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Burned Out

Exploring the Causes, Consequences,
and Solutions of Workplace Stress in
Public Service Organizations

Edited by Leonard Bright



Burned Out - Exploring
the Causes, Consequences,
and Solutions of
Workplace Stress in Public
Service Organizations

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IntechOpen Book Series

Public Health

Volume 4

Aims and Scope of the Series

Public health is what we as a society do collectively to contribute to and ensure the health and social conditions for the enjoyment of health as a resource for life. It can also be defined as science and research that promotes health, prevents disease, and improves populations' well-being and quality of life. Its objective is to know the risk factors that determine and condition the populations' health levels at present. At the end of the 20th century and the beginning of the 21st century, it is unjustifiable and regrettable that morbimortality according to age plays a leading role when the causes are mostly well known and therefore preventable, such as obesity, AIDS, cirrhosis, diabetes mellitus, addictions and cancer associated with the consumption of tobacco and alcohol, etc. In short, public health is science based on epidemiology and biostatistics, and currently, new technologies and artificial intelligence must be incorporated to identify patterns and trends in what we do collectively as a society to ensure living conditions and prevent risk factors that affect individual and population health. For all these reasons, it is essential to scientifically investigate and act on the determinants that impede the well-being and quality of life related to the health of people, patients, and populations in general, given that to control the determinants of diseases, it is important to control the environment and genetics. Consequently, the current fight for public health must prioritize the control of the environment, such as atmospheric and biological pollution and environmental and social biodiversity, promoting the sensitivity and training of society and its individuals by empowering them to make free and appropriate decisions about these aspects to lead healthy lifestyles based on motivation and responsibility in the face of the challenges they cope with from an individual point of view, such as dealing with the addictions that exist in today's complex world. Public health also requires an ethical vision and incorporates strategies to reduce social inequality.

Meet the Series Editor



José Antonio Mirón Canelo is a physician, doctor, and professor of Preventive Medicine and Public Health at the Faculty of Medicine and Dentistry of the University of Salamanca with over 30 years of experience. He is the director of the USAL's Expert Degree in Health Management, currently in its 13th edition. Prof. Mirón Canelo directs a research group at the Research Institute of Biomedical Sciences (IBSAL) of the University of Salamanca focused on addressing the challenges and care needs of vulnerable people and patients such as the elderly with multiple pathologies and people with disabilities and dependence. As a teacher, he has been recognized for excellence in teaching three times in a period of five years.

Meet the Volume Editor



Dr. Leonard Bright is a Full Professor at Texas A&M University's Bush School of Government and Public Service. He obtained his Ph.D. from the Hatfield School of Government at Portland State University in Oregon. He teaches core courses in the Master of Public Service and Administration degree program at the Bush School at Texas A&M. His research focuses on public service motivation, public management, human resource management, and higher education.

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Preface

Stress is a common feature of the workplace. Public service occupations are among the most stressful workplaces in the world. Public servants must address society's most difficult and demanding problems, which include pandemics, terrorism, natural disasters, and various complex social issues. These challenges expose employees to great physical dangers, significant emotional strain, and often constant media, political, and citizen scrutiny. Given these issues, a call was made for contributions that address burnout among public service employees. The objective was to develop a book that provided an in-depth analysis of the types of stress prevalent in different public service workplaces, the effects of stress on various outcomes, and potential mitigation strategies. Scholars from across the globe responded to the call, contributing comprehensive literature reviews, original empirical research, and practical self-management strategies.

Comprehensive Literature Reviews

The first four chapters are comprehensive literature reviews of the stress and burnout literature. These reviews serve as excellent resources for future research on the topic. For example, Abrar Alkudhayr and Qasem Aljabr's chapter titled "Behind the Scenes: The Realities of Stress in Public Service Jobs", provides an overview of the literature regarding the root causes of burnout, its consequences, and several mitigation strategies such as job redesign, stress management programs, and motivation reward programs. Next, Huijeong Ho's chapter titled "Teacher Burnout in Educational Organizations", focuses on the unique effects of burnout in the field of education. The author highlights research demonstrating that school stress can result from excessive workloads, relationships with parents, and lack of support from school administrators. After reviewing the literature, the author explores strategies that educational institutions can implement to address the problem.

Similarly, Enes Berk Sahin and Fabian Homberg's chapter titled "How to Reduce Burnout in Public Service Organizations during Times of Crisis? A Review of (Promising) Interventions" offers a comprehensive overview of the literature, highlighting what the authors suggest are promising stress management interventions such as workload adjustments, social support enhancement, and involvement in decision-making. This chapter also addresses various stressors and their consequences on symptoms of burnout at both individual and organizational levels. Additionally, it explores the implications of these intervention strategies in contexts like economic and financial crises, war, and pandemics. A valuable aspect of the chapter is a chart summarizing research findings to advance future studies on the topic.

