The categorization and recognition of these stressors is an important aspect of developing specified interventions to mitigate stress among healthcare workers.

2.4 Influence of Cultural and Organizational Factors

The prominent consequences of cultural problems and organizational fundamentals were examined by Shafique et al. (2021) and Saeed et al. (2018); regarding the efficacy of stress and coping interventions. Notably, organizational rules, regulations, hierarchical systems, and cultural standards and traditions can either get worse or alleviate stress levels in healthcare settings. Having a relevant and specific knowledge of those dynamics is essential in the making of suitable interventions concerning cultural and organizational domains in Pakistan.

2.5 Effectiveness of Stress Management Interventions

The literature has highlighted various types of stress management interventions, but their efficacy within the context of Pakistan is yet to be explored in different small settings. Stress management interventions (SMIs); such as organizational support systems, mindfulness, counseling, and cognitive-behavioral therapies have exhibited salient potential elsewhere (Liu et al., 2019; West et al., 2018). Nevertheless, their efficacy and applicability in the Pakistani context or settings need further exploration and investigation.

2.6 Knowledge Gap and Rationale for the Current Study

Even though there is a vast knowledge available in the literature, a noteworthy knowledge gap does exist regarding the distinct experiences of healthcare workers in the Pakistani context. The knowledge in the form of synthesized qualitative evidence is lacking in the research; about the adapted effective interventions and the unique stressors. So, this research intends to fill the gap through meta-synthesis of qualitative studies which will offer insights into stress management interventions and external factors. Resultantly this will enhance the job performance and the well-being of the healthcare workers.

2.7 Theory Foundation: Job Demands-Resources (JDR) Model, Conservation of Resources (COR) Theory, and Lauze's Framework for Stress

The study is underpinned and integrated by Lauze's stress framework, the Job Demand-Resources (JDR) model, and the Conservation of Resources (COR) theory. The framework posited by Lauze suggests the transactional nature of the stress which considers environmental factors and individual characteristics of the workers in this context. With the exploration of these theories, the review tends to elaborate on the stress in the healthcare sector of Pakistan and integrate it with job demands, coping procedures, resources available, and sociocultural aspects.

In short, the existing literature shows the prevalence of stress phenomenon among healthcare staff in Pakistan. Also, there are certain common stressors, organizational and cultural influences, and knowledge about the efficacy of stress management interventions.

The emerging knowledge gaps in the literature necessitate further investigation, compilation, and synthesis of comprehensive knowledge to address the issues in the Pakistani context.

3.0 Methodology

3.1 Introduction

This chapter outlined the methodological framework used for steering a meta-synthesis that is directed at explaining the role of stress and stress management interventions within Pkaiatan's healthcare sector. It described the systematic approach adopted for analyzing and synthesizing the excerpts from qualitative research studies.

3.2 Research Design

3.2.1 Study Objective and the Type

The primary objective of the study was to 'holistically understand the influence of the stress phenomenon; and stress management interventions adapted to various settings of healthcare in Pakistan'; through the amalgamation of qualitative research excerpts and findings. For this purpose, a meta-synthesis and systematic methodology were adopted to analyze and synthesize qualitative research outcomes regarding stress management and related phenomena.

3.2.2 Search Strategy

3.2.3 Database Selection and Search Terms

Well-regarded databases were chosen and included like Google Scholar, PubMed, Web of Science, and PsychINFO to discriminate qualitative studies; that address stress and stress management in Pakistan's healthcare sector. For this purpose, a wide-ranging PRISMA 2020 Flow Diagram 1:

search strategy was made using keywords and MeSH terms related to stress management strategies, the healthcare sector, and Pakistan. The search strategy used various interchangeable terms and keywords like stress management interventions, coping mechanisms, techniques and stress handling approaches, skills etc; these terms are adapted to each database to find relevant literature.

