PRIORITIZING STRATEGIC RESOURCES: MENTAL HEALTH AND WELLBEING OF HEALTHCARE PROFESSIONALS

Mir Muhammad Shah, Sarwar Mehmood Azhar, and Raheela Haque

(CGP # 05-221)

4TH RASTA CONFERENCE

Tuesday, September 03 & Wednesday, September 04, 2024

Roomy Signature Hotel, Islamabad

This document is unedited author's version submitted to RASTA.

RESEARCH FOR SOCIAL TRANSFORMATION & ADVANCEMENT

Competitive Grants Programme for Policy-oriented Research

Pakistan Institute of Development Economics

ABSTRACT

This research aimed to determine the existence and extent of mental health issues among healthcare workers, including doctors, nurses, paramedical staff, and administrative personnel, in public and private sector hospitals in Sindh. Utilizing a qualitative research strategy, the study employed in-depth interviews and a lived experience approach to identify major sources of stress. Stratified sampling was used to select healthcare workers from five tertiary hospitals, both public and private, in Karachi and Sukkur. A snowballing approach resulted in 26 interviews across various strata of healthcare workers, ceasing when each category reached saturation.

The findings indicated a higher incidence of stress among staff in public sector hospitals compared to their private sector counterparts, where stress levels were minimal or non-existent across different strata. The primary sources of stress included unmanageable patient loads due to weak secondary and primary healthcare facilities in Sindh. Additionally, the lack of capabilities among healthcare service providers, such as inadequate support in developing stress management and coping strategies, and insufficient training in effective communication with patients, were significant contributors. Furthermore, the lack of hospital etiquette among uneducated patients and their attendants, leading to unacceptable behaviors, also exacerbated stress levels among healthcare workers. This research highlights the urgent need for improved healthcare infrastructure, training, and support systems to alleviate stress and enhance the well-being of healthcare workers in Sindh.

PREFACE

This research aims to determine the existence and extent of mental health issues among healthcare workers in public sector tertiary hospitals in the province of Sindh. Additionally, it seeks to identify the major sources of stress that, if left unresolved, could lead to deteriorating well-being for all healthcare service providers, including doctors, nursing staff, paramedical staff, and administrative personnel. The study also aims to provide recommendations for policy development to improve intervention strategies that will enhance the well-being of healthcare workers and, in turn, positively impact the quality of care provided to the population of Sindh in particular and Pakistan in general.

Addressing these issues and improving the existing status of healthcare services in Pakistan is imperative. This research acknowledges the funding support provided by the Pakistan Institute of Development Economics (PIDE) and the considerable inputs from the mentors of the program, which have significantly improved the outcome of this study.

TABLE OF CONTENTS

LIST OF TABLES

INTRODUCTION

The recurring nature of pandemics, coupled with population growth in poorer countries, has starkly exposed the deficiencies in healthcare systems worldwide. A recent survey by Ipsos, which included 23,500 adults from 34 countries, revealed that a majority of individuals (three out of five) believe their country's healthcare system is overwhelmed. The survey also highlighted that disruption in healthcare systems is a primary concern for 36% of respondents, up from 31% the previous year. Notably, mental health has become a greater concern than cancer (34%) for the first time in the annual Ipsos reports. Additionally, 26% of respondents identified stress as a leading health concern, surpassing obesity (22%).

Pakistan's healthcare sector has historically struggled with workplace well-being, particularly concerning mental health (Søvold et al., 2021). This persistent challenge is exacerbated by the limited availability of critical resources needed for better healthcare delivery, including inadequate financing for additional healthcare facilities, insufficient infrastructure to meet growing patient demand, and a lack of medical facilities, beds, equipment, and trained human resources (Hashmi et al., 2020). Consequently, the healthcare sector struggles to allocate and utilize resources efficiently, creating a comprehensive and effective healthcare delivery system. The necessity to treat increasing numbers of patients without refusal exacerbates these issues, leading to higher rates of mental health problems and burnout among healthcare workers. The turbulent environment during the pandemic has further intensified these issues, contributing to burnout syndrome (Johnson et al., 2020).

This situation raises a critical concern: can the strategic utilization of resource bundles enhance the well-being and mental health of healthcare workers and improve Pakistan's healthcare system? Addressing these challenges requires designing and implementing initiatives that effectively mobilize critical resources and assets to enhance healthcare workers' mental well-being and improve the overall healthcare delivery system in Pakistan, particularly in Sindh. Despite the growing concerns about the mental health of medical staff (Waugh et al., 2017) and the importance of addressing this issue, the literature has yet to thoroughly review the gaps in strategic resource availability, management, infrastructural systems, and regulatory procedures that contribute to stress and burnout among healthcare workers. These gaps need to be identified and addressed to develop a health-oriented ecosystem in developing countries like Pakistan. Resources include tangible assets and intangible resources, particularly in the form of manpower and their relevant capabilities.

Further there is a scarcity of evidence-based research within healthcare to guide decision-making in creating resource-rich environments that sustain resource gain spirals and promote a mentally healthy workplace that fosters resource creation. Furthermore, there is a lack of comparative analysis of occupational burnout and mental health issues across diverse healthcare occupational groups such as doctors, nurses, and other paramedical staff in the healthcare literature. Specifically, there is limited knowledge about the similarities and differences in the resource loss spirals faced by each occupational category (medical and paramedical staff) in specific healthcare centers such as general hospitals with a minimum of one ICU, two operating theaters, and at least 150 beds.

Therefore, this study aims to explore this issue through the lens of the conservation of resource theory (CRT) (Hobfoll, 1989) and capability theory (Sen, 1993; Robeyns, 2006; Nussbaum, 2000).

The study seeks to determine the nature of critical resource bundles required and ways to provide affordable healthcare centers through the effective utilization of available financial and human resources and necessary equipment, and how their use may or may not promote positive well-being outcomes in the healthcare setting.

1.1 Objectives of the Study

1. To identify the sources of stress prevalent in healthcare centers, clustered around the lack of resource bundles necessary to ensure the well-being of medical staff in prolonged patient contact.
2. To explore organizational investments required in tangible and intangible assets that promote resource gain and enhance healthcare professionals' well-being.
3. To assess the impact of resource availability on the mental health and burnout of healthcare workers and review the trends, causes, implications, and interventions required to address mental health issues among medical professionals.

1.2 Research Questions

1. To what degree do organizational factors within healthcare centers contribute to a resource-poor environment?
2. To what extent does a resource-poor environment contribute to the mental health of healthcare workers?
3. How efficient are healthcare centers in provisioning proper human resources, infrastructure, and critical equipment, and what are the implications for healthcare delivery and patient outcomes?

LITERATURE REVIEW

Healthcare workers are the backbone of any healthcare system, playing a crucial role in delivering care and managing public health systems. Over the years, they have been significantly impacted by the psychological effects of continuously experiencing immense pressure due to their direct involvement in patient treatment and care. Consequently, they face a higher risk of mental health issues compared to the general population or their counterparts in other professions (Cai et al., 2020; Liu et al., 2020; Blasco-Belled et al., 2024; Shaukat&Razzak, 2020).

The unprecedented pandemic situation further highlighted and exacerbated existing vulnerabilities in healthcare systems worldwide. Many countries, including Pakistan, faced significant challenges as hospitals and healthcare services struggled to cope with the rapid increase in patient numbers (Lima et al., 2020; Umbetkulova et al., 2024; Núñez&Ramaprasad, 2021). This exposed issues such as resource misallocation, workforce shortages, lack of training and support systems, and inadequate planning and administration, all of which have severe psychological impacts on healthcare workers (Yuan et al., 2020; Vizheh et al., 2020; Muller et al., 2020).

Table 1, provides details of the healthcare workforce in Pakistan, underscoring the essential role these professionals play in the healthcare system. Like their counterparts in other countries, they are often the most vulnerable during crises and are regularly exposed to high levels of stress while performing their duties in an overwhelmed healthcare system.

Table 1: Human resources in Pakistan's healthcare system

	2017	2018	2019	2020	2021
Doctors	209,007	220,829	233,261	245,987	266,430
Dentists	20,463	22,595	24,930	27,360	30,501
Nurses	103,777	108,474	112,123	116,659	121,245
Midwives	38,060	40,272	41,810	43,129	44,693
Lady health workers	18,400	19,910	20,565	21,361	22,408

Source: Khan et al. (2023)

The mental health of healthcare workers became a major area of concern around the world especially during the pandemic, and particularly in resource-constrained settings like Pakistan. In Pakistan, mental health services are grossly underdeveloped, leading healthcare workers to face numerous challenges (Mukhtar, 2024; Qazi et al., 2024). Especially during the COVID-19 outbreak, Pakistani healthcare workers reported high levels of stress and burnout. This mirrored global trends but was possibly more severe due to deficiencies in the existing healthcare system of Pakistan (Andlib et al., 2022; Mushtaque et al., 2022; Riaz et al., 2021). Exacerbating this situation is a reported significant treatment gap for mental health disorders including providing training to them to cope with stress-related issues, which impacts the well-being of healthcare workers and ultimately affects the quality of care they provide (Khalid & Ali, 2020; Khan et al., 2024; Rana & Mukhtar, 2020).Moreover, the stigma attached to mental health illnesses, when coupled with the lack of resources and qualified experts to provide support to those who are affected, worsens the problem.

The goal of this literature review is to comprehensively examine the obstacles and challenges facing the healthcare industry in Pakistan, with an emphasis on the effects on the psychological and mental health of healthcare professionals and the implications for the healthcare system and public health. This review utilizes Resource Conservation Theory (RCT)(Hobfoll, 1989), and Capability Theory (Sen, 1993; Robeyns, 2006; Nussbaum, 2000) to identify and examine the essential resources healthcare facilities require to enhance the quality of healthcare delivery and ensure the safety of healthcare personnel. Addressing these challenges requires a multifaceted approach. By leveraging the insights from RCT and Capability Theory, this review identifies effective strategies and

interventions that can benefit the government and other stakeholders. Such interventions in Pakistan will be critical for creating a more resilient and effective healthcare system that can better handle impending challenges and emergencies. Improving the standard of care provided to patients and safeguarding the mental health and well-being of healthcare professionals is essential for long-term improvements in healthcare delivery.

2.1 Theoretical Framework

Resource Conservation Theory (RCT), proposed by Hobfoll (1989), focuses on the stress individuals experience when their resources are threatened, lost, or not replenished. RCT categorizes resources into physical (e.g., diagnostic and life-saving equipment), personal (e.g., stress management and resilience), social (e.g., support systems, both organizational and external), and energy resources (e.g., time, effort). The theory posits that individuals strive to obtain, retain, and protect their resources, and stress arises from perceived or actual loss of these resources. In the context of healthcare, this theory highlights how shortages of resources or inadequate support systems can lead to significant stress and reduced well-being among healthcare workers.

Capability Theory further enriches this discussion by addressing gaps in professional capability, particularly concerning the rapid advancement of technology and the evolving demands of healthcare. Sen (1993), Robeyns (2006), Nussbaum (2000, 2011), and Mitchell et al., (2017) propose that well-being is closely linked to individuals' capabilities to perform and manage various roles effectively. In healthcare, this includes the ability to manage not only patient care and interactions with attendants but also to handle stress and develop resilience. Capability Theory underscores the importance of equipping healthcare professionals with the skills and resources necessary to adapt to changing conditions and challenges, thereby enhancing their overall well-being and effectiveness in their roles.

2.2 Healthcare Structure of Pakistan

The healthcare delivery system in Pakistan, comprises of mixed types including private and public sectors. Under the constitution, health is primarily the responsibility of the provincial government, except in the federally administrated areas. Healthcare delivery has traditionally been jointly administered by the federal and provincial governments with districts mainly responsible for implementation. Service delivery is organized through preventive, promotive, curative, and rehabilitative services.