Lastly, Kate Parker, Lauren Nun Faokunla and Nathan Morrell's chapter titled "Demand-Resource Balance, Autonomy, and the Utility of Organizational Strategies in Addressing Healthcare Professional Burnout" zeroes in on burnout in the healthcare industry. The authors discuss the increasing prevalence of burnout among

healthcare professionals due to factors like excessive workload, lack of autonomy, and inefficient work environments. They address individual, leadership, and organizational strategies to mitigate these stressors. Based on their review, they argue that organizational-level strategies such as scheduling changes, workload reductions, wellness programs, and reducing clerical burdens are the most effective in reducing stress.

Empirical Studies

The second set of chapters employs empirical approaches to studying burnout in public service. For example, David Giauque, Frédéric Cornu and Samuel Pacht's chapter titled "Antecedents of Stress Perception and Willingness to Recommend Employer in Healthcare Organization" investigates work-related factors contributing to perceived stress and its impact on employees' willingness to recommend their employer, using a Swiss university hospital as a case study. The authors suggest that employees' intention to recommend their employer is a proxy for their health levels. They indicate that highly stressed employees were less likely to recommend their organization. Using the Job Demands-Resources framework, they hypothesize significant relationships between a range of individual and organizational factors and willingness to recommend. Using a survey of over 13,000 employees, the authors confirmed their hypothesis and addressed their implications.

Next, Mojca Dobnik, Brigita Skela Savič, Matjaž Maletič and Lorber Mateja's chapter titled "Causes and Consequences of Stress at the Workplace of Nursing Employees in Slovenian Hospitals" presents an original empirical study investigating correlations among job stress and attitudes like perceptions of well-being. The study found that nurses experience constant pressure and psychological problems due to a lack of support, leading to significant consequences for organizations and employees. The authors emphasize the importance of developing strategies to ensure adequate staffing and a supportive management system.

Stress Management Strategies

The final set of chapters provides self-directed strategies that employees can use to manage their stress in public service workplaces, including meditation, yoga, and maintaining a healthy and spiritual lifestyle. For instance, Femke E. Bakker's chapter titled "Perspective Chapter: Meditation as a Self-Care Routine to Prepare for and Cope with Stress" reviews meditation theory and research and presents several easy exercises that individuals can use to help manage their stress. Along these same lines, Miliam Quispe-Vargas, Lourdes Quenta-Condori and Yaneth Cari-Mamani's chapter titled "A Theoretical Review of Eight Natural Remedies for Stress, Anxiety, and Depression Management" discusses the role of positive lifestyle choices such as proper nutrition, exercise, and rest in managing stress and preventing disorders like depression and anxiety. The author reviews several stress management strategies and their implications for public service. Last but not least, Praag Bhardwaj, Navdeep Ahuja, Parul Malik, Dilasha Sethi, Arpit Singh and Monika Pathania's chapter titled "Harnessing the Body, Breath, and Mind: Yoga Strategies for Resilience over Stress and Burnout in Public Service" examines the physiological and psychological aspects of stress and burnout and presents yogic strategies to enhance resilience and well-being. It explains the benefits of asanas, pranayama, and dhyana for health,

mental stability, and cognitive control. The authors argue that integrating yoga into public service environments can effectively manage stress and prevent burnout by addressing physiological and psychological stress dimensions.

This book offers significant insights for a variety of public service sectors. Each chapter presents a comprehensive guide to advancing empirical research on burnout in public service and offers practical, actionable solutions that every public service employee can implement to reduce stress and enhance well-being. I commend the authors for their valuable contributions to this critical subject.

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Section 1

Comprehensive Literature Reviews

Chapter 1

Behind the Scenes: The Realities of Stress in Public Service Jobs

Abrar Alkudhayr and Qasem Aljabr

Abstract

Imagine feeling constantly overwhelmed, underappreciated, and drained. This is the harsh reality for many individuals working in public service – the incredible individuals who uphold our communities. We all recognize them – the teachers, doctors, firefighters, and any social workers – they pour their hearts into their work, but the pressures of the job are pushing them to their limits. The project, named “Burned Out,” delves into the reasons behind why these individuals are experiencing such extreme burnout. We will explore the root causes of this stress, for example, heavy workloads, limited resources, or feeling like they have no control. However, the impact of burnout extends beyond just the individuals themselves; it negatively affects everyone. Exhausted employees are unable to perform at their best, resulting in a decline in the quality of the services we depend on. “Burned Out” does not just point out the problem; it offers solutions. We will explore ways public servants can manage stress and maintain a supportive environment and healthy work-life balance.

Keywords: burnout, workplace stress, public servants, work-life balance, quality of the service

1. Introduction

Burnout, the term first introduced in the 1970s by psychologist Herbert Freudenberger, describes a state of extreme physical, emotional, and mental exhaustion due to prolonged stress. Burnout has become a significant issue in today’s fast-paced world as the pressures of work, family, and social obligations intensify. Many individuals experience profound fatigue, cynicism, and a marked decline in productivity. The repercussions of burnout extend beyond the individual, profoundly impacting workplaces, communities, and society at large. This chapter delves into the diverse causes, extensive consequences, and viable solutions for burnout, promoting healthier, more sustainable lifestyles.