3.2.4 PubMed Databases and Google Scholar:

The following search strings were used:-

- ("stress intervention' OR "stress management" OR "stress reduction") AND
- ("healthcare workers' OR "healthcare professionals" OR "medical staff") AND
- ("Pakistan' OR "Khyber Pakhtunkhwa")

3.2.5 Medical Subject Headings (MeSH) Terms:

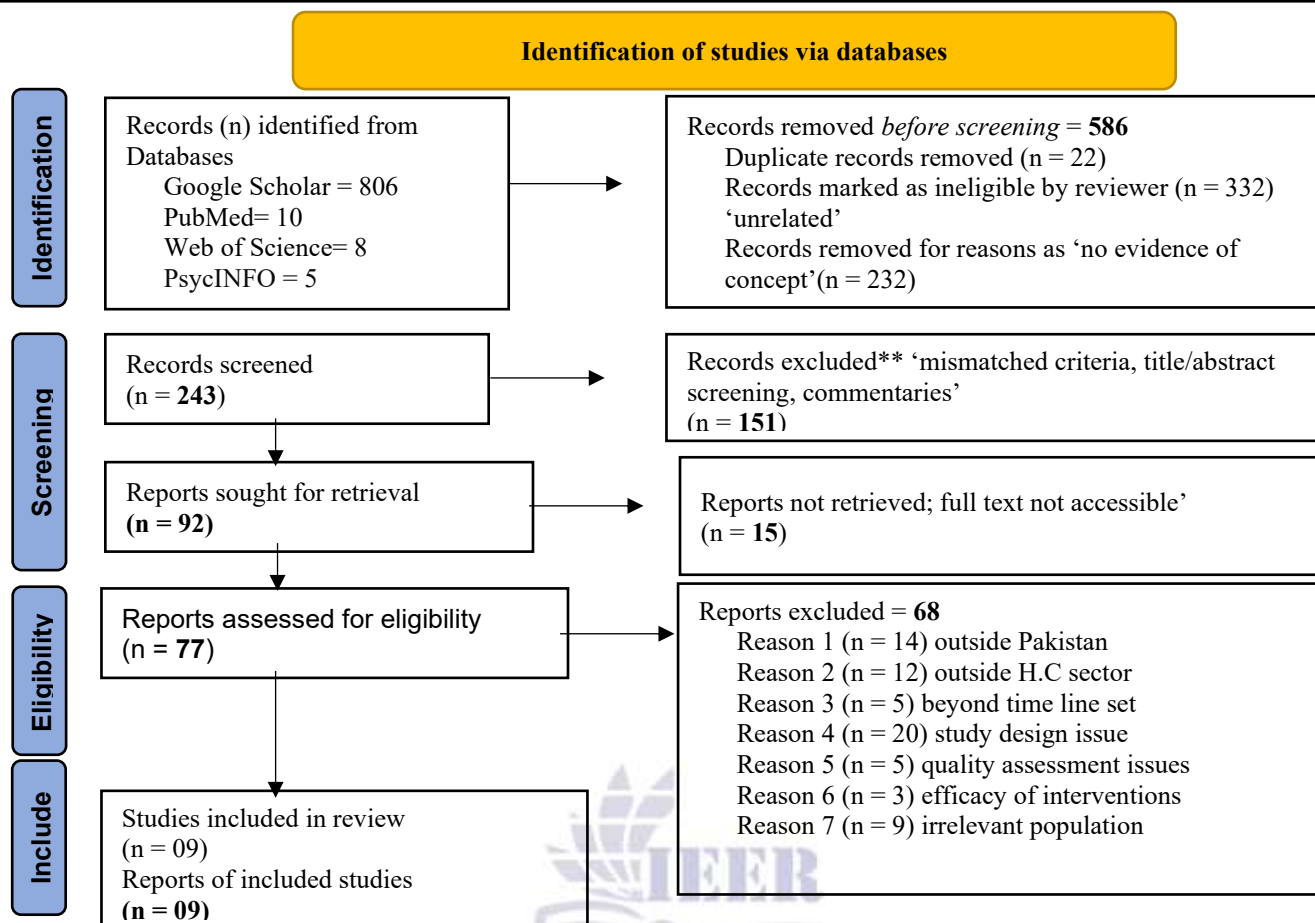
Following MeSH terms were utilized for more accuracy:-

- ("Occupational Stress" [MeSH] OR "Stress, Psychological" [MeSH]) AND
- ("Medical Staff" [MeSH] OR "Health Personnel" [MeSH]) AND
- ("Khyber Pakhtunkhwa" [MeSH] OR "Pakistan" [MeSH])

3.2.6 Additional Keywords:

More specific keywords explored like:

- ("resilience" OR "mindfulness" OR "coping strategies") AND
- ("healthcare facility" OR "hospital" OR "clinic")



3.3 Inclusion and Exclusion Criteria The inclusion of studies in this meta-synthesis demanded adherence to the following criteria:

Table 2: Inclusion and Exclusion Criteria

Category	Inclusion Criteria	Exclusion Criteria
Study Design	Cross-sectional studies, qualitative studies, systematic reviews/meta-synthesis.	Quantitative studies or other non-qualitative research methodologies.
Subject	Healthcare professionals working in various roles within healthcare settings in Pakistan (e.g., doctors, nurses, pharmacists, allied health professionals, administrative staff).	Individuals not employed in healthcare professions, non-Pakistani residents, and individuals not residing or working within Pakistan's healthcare sector.
Intervention	Studies investigating stress and stress management interventions designed for healthcare professionals.	Research articles unrelated to stress, stress management, or healthcare settings.
Geographical Location	Studies conducted specifically in healthcare settings located within Pakistan.	Studies conducted outside Pakistan.

Outcome Measures	Studies that assessed the impact of stress management interventions on relevant outcomes (e.g., stress levels, psychological well-being, job satisfaction, burnout, resilience, coping strategies, job performance).	Studies that do not assess the impact of stress management interventions or do not focus on relevant outcomes.
Publication Date	Studies published between 2014-2024.	Studies published outside the specified timeframe.
Language	Studies published in English.	Articles not published in English.
Accessibility	Studies for which the full text is accessible.	Studies for which the full text is not accessible.

3.4 Study Selection

3.4.1 Screening Process

A rigorous screening process entails the assessment of titles and abstracts by two independent reviewers in synchronization with the stipulated inclusion and exclusion criteria. Subsequently, full texts of potentially pertinent studies were meticulously scrutinized for further stringent appraisal processes.

Table 3: Demographic Characteristics of Studies

3.4.2 Quality Assessment

The methodological rigor of included studies is assessed using established tools like the JBI Tool for study design, sampling, data collection, and analysis methodologies, highlighting strengths, weaknesses, and intervention effectiveness. Additionally, the Critical Appraisal Skills Programme (CASP) checklist for qualitative research is employed to evaluate the generalizability, risk of biases, limitations, reliability, and validity of the interventions.

	1. Gilani et al. (2022)	2.Afshan et al. (2022)	3. Saleem et al. (2021)	4. Hameed et al. (2022)	5.Saeed et al. (2022) **	6. Rashid and Faisal et al. (2020)	7.Shahil et al. (2021)	8.Shahbaz et al. (2021)	9. Steinzmet et al. (2021)	Avg. Values	
Age (20-50)	25-35	30-48	30-40	43.2	30-47	25-32	22-48	25-40	25-35	34 Yrs.	
Mean. Age	30	35	35	43.2	38.5	29	35	33	30		
Gender	M	10	12	06	26	892	09	01	09	30	109
	F	13	00	04	21	892	04	11	22	42	112
Experience (Years)*	6-12 (9) *	10 (10)	15 (15)	14.4 (14.4)	15 (15)	05 (05)	09 (09)	05-10 (05)	10-20 (15)	11 yrs.	
Doctors	17	12	10	16	27	13	05	09	18	14	
Nurses	06	00	00	26	819	00	06	08	42	100	
Paramedics	00	00	00	05	938	00	01	14	12	107	
Setup	Public	Public + Private	Public	Public	Public	Public	Private	Private	Public	Pub.	
Urban / Rural	Urban (KCI)	Urban (KCI)	Urban	Rural Punjab	Urban LHR	Urb; Rur. (GJW, SRG, KCI, LHR)	Urban (KCI)	Urban (LHR)	Dir, KP	Urb.	

Table 4 Quality Assessment (CASP)

References*	Q.1**	Q.2	Q.3	Q.4	Q.5	Q.6	Q.7	Q.8	Q.9	Q.10	Result (%)
1. Gilani et al. (2022)	Y	Y	Y	Y	Y	U	Y	Y	Y	Y	09/10 (90%)
2. Afshan et al. (2022)	Y	Y	Y	Y	Y	U	Y	Y	Y	Y	09/10 (90%)
3. Saleem et al. (2021)	Y	Y	Y	Y	Y	Y	Y	U	Y	Y	09/10 (90%)
4. Hameed et al. (2022)	Y	Y	Y	Y	Y	Y	Y	U	Y	Y	09/10 (90%)
5. Saeed et al. (2022)**	Y	Y	Y	NA	Y	NA	U	Y	Y	Y	07/10 (70%)
6. Rashid and Faisal et al. (2020)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10/10 (100%)