Public Sector: The state provides healthcare through a three-tiered (primary, secondary, and tertiary) healthcare delivery system and a range of public health interventions. The first tier includes Basic Health Units (BHUs) and Rural Health Centers (RHCs) forming the primary healthcare model; secondary care encompasses first and second referral facilities providing acute, ambulatory and inpatient care through Tehsil Headquarter Hospitals (THQs) and District Headquarter Hospitals (DHQs) and tertiary care hospitals including teaching hospitals.

The public health activities have persistently increased in terms of physical infrastructure and workforce. The national health infrastructure comprises 1201 hospitals, 5518 Basic Health Units, 683 Rural Health Centers, 5802 Dispensaries, 731 Maternity & Child Health Centers, and 347 TB centers, and the total availability of beds in these health facilities is estimated at 123394. In addition, more than 95000 Lady Health Workers are providing primary healthcare services to the community through the health houses.

Private Sector: The rising population pressure on state health institutions has allowed the private sector to bridge the gap between rising demand and limited public health facilities. The number of private hospitals, clinics, and diagnostic labs has increased considerably and is contributing to health services in the country. The majority of private sector hospitals have a sole proprietorship or a

partnership model of organization. Stand-alone clinics across Pakistan are the major providers of out-patient care majority of these clinics fall in the sole proprietorship category.

2.3 Healthcare System in Pakistan Compared to Countries Around the Globe

Due to many combinations of components that might be taken into consideration for their formation, the existing health systems around the globe differ from one another. For many years, the performance problem has been central to the ranking of health systems. To assess the effectiveness of health systems in their member nations, the WHO carried out a ranking in 2000. Recently, CEO World Magazine published a Healthcare Index (April 2024) of 110 different countries evaluating them based on several critical health variables. The Healthcare Index is a statistical evaluation of the general state of the healthcare framework, taking into account factors like government preparedness, and cost (per capita in USD); healthcare professionals (such as doctors, nurses, and other staff members (competencies, healthcare infrastructure, and quality medication availability. It also considers other aspects such as the environment, availability of clean water, sanitation, and the government's willingness to enforce fines on dangers like obesity and tobacco use. As per the survey of 110 countries for CEOWorld Magazine Healthcare Index, Taiwan was ranked at the top as the country with the best healthcare system in the world scoring 78.72. Whereas Pakistan ranked 104 with an overall healthcare score of 22.7 underscoring significant challenges in its healthcare system. This ranking of 110 countries across the globe is based on five different health variables such as infrastructure, professionals, medicine availability, cost, and government readiness (Appendix I).

Pakistan's placement highlights considerable issues and challenges within its healthcare system. In terms of Medical Infrastructure and Professionals, its score is 65.2, which indicates Pakistan's healthcare infrastructure and availability of professionals is not as sufficient as in other countries (CEO World Magazine 2024; Nishtar, 2019). The infrastructure including hospitals, clinics, and medical equipment, faces numerous challenges in terms of facilities provided. While there have been improvements, especially in urban areas, rural regions still lack adequate facilities i.e., lacking essential medical equipment, supplies, and proper sanitation. Also, according to a report by the Pakistan Medical Association (PMA), many hospitals operate without basic amenities such as clean water, electricity, and functioning medical equipment (PMA, 2022). This lack of infrastructure places immense pressure on healthcare workers who are forced to work in suboptimal conditions.

Likewise, the country has a significant number of qualified healthcare professionals; however, there is a disparity in their distribution which creates a shortage. Urban centers have a higher concentration of doctors and specialists, whereas rural areas suffer from a severe shortage. The shortage of healthcare professionals in Pakistan exacerbates the burden on existing staff. As per World Bank Data on Pakistani Population, Pakistan has a doctor-to-population ratio of approximately 1:1000, far below the recommended level. This shortage forces healthcare workers to work extended hours and manage large patient loads. Additionally, ongoing issues such as brain drain, where medical professionals seek better opportunities abroad, exacerbate the problem.

The score of Medicine Availability and Cost is 49.87. This indicates that essential medicines are not consistently available across the country and the cost is high (CEOWorld Magazine, 2024; Malik & Syed, 2020; WHO, 2023). Factors such as supply chain inefficiencies, lack of regulation, and corruption affect the availability of medicines, particularly in rural and underprivileged areas. Likewise, the cost of medicines can be prohibitive for a significant portion of the population. Despite governmental efforts to regulate prices, many people still struggle to afford necessary treatments. The high cost of healthcare, combined with limited insurance coverage, makes access to medicine a critical issue.

The 48.53 score of Government Readiness again gives an alarming indication (CEOWorld Magazine, 2024; GOP, 2023; Ahmed & Qureshi, 2021). The government's efforts to improve healthcare include

various policies and initiatives aimed at increasing access to services and improving quality. However, implementation and execution often fall short due to bureaucratic hurdles, inadequate funding, and political instability.There have been strides in public health campaigns, such as vaccination drives and awareness programs for communicable diseases. Nevertheless, these programs frequently lack the necessary reach and sustainability to effect long-term change.The country's readiness to handle health emergencies, such as pandemics or natural disasters, is limited. The COVID-19 pandemic highlighted these weaknesses, revealing gaps in crisis management and resource allocation.

The overall Healthcare Index score of 22.7 reflects the cumulative impact of the above factors. Pakistan's healthcare system, while having pockets of excellence, generally struggles with widespread inefficiencies, inequities, and underfunding. The low overall score indicates that substantial improvements are needed across all evaluated dimensions to enhance the health and well-being of its population.

Out of 210 million people, 72% of Pakistan's population lives in rural regions remote from medical services (Tahir, 2023). With a mere 95,000 nurses and 180,000 physicians, there is one doctor for every 997 people, one hospital bed for every 1,584 people, and one dentist for every 10,658 residents. Moreover, government spending on healthcare accounts for around 0.6% of GDP (Gross Domestic Product), of which the bulk is allocated to secondary and tertiary care and just 15% to primary and preventive care. The public's trust is damaged by this reactive strategy, which also results in the public sector using just 20% of first-level care. The absence of standardized essential service packages, uncontrolled private healthcare, discrepancies in access between urban and rural areas, and unequal access all contribute to the non-responsiveness of the healthcare system (See Table 2). This illustrates the dire situation of the healthcare system, with many people unable to access basic medical treatment

Table 2: Key statistics of Pakistan's healthcare system

Aspect	Details
Total population	210 million
Rural population percentage	72%
Number of doctors	180,000
Number of nurses	95,000
Doctor to population	One physician for every 997 people
Hospital bed to population	One bed at the hospital for every 1,584 people
Dentist to population	One dentist for every 10,658 residents
Doctor to population	One doctor for every 997 individuals
Government healthcare spending	0.6% of GDP

Source: Tahir (2023).

Additionally, there are noticeable provincial differences in public health spending. Only 10% of Baluchistan's resources are allocated to healthcare, compared to 66.2% in Punjab, which is home to 53% of Pakistan's population. Khyber Pakhtunkhwa (KP) is at 18.7%, while Sindh is in the middle at 33.4%. In 2016-17, public health spending as a percentage of GDP remained insufficient at 0.46%, despite a small rise of 9% from the previous year. With about $36.2% per capita, health spending is substantially below international standards for low-income nations (Tahir, 2023).

2.4 More Challenges Confronted by Healthcare Workers in Pakistan

Funding and Resource Allocation*:* Insufficient funding is one of the significant challenges. The healthcare funding in Pakistan as mentioned above is significantly lower compared to other countries

with similar economic standings. This underfunding leads to a resource-poor environment, affecting the availability of medical supplies, infrastructure, and human resources (Zaidi et al., 2013). Moreover, Khan et al., (2023) in their study indicate that as per Pakistan's Healthcare Spending 2020-2023 report, Pakistan spends about 38 US dollars (USD) per person as compared to other poor nations. In contrast to Pakistan, India, the Philippines, and Ghana, per capita healthcare expenditures are 57, 165, and 85 USD, respectively. Pakistan allocated 1.2% of its GDP to the public health system, up from 1.1 in 2019–2020 (GOP, 2022). This rise is not noteworthy when considering the GDP percentage. The paucity of medical supplies, pharmaceuticals, medical equipment, and trained healthcare workers is a problem brought on by the inadequate funding for Pakistan's healthcare system. Although there is an increase in human resources from 2014 to 2021, this growth is not enough to cater to the needs of the population growing at 2% per annum (See Table 1, given above). As a consequence of this situation according to the study conducted by Nadir et al., (2023), around 32,879 physicians graduate every year in Pakistan and 40% of them go abroad for better opportunities citing low income, long hours of job, and inequality as the main reasons.

Management Practices and Workforce Planning*:* Effective management practices are critical in optimizing the use of limited resources. However, in Pakistan, issues such as bureaucratic inefficiencies, corruption, and lack of strategic planning hinder the effective management of healthcare resources (Mishal et al., 2020). Workforce planning is another critical area where deficiencies are evident, with a shortage of trained healthcare professionals, inadequate training programs, and poor retention rates (Shaheen et al., 2023; Hameed et al., 2022).

Technological Resources*:* Technology adoption in the healthcare industry can significantly enhance service delivery and resource management. However, Pakistan falls behind in the implementation of telemedicine, health information systems, and other technological breakthroughs due to a lack of infrastructure, financial constraints, and resistance to change (Shaheen et al., 2023). This technological gap makes the already resource-poor atmosphere in healthcare facilities even worse.

Insufficient Training and Support*:* Continuous medical/professional education and skills development opportunities are limited in Pakistan, hindering healthcare workers' ability to stay updated with the latest medical advancements and best practices. According to the Pakistan Medical and Dental Council (PMDC), there is a need for more structured and accessible training programs for healthcare workers.

Political Interference*:* Political interference and bureaucratic hurdles often hinder efficient healthcare delivery in Pakistan. Decisions regarding healthcare policies, resource allocation, and staffing are frequently influenced by political agendas rather than the needs of the healthcare system. This interference can lead to mismanagement and inefficiencies.

Low Salaries: Healthcare workers in Pakistan are often underpaid, making it difficult for them to meet their financial needs. According to 2020 data from the Pakistan Bureau of Statistics, the average salary of healthcare workers in Pakistan is significantly lower than in many other countries. This financial instability can lead to stress and job dissatisfaction.

Stigmatization and Violence: Healthcare workers, especially women, can face stigmatization and violence from patients or their families. The 2020 report by Human Rights Watch (HRW) documented numerous cases of verbal and physical abuse against healthcare workers in Pakistan. This violence is often rooted in cultural and societal attitudes towards healthcare workers and a lack of education among the patients and their attendants.

Cultural Expectations*:* Societal expectations and cultural norms can place additional pressures on healthcare workers, especially regarding gender roles. In many parts of Pakistan, women healthcare workers face additional challenges due to cultural norms that restrict their roles and opportunities.

2.5 Impact on the mental health of healthcare workers

Frustration and Demotivation: Healthcare workers face numerous challenges that significantly impact their mental health and job satisfaction. The inability to provide adequate care due to resource constraints can lead to frustration and demotivation. As highlighted by Iqbal et al. (2019), healthcare workers expressed feelings of helplessness and dissatisfaction with their work environment. Additionally, the inability to influence healthcare policies and practices contributes to frustration and disillusionment among healthcare professionals, as noted by Saeed et al. (2020), who reported dissatisfaction with political interference in healthcare. Job insecurity further decreases motivation and engagement. Khan et al., (2019), observed that healthcare workers felt less motivated due to a lack of job security. Exposure to violence and abuse can result in depression, PTSD, and other mental health issues. Also, these conditions among healthcare professionals are common who experience workplace violence (Ali et al., 2019). Lastly, stigmatization and lack of support can lead to feelings of isolation and loneliness. Shah et al. (2019) highlighted that healthcare workers reported feeling isolated due to the lack of support from colleagues and the community.