Burnout is not merely an overworked feeling; it is a complex syndrome defined by three main components: emotional exhaustion, depersonalization, and a reduced sense of personal achievement. Emotional exhaustion leaves individuals feeling depleted and unable to cope with daily tasks. Depersonalization leads to a detached and indifferent attitude toward work and interactions with others, creating a sense

of alienation. Lastly, a reduced sense of personal achievement results in feelings of incompetence and a lack of productivity. Understanding these components is essential for comprehending the multifaceted nature of burnout and addressing it effectively.

The causes of burnout are multifactorial, involving both organizational and personal elements. Organizational factors such as excessive workload, lack of control, insufficient rewards, poor community relationships, lack of fairness, and value conflicts significantly contribute to burnout. Excessive workload and long working hours are the primary drivers, while the lack of control over work processes and outcomes exacerbates feelings of helplessness. Insufficient rewards, whether in compensation, recognition, or advancement opportunities, can diminish motivation and satisfaction. Poor relationships with colleagues and supervisors lead to isolation and conflict, while perceived unfairness and value conflicts erode trust and engagement. On a personal level, traits such as perfectionism, neglect of self-care, and ineffective coping strategies can trigger and exacerbate burnout. The interplay between these organizational and personal factors fosters chronic stress, eventually leading to burnout.

The consequences of burnout are severe and far-reaching. For individuals, burnout can result in serious health issues such as depression, anxiety, cardiovascular problems, and a weakened immune system. The chronic stress associated with burnout can trigger or exacerbate mental health disorders, contributing to a cycle of declining well-being and productivity. Physical health can also deteriorate, with increased risks of hypertension, heart disease, and other stress-related illnesses. In the workplace, burnout leads to reduced productivity, increased absenteeism, and higher turnover rates, negatively impacting organizational efficiency and morale. The diminished performance and frequent absences of burned-out employees disrupt workflows and burden the remaining staff. High turnover rates result in additional costs related to recruitment, training, and lost institutional knowledge. On a broader scale, burnout incurs economic costs and burdens healthcare systems, underscoring the need for comprehensive solutions. The societal impact of burnout includes decreased economic productivity, increased healthcare expenditures, and a general decline in community well-being.

Addressing burnout requires a holistic approach that includes both preventive measures and interventions. Preventive strategies involve promoting work-life balance, creating supportive work environments, and encouraging self-care. Organizations can implement flexible work schedules, provide resources for stress management, and foster a culture of recognition and support. Creating supportive work environments includes enhancing team cohesion, improving communication, and ensuring fairness in policies and practices. Encouraging self-care involves educating employees about the importance of physical health, mental well-being, and effective coping strategies. Interventions may include organizational changes to reduce workloads, increase job control, and provide necessary support and resources. For example, reallocating tasks, providing training and development opportunities, and offering mental health resources can alleviate some of the pressures contributing to burnout. For individuals, developing resilience through stress management techniques, seeking professional assistance, and building strong support networks are crucial in mitigating burnout's effects. Techniques such as mindfulness, cognitive-behavioral strategies, and regular physical activity can enhance resilience. Professional assistance from counselors or psychologists can provide targeted interventions, while strong personal and professional support networks offer essential emotional and practical support.

Certain professions are particularly prone to high burnout rates due to their inherent stress levels, long hours, and demanding responsibilities. These include healthcare professionals, teachers, and educators, social workers, law enforcement and first responders, corporate jobs, customer service representatives, retail workers, tech industry workers, journalists, and military personnel. Each profession faces unique challenges that contribute to significant stress and burnout.

Healthcare professionals, including physicians, surgeons, nurses, and emergency medical technicians (EMTs), face intense pressures from long hours, high responsibilities, and emotional strain. Teachers and educators manage large class sizes, administrative pressure, and emotional demands, while social workers handle challenging cases involving vulnerable populations. Law enforcement officers and first responders operate in high-risk environments with constant exposure to traumatic events. Corporate jobs such as those held by lawyers, investment bankers, and corporate executives are characterized by high-pressure environments, long hours, and demanding clients. Customer service representatives face high burnout rates due to the volume of calls and dealing with challenging customers. Retail workers endure long hours and demanding customer interactions, while tech industry workers, particularly software developers, navigate tight deadlines and the need to keep up with new technologies. Journalists work under tight deadlines and irregular hours, and military personnel face high stress, physical danger, and long deployments away from family.

This chapter will explore these high burnout professions in greater detail, examining the specific factors contributing to burnout in each field. By understanding the unique challenges and stressors associated with these professions, we can better address the root causes of burnout and develop targeted strategies for prevention and intervention. Through recent research and case studies, this chapter aims to provide a comprehensive understanding of burnout and offer practical recommendations for individuals and organizations striving to combat burnout and enhance well-being. By promoting work-life balance, creating supportive work environments, and encouraging self-care, we can mitigate the effects of burnout and foster healthier, more sustainable lifestyles.