7.Shahil et al. (2021)	Y	Y	Y	Y	Y	U	Y	Y	Y	Y	09/10 (90%)
8.Shahbaz et al. (2021)	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	09/10 (90%)
9. Steinzmet et al. (2021)	Y	Y	U	Y	Y	U	U	Y	Y	Y	07/10 (70%)

3.4.3 Data Extraction

3.4.4 Data Items

Integral data encompassing study characteristics (author, year, location), participants' demographics, research objectives, discerned stressors, explored stress management interventions, and principal findings were meticulously extracted from each included study.

3.4.5 Meta-synthesis

Data synthesis entails a meticulous thematic analysis of qualitative findings across the included studies to unveil recurring themes, patterns, and divergences germane to stress and stress management within Pakistan's healthcare sector.

3.4.6 Analytical Approach

A methodical meta-synthesis approach was deployed to harmonize and interpret findings emanating from individual qualitative studies, thereby engendering novel insights and theoretical understandings vis-à-vis the role of stress and stress management interventions in Pakistan's healthcare domain.

3.4.7 Validation

The genuineness of synthesized findings was validated via peer debriefing and member-checking endeavors to increase the credibility and trustworthiness of the meta-synthesis outcomes.

3.5 Reporting

3.5.1 Reporting Standards

Adherence to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines for qualitative research was diligently observed to support the findings of this meta-synthesis.

4.0 Results / Findings

4.1 Overview of studies

The results provide a thorough overview of stress management methodologies and interventions among healthcare professionals in Pakistan. The results are based upon a series of reviews, in addition to, the thematic analysis of nine selected studies. The study identifies a range of stressors faced by healthcare workers. Among the various factors, a few to mention here include career prospects, interpersonal conflicts, job demands, infrastructure deficiencies, medication costs, family concerns, infection fears, organizational issues, and existential stress. The study highlights numerous interventions applied to stress management. These include awareness campaigns, training, psychological support, relaxation therapies, supportive work environments, and coping strategies. The instances observed during the study reveal the relationship between high-stress levels and the negative impacts on the well-being of the healthcare staff. The other concerns include infection fears, family concerns, and psychological distress. Support from the government and the media and recognition are considered crucial for addressing healthcare professionals' stress. The findings determine the complex nature of stress management prevailing among healthcare professionals in Pakistan, besides providing detailed inputs or recommendations for effective interventions. It also supports the mechanisms aimed at promoting the well-being of healthcare workers.

4.2 Themes Emerging from Qualitative Synthesis

The qualitative dissection of the under-observation studies unveiled main themes. The themes provide stress management interventions among Pakistani healthcare professionals or workers. They also highlight many challenges being faced by healthcare

workers, and the relevant strategies employed to alleviate stress.

Theme 1: Career and Organizational Challenges

Sub-themes	Descriptions
'Lack of career prospects and job security'	Structural and organizational challenges include limited opportunities for career advancement and job security.
Inadequate infrastructure and resources	Healthcare facilities often suffer from inadequate infrastructure and insufficient resources.
Administrative issues and governance failures	Failures in administration and governance further exacerbate the challenges faced by healthcare professionals.

Theme 2: Work Demands and Stressors

Sub-themes	Descriptions
Long working hours and excessive workload	Healthcare professionals face extended shifts and heavy workloads, contributing to elevated stress levels.
Lack of regulation in work schedules	The absence of regulated work schedules adds to the unpredictability and strain of healthcare work.
High patient load and inadequate staffing	High patient volumes and insufficient staffing levels further burden healthcare workers.

Theme 3: Psychological and Emotional Impact

Sub-themes	Descriptions
Fear of infection and transmission to family	Healthcare workers are deeply concerned about the risk of infection and transmitting it to their families.
Anxiety, distress, and burnout	High-stress environments lead to significant anxiety, emotional distress, and burnout among professionals.
Psychological vulnerability and existential stress	Workers face existential stress and psychological vulnerability due to the high-stress nature of their jobs.

Theme 4: Support and Coping Strategies

Sub-themes	Descriptions
Need for psychological support and counseling	There is a critical need for psychological support and counseling to help manage stress.
Importance of peer and organizational support	Support from peers and organizations is vital for the well-being of healthcare professionals.