Increased Stress and Anxiety: Healthcare workers face numerous challenges that significantly impact their mental health in terms of anxiety and stress. The pressure to meet high patient demands with limited staff and other resources leads healthcare professionals to increased stress and anxiety levels. Hussain et al. (2021), identified high workloads as a significant predictor of stress among Pakistani nurses. The constant threat of violence and insecurity leads to chronic anxiety and fear, supported by Zafar (2022), which found high levels of anxiety among healthcare workers in conflict zones. Likewise, lack of resources results in increased workloads and stress, leading to burnout, anxiety, and depression, as studies show high patient-to-staff ratios and extended hours contribute to physical and mental exhaustion (Sandesh et al., 2020). Low salaries and financial instability further cause chronic stress, as confirmed by Raza et al., (2020). Also, as per Yasmin et al., (2022), healthcare workers who experienced or witnessed violence at work were at higher risk. Political interference again creates ethical dilemmas, causing moral distress as healthcare workers feel unable to provide optimal care due to external pressures.

Burnout: Burnout among healthcare workers in Pakistan has become a significant concern, particularly after the COVID-19 pandemic. Burnout is a psychological syndrome characterized by chronic workplace stress that has not been successfully managed, and it encompasses three dimensions: emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment (Jackson et al., 1986). Several factors contribute to the onset and exacerbation of burnout among Pakistani healthcare workers, especially in the post-pandemic context. The severe effects of the pandemic have significantly exacerbated burnout among healthcare workers in Pakistan due to increased workloads, inadequate resources, prolonged working hours, exposure to violence, financial instability, ethical dilemmas, and the psychological impact of high mortality rates (Asghar et al., 2021; Aslam et al., 2022; Mushtaque et al., 2022). Comprehensive strategies to improve working conditions, provide adequate resources, offer psychological support, enhance financial stability, and address ethical issues are essential to mitigate burnout and support the well-being of healthcare workers in Pakistan.

Professional Stagnation: Professional stagnation in the healthcare profession in Pakistan significantly impact the professional satisfaction and mental health of these workers. Lack of access to training and development opportunities lead to feelings of professional stagnation and reduced job satisfaction, as observed in a study by Ariff et al. (2010). Also, inadequate training reduces healthcare workers' confidence in their abilities, leading to increased stress and anxiety (Mahmood et al., 2021). Further a lack of formal support systems, including mental health services, peer support, and supervisory support, exacerbates feelings of helplessness and increases the risk of mental health issues (Hayat et al., 2021; Munawar& Choudhry, 2021). A combination of such factors lead to a

prevalence of burnout, professional dissatisfaction, and mental health issues among healthcare workers in Pakistan, which was particularly noticeable in the wake of the pandemic.

Work-life Imbalance: Extended working hours disrupt the work-life balance of healthcare workers, leading to stress and decreased job satisfaction. This imbalance was also highlighted by Askari et al., (2021) and Hong (2020), in their studies that healthcare workers reported difficulty balancing professional and personal responsibilities. Cultural expectations regarding gender roles can create work-life conflicts for women healthcare workers. This was observed in a study by Sultana & Fatima (2017), where female healthcare workers reported difficulties balancing professional responsibilities with societal and family expectations.

2.6 Broader Implications

Quality of Care*:* The availability of resources directly impacts the quality of care provided to patients. Studies have shown that adequate staffing, medical supplies, and infrastructure are associated with better patient outcomes, including lower mortality rates, reduced complications, and higher patient satisfaction (Hayat et al., 2021). In Pakistan, resource constraints often lead to compromised care quality, affecting patient safety and outcomes. The mental health challenges faced by healthcare workers lead to decreased quality of patient care and medical errors. Burnout, stress, and anxiety can impair cognitive function and decision-making abilities, increasing the likelihood of errors. A study by Mushtaque et al., (2022) found that healthcare workers experiencing burnout were more likely to make mistakes in patient care.

Healthcare Efficiency*:* Efficient resource utilization is essential for optimizing healthcare delivery. The lack of resources often leads to inefficiencies such as longer wait times, delayed treatments, and reduced access to essential services (Khalid & Ali, 2020). These inefficiencies not only affect patient outcomes but also increase the workload and stress for healthcare workers.

Long-term Sustainability: Ensuring the long-term sustainability of healthcare services requires strategic investment in resources. Building such systems in Pakistan requires addressing the fundamental issues of resource allocation, management, and technological adoption (Anser et al., 2020). Persistent psychological stress and burnout can lead to high turnover rates and a depletion of the healthcare workforce, affecting the long-term sustainability of the healthcare system. According to the 2019 PMDC report, high turnover rates among healthcare workers in Pakistan are a significant concern, with many professionals leaving the field due to stress and burnout.

Public Health: The well-being of healthcare workers is directly linked to public health outcomes. Poor mental health among healthcare workers can compromise their ability to respond effectively to public health emergencies and everyday healthcare needs. A study by Young et al. (2021) found that healthcare workers' mental health significantly impacted their ability to provide quality care during the pandemic.

Economic Impact*:* Mental health issues among healthcare workers can lead to increased absenteeism and decreased productivity, impacting the overall economy. According to Kaye et al., (2021), mental health issues in the workplace can result in significant economic losses due to reduced productivity and increased healthcare costs.

In summary, this literature review has explored the multifaceted challenges encountered by the healthcare industry in Pakistan, particularly focusing on how these issues affect the mental and psychological health of those working in the field. Understanding and tackling these issues is essential not only for the well-being of healthcare workers but also for the quality of care provided to patients and the broader implications for Pakistan's healthcare system and public health. This review underscores the challenges faced by healthcare professionals working in Pakistan's public and private sector hospitals as well as understanding the importance of addressing these issues and

challenges comprehensively to promote a healthcare system that is more resilient and effective. Moreover, by leveraging theoretical frameworks and empirical evidence, the goal of this research is to delineate strategies to improve healthcare quality, assist healthcare professionals, and strengthen the resilience of the healthcare system. Moreover, by suggesting the recommended suggestions and interventions for government, policymakers, and other relevant stakeholders, Pakistan can pave the way for improving the healthcare system that prioritizes both patient care and the well-being of its healthcare workforce, ultimately enhancing health outcomes and societal well-being.

RESEARCH METHODOLOGY

This study employed a qualitative research methodology to explore the stress experienced by healthcare workers based on their lived experiences in Pakistani hospitals. The focus was on understanding the challenges faced by healthcare professionals in both public and private sector health organizations.

3.1 Study Population and Selection Criteria

The study targeted healthcare workers from hospitals in two cities: Sukkur and Karachi. Hospitals were selected based on specific criteria: each had to have a minimum of 150 beds, at least 2 operating theaters, and at least 1 intensive care unit (ICU)[1]. This selection criterion ensured that the hospitals were sufficiently equipped to provide diverse and relevant insights into the experiences of healthcare workers.

3.2 Sampling Method

Stratified sampling was employed to select interview participants from the identified hospitals. The population was divided into strata based on different job roles, including doctors (MS doctors, surgeons or consultant doctors, postgraduate doctors in residency, house officers, and medical officers), nursing staff, operation ward technicians, lower staff, and administrative staff. This approach ensured a comprehensive representation of various roles within the healthcare workforce.

To identify participants for interviews, the study used the snowball sampling technique. Initially, convenience sampling was used to select the first interviewee, and subsequent participants were recruited through referrals from these initial contacts. This method facilitated the collection of information from a network of healthcare workers, capturing diverse perspectives based on their lived experiences.

3.3 Data Collection and Analysis

The researchers conducted in-depth interviews using open-ended questionnaires designed to elicit detailed responses about the challenges faced by healthcare workers and the impact on their well-being and burnout. In the initial stage, two pilot interviews were conducted to test and refine the interview questions. Feedback from these pilot interviews led to modifications in the questionnaire to better address the study's focus.

A total of 26 interviews were recorded after seeking permission from the interviewees and further interviews were terminated as researchers found saturation in the contents. These interview recordings were transcribed and analyzed using NVivo version 12, a qualitative data analysis software. Thematic analysis was applied to identify and interpret key themes related to the experiences and challenges of healthcare workers. This analysis provided valuable insights into the critical resource requirements and the impact on performance and well-being in the context of healthcare delivery.

[1] We are grateful to our mentors for suggesting that this criterion should be incorporated as it will cover tertiary hospitals where the assumedly larger inflows of patients are recorded whereas our initially proposed criteria of minimum 50 beds limit would be too low a threshold for validity of findings.

RESULTS

The authors adhered to a qualitative research strategy to explore and develop thematic details from the lived experiences of healthcare workers and their impact on their mental health. The research aimed to identify key factors contributing to stress and mental health issues among healthcare providers, utilizing a robust thematic analysis approach to distill and prioritize these factors.

4.1 Thematic Analysis and Coding Process

The authors conducted a thematic analysis of transcribed interviews using NVivo software to ensure systematic and reliable coding. To further validate the findings, the research team also manually coded the interviews. This dual-method approach ensured a comprehensive capture of the diverse experiences and perspectives of healthcare workers. On average, seven themes were generated from each of the 22 interviews, resulting in approximately 154 initial thematic items.

4.2 Theme Reduction and Validation

The initial 154 themes were carefully analyzed for repetition, contextual similarity, and frequency of occurrence, following established qualitative research methodologies for coding and theme development (Braun & Clarke, 2006; Miles, Huberman, & Saldaña, 2014). Through this process, the authors distilled the themes into 19 overarching categories (see table 3).

Table 3: Themes generated from all interviews

#	Themes	Description	Quotations
1	Resource Availability and Management	Addressing issues related to the availability of medical resources and equipment essential for duty performance by healthcare workers and managing these resources efficiently to meet patient needs.	"*When resources are not available, it leads to frustration and anger, especially when things are available but not supplied correctly, causing patients to suffer, which feels bad. That's why doctors face stress throughout their working period, whether in the private or public sector."*
2	Staffing and Management	Highlighting issues related to staffing levels, management practices, workload distribution, and the need for improved support for healthcare staff.	"*Medical staff here suffers from stress due to the poor condition of the hospital and lack of facilities. Such as the major causes include the administrative system, the system works based on estimates made on the number of beds available in the hospital, like they have hiring staff members as per the beds total and arranging the medicines and equipment in that accordance. Whereas the reality is different because the inflow of patients daily is far higher than the number of beds in the hospital, this condition raises issues in handling patients and creates hurdles in job performance of medical officers and staff."*
3	Training and Development	Focusing on the continuous need for education and professional development through training	"*There is a lack of training logic here. The human resources are not as highly qualified as they are required in terms of management and technology. They lack the expertise in using the*

#	Themes	Description	Quotations
		programs for healthcare workers to enhance their skills and knowledge.	*latest machinery and when they are unable to perform their task efficiently, they get frustrated and it leads to job stress among them."*
4	Patient Care and Management	Stress created by patient overload, managing staff issues, ensuring high-quality care, and optimizing patient referral and management systems.	"*When we have an outflow of patients two doctors in apart of 4 hours are examining 80 to 90 patients. You can see in the general OPD, there 450 to 500 flow of patients. So in 4 to 5 hours how much time we can give to each patient? We have a shortage of staff, and doctors. In our setup, we don't have some type of labs as well."*
5	Stress and Mental Health	Identifying stress factors for healthcare workers, implementing stress management techniques, and addressing the mental health impact of their work environment.	*"There is exhaustion. I mean, continuous, in our setup, there are so many continuous working hours and the patient load is so high, there are 2 or 1 doctor. So, it creates a situation of draining or exhaustion in the doctor, because of which his/her capabilities are reduced, he/she gets irritated."*
6	Systemic and Policy Issues	Evaluating the role of government policies, administrative challenges, and accountability measures in the healthcare system.	"*In Pakistan the system is available. But the people, we people are not following the system. Neither do our regular authorities force us to follow that you are bound to follow these rules. In our healthcare sector, our human resources are exploited, misused."*
7	Emergency Preparedness and Response	Preparing for and effectively managing emergencies to ensure patient safety and care.	"*We don't get panic. As we know our field and job. We do manage things properly. But if sometimes anything is not available and our patient needs that, at that time we feel situational stress and become so much stressed. Because the patient suffers. We try to make sure that we are giving our 100% at that time. If we don't have any resources at that time, we feel so much stressed. If any patient is neglected because of us or because of management therefore even at home we keep stressed."*
8	Work Environment and Job Satisfaction	Examining factors that influence job satisfaction, work-life balance, and overall well-being of healthcare workers.	"*Earlier I started with we are living in a stressful country. Earlier on Friday Saturday or Sunday people went out and spent time with people but now even on Sunday, people go to work. There is no difference between Sunday and other days. Even in the private sector. Husband and wife can't give time to each other."*