2. Root causes of burnout

Burnout is a multifaceted phenomenon arising from a complex interplay of organizational and personal factors. It is characterized by emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment [1]. Organizational causes are often at the forefront, starting with excessive workload. When job demands exceed available resources, employees have little room for rest and recovery, leading to chronic stress and burnout. Unrealistic expectations and constant high-pressure demands further exacerbate this issue, placing undue strain on employees and fostering a high-stress environment [2].

A significant contributor to burnout is the need for more control over work processes, schedules, and decision-making. Employees who feel powerless and undervalued are particularly susceptible to burnout, significantly when micromanagement stifles their creativity and initiative [3]. This sense of powerlessness is often compounded by insufficient financial and intrinsic rewards, which diminish motivation and lead to feelings of futility and disengagement [4]. Moreover, poor workplace relationships and a lack of support from colleagues and supervisors create a toxic

work environment. An unsupportive organizational culture that favors competition over collaboration exacerbates these conditions, making employees feel isolated and stressed [5].

Perceived unfairness in workload distribution, recognition, and promotions fosters employee resentment and mistrust. A lack of transparency in decision-making processes further erodes trust, making employees feel undervalued and unsupported. Additionally, conflicting values between an individual and the organization or being forced to compromise on personal ethics add significant stress. Excessive documentation is another critical factor contributing to burnout, as it increases workload, reduces time for core job functions, and causes mental fatigue. This is evident in various fields, such as healthcare, where Electronic Health Record (EHR) systems significantly contribute to physician burnout in the United States. Physicians report that EHR systems increase their workload and time spent on administrative tasks, leading to higher levels of burnout. However, this issue extends beyond healthcare, affecting professionals like lawyers, who must balance extensive legal documentation with precision and thoroughness, further contributing to mental exhaustion and burnout [6, 7].

Social workers, particularly those dealing with vulnerable populations such as children and families, are at high risk for burnout due to several unique factors. The emotional strain of constantly encountering traumatic and distressing situations, such as child abuse, domestic violence, and poverty, leads to significant emotional exhaustion. High workloads and large caseloads exacerbate this exhaustion as social workers struggle to adequately support each client within limited timeframes. Bureaucratic challenges, including navigating complex administrative systems and policies, contribute to feelings of inefficacy and decreased job satisfaction. The limited resources and support available to social workers further hinder their ability to meet their clients' needs, resulting in helplessness and frustration. Additionally, the cumulative stress from hearing about and dealing with the traumatic experiences of clients can lead to secondary traumatic stress, a condition similar to PTSD, which further contributes to burnout [8, 9].

Military personnel, including active-duty soldiers, face unique challenges that contribute to high burnout rates. The high-stress environments and constant threat of physical danger, particularly during combat deployments, lead to mental exhaustion and burnout. Prolonged deployments away from family and loved ones create feelings of isolation and loneliness, exacerbating stress and burnout. Transitioning back to civilian life or between deployments can be particularly challenging, as soldiers struggle to adjust to different environments and expectations, increasing stress levels. Military personnel are also at a higher risk for mental health issues such as PTSD, depression, and anxiety due to their experiences in combat and high-stress situations. These conditions, if not adequately addressed, contribute significantly to burnout. Furthermore, the stigma and logistical barriers associated with seeking mental health care in the military prevent early intervention, increasing the risk of burnout [10, 11]. On a personal level, perfectionism plays a significant role in contributing to burnout. Individuals with perfectionistic tendencies set unrealistically high standards for themselves and are highly self-critical when they fall short, leading to chronic stress and dissatisfaction [2]. This drive for perfection often results in neglecting self-care, as individuals prioritize work and achievement over basic needs like adequate sleep, proper nutrition, and regular physical activity. Consequently, their emotional and physical reserves become depleted, exacerbating feelings of burnout [3].

Overcommitment to work and personal responsibilities without allowing time for rest also stems from perfectionistic ideals, where individuals feel compelled to meet their high standards and the expectations of others. This relentless pursuit of excellence leaves little room for recovery, increasing the risk of burnout [1]. Ineffective stress management techniques and a lack of solid support networks further exacerbate the situation, leaving individuals more vulnerable to stress and exhaustion [5].

Additionally, personality traits such as Type A characteristics and deriving self-worth from accomplishments intensify the pressure to perform perfectly, contributing to chronic stress [4]. External stressors, such as relationship issues, financial problems, or health concerns, combined with the challenge of balancing multiple roles, further increase the risk of burnout [1]. Thus, the interplay between perfectionism and self-neglect creates a vicious cycle that contributes to burnout.