Implementation of coping strategies	Effective coping strategies and stress management interventions are necessary to maintain health worker well-being.
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Theme 5: Socio-cultural Context

Sub-themes	Descriptions
Gender discrimination and unequal opportunities	Gender discrimination and unequal opportunities are prevalent issues that impact healthcare workers.
Societal stigma and taboo surrounding mental health	Societal stigma and taboos around mental health issues hinder effective stress management.
Cultural factors influencing stress perception	Cultural norms and values significantly influence how stress is perceived and managed among healthcare workers.

These themes together highlight the different nature of stress management interventions among healthcare professionals in Pakistan. Once these are addressed, it will provide tangible help to the policymakers, organizations involved in healthcare services, and all relevant stakeholders in developing relevant and specific interventions. This will overall support the system aimed at providing the well-being of the healthcare workers.

4.2.1 Stress Types Among HCPs in Pakistan

The results show the target community (healthcare professionals) confronts immense occupational and psychosocial stressors. Occupational stressors are long working hours, heavy workloads, job insecurity, resource scarcity, and administrative challenges; whereas psychosocial stressors are further distorted by the fear of gender discrimination, infection, emotional strain, and societal stigma.

Different coping strategies are being exercised by healthcare professionals to mitigate the levels of stress. Psychological support through advocacy and counseling besides peer groups holds a pivotal stage. Organizational support in the shape of training, resources, and a supportive work environment enhances well-being. Techniques like mindfulness, maintaining work-life balance, help sustain resilience are those that can be categorized as self-care. The complex nature of stress among healthcare

professionals is evident from the findings of the study and highlights the need for widespread interventions.

4.2.2 Effectiveness of Stress Management Interventions

The analysis exhibits some effective procedures for coping with the stress prevailing in a number of the healthcare workforce. Some of them are techniques that are related to mindfulness and entertainment strategies which emerged as significant ones. On the other hand, colleague support, organization help and counseling provide the necessary mental support and assistance. Flexible operating hours at places of work, certain time offs, and addressing a way of life of work-life balance; can bring about more enhanced well-being of healthcare employees (HCWs). Skill development, respective training, and schooling elements also are critical and fall into coping mechanisms.

Furthermore, the supply of suitable resources and a supportive subculture within the enterprise; hold a critical position in constructing resilience amongst healthcare workers (HCWs). For the success of SMIs; a multifaceted method addresses systemic and personal factors as critical.

4.2.3 Barriers and Facilitators

Time constrictions, social stigmas, limited sources, resistance to exchange, and current organizational lifestyle create difficulties in the employment of SMIs

among healthcare employees (HCWs). All these elements create a complicated environment for the well-being of the healthcare team of workers.

Alternatively, effective management, strong peer networks, due education, considered necessary sources, and flexible time schedules guide the successful implementation of those SMIs. Overpowering the boundaries and leveraging facilitators are important steps to employ SMIs.

4.2.4 Contextual Factors Influencing SMIs

The related workload, availability of assets, organizational way of life, socio-financial function, and coverage help affect the effectiveness of SMIs within the healthcare area. The contextual elements suggest how the interventions are acquired and carried out. It also delineates the need for complete information on the complete surroundings even ensuring its efficiency and efficacy.

In a nutshell, tailored interventions considering the elaborated factors; are essential for promoting the well-being of healthcare professionals. Addressing the challenges and leveraging the strengths of the healthcare context in Pakistan, effective and sustainable stress management strategies are bound to evolve bringing good results.

4.3 Subgroup Analyses

Subgroup analyses of the study that were based on demographics, roles, and settings reveal different patterns. Importantly; they influence the outcomes of stress management interventions. Adapting these interventions to specific subgroups is essential to maximize their success and promote the well-being of healthcare professionals.

4.4 Gaps and Limitations in Literature

The gaps identified during the study were methodological variability, under-representation of certain groups, limited generalizability, a focus on intervention implementation, lack of longitudinal studies, the need for culturally tailored interventions, and intersectional factors. Addressing these gaps is crucial for advancing stress management interventions (SMIs) among healthcare professionals in Pakistan.