#	Themes	Description	Quotations
9	Hospital Infrastructure and Services	Assessing the quality and adequacy of hospital facilities and services, and planning for future improvements.	*"The healthcare system is not right; everyone is corrupt from top to bottom, including the Organizations managed by government, DHO, MS, and I don't think there are any chances of the system getting better. Most people are satisfied with this system."*
10	Support Systems and Coping Mechanisms	Providing support systems for healthcare workers to cope with stress and maintain their mental health and well-being.	*"There are no workshops for doctors' mental health. Informal activities are conducted, like lunch parties or picnics, which are arranged by the ward staff themselves.Secondly, there are coping strategies, in which you take some mental relief, relax, sleep a little, take some rest for a few days, go on vacations, whatever the situation is."*
11	Training and Education	Emphasizing the importance of continuous education and training programs for healthcare staff to keep up with advancements in the field.	*"The most important thing is that our staff should be well trained. Staff should know from where this patient came, where we have to send this patient, and where he is going. Earlier doctors were doing this. From where this staff is coming and where we have to refer them. Our base should be strong. Our backbone is this nursing staff, they should be well trained. Until and unless our staff does not get well trained, we can't process things further."*
12	Comparative Analysis	Comparing practices, policies, and outcomes of different hospitals or healthcare systems to identify best practices and areas for improvement.	*"Like in the public sector, we see in Pakistan, that the resources are less, because in private, we are paying the patients, so the resources are fully available, so in the public sector, because the government gives so many funds, so why the resources are less, or like you are saying, the beds are less, or the medicines are less."*
13	Financial /Resource Constraints	Addressing the financial challenges and resource limitations that impact the quality of healthcare services.	*"The administration says no approval is granted for funds. The situation becomes stressful and distressing when a patient's life is at risk."*

#	Themes	Description	Quotations
14	Patient/Staff Interaction	Improving interactions between patients, their families, and healthcare staff to enhance the overall care experience.	*"Sometimes I feel that when attendants come and abuse doctors, that makes us stressed for a long time. So administration handles that issue but I feel there is no respect for doctors. For that, we took a session in which they taught us that when attendants misbehave with you, you just need to remain calm."*
15	Governance Policy	Developing and implementing effective policies and governance structures to ensure accountability and efficient operation of healthcare systems.	*"The government, there should be a policy, if from the government, there is no funding, and from the hospital, there is a policy, then there is no benefit, if both the sides, have a policy, and it is on a table, how to work, then it will be better, there is nothing from one side."*
16	Impact on Society and Economics	Evaluating the broader impact of healthcare practices and policies on society and the economy.	*"We should use the resources properly. And they will have an impact on our society in some way. Health wise and economically. The poor people who have lost Rs. 500, they spend Rs. 5000 on their health. Or he should come to the private sector where he has to do the dressing for Rs. 50, he has to spend Rs. 5000 for it."*
17	Health and Well-being	Focusing on the physical and mental health of healthcare workers and the impact of their work environment on their overall well-being.	*"It's all about the mental health. How strong you are, depends on how your reflexes are, how you are trained, how you are trained in tough situations, and how strong you are. You have to be very strong on your nerves, as well as your mental health, and as well as physically. Honestly speaking, doctors feel more. As compared to a normal person."*
18	Gender Discrimination	Addressing issues of gender discrimination and promoting equality in the healthcare workforce.	*"Gender discrimination exists. We were equally capable, like completing our job hours but males were like more preferred."*
19	Future Planning and Recommendations	Developing strategies and recommendations for future improvements in healthcare systems and practices.	*"WHO and Hospital HR should arrange the training on the initial level of hiring which must include communication training, like how to develop effective communication between Doctors and lower staff, Medical workers and Administration, and Doctors to patients. Government should devise policies for hospitals to conduct mental health training and seminars free of cost."*

4.3 Prioritized Themes using Expert Validation

These 19 themes were then presented to practitioners and experts for validation and prioritization. The experts were asked to rank the themes based on their significance, considering their practical experience and knowledge. By mathematically aggregating these rankings, ten themes were selected for further elaboration. This parsimonious approach ensured that the most critical factors were identified, adhering to the principle of capturing all possible experiences through a few key themes. This method not only streamlined the analysis but also ensured that the selected themes accurately represented the primary sources of stress among healthcare workers. The finalized themes are as follows

1. Patient Inflow Overload
2. Resource Availability
3. Staffing and Management
4. Training and Development
5. Illiteracy and Unawareness of the Patient Population
6. Financial Challenges
7. Workers' Mental Well-being
8. Stress Coping Strategies
9. Working Environmental Factors
10. Policies and Governance

4.4 Further Refinement and Final Themes

Further refinement through expert consultation led to the identification of the final six themes, which in our opinion are critical for the development of targeted solutions and recommendations:

1. Managing Patient Inflow Overload
2. Resource Availability and Management
3. Training and Development
4. Patient Interaction and Management
5. Stress Coping Strategies
6. Working Environmental Factors

4.5 Implications for Policy and Practice

These six themes encapsulate the core issues faced by healthcare workers in Sindh and provide a structured framework for formulating strategic recommendations. The identified themes will guide the development of policies and interventions aimed at alleviating the mental health burden on healthcare workers, thereby improving their well-being and enhancing the overall quality of healthcare services. By addressing these critical areas, it is possible to create a more supportive and efficient healthcare environment in Sindh and potentially extend these solutions to broader contexts across Pakistan.

DISCUSSION

The in-depth and semi-structured interviews with health workers in Sindh Government and private sector hospitals have revealed several critical causes of mental health issues among healthcare and support workers across various hospital environments. These causes are categorized into distinct themes/topics as indicated above and, provide a comprehensive understanding of the underlying factors contributing to the mental health challenges faced by healthcare providers and respond to the objectives of our study.

5.1 Initial Observations

Before delving into the detailed discussion, two key observations from the fieldwork are worth noting:

Stress, Anxiety, and Burnout in Private vs. Public Hospitals

It was established that incidences of stress, anxiety, and burnout were nearly nonexistent in private-sector hospitals. This phenomenon can be attributed to the "patient be aware" business model employed by private hospitals, where patients bear the responsibility of providing all necessary medical requirements. Consequently, only those patients who are fully prepared to manage any resource shortcomings seek treatment at these private hospitals.

5.2 Sources of Stress

The sources of stress were found to cluster around two primary environmental situations:

Individual-related Factors*:* The sources of stress and anxiety that lead to a loss of well-being include the individual's motivation driven by material and pecuniary needs, a lack of management skills and capabilities, and the ability to communicate effectively with patients and colleagues. The Capability Approach (Sen, 1993; Robeyns, 2017) emphasizes that enhancing individual skills and competencies is essential for improving performance and well-being. This aligns with the need to address gaps in management skills and communication among healthcare workers.

Work Environment-related Factors*:* These stressors include excessive workloads resulting from unpredictable and unmanageable patient volumes in tertiary government hospitals of Sindh, inadequate or lacking materials and equipment, and insufficient support systems to perform duties amidst the unplanned patient influx. Adding to this burden is the behavior of patients and their attendants, who often lack hospital etiquette, exacerbating an already challenging situation.

According to the Conservation of Resources Theory (Hobfoll, 1989), stress occurs when individuals perceive a threat to their resources or experience a loss of resources while performing their responsibilities or tasks within their job environments. This theory posits that a minimum resource threshold is necessary for performance, with increasing difficulty arising as demands surpass the available resource pools.

In this context, inadequate materials and equipment, excessive workloads, and impolite or irresponsible patient behaviors significantly contribute to the stress experienced by healthcare workers. These factors create rapidly shifting environments that require a high degree of adaptation, further straining the mental health and well-being of healthcare staff.

Additionally, a significant number of these patients, unaware of what awaits them, reach tertiary care hospitals located in urban areas of Sindh province without prior appointments, schedules, or plans for visitation to the OPDs.

The following topics, derived from intensive and extensive open-ended and semi-structured interviews conducted across major tertiary hospitals, provide a deeper insight into the mental health

challenges faced by healthcare workers. These themes are based on a stratified sample of doctors, nurses, paramedics, and other staff across four major tertiary government hospitals and three private sector hospitals in Sindh.

Table 4: Conservation of resources theory themes

COR Theory Theme	Description
Theme one	Resources are required for adaptation and change
Theme two	The threat of loss leads to the protection of assets.
Theme three	Resources must be optimized for adaptation.

Source: Alvaro et al. (2010).

5.3 Discussion on Finalized Topics Derived from the Interviews

***Overload of Patients in Tertiary Hospitals**:* A significant cause of mental health issues among health workers is the overwhelming number of patients. Tertiary hospitals in urban centers, particularly in Karachi, receive an influx of patients not only from the densely populated metropolis but also from surrounding rural and semi-urban areas. This patient overload creates unmanageable workloads for doctors and nurses, leading to high levels of stress and burnout. The strain of dealing with a patient load far exceeding the hospital's capacity is a primary contributor to mental health issues among healthcare workers.

Hospital capacity is predicated on the number of beds that the hospital is designed to function with. All staffing and equipment/facilities are configured accordingly, and these fall substantially below adequacy levels when patient footprints far exceed the handling capacity and capability of the staff as well as the bed capacity available. Senior management and healthcare providers, including doctors and nurses, report that often two patients with different diseases are being assigned to a single bed in medical wards. This situation not only causes undue stress to the nursing staff and doctors, who are forced to go beyond professional protocols but also requires them to deal with the different patient attendants for the two patients on the same bed. These attendants, generally have different inclinations and opinions and are often unaware of hospital etiquette. This indicates first the desirability of adding facilities to the existing tertiary hospitals in urban centers. However, our direct observation and verification by heath care workers inform us that most hospitals have no further space to grow as these are located within buildup areas surrounded by commercial activities and residential areas. This, therefore, indicates a shift of resources to other productive sectors within the healthcare system in Sindh such as the secondary and primary healthcare units, and forms the second topic to be discussed below.

Further to the issues of adequate facilities, the second point relates to the necessary coping skills of healthcare workers. For example, even in normal medical conditions, doctors and nursing staff must communicate effectively with patients, but weak communication skills of healthcare workers and their coping skills further exacerbate the stress and aggravation as reported in the above-mentioned situation of patient over load. Concerning this Conservation of Resources (COR) theory (Hobfoll, 1989), and Dynamic Capability Theory (Teece, Pisano, & Shuen, 1997) suggest that organizations must develop appropriate resources and leverage their capabilities to respond effectively to rapidly changing and shifting environments, such as those in hospitals in Sindh and across Pakistan.

In summary, therefore, enhancing the capacity of healthcare facilities not only in tertiary hospitals but also diverting resources to secondary healthcare units located in catchment areas and improving targeted resource allocation is critical to managing patient overload. As mentioned above COR theory underscores the importance of optimizing resources to ensure that healthcare workers can adapt to the demands of their environment. Similarly, the Capability Approach (Sen, 1993; Robeyns, 2017) emphasizes that building the skills and competencies of healthcare workers especially,

communication skills and resilience capabilities in the present case, is essential for improving their performance and well-being, which is crucial in managing the high patient volumes and associated stress in tertiary hospitals. Especially in the case of resilience, it becomes operative, when proactive coping interventions are aimed at buffering against the negative impact of stress (Alvaro et. al 2010).