Ultimately, the interaction between these organizational and personal factors creates a breeding ground for burnout. Addressing burnout effectively requires a holistic approach that considers both these domains. Organizations need to foster supportive environments promoting work-life balance, fairness, and recognition, while individuals must develop resilience through self-care, effective stress management, and robust support networks. Understanding and addressing the diverse causes of burnout are essential steps toward creating healthier and more productive workplaces and communities [2, 3].

3. Burnout consequences

The consequences of burnout are profound and multifaceted, affecting individuals, teams, and organizations. Understanding these consequences is essential for developing effective interventions and creating a supportive work environment.

For individuals, burnout has significant physical health implications. Studies indicate that those experiencing burnout are at a higher risk for cardiovascular diseases, musculoskeletal disorders, and chronic fatigue [12]. The stress associated with burnout can lead to elevated levels of cortisol and other stress hormones, negatively affecting the body's systems. As a result, individuals often report increased incidence of headaches, gastrointestinal issues, and respiratory problems. Chronic stress also weakens the immune system, making individuals more susceptible to infections and illnesses. In terms of mental health, burnout significantly contributes to conditions such as depression, anxiety, and sleep disorders [13]. The emotional exhaustion component of burnout can lead to feelings of hopelessness and decreased life satisfaction and can also increase the risk of substance abuse as individuals may turn to alcohol or drugs to cope with their symptoms. Moreover, cognitive impairments, including difficulties with attention, memory, and executive function, are common among individuals with burnout [14].

Burnout's detrimental effects on job performance are well-documented across multiple professions. Addressing burnout through effective interventions and supportive work environments is crucial to maintaining high levels of performance and well-being among professionals in all fields.

Extensive research has demonstrated that burnout significantly impacts job performance across various fields. In healthcare, burnout is linked to increased medical errors, reduced quality of patient care, and lower patient satisfaction. Physicians, nurses, and other healthcare professionals experiencing burnout are more likely to

make diagnostic mistakes, overlook critical patient information, and exhibit diminished empathy, which can negatively affect patient outcomes [15, 16].

In healthcare, burnout is a critical factor contributing to medical errors. A study published in the *Journal of the American Medical Association* (JAMA) found that burnout among physicians is associated with a twofold increase in the likelihood of self-reported medical errors [17].

In the education sector, teacher burnout leads to decreased instructional quality, lower student engagement, and higher absenteeism rates. Burned-out teachers may struggle to maintain classroom discipline, show less enthusiasm for teaching, and are more prone to emotional exhaustion, which can negatively influence student learning and achievement [18].

Burnout affects employee productivity, creativity, and overall job performance in the corporate world. Employees experiencing burnout often display reduced motivation, increased absenteeism, and lower job satisfaction. Which can lead to reduced work quality, missed deadlines, and a higher likelihood of workplace conflicts [2].

Burnout also impacts teams, leading to decreased harmony and collaboration. Individuals experiencing burnout may withdraw from team activities and exhibit a reduced willingness to cooperate, negatively affecting team dynamics [19]. This lack of harmony can lead to conflicts, reduced motivation, and a decline in overall team performance, creating an unfriendly work environment that further contributes to stress and burnout among team members. High levels of burnout are also correlated with increased absenteeism and employee turnover [20]. Employees experiencing burnout are more likely to take sick leave or leave the organization altogether, disrupting team continuity and increasing the workload for remaining team members, perpetuating a cycle of increased demands and further burnout.

A study conducted in 2003 found that employees with high burnout levels took 3.6 times more sick leave than their non-burnout counterparts [21]. Regarding overall absenteeism rates, the European Working Conditions Survey (EWCS) indicated that burnout-related absenteeism accounted for nearly 50% more absences compared to employees who are not experiencing burnout [22].

For organizations, burnout leads to significant declines in productivity. Burnout reduces both the quality and quantity of work produced by employees, with substantial financial implications [23]. Decreased productivity can result in missed deadlines, poor performance outcomes, and a decrease in overall operational efficiency. Additionally, the physical and mental health issues associated with burnout lead to higher healthcare costs for organizations. Studies have shown that burnout-related health problems result in increased medical claims and insurance costs [24]. The Harvard Business Review reported in 2017 that the cost of lost productivity due to burnout in the U.S. workforce could be as high as \$125 billion to \$190 billion annually. The World Health Organization (WHO) reported that stress-related conditions, including burnout, cost U.S. businesses up to \$300 billion annually in lost productivity and related expenses. These higher healthcare costs can strain organizational resources and reduce financial stability. Furthermore, burnout is inversely related to employee engagement. When employees are burned out, they exhibit lower levels of motivation, commitment, and job satisfaction [1]. This decline in employee engagement can lead to reduced innovation, poor customer service, and a negative organizational culture, making the achievement of strategic goals significantly more challenging.

4. Solutions and preventive strategies for burnout

As the prevalence of burnout continues to rise, recent researches have focused on many solutions and preventive measures to address its root causes and mitigate its impact.