5.0 Discussion

The in-depth reviews and thematic analysis of stress, and stress management interventions among healthcare professionals (HCPs) in Pakistan were carried out. The analyses have provided critical insights into the specific nature; and management of the stress in this demographic. The study has identified occupational and psychosocial stressors for instance long working hours and fear of infection. These findings highlight the need for comprehensive and targeted interventions to counter the specific stressors; effectively. The key insights are as follows:

5.1 Types of Stress Experienced by HCPs

- Occupational Stressors: long working hours, administrative challenges, heavy workloads, and job insecurity.
- Psychosocial Stressors: fear of infection, societal stigma, emotional toll, and gender discrimination.

5.2 Effectiveness of Stress Management Interventions (SMIs)

Relaxation techniques like counseling, mindfulness, psychological support, work-life balance initiatives, training and skill development, and organizational support are identified as interventions. These are found effective in reducing stress and improving overall well-being.

5.3 Barriers and Facilitators

- Barriers are highlighted as limited resources, mental health stigma, time constraints, organizational culture, and resistance to change.
- Facilitators delineate leadership support, training, peer support networks, accessible resources, and flexibility.

5.4 Contextual Factors

- Factors like cultural norms, socioeconomic status, organizational culture, workload, resource access, and policy support directly affect the implementation and efficacy of SMIs.

5.5 Subgroup Analyses

- Differences in intervention outcomes were observed based on demographics,

professional roles, and organizational settings of the healthcare system.

5.6 Gaps and Limitations

- Identified gaps include methodological variability, limited generalizability, under-representation of certain groups, lack of longitudinal studies, need for culturally tailored interventions, and limited outcome measures beyond stress reduction.

5.7 Implications for Practice

Practice recommendations include tailoring the interventions, investing in support, related education and training, systemic barriers, and monitoring the efficacy of SMIs.

Strategies or Interventions for healthcare specialists should be tailored to address precise stressors with culturally sensitive, gender-responsive, and inclusive procedures. Leadership dedication and useful resource investment are key to growing supportive job environments that prioritize well-being.

Education and education in stress control, resilience, and conflict resolution among employees are critical, along with addressing systemic obstacles like mental fitness stigma and gender discrimination. Continuous tracking needs to be applied to evaluate the effectiveness of those interventions and to make sure of the long-term impact.

5.8 Implications for Policy

Policy recommendations and modifications have to be conscious of HR development, gender equity, and mental fitness integration within healthcare systems. Infrastructural improvements and collaboration among stakeholders, paired with clear guidelines and coverage advocacy, will adopt a nicely supported and resilient healthcare group of workers.

Policy hints emphasize the importance of human resource improvement through investing in schooling and development packages that beautify healthcare experts' talents and resilience. Gender fairness and inclusion have to be promoted for the duration of the arena, making sure that each employee is supplied same opportunities and help. Furthermore, clear hints for SMIs ought to be established to standardize practices and sell consistency. Mental fitness offerings must be incorporated into healthcare delivery

structures to help healthcare workers' intellectual well-being.

Refining healthcare infrastructure and sources is also essential for enhancing running conditions and ensuring that teams of workers have the equipment they want. Sponsorship for coverage modifications is vital to guard healthcare specialists' well-being and foster a supportive working environment. Additionally, collaboration among stakeholders should be endorsed to permit coordinated efforts and impactful solutions in addressing systemic challenges inside the healthcare system.

Recommendations for Future Research

Future studies ought to be cognizant of intersectional analyses, mixed-techniques approaches, and broader outcome measures, such as job satisfaction, burnout, etc., to gain deeper expertise on the influences of SMIs. Tailored interventions and longitudinal studies, alongside comparative research and implementation technological know-how, will assist create powerful strategies to enhance healthcare experts' well-being in Pakistan.

Research has to also recognize tailoring interventions to supportive cultural and organizational contexts, making sure that they may be applicable and influential. The discipline of implementation technology has to be explored to apprehend the factors that facilitate or avert the sensible utility of SMIs. Comparative research is vital to evaluate the efficacy of different interventions, while policy evaluation ought to assess the effects of coverage adjustments and organizational tasks.

These regions or recommendations will increase the relevant knowledge, and improve the highlighted practices and well-being of the healthcare professionals in Pakistan.

6.0 Conclusion

This meta-synthesis study indicates various but significant and complicated demanding situations or stressors being confronted by healthcare experts (HCPs) in Pakistan. The results or findings spotlight the extensive range of stressors confronting HCPs, from long working hours and restrained sources to gender discrimination, etc. These stressors affect their intellectual and emotional well-being, urging for

centered interventions to alleviate the associated stress.