High Patient Demand and Non-Refusal Policy: Public sector hospitals in Sindh operate under a policy of non-refusal to patients irrespective of their financial status and medical condition. This policy, while commendable in its inclusivity, leads to significant strain on hospital resources and staff. Accepting all patients regardless of capacity limitations in tertiary hospitals exacerbates the overload of available facilities, forcing healthcare workers to cut corners and work under suboptimal conditions.

Given that these hospitals provide services at no or minimal cost, the demand far exceeds available facilities. For instance, WHO EMRO noted that 'Despite an elaborate and extensive health infrastructure, the healthcare delivery suffers from some key issues like the high population growth, uneven distribution of health professionals, deficient workforce, insufficient funding and limited access to quality healthcare services.' (GOUK, 2024). The relentless demand for services forces healthcare workers to manage an overwhelming number of patients, often exceeding safe and sustainable limits.

Capacity Limitations and Overcrowding: Hospitals are traditionally provided manpower and other tangible resources, including equipment and medicines, based on the number of beds rather than the actual patient footprint. This leads to overcrowded outpatient departments where doctors may see over 150 patients in a six-hour shift. Anecdotal evidence suggests that some doctors have reported handling over 200 patients in a single shift, although this number has not been verified. Substantiating this observation Hashmi et al., (2021), reported "It is not uncommon for a General Practitioner or even a specialist working in private practice to see upwards of 100 patients a day".

Such conditions are not unique to Sindh but are echoed in other parts of Pakistan and similar healthcare systems worldwide, as documented in studies on healthcare worker burnout (Khan et al., 2019).

In a case study from Karachi's Jinnah Postgraduate Medical Centre (JPMC), healthcare providers reported extreme stress and burnout due to high patient loads and inadequate support. One physician noted, "We are working in a war zone. The number of patients is overwhelming, and we have neither the time nor the resources to provide the care they need" (JPMC, 2021). Such anecdotal accounts underscore the systemic issues facing these hospitals.

Impacts on Healthcare Workers: The policy of non-refusal and the resulting high patient volumes highlight significant gaps in staffing and support, severely impacting the mental health of healthcare workers. Research shows that high workloads and insufficient staffing are major contributors to healthcare worker burnout, anxiety, and depression (Shah et al., 2018). This is particularly evident in public hospitals where the pressure to deliver care to all patients, despite resource constraints, creates an unsustainable work environment.

In a qualitative study by Fatima et al. (2021), nurses and doctors from several public hospitals in Sindh reported feelings of helplessness and frustration. One nurse mentioned, "We are expected to perform miracles with minimal resources. It's a constant battle against time and exhaustion." Such narratives are supported by broader research indicating that inadequate staffing and high patient demands lead to poor job satisfaction and high turnover rates among healthcare workers (Sultana et al., 2020).

In short, therefore, the high patient demand and non-refusal policy in public sector hospitals in Sindh create significant challenges for healthcare providers. The mismatch between patient volumes and

available resources leads to overcrowded facilities and immense stress on healthcare workers. Addressing these issues through increased funding, workforce expansion, training programs, efficient resource allocation, and policy revisions is essential to improve the healthcare environment and the well-being of healthcare workers.

Resource Availability, Shortages, and Management: Patient overload has been identified as a critical issue contributing to the mental health challenges faced by healthcare workers (Liu et al., 2020; Blasco-Belled et al., 2024). This issue has been previously discussed, highlighting the stress derived from the direct interaction between staff and patients (Cai et al., 2020). Compounding this problem are shortages in essential medical equipment and allied resources, which result in a backlog of diagnostic reports and the breakdown of machinery used for diagnosis due to overuse (Shaukat & Razzak, 2020). There have been reported instances where bed shortages have resulted in two patients diagnosed with different diseases occupying a single bed. This situation leads to significant stress not only among doctors and nurses, who have to manage this complex service delivery but also among paramedic staff responsible for providing diagnostic services (Muller et al., 2020).

Two primary issues arise in such situations. Firstly, delays in providing laboratory reports impede doctors' ability to diagnose patients promptly (Vizheh et al., 2020). Secondly, with continuous use and no available downtime for machine maintenance, equipment breakdowns can lead to further delays in delivering optimal medical care (Greenberg, 2020; Khalid & Ali, 2020). This situation often shifts the burden to patients, who must arrange for medical test results from external laboratories. The additional cost and time involved not only result in growing frustration with the medical services among the public but also cause stress for healthcare service providers, who are often wrongly accused by patients of causing delays, especially when the communication between patients and health service providers is weak or nonexistent (Khan et al., 2020)

Therefore, the combined effect of direct interaction with patients and the indirect consequences of high patient volumes place a substantial burden on healthcare staff, often resulting in stress and mental fatigue (Riaz et al., 2021). This scenario underscores the need for adequate resource allocation and maintenance to ensure that healthcare workers can perform their duties effectively, thereby reducing stress and improving patient care outcomes (Andlib et al., 2022).

Inadequate Primary and Secondary Healthcare Facilities: The lack of adequate healthcare facilities in primary and secondary units in rural and semi-urban areas forces patients to travel to city-based tertiary hospitals for medical care. This gap in the healthcare infrastructure shifts the burden onto tertiary hospitals, exacerbating patient overload. The rural healthcare system's inability to address basic health needs locally means that tertiary hospitals are inundated with cases that could otherwise be managed at lower-level facilities. This systemic issue highlights the need for significant improvements in rural healthcare services, not only in terms of providing appropriate manpower but also in ensuring minimal facilities for the detection and provision of primary-level medical care. Such improvements are crucial to alleviate the pressure on urban hospitals.

However, simply adding facilities to secondary or primary health institutions is not sufficient in itself. The core issue identified is the brand strength of tertiary hospitals compounded by a lack of trust among the populace in the ability of primary and secondary healthcare facilities to meet their health needs effectively and efficiently. This mistrust was evident when anecdotal evidence was shared with the researchers that most patients and attendants while visiting secondary or primary healthcare facilities, force the healthcare workers in these centers to refer them to known tertiary hospitals. This not only results in undue and unplanned pressure on the OPDs of city center hospitals but also results in an economic burden on the already poor population, which travels across the province just to reach and receive healthcare that could be easily available at their doorsteps.

Unplanned visits to the OPDs in tertiary hospitals also cause extreme stress on doctors' time and attention to facilitate patients properly as they are already trying to care for over 150 patients during a six-hour shift, which far exceeds the upper level of patient consultation at 60 per six-hour shift. This excessive patient load is not sustainable and leads to suboptimal care, thus adding to mortality rates further exacerbating the mental health issues of healthcare workers.

Research has shown that strengthening primary healthcare systems can significantly reduce the burden on tertiary hospitals. For example, a study by Kruk et al. (2018) highlighted that investment in primary care is associated with improved health outcomes and reduced hospital admissions. Additionally, according to Starfield et al. (2005), effective primary care can prevent hospitalizations and bed occupancy in tertiary hospitals as well as manage chronic conditions and provide continuous care, thus easing the load on tertiary facilities. Therefore, enhancing primary and secondary healthcare infrastructure, alongside building trust within the community, is critical for a more balanced and efficient healthcare system.

Insufficient Training and Mentoring for Young Doctors and Nurses: Our research findings reveal a significant deficiency in mentoring and training for young doctors, nurses, and paramedic staff in handling work overloads and managing interactions with impatient and uneducated patient attendants. This finding is particularly counterintuitive given the assumption that doctors receive exemplary professional medical training in medical colleges in Pakistan.

Historically, professors and senior doctors played a crucial role in grooming young healthcare providers, imparting essential skills in patient handling, communication, and stress management. Interaction with patients and their families during this mentoring experience helps nurses develop technical, psychomotor, interpersonal, and communication skills (Dunn et al., 2000; Adams, 2010; Chan et al., 2002; Banning et al., 2006). This can logically extend to all healthcare students, including those undertaking medical studies in medical colleges. However, increasing workloads and a shift towards self-interest, coupled with opportunities to develop and earn substantially from personal clinical practices, have led to a disengagement from mentoring roles.

Reflecting this condition, Dunnington's (1996) question, "Where have all the mentors gone?" resonates today in academic medicine and aligns with our findings. Dunnington observed:

"I have become increasingly troubled over the last few years by what I perceive as an abandonment of the most central elemental role of educators in general and surgical educators specifically. This role is beyond curriculum development efforts, beyond lecturing, and beyond performance evaluation. I would like to frame this critical issue in the form of a question: Where have all the mentors gone?".

In the context of Pakistan, particularly Sindh, recent changes in both medicine and environmental conditions affecting healthcare workers have transformed not just the technical aspects of clinical practices but also research-based decision-making and mentoring practices.

Beyond the issue of on-the-job mentoring, there is a lack of training at the organizational level to support health professionals in developing stress management and coping strategies. This leaves young healthcare workers ill-prepared to cope with the demands of their roles, contributing significantly to stress and other mental health issues. Research further indicates the importance of ongoing training. For instance, participants in a longitudinal study using a 6-week stress-management program designed to develop stress-management skills reported temporary decreases in burnout when the participants attended only one training. However, subjects receiving refresher sessions showed decreases in burnout over four years.

This aligns with the Theory of Capabilities (Sen, 1993; Robeyns, 2017), which suggests that enhancing the skills and competencies of workers is essential for improving their performance and

well-being. Mitchell et al. (2017) conceptualize this in terms of the importance of capability development in the health field to address the challenges faced by healthcare providers.

Stress from Uneducated Patients and Their Attendants: Healthcare workers face considerable stress when dealing with uneducated patients and their attendants, who often lack basic hospital visitation etiquette. This issue seems to be particularly pronounced in countries like Pakistan, where there is anecdotal evidence of conflicts and even physical altercations between patient attendants and hospital staff, both medical and administrative (Qadri et al., 2021). Attendants often refuse to follow hospital rules and guidance, leading to chaotic environments that place additional strain on healthcare providers.

This problem is reflected in Pakistan's healthcare ranking; the country is ranked 104 out of 110, with a healthcare index of 22.7 compared to the top-ranked country's score of 78.72 (CEOWorld Magazine, 2024). The chaotic behavior of patients and attendants not only highlights the lack of healthcare facilities but also underscores the urgent need for public health education campaigns. Improving patient behavior in hospitals through education could significantly reduce stress for healthcare providers (Fink-Samnick, 2016).

The Conservation of Resources Theory (Hobfoll, 1989) also suggests that resource loss is a key factor in stress development. In this context, the lack of patient education and the resulting chaos can be seen as a resource drain on healthcare providers, who must spend unnecessary effort and time managing patients and attendants. This could be mitigated through awareness-building and public education campaigns.

The absence of such systemic efforts, which could easily be implemented by hospitals with government support and wide-ranging access to social media platforms, contributes to the stress and mental health issues of healthcare providers. This issue requires urgent attention and intervention to improve the overall hospital environment and the well-being of healthcare workers (Choudhry et al., 2023). Some of the unacceptable social behaviors reported in hospitals that significantly contribute to the stress and anxiety of healthcare workers are appended below:

a) Disrespect and Aggression: Verbal abuse, threats, and physical violence by patients and their attendants can create a hostile work environment, leading to increased stress and anxiety among healthcare staff (Bhatti et al., 2021).
b) Non-compliance with Hospital Rules: Ignoring hospital policies, such as visiting hours, hygiene protocols, and safety regulations, disrupts the orderly functioning of the hospital and adds to the workload of healthcare providers (Fink-Samnick, 2016). In Pakistan the situation is aggravated due to a) the absence of clear signage or directions that with time become unreadable and are not replaced; b) due to lack of formal education the patients and their attendants either cannot understand or properly follow the instructions provided.
c) Miscommunication and Misinformation: Lack of clear communication between healthcare workers and patients coupled with the spread of misinformation by patients and their families can lead to misunderstandings, increased tension, and stress among healthcare workers (Feroz et al., 2021).