Research by Demerouti et al. emphasizes job redesign to balance workload and demands, suggesting flexible work schedules and even task distribution as effective measures. Workload reduction can be achieved by implementing efficient task management systems and utilizing technological tools to automate repetitive tasks. Regular workload assessments and feedback mechanisms should be established to ensure that employees are not overwhelmed. Additionally, involving employees in decision-making processes regarding task allocation can foster a sense of empowerment and reduce perceived workload [25].

Job redesign in education might involve:

- Reducing class sizes.
- Allowing for flexible teaching schedules.
- Distributing administrative tasks among support staff to alleviate these burdens and enhance teachers' well-being [18].

Law firms can mitigate these effects in the legal profession by implementing job redesign strategies such as flexible working hours, balanced caseloads, and support systems for mental health. These strategies can help lawyers manage their workload and reduce burnout risk [7].

Additionally, organizations should clearly communicate their mission, vision, and values, and involve employees in shaping these aspects. Regularly reviewing and updating job roles and responsibilities to align with individual employees' strengths and career aspirations can enhance job satisfaction and reduce burnout. Providing opportunities for professional development and career growth further ensures that employees feel valued and engaged [26].

Strong social support networks within the workplace, also, act as a buffer against stress. Fostering positive workplace relationships can be achieved through team-building activities, mentorship programs, and open communication channels. Encouraging collaboration and creating opportunities for social interaction, such as company outings and team lunches, can strengthen bonds among colleagues. Training programs focusing on communication skills, emotional intelligence, and conflict resolution can help build a more cohesive and supportive work environment, reducing the risk of burnout [27].

Moreover, recognition and rewards are critical in mitigating burnout, with Maslach and Leiter emphasizing the need for both formal and informal rewards to boost morale. Establishing a comprehensive recognition program that includes employee of the month awards, public acknowledgments, and performance-based bonuses can significantly enhance motivation. Additionally, informal recognition, such as verbal praise and personalized thank-you note, can create a positive work environment. Regularly celebrating milestones and achievements helps reinforce a culture of appreciation and motivates employees to maintain high-performance levels [1].

On top of that, implementing stress management programs, including mindfulness and resilience training, has been shown to be effective in reducing burnout. Introducing regular stress management workshops and mindfulness sessions can equip employees with tools to manage stress effectively. Encouraging practices such as meditation, deep breathing exercises, and other relaxation techniques can help employees maintain emotional well-being. Creating a culture that promotes mental health awareness and provides access to resources, such as employee assistance programs and counseling services, can further support stress management [28].

Finally, enhancing work-life balance plays a critical role in preventing burnout. Organizations should implement policies that support work-life balance, such as flexible working hours and remote work options, to ensure employees have sufficient time for personal and family life [29]. A study performed at the Australian National University found that a healthy limit on work is 39 hours per week. Working more than 40 hours per week could hurt employees' physical and mental health, increasing the risk of burnout [30]. Encouraging employees to take regular breaks and vacations and disconnect from work during non-working hours is essential. Promoting a healthy work-life balance through initiatives like wellness programs, gym memberships, and family-friendly policies can improve overall well-being and productivity [29].

Addressing stress and burnout in military personnel is a critical issue, given their high risk of experiencing burnout. Preventive measures to mitigate this risk require a multifaceted approach. Effective strategies involve them in periodic structured stress management programs that teach mindfulness and relaxation techniques, as well as resilience training to enhance coping skills [31]. Leader interventions play a crucial role, where military leaders are trained to recognize and address stress among their subordinates [32]. Finally, removing barriers to accessing mental health services and encouraging their use is essential for reducing stigma and improving mental health outcomes [33].

5. Conclusion

Burnout is a complex and pervasive issue influenced by organizational and personal factors. Excessive workload, lack of control, insufficient rewards, poor workplace relationships, perceived unfairness, and conflicting organizational values significantly contribute to burnout. The interaction between these factors creates a cycle of chronic stress that can lead to severe burnout. However, addressing this issue is entirely within our reach. We can effectively combat burnout by adopting a holistic approach that creates supportive organizational environments and fosters individual resilience. Organizations can implement strategies to distribute workloads more evenly, give employees greater control over their work, and ensure that rewards and recognition are fair and sufficient. Improving workplace relationships and addressing perceived unfairness can also play a significant role in reducing burnout. Understanding and mitigating the diverse causes of burnout enable us to build healthier and more productive workplaces and communities. Promoting open communication and providing mental health resources are essential for a brighter future. These initiatives can create a more inclusive and supportive workplace culture where employees feel valued and heard. Emphasizing the importance of work-life

balance will further enhance employee well-being and lead to more tremendous organizational success. Furthermore, fostering a continuous learning and development culture can empower employees to grow and adapt, reducing the likelihood of burnout. Encouraging employees to take regular breaks, engage in physical activity, and pursue hobbies can also contribute to their overall well-being. By prioritizing employee health and happiness, organizations can create an environment where everyone has the opportunity to thrive. Together, we can create a thriving work culture where everyone has the opportunity to flourish. Through organizational and individual collaborative efforts, we can turn the tide on burnout and pave the way for a future where workplaces are vibrant, supportive, and conducive to personal and professional growth. With commitment and concerted action, we can ensure that burnout becomes a challenge of the past, replaced by a culture of resilience and well-being.