The explored stress control interventions (SMIs), as an example; mindfulness practices, display a promise in appeasing stress among HCPs in Pakistan. However, the efficacy of these strategies is being compromised via significant barriers. Limited availability of sources, societal stigma, and deficient organizational leaders hinder the substantial employment of these techniques. Tackling these barriers is important for a hit adoption and sustainability of stress management strategies.

To settle the proper well-being of HCPs, a complete and multifaceted approach or method is essential. This method has to revolve around investment in robust help structures, advise for policy reforms, and encourage management commitment to HCP welfare. Moreover, uninterrupted research efforts are crucial in refining and growing effective interventions. By addressing those key regions, we can create a supportive environment that fosters resilience and complements the general well-being of healthcare professionals in Pakistan.

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Appendices

Table 5

Table 5: Quality Assessment of studies included in the review using modified JBI critical tools. (Reviewer 1)

Critical Appraisal Questions	Gilani et al.1	Afshan et al.2	Saleem et al. 3	Hameed et al. 4	Saeed et al.5	Rashid and Faisal et	Shahil et al. 7	Shahbaz et al. 8	Steinmet et al. 9
1. Was the sample frame appropriate to address the target population?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2. Were the study participants sampled appropriately?	Yes	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	Unclear
3. Was the sample size adequate?	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4. Were the study subjects and the study described in detail?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5. Was the data analysis conducted with sufficient coverage of the identified sample?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6. Were valid methods used for the identification of the condition?	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	Yes	Yes
7. Was the condition measured in a standard, reliable way for all participants?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Unclear
8. Was there appropriate statistical analysis?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9. Was the response rate of adequate, and if not, was the low response rate managed appropriately?	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	Yes	Yes
10. Was the finding robust to sensitivity analyses?	Yes	Yes	Yes	Unclear	Unclear	Yes	Yes	Unclear	Yes
11. Are the results generalizable to the target population?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12. Do the conclusions and recommendations follow from the results?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 6

Table 6: Quality Assessment of studies included in the review using JBI critical appraisal tools (Reviewer 2)

S. No	Checklist	Gilani et al. 1	Afshan et al. 2	Saleem et al. 3	Hameed et al. 4	Saeed et al. 5	Rashid and Faisal et al. 6	Shahil et al. 7	Shahbaz et al. 8
1	Is there congruity between the stated philosophical perspective and the research methodology?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	Is there congruity between the research methodology and the research question or objectives?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	Is there congruity between the research methodology and the methods used to collect data?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	Is there congruity between the research methodology and the representation and analysis of data?	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	Yes
5	Is there congruity between the research methodology and the interpretation of results?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	Is there a statement locating the researcher culturally and theoretically?	Yes	Unclear	Unclear	Yes	Unclear	Yes	Yes	Unclear
7	Is the influence of the researcher on the research, and vice-versa, addressed?	Unclear	Yes	Yes	Unclear	Unclear	Yes	Unclear	Yes
8	Are participants, and their voices, adequately represented?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	Is the research ethical according to current criteria, or, for the recent studies, and is there evidence of ethical approval by an appropriate body?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 8: Criteria for Evaluating the Quality of a Research Study (JBI Tool) (Reviewer 3)

LOW Quality (1)	MODERATE Quality (2)	HIGH Quality (3)
1. No clear link between the data and findings 2. No clear basis for drawing wider inferences from the study 3. Lack of alignment between the theory, research question, data collection, analysis and results 4. The sampling strategy, depth and volume of data, and analytical steps taken are not appropriate within the framework 5. The study does not capture and portray the world it is trying to describe 6. The claims made by the research are not backed up	1. Some clear links between the data and findings 2. Some clear bases for drawing wider inferences from the study 3. Some alignment between the theory, research question, data collection, analysis and results 4. The sampling strategy, depth and volume of data, and analytical steps taken are somewhat appropriate within the framework 5. The study somewhat captures and portrays the world it is trying to describe 6. The claims made by the research are somewhat backed up	1. A clear link between the data and findings 2. A clear basis for drawing wider inferences from the study 3. Alignment between the theory, research question, data collection, analysis, and results 4. The sampling strategy, depth and volume of data, and analytical steps taken are appropriate within the framework 5. The study captures and portrays the world it is trying to describe 6. The claims made by the research are well-backed up