Lack of Training in Communication and Coping Strategies: There is a notable absence of professional training programs focused on developing communication skills, stress-coping strategies, and resilience for doctors, nurses, and other hospital staff (Gidugu et al., 2015; Mealer et al., 2014). Such training is crucial for managing the high-stress environments typical in public hospitals. The lack of these skills further exacerbates the mental health issues among healthcare providers, who often find themselves ill-equipped to handle the emotional and psychological demands of their roles (Shanafelt et al., 2015; West et al., 2016). The interplay between poor communication skills and inadequate coping mechanisms creates a vicious cycle, where stress leads

to communication breakdowns, which in turn increases stress, progressively worsening the mental health of healthcare workers (Sinsky et al., 2016; Zwack& Schweitzer, 2013).

The mental health issues faced by healthcare workers in Sindh Government hospitals stem from a complex interplay of factors, including patient overload, inadequate rural healthcare facilities, insufficient training, and resource shortages. Addressing these issues requires a multifaceted approach, starting with improving primary and secondary healthcare services in both urban centers and rural areas. Additionally, enhancing training programs for healthcare providers and implementing public health education campaigns through social media and mobile systems, which are accessible to a large part of the population, are essential.

By tackling these underlying causes, it is possible to alleviate the mental health burden on healthcare workers, thereby improving their well-being and the overall quality of healthcare services. The next section provides targeted recommendations that, if implemented in letter and spirit, can begin to turn the tide in favor of healthcare service providers and consequently bring a positive impact on the overall healthcare system in Sindh in particular and across Pakistan in general.

RECOMMENDATIONS

The mental health challenges faced by healthcare workers in Sindh and Pakistan generally, particularly those in government tertiary hospitals, pose a significant risk to the already stressed healthcare system. These challenges discussed in the previous section, can be broadly categorized into three main and associated subcategories. For example, patient overload is one main problem that can be subcategorized into a lack of resources and weak secondary and primary healthcare systems. The second main category relates to the skills and capability of healthcare workers with the associated issue of lack of training in soft skills such as communication, stress, and conflict management. Finally, the last relates to the characteristics of the general population of the patients and attendants who visit the tertiary hospitals for treatments and their behavioral aspects and impacts. Addressing these challenges requires comprehensive policy formulation and strategic resource allocation. Based on the findings discussed, the following recommendations are proposed to alleviate the stress and improve the efficiency and effectiveness of the healthcare system in Sindh Pakistan.

6.1 Implementation of a General Practitioner(GP) System

Recommendation: Develop and implement a system similar to the GP system in the UK.

Rationale: The unmanageable patient load in tertiary hospitals can be significantly reduced by establishing a primary healthcare network that serves as the first point of contact for patients. This system will ensure that only cases requiring specialized care are referred to tertiary hospitals.

Action Steps:

Pilot Program: Initiate a pilot program in a major urban center to establish GP clinics in various neighborhoods.

Integration with IT: Develop an IT application to facilitate seamless referral processes and patient record management.

Training: Provide training for GPs to handle a wide range of medical issues, thereby reducing the burden on tertiary hospitals.

6.2 Strengthening Secondary Healthcare Facilities

Recommendation: Allocate resources to enhance secondary healthcare facilities in catchment areas of urban tertiary hospitals.

Rationale: Divert resources from developing more tertiary hospitals in urban centers to develop and strengthen secondary healthcare facilities to stem patient flow from these catchment areas particularly those patients who have no serious medical issues and ensure timely medical intervention at an earlier stage at points which are easy to reach for patients.

Action Steps:

Resource Allocation: Redirect funds to build and equip secondary healthcare units in strategic locations identified based on patient data from existing tertiary hospitals.

Capacity Building: Increase the capacity of existing secondary healthcare facilities to handle more patients and provide a broader range of services.

Accessibility: Ensure these facilities are easily accessible to the populations they serve, particularly in semi-urban and rural areas. This will also reduce funds spent by patients when traveling with their attendants to distant city centers.

6.3 Public Education on Hospital Etiquette

Recommendation: Launch public health education campaigns focusing on hospital etiquette and patient behavior.

Rationale: Educating patients and their attendants about proper hospital behavior will reduce the stress on healthcare workers and improve the overall hospital environment.

Action Steps:

Social Media Campaigns: Utilize social media platforms and influencers to disseminate short, engaging videos on hospital etiquette.

Information Dissemination: Create educational content to be displayed in hospitals and clinics, funded by the health ministry.

Community Outreach: Conduct community outreach programs to raise awareness about the importance of following hospital protocols.

Improve signage: Develop and position hospital guiding and instructional signages' including voice messages in local languages in public places located in hospital compounds that are easily understood by everyone.

6.4 Professional Training for Healthcare Providers

Recommendation: Incorporate comprehensive training programs for doctors, nurses, and paramedical staff focusing on communication, stress management, and conflict resolution.

Rationale: Proper training in these areas will equip healthcare providers with the necessary skills to handle the emotional and psychological demands of their roles, reducing stress and improving patient care.

Action Steps:

Curriculum Development: Develop and integrate courses on communication, human behavior psychology, and stress and conflict management into medical education.

Continuous Education: Establish ongoing training and development programs to ensure that healthcare providers remain updated with best practices not only in their professional subjects but refresher training programs addressed on the lines used by SMEDA where they subsidize the fee to encourage participation.

6.5 Enhancing Mentorship and Support Systems

Recommendation: Strengthen the mentorship and support systems for young healthcare professionals.

Rationale: Revitalizing the role of senior doctors as mentors will provide young healthcare workers with the guidance and support they need to navigate their professional responsibilities effectively.

Action Steps:

Mentorship Framework: Develop a structured mentorship framework that pairs young healthcare providers with experienced professionals.

Incentives for Mentors: Provide incentives for senior doctors to actively participate in mentorship programs especially as beyond their hospital duties they are engaged in their private clinics to enhance their incomes.

Feedback Mechanisms: Implement feedback mechanisms to continually improve the mentorship process based on the experiences of both mentors and mentees.

6.6 Conclusion

Addressing the mental health challenges faced by healthcare workers in Sindh Government hospitals requires a multifaceted approach. By implementing a GP system, strengthening secondary healthcare facilities, educating the public, providing professional training, and enhancing mentorship programs, it is possible to alleviate the burden on healthcare providers. These measures will not only improve the well-being of healthcare workers but also enhance the overall quality of healthcare services in Sindh, Pakistan.

REFERENCES

Adams, T. L. (2010). Gender and feminization in health care professions. *Sociology Compass, 4*(7), 454-465.

Ahmed, A., & Qureshi, M. A. (2021). Public health policies in Pakistan: Challenges and opportunities. *Public Health Reviews,* 42(1), 123-134.

Ali, M., Bilal, H., Raza, B., & Ghani, M. U. (2019). Examining the influence of workplace bullying on job burnout: Mediating effect of psychological capital and psychological contract violation. *International Journal of Organizational Leadership, 8(2).*

Alvaro, C., Lyons, R. F., Warner, G., Hobfoll, S. E., Martens, P. J., Labonté, R., & Brown, E. R. (2010). Conservation of resources theory and research use in health systems. *Implementation Science, 5*, 1-20.

Andlib, Z., Khalid, M., & Naeem, M. (2022). Healthcare workers and COVID-19 pandemic: Impact on their mental health, quality of life, and job satisfaction. *Journal of Occupational Health and Epidemiology, 11*(2), 122-134

Anser, M. K., Yousaf, Z., Khan, M. A., Nassani, A. A., Abro, M. M. Q., Vo, X. H., & Zaman, K. (2020). Social and administrative issues related to the COVID-19 pandemic in Pakistan: Better late than never. *Environmental Science and Pollution Research, 27*, 34567-34573.

Ariff, S., Soofi, S. B., Sadiq, K., Feroze, A. B., Khan, S., Jafarey, S. N., ...& Bhutta, Z. A. (2010). Evaluation of health workforce competence in maternal and neonatal issues in public health sector of Pakistan: An assessment of their training needs. *BMC Health Services Research, 10*, 1-9.

Asghar, M. S., Yasmin, F., Alvi, H., Shah, S. M. I., Malhotra, K., Farhan, S. A., ...& Rasheed, U. (2021). Assessing the mental impact and burnout among physicians during the COVID-19 pandemic: A developing country single-center experience. *The American Journal of Tropical Medicine and Hygiene, 104*(6), 2185.

Askari, R., Rafiei, S., Akbari, R., Ebrahimi, E. H., Dehghani, A., & Shafii, M. (2021). The relationship between work-life balance and quality of life among hospital employees. *International Journal of Healthcare Management, 14*(2), 436-440.

Aslam, N., Khan, A., Habib, N., & Ahmed, A. (2022). The moderating role of life satisfaction in the relationship between burnout and depression among nursing staff: a human rights concern in Pakistan. *International Journal of Human Rights in Healthcare, 15*(5), 416-425.

Banning, M., Hill, Y., & Rawlings, S. (2006). Student learning in care homes. *Nursing Older People, 17*(10).

Bhatti, O. A., Rauf, H., Aziz, N., Martins, R. S., & Khan, J. A. (2021). Violence against healthcare workers during the COVID-19 pandemic: A review of incidents from a lower-middle-income country. *Annals of Global Health, 87*(1).

Blasco-Belled, A., Tejada-Gallardo, C., Fatsini-Prats, M., & Alsinet, C. (2024). Mental health among the general population and healthcare workers during the COVID-19 pandemic: A meta-analysis of well-being and psychological distress prevalence. *Current Psychology, 43*(9), 8435-8446.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101.

Cai, Q., Feng, H., Huang, J., Wang, M., Wang, Q., Lu, X., ... & Liu, Y. (2020). The mental health of frontline and non-frontline medical workers during the coronavirus disease 2019 (COVID-19) outbreak in China: A case-control study. *Journal of Affective Disorders*, *275*, 210-215.

CEOWorld Magazine. (2024). *Healthcare index April 2024*. https://ceoworld.biz/2024/04/02/countries-with-the-best-health-care-systems-2024/

Chan, R., Molassiotis, A., Eunice, C., Virene, C., Becky, H., Chit-Ying, L., ...& Ivy, Y. (2002). Nurses' knowledge of and compliance with universal precautions in an acute care hospital. *International Journal of Nursing Studies, 39*(2), 157-163.

Choudhry, F. R., Khan, N., & Munawar, K. (2023). Barriers and facilitators to mental health care: A systematic review in Pakistan. *International Journal of Mental Health, 52*(2), 124-162.

Dunn, S. V., Lawson, D., Robertson, S., Underwood, M., Clark, R., Valentine, T., ...& Herewane, D. (2000). The development of competency standards for specialist critical care nurses. *Journal of Advanced Nursing, 31*(2), 339-346.

Dunnington, G. L. (1996). The art of mentoring. *The American Journal of Surgery*, 171(6), 604-607.

Fatima, M., Waqar, M., Qamar, H., Akram, M., Zia, F., & Hussain, R. (2021). Knowledge and practice of health-care workers regarding hand hygiene during third wave of COVID-19 pandemic. *Medicine, 87*, 32-1.

Feroz, A. S., Pradhan, N. A., Ahmed, Z. H., Shah, M. M., Asad, N., Saleem, S., & Siddiqi, S. (2021). Perceptions and experiences of healthcare providers during COVID-19 pandemic in Karachi, Pakistan: An exploratory qualitative study. *BMJ Open, 11*(8), e048984.

Fink-Samnick, E. (2016). Protection for professional case management: Social work's intricacies and opportunities. *Professional Case Management, 21*(4), 201-206.