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Conflict of interest

The authors declare no conflict of interest.

Notes/thanks/other declarations


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Chapter 2

Teacher Burnout in Educational Organizations

Huijeong Oh

Abstract

Stress, which occurs when humans face any physical or mental situation, is a mental and psychological state felt by humans in the process of coping and adapting to external pressures or demands, and occurs in various forms depending on individual characteristics and environments. Humans need to properly manage the stress they encounter in the process of leading their lives. However, as it is said that stress is the cause of all diseases, when stress occurs continuously or exceeds the acceptable range, humans face various problems. In particular, excessive job stress causes negative results in physiological and behavioral aspects, causing the so-called burnout, a phenomenon of physical and mental exhaustion. This issue of burnout has become a big topic in the education field recently. If the burnout problem experienced by teachers is not properly resolved, then it can have a negative impact not only on individual teachers but also on the school as a whole. So, there is a need to carefully analyze and manage the problem of teacher burnout in educational organizations. Therefore, in this chapter, I will explore and present how teacher burnout appears in educational organizations, what its causes and consequences are, and how it can be resolved.

Keywords: teacher burnout, educational organizations, causes, consequences, solutions

1. Introduction

Education plays an important role in promoting social development and individual growth. Teachers who provide education in schools convey knowledge and values to students, have an important influence on students' growth as members of the future society, determine the quality of education, and are the most important factors that determine the success or failure of education. It applies. However, in recent years, teacher burnout has emerged as a significant educational problem. Teacher burnout is defined as job stress, emotional fatigue, and low job satisfaction, which has a negative impact on individual teachers and the overall educational environment [1].

Excessive workload, conflicts with students, relationships with parents, and lack of support from school administration are pointed out as major causes of teacher burnout [2]. When teachers experience burnout, they put less effort into teaching, avoid contact with students, do not accept advice from others, lose patience, become

authoritative toward students, and even withdraw from the teaching profession. They develop negative views about themselves and thoughts of leaving the workplace, and show a tendency to neglect work, such as absenteeism and lethargy [3]. This means that teacher burnout causes various adverse effects not only for individual teachers, but also for school organizations and students, making it difficult to expect successful education from exhausted teachers. Therefore, it is very important to explore the causes and consequences of teacher burnout and find countermeasures to alleviate it.

Accordingly, this chapter aims to comprehensively explore the teacher burnout phenomenon that appears in educational organizations, analyze its causes and results, and propose effective strategies to solve it. Through this, I hope to contribute to building a healthy and happy educational environment for both teachers and students.

2. Main symptoms and consequences of teacher burnout in educational organizations

Freudenberger explained the symptoms of burnout as physical, behavioral, and mental signals [4]. Physical signals include weight loss, insomnia, reduced ability to recover from colds, feelings of physical decline, headaches and stomach problems, shortness of breath, and depression; behavioral signals include anger, irritability, and frustration responses; and mental signals include feelings of exhaustion, boredom, disillusionment, discouragement, and confusion. He viewed burnout as a mental disorder and attempted a clinical approach, such as diagnosis, counseling, and personal treatment [4].

Farber and Miller describe symptoms of burnout as anger, anguish, nervousness, fatigue, depression, insomnia, boredom, anger, anxiety, helplessness, low self-esteem, withdrawal, cynicism, and excessive use of alcohol and drugs. It is said that their plans for teaching are not thoughtful and that they plan to leave the teaching profession or actually try to leave the teaching profession [5].

Maslach and Jackson suggested that the main symptoms of teacher burnout are emotional exhaustion, depersonalization, and loss of personal accomplishment [6]. Emotional exhaustion is when a teacher feels that he or she can no longer do what he or she could before because he or she is exhausted and emotionally drained. Depersonalization is a negative and cynical attitude in which teachers and students become emotionally separated and students are viewed as a passing process or a nuisance rather than as valuable people. Lastly, loss of personal accomplishment is experienced when an individual feels that he or she cannot achieve his or her goals, that is, viewing one's work as meaningless because one's efforts do not produce satisfactory results [6].

Schwab et al. say that usually the first sign of burnout is a feeling of being emotionally drained from one's work [3]. Emotionally drained teachers tend to treat fellow teachers and students in a depersonalizing way or develop negative and cynical attitudes toward themselves and others. Another aspect of burnout is low expectations and lack of accomplishment. Many teachers begin their teaching career with great expectations and aspirations of contributing to the school and society, but after 2–3 years, they begin to realize that they cannot live up to their expectations [3].

According to Cherniss, burntout teachers have a high resistance to coming to work, feeling like a failure, anger and resentment, guilt, despondency and indifference, pessimism, feelings of isolation, tiredness, severe fatigue after work, and loss of positive feelings toward students, hesitancy to contact students, treating students in a

stereotypical way, poor concentration or listening skills, cynicalness, following rules, avoiding business discussions with colleagues, prejudice, overuse of drugs, frequent colds, minor headaches and digestive problems, and rigidity of thinking. It is said that they show resistance to change, suspicion and paranoia, and family conflicts [7].

Cardinal presents teacher burnout symptoms by dividing them into physical and behavioral [8]. Physical symptoms include fatigue and physical exhaustion, headaches, gastrointestinal problems, weight loss, insomnia, depression, and rough breathing, and behavioral symptoms include moodiness, nervousness, low tolerance for frustration, suspicion of others, and helplessness. It is said that overload and lack of control further intensify occupational risks [8].

According to Brock and Grady, the symptoms of burnout include, first, feeling chronic fatigue physically, second, cognitive problems when individuals make decisions, third, socially withdrawing from colleagues and students, and fourth, irrationally, students, parents, and others. They build an emotional wall that isolates themselves from their colleagues and criticize themselves. Fifth, they show symptoms of mental depression, and in the confusion for a long time, work satisfaction and self-confidence disappear [9]. It is even said that an individual's spiritual values are severely shaken and they fall into despair [9].

As discussed above, the symptoms of burnout are explained based on physical and emotional symptoms, as well as specific details, such as impoverished interpersonal relationships, negative attitudes toward others or low self-esteem, dissatisfaction with the work environment, job stress, and inappropriate behavior such as absenteeism. Additionally, when teachers are burned out, they may become less engaged in teaching, distance themselves from students, refuse feedback, lose patience, and act more rigidly or authoritarian. This can result in a negative outlook on their profession and thoughts of leaving the job. As a consequence, they might neglect their duties, showing signs of absenteeism and lethargy, leading to dysfunctions among teachers, students, and within the school. In such conditions, expecting burnout teachers to provide effective education becomes increasingly difficult [3].

3. Causes of teacher burnout in educational organizations

Previous studies on the causes of burnout have divided them into individual characteristics and environmental characteristics [1]. Demographic characteristics of individual characteristics, such as age, education, experience, gender, and marital status, were found to have an effect on teacher burnout [10–12]. However, demographic characteristics, such as gender, marital status, age, and experience, do not show consistent results, making it difficult to view them as major variables predicting burnout [13–15]. Psychological characteristics, such as a competitive personality, neuroticism, locus of control, self-efficacy, and ego-resilience, are key individual characteristics. These traits play a crucial role in determining how individuals cope with and adapt to stress, even when faced with the same level of stress, influencing their ability to manage its intensity and maintain healthy adaptation. It has become an influential variable in teacher burnout research [16–19]. The job characteristics of environmental characteristics that affect teacher burnout include job stressors, role conflict and role ambiguity, lack of challenge opportunities, and excessive workload [12, 20, 21]. The organizational characteristics of environmental characteristics include organizational climate, principal's leadership, school size, overcrowded classes, and isolation from the community [22–24].

3.1 Personal causes of teacher burnout: focusing on demographic characteristics and psychological characteristics

The variables that are most studied as individual characteristics can be broadly divided into demographic characteristics and psychological characteristics. This section will examine the relationship between burnout and demographic characteristics, such as gender, marital status, age, and experience, and psychological characteristics, such as personality type, locus of control, self-efficacy, and ego resilience.

In the case of demographic characteristics, studies have found that male teachers have a stronger degree of depersonalization than female teachers, and studies have found that there is no correlation with gender, so there is no consistent trend [12, 13, 25]. Depersonalization refers to a psychological state where an individual becomes detached from their work, leading to a sense of emotional numbness or cynicism toward their job and the people they interact with, such as colleagues or students. This detachment often manifests as a lack of empathy, a reduced sense of personal accomplishment, and a tendency to view others as impersonal objects rather than as individuals. It is one of the key components of burnout, particularly in professions that involve intense interpersonal interactions, like teaching [6].

Studies examining the relationship between burnout and marital status have shown mixed results. Some studies indicate that unmarried individuals have higher rates of burnout than married couples, while others show no effect of marital status or even suggest that married couples experience more burnout than unmarried individuals [11, 14, 26].

In terms of the relationship between age and experience and burnout, previous studies have shown that teachers aged 20–34 years had a significantly higher frequency of emotional exhaustion than teachers aged 45 years or older. In addition, it was said that teachers with 13–24 years of experience showed the lowest level of burnout in terms of personal achievement [10]. However, other studies show that there is no difference according to age or experience, so consistent research results are not obtained for age and experience [1, 27].

Therefore, demographic characteristics like gender, marital status, age, and experience do not yield consistent results in predicting burnout. As a result, it is challenging to consider these characteristics as reliable indicators of burnout [15].

Psychological characteristics are seen as the main cause of the difference in intensity experienced, even when the same stress is given and the ability to overcome stress and adapt healthily