Gidugu, V., Rogers, E. S., Harrington, S., Maru, M., Johnson, G., Cohee, J., & Hinkel, J. (2015). Individual peer support: A qualitative study of mechanisms of its effectiveness. *Community Mental Health Journal, 51*(4), 445-452.

GOP (Government of Pakistan). (2022). Pakistan economic survey 2021-22. Islamabad: Finance Division.

GOP (Government of Pakistan). 2023. *Annual health report 2023*. Ministry of National Health Services, Regulations & Coordination

GOUK. (2024). *Country information note Pakistan: Healthcare and medical treatment (July, 2024)*. Version 3.0. https://www.gov.uk/government/publications/pakistan-country-policy-and-information-notes

Greenberg, N. (2020). Mental health of health-care workers in the COVID-19 era. *Nature Reviews Nephrology, 16*(8), 425-426.

Hameed, W., Khan, B., Siddiqi, S., Asim, M., & Avan, B. I. (2022). Health system bottlenecks hindering provision of supportive and dignified maternity care in public health facilities. *PLOS Global Public Health, 2*(7), e0000550.

Hashmi, M. D., Alnababteh, M., Vedantam, K., Alunikummannil, J., Oweis, E. S., & Shorr, A. F. (2020). Assessing the need for transfer to the intensive care unit for Coronavirus-19 disease: Epidemiology and risk factors. *Respiratory Medicine, 174*, 106203.

Hashmi, S. M., Chang, B. H., &Rong, L. (2021). Asymmetric effect of COVID-19 pandemic on E7 stock indices: Evidence from quantile-on-quantile regression approach. Research in International Business and Finance, 58, 101485.

Hayat, K., Arshed, M., Fiaz, I., Afreen, U., Khan, F. U., Khan, T. A., ...& Fang, Y. (2021). Impact of COVID-19 on the mental health of healthcare workers: a cross-sectional study from Pakistan. Frontiers in public health, 9, 603602.

Hobfoll, S. E. (1989). Conservation of resources: a new attempt at conceptualizing stress. *American Psychologist, 44*(3), 513.

Hong, K. J. (2020). Effect of working time quality on the work-life imbalance of nurses. *Journal of Korean Academy of Nursing Administration, 26*(1), 11-21.

Hussain, S., Razzaq, M. A., Shah, H., Lashari, M. N., & Bhayo, A. W. (2021). Nursing workload and level of patient satisfaction with nursing care in cardiology department at tertiary care hospitals Pakistan. *Journal of Liaquat University of Medical & Health Sciences, 20*(3), 241-245.

Iqbal, U., Humayun, A., & Li, Y. C. (2019). Healthcare quality-improvement and measurement strategies and its challenges ahead. *International Journal for Quality in Health Care, 31*(1), 1-1.

Jackson, S. E., Schwab, R. L., & Schuler, R. S. (1986). Toward an understanding of the burnout phenomenon. *Journal of Applied Psychology, 71*(4), 630.

Johnson, K. D., Harris, C., Cain, J. K., Hummer, C., Goyal, H., & Perisetti, A. (2020). Pulmonary and extra-pulmonary clinical manifestations of COVID-19. *Frontiers in Medicine, 7*, 526.

Kaye, A. D., Okeagu, C. N., Pham, A. D., Silva, R. A., Hurley, J. J., Arron, B. L., ... & Cornett, E. M. (2021). Economic impact of COVID-19 pandemic on healthcare facilities and systems: International perspectives. *Best Practice & Research Clinical Anaesthesiology, 35*(3), 293-306.

Khalid, A., & Ali, S. (2020). COVID-19 and its challenges for the healthcare system in Pakistan. *Asian Bioethics Review, 12*(4), 551-564.

Khan, B. A., Cheng, L., Khan, A. A., & Ahmed, H. (2019). Healthcare waste management in Asian developing countries: A mini review. *Waste Management & Research, 37*(9), 863-875.

Khan, N., McGarry, K., Naqvi, A. A., Iqbal, M. S., & Haider, Z. (2020). Pharmacists' viewpoint towards their professional role in healthcare system: A survey of hospital settings of Pakistan. *BMC Health Services Research, 20*, 1-15.

Khan, R., Javed, H., Fatima, W., Ahsan, A., Khan, M. I. U., Ahmad, S., & Khurshid, M. (2024). The unspoken wounds: Understanding the psychological impact on healthcare professionals fighting COVID-19 in Pakistan. *Transboundary and Emerging Diseases*, *2024*(1), 3364960.

Khan, S. J., Asif, M., Aslam, S., Khan, W. J., & Hamza, S. A. (2023). Pakistan's healthcare system: A review of major challenges and the first comprehensive universal health coverage initiative. *Cureus*, *15*(9).

Kruk, M. E., Gage, A. D., Arsenault, C., Jordan, K., Leslie, H. H., Roder-DeWan, S., ... & Pate, M. (2018). High-quality health systems in the sustainable development goals era: Time for a revolution. *The Lancet Global Health*, *6*(11), e1196-e1252.

Lima, C. K. T., Carvalho, P. M. M., Lima, I. A. A. S., Nunes, J. V. A. O., Saraiva, J. S., de Souza, R. I., ... & Neto, M. L. R. (2020). The emotional impact of Coronavirus 2019-nCoV (new Coronavirus disease). *Psychiatry Research, 287*, 112915.

Liu, Z.,Wu, J., Shi, X., Ma, Y., Ma, X., Teng, Z., et al (2020). Mental health status of healthcare workers in China for COVID-19 epidemic. *Annals of Global Health, 86*(1), 128.

Mahmood, Q. K., Jafree, S. R., Jalil, A., Nadir, S. M. H., & Fischer, F. (2021). Anxiety amongst physicians during COVID-19: Cross-sectional study in Pakistan. *BMC Public Health, 21*, 1-10.

Malik, M.A., & Syed, N. (2020). Availability and affordability of medicines in Pakistan. *Journal of Pharmaceutical Policy and Practice, 13*(1), 56.

Mealer, M., Conrad, D., Evans, J., Jooste, K., Solyntjes, J., Rothbaum, B., & Moss, M. (2014). Feasibility and acceptability of a resilience training program for intensive care unit nurses. *American Journal of Critical Care, 23*(6), e97-e105.

Miles, H., & Huberman, A. M. (2018). Saldana.(2014). *Qualitative data analysis: A methods sourcebook*, *3*.

Mishal, L., Rabia, B., Iram, L., & Rizwan, L. A. (2020). Exploring human resource management in the health care systems of Pakistan. *Pakistan. J Pract Prof Nurs*, *4*, 018.

Mitchell, P. M., Roberts, T. E., Barton, P. M., & Coast, J. (2017). Applications of the capability approach in the health field: A literature review. *Social Indicators Research, 133*, 345-371.

Mukhtar, S. (2024). Experiences, challenges, and lessons learned from covid-19: A case study of mental health in Pakistan. *Disaster Medicine and Public Health Preparedness, 18*, e11.

Muller, A. E., Hafstad, E. V., Himmels, J. P. W., Smedslund, G., Flottorp, S., Stensland, S. Ø., ... & Vist, G. E. (2020). The mental health impact of the covid-19 pandemic on healthcare workers, and interventions to help them: A rapid systematic review. *Psychiatry Research*, *293*, 113441.

Munawar, K., & Choudhry, F. R. (2021). Exploring stress coping strategies of frontline emergency health workers dealing Covid-19 in Pakistan: A qualitative inquiry. *American Journal of Infection Control, 49*(3), 286-292.

Mushtaque, I., Raza, A. Z., Khan, A. A., & Jafri, Q. A. (2022). Medical staff work burnout and willingness to work during COVID-19 pandemic situation in Pakistan. *Hospital Topics, 100*(3), 123-131.

Nadir, F., Sardar, H., & Ahmad, H. (2023). Perceptions of medical students regarding brain drain and its effects on Pakistan's socio-medical conditions: A cross-sectional study. *Pakistan Journal of Medical Sciences, 39*(2), 401.

Nishtar, S. (2019). The challenge of healthcare in Pakistan. *Lancet,* 393(10170), 1074-1075.

Núñez, A., &Ramaprasad, A. (2021). A Framework for COVID-19 Preparedness and response in healthcare systems. *International Journal of Environmental Research and Public Health, 18*(11), 5703.

Nussbaum, M. C. (2000). *Women and human development: The capabilities approach* (Vol. 3). Cambridge university press.

Nussbaum, M. C. (2011). *Creating capabilities: The human development approach*. Harvard University Press.

Pakistan Medical Association (PMA) (2022). *Annual report on healthcare professionals*. PMA.

Qadri, U., Hussain, A., & Shaikh, S. (2021). Change in perception and behavior of patients/attendant and healthcare workers after? Introduction of low-cost violence prevention interventions at emergency department of a tertiary care hospital in Karachi. *Pakistan Journal of Public Health*, *11*(4), 255-260.

Qazi, F. K., Rehman, K., Waheed, S. A., Aleem, S., Kibria, Z., &Asim, M. (2024). Lived experiences of COVID-19 patients admitted in isolation wards of healthcare centers in Peshawar, Pakistan: A phenomenological perspective. *Public Health in Practice, 7*, 100499.

Rana, W., & Mukhtar, S. (2020). Mental health of medical workers in Pakistan during the pandemic COVID-19 outbreak. *Asian Journal of Psychiatry, 51*, 102080.

Raza, A., Matloob, S., Abdul Rahim, N. F., Abdul Halim, H., Khattak, A., Ahmed, N. H., ... & Zubair, M. (2020). Factors impeding health-care professionals to effectively treat coronavirus disease 2019 patients in Pakistan: A qualitative investigation. *Frontiers in Psychology*, *11*, 572450.

Riaz, B., Rafai, W. A., Ussaid, A., Masood, A., Anwar, S., Baig, F. A., ... & Iqbal, F. (2021). The psychological impact of COVID-19 on healthcare workers in Pakistan. *Future Healthcare Journal*, *8*(2), e293-e298.

Robeyns, I. (2006). The capability approach in practice. *Journal of Political Philosophy*, *14*(3).

Robeyns, I. (2017). *Wellbeing, freedom and social justice: The capability approach re-examined* (p. 266). Open book publishers.

Saeed, F., Mihan, R., Mousavi, S. Z., Reniers, R. L., Bateni, F. S., Alikhani, R., & Mousavi, S. B. (2020). A narrative review of stigma related to infectious disease outbreaks: What can be learned in the face of the Covid-19 pandemic?. *Frontiers in Psychiatry*, *11*, 565919.

Sandesh, R., Shahid, W., Dev, K., Mandhan, N., Shankar, P., Shaikh, A., & Rizwan, A. (2020). Impact of COVID-19 on the mental health of healthcare professionals in Pakistan. *Cureus*, *12*(7).

Sen, A. (1993). Capability and well-being. In M. C. Nussbaum & A. Sen (Eds.), *The quality of life*. Clarendon Press, Oxford.

Shah, A. D., Quinn, N. J., Chaudhry, A., Sullivan, R., Costello, J., O'Riordan, D., ... & Williams, J. G. (2019). Recording problems and diagnoses in clinical care: developing guidance for healthcare professionals and system designers. *BMJ Health & Care Informatics*, *26*(1).

Shah, S. A., Akhtar, T., & Mehmood, A. (2018). Workload and mental health issues in public sector hospitals. *Pakistani Journal of Medical Sciences, 34*(2), 189-195.

Shaheen, R., Yasin, A., Yasmin, F., & Anwar, R. (2023). Addressing financial and administrative challenges in public sector health programs: A review of Pakistan's health care system. *Journal of Human Dynamics*, *1*(2), 45-52.

Shaikh, S., Baig, L. A., Hashmi, I., Khan, M., Jamali, S., Khan, M. N., ... & Zaib, S. (2020). The magnitude and determinants of violence against healthcare workers in Pakistan. *BMJ Global Health*, *5*(4), e002112.

Shanafelt, T. D., Dyrbye, L. N., &Sinsky, C. (2015). From burnout to engagement: The role of resiliency and compassion fatigue. *American Medical Association Journal of Ethics, 17*(5), 496-503.

Shaukat, N., & Razzak, J. (2020). Physical and mental health impacts of COVID-19 on healthcare workers: A scoping review. *International Journal of Emergency Medicine, 13*(1), 1-8.

Sinsky, C., Colligan, L., Li, L., Prgomet, M., Reynolds, S., Goeders, L., ...& Blike, G. (2016). Allocation of physician time in ambulatory practice: A time and motion study in 4 specialties. *Annals of Internal Medicine, 165*(11), 753-760.

Sirmon, D. G., Hitt, M. A., Ireland, R. D., & Gilbert, B. A. (2011). Resource orchestration to create competitive advantage: Breadth, depth, and life cycle effects. *Journal of Management, 37*(5), 1390-1412.

Søvold, L. E., Naslund, J. A., Kousoulis, A. A., Saxena, S., Qoronfleh, M. W., Grobler, C., & Münter, L. (2021). Prioritizing the mental health and well-being of healthcare workers: an urgent global public health priority. *Frontiers in Public Health, 9*, 679397.

Starfield, B., Shi, L., & Macinko, J. (2005). Contribution of primary care to health systems and health. *The Milbank Quarterly*, *83*(3), 457-502.

Sultana, A., Riaz, M., & Nasir, M. (2020). Job satisfaction and turnover intention among healthcare workers in Pakistan. *Journal of Occupational Health, 62*(1), e12131.

Sultana, H., & Fatima, A. (2017). Factors influencing migration of female workers: A case of Bangladesh. *IZA Journal of Development and Migration*, *7*, 1-17.

Tahir, N. (2023, September 24). Healing with numbers: transforming Pakistan's healthcare with data. *Express Tribune*. https://tribune.com.pk/story/2437397/healing-with-numbers-transforming-pakistans-healthcare-with-data

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal, 18*(7), 509-533.

Ullah, I., Khan, K. S., Ali, I., Ullah, A. R., Mukhtar, S., de Filippis, R., ...& Asghar, M. S. (2022). Depression and anxiety among Pakistani healthcare workers amid COVID-19 pandemic: A qualitative study. *Annals of Medicine and Surgery, 78*, 103863.

Umbetkulova, S., Kanderzhanova, A., Foster, F., Stolyarova, V., & Cobb-Zygadlo, D. (2024). Mental health changes in healthcare workers during COVID-19 pandemic: A systematic review of longitudinal studies. *Evaluation & the Health Professions, 47*(1), 11-20.

Vizheh, M., Qorbani, M., Arzaghi, S. M., Muhidin, S., Javanmard, Z., & Esmaeili, R. (2020). The mental health of healthcare workers in the COVID-19 pandemic: A systematic review. *Journal of Diabetes & Metabolic Disorders, 19*(2), 1967-1978.

Wang, H., Liu, Y., Hu, K., Zhang, M., Du, M., Huang, H., & Yue, X. (2020). Healthcare workers' stress when caring for COVID-19 patients: An altruistic perspective. *Nursing Ethics, 27*(7), 1490-1500.

Waugh, W., Lethem, C., Sherring, S., & Henderson, C. (2017). Exploring experiences of and attitudes towards mental illness and disclosure amongst health care professionals: A qualitative study. *Journal of Mental Health, 26*(5), 457-463.

West, C. P., Dyrbye, L. N., Erwin, P. J., & Shanafelt, T. D. (2016). Interventions to prevent and reduce physician burnout: a systematic review and meta-analysis. *The Lancet, 388*(10057), 2272-2281.

World Health Organization (2023). *Pakistan health system review*. WHO.

Yasmin, F., Jatoi, H. N., Abbasi, M. S., Asghar, M. S., Siddiqui, S. A., Nauman, H., ... & Alam, M. T. (2022). Psychological distress, anxiety, family violence, suicidality, and wellbeing in Pakistan during the COVID-19 lockdown: A cross-sectional study. *Frontiers in Psychology*, *13*, 830935.

Young, K. P., Kolcz, D. L., O'Sullivan, D. M., Ferrand, J., Fried, J., & Robinson, K. (2021). Health care workers' mental health and quality of life during COVID-19: Results from a mid-pandemic, national survey. *Psychiatric Services, 72*(2), 122-128.

Yuan, K., Zheng, Y. B., Wang, Y. J., Sun, Y. K., Gong, Y. M., Huang, Y. T., ... & Lu, L. (2020). Psychological and mental health impacts on Chinese healthcare workers during the outbreak of COVID-19: A national cross-sectional survey study. *European Psychiatry, 63*(1), e53.

Zafar, M. (2022). Impact of the COVID-19 on the health system and healthcare workers: A systematic review. *Health Scope*, *11*(3).

Zaidi, S., Bigdeli, M., Aleem, N., & Rashidian, A. (2013). Access to essential medicines in Pakistan: Policy and health systems research concerns. *PloS One, 8*(5), e63515.

Zwack, J., & Schweitzer, J. (2013). If every fifth physician is affected by burnout, what about the other four? Resilience strategies of experienced physicians. *Academic Medicine*, *88*(3), 382-389.

APPENDIX

Table 5: Countries with the best healthcare systems, 2024

Rank	Country	Medical infrastructure & professionals	Medicine availability & cost	Government readiness	Healthcare Index (overall)
1	Taiwan	87.16	83.59	82.3	78.72
2	South Korea	79.05	78.39	78.99	77.7
3	Australia	90.75	82.59	92.06	74.11
4	Canada	86.18	78.99	88.23	71.32
5	Sweden	78.77	74.88	74.18	70.73
6	Ireland	92.58	96.22	67.51	67.99
7	Netherlands	77.86	71.82	55.1	65.38
8	Germany	86.28	75.81	83.82	64.66
9	Norway	72.48	68.68	64.78	64.63
10	Israel	88.63	75.61	90.25	61.73
11	Belgium	79.09	69.93	67.29	60.16
12	Switzerland	77.76	68.97	59.65	59.6
13	Japan	98.7	94.99	98.74	59.52
14	Singapore	76.39	67.47	71.33	57.96
15	United States	79.73	68.59	75.73	56.71
16	Austria	86.58	71.23	73.86	54.86
17	United Arab Emirates	78.93	66.04	60.94	52.3
18	Czech Republic	77.77	65.42	69.68	52.25
19	Finland	74.2	63.51	97.84	52.1
20	Portugal	68.21	60.36	55.08	51.99
21	New Zealand	73.53	62.22	74.19	50.15
22	Italy	98.3	75.25	83.54	49.58
23	Hong Kong	62.39	55.73	52.91	48.64
24	Denmark	82.67	66.15	81.98	48.54
25	France	69.37	59.16	66.11	48.27
26	Spain	96.87	86.79	98.21	48.13
27	United Kingdom	78.03	63.08	75.19	47.15
28	Greece	70.06	58.53	62.6	46.24
29	India	75.2	60.99	66.54	45.84
30	Luxembourg	84.18	65.52	76.28	45.62
31	Croatia	83.43	64.98	85.77	45.3
32	Lithuania	71.12	58.62	64.48	45.3
33	Slovenia	67.54	56.77	60.69	45.29
34	Estonia	64.17	54.94	52.11	45.1
35	Cyprus	78.39	62.1	74.03	44.72
36	Iceland	98.1	66.02	64.34	44.55
37	Saudi Arabia	83.38	87.03	98.43	44.43
38	Brazil	85.38	64.9	72.19	43.06
39	Indonesia	64.37	54.02	55.79	42.99
40	Latvia	71.54	57.69	53.28	42.92
41	Bulgaria	65.97	54.61	47.94	42.5
42	Russia	88.12	72.84	91.25	42.31

43	Slovakia	76.84	59.97	74.42	41.99
44	Hungary	74.88	58.95	69.12	41.97
45	Mexico	71.55	57.07	65.42	41.63
46	China	69.67	55.99	65.36	41.4
47	Costa Rica	89.83	65.29	87.57	39.85
48	North Macedonia	75.65	58.23	65.85	39.65
49	Tunisia	73.88	57.18	74.7	39.37
50	Lebanon	68.39	54.18	65.81	39.03
51	Georgia	67.54	53.73	47.83	39.02
52	Bosnia & Herzegovina	76.14	58.14	62.74	38.95
53	Albania	91.58	65.96	94.29	38.65
54	Bahrain	72.36	55.97	67.42	38.48
55	Tunisia	66.73	53.04	50.02	38.43
56	Jordan	90.55	79.67	97.21	38.13
57	Azerbaijan	70.93	54.96	64.1	37.94
58	Serbia	64.76	51.7	57.85	37.76
59	Poland	74.99	56.95	63.39	37.71
60	Turkey	70.83	54.54	73.01	37.16
61	Belarus	71.76	54.98	73.65	37.08
62	Panama	74.26	56.1	80.07	36.74
63	Uruguay	69.21	53.29	52.97	36.31
64	Uzbekistan	64.57	50.87	59.31	36.26
65	Venezuela	97.4	68.59	92.72	35.96
66	Oman	45.46	40.81	43.32	35.85
67	Argentina	77.18	57.08	72.25	35.64
68	Angola	72.04	54.41	71.68	35.61
69	Kenya	75.31	55.96	64.15	35.32
70	Puerto Rico	69.92	53.1	51.23	35.16
71	Dominican Republic	89.14	70.55	89.2	35.09
72	Ecuador	66.12	51.05	62.85	34.97
73	Kuwait	96.34	66.82	82.83	34.78
74	Morocco	67.9	51.87	63.47	34.78
75	Qatar	70.82	53.3	59.3	34.63
76	Ukraine	72.31	54.06	58.37	34.61
77	Algeria	69.88	52.7	66.16	34.37
78	Kazakhstan	73.69	54.62	59.64	34.28
79	Iraq	70.73	52.88	64.43	33.84
80	Peru	75.32	55.16	58.24	33.65
81	Colombia	68.87	51.69	53.55	33.38
82	South Africa	49.97	41.87	52.56	33.22
83	Thailand	67.36	50.73	63.2	33.01
84	Nigeria	69.5	51.81	62.68	32.94
85	Romania	70.58	52.34	68.18	32.89
86	Chile	77.8	56.06	59.35	32.88
87	Philippines	73.74	53.81	57.45	32.55
88	Malaysia	73.36	53.59	58.14	32.52
89	Vietnam	71.39	52.53	53.7	32.42
90	Bangladesh	70.5	51.8	52.41	31.9

91	Egypt	70.3	51.7	52.03	28.5
92	Iran	70.1	51.61	51.77	28.2
93	Guatemala	69.9	51.41	51.41	27.9
94	Tanzania	69.8	51.34	51.03	27.6
95	Turkmenistan	69.8	50.88	50.95	27.3
96	Cote dIvoire	69.5	50.73	50.63	27.2
97	Ghana	68.3	50.59	50.43	27
98	Myanmar	68.2	50.39	50.36	26.3
99	Uganda	66.9	50.28	49.85	25.8
100	Cameroon	66.8	50.13	49.67	25.7
101	Democratic Republic of the Congo	66.6	50.04	49.67	25.6
102	Sudan	66	49.97	49.63	25.6
103	Libya	65.8	49.9	49.04	25.2
104	**Pakistan**	**65.2**	**49.87**	**48.53**	**22.7**
105	Sri Lanka	65	49.64	48.4	22.5
106	Bolivia	64.2	49.6	47.96	22.3
107	Paraguay	64	49.25	47.73	21.9
108	Nepal	63.9	49.17	47.03	21.4
109	Honduras	63.4	49.15	46.58	19.6
110	El Salvador	62.6	48.96	46.22	18.6

Source: CEOWorld Magazine (2024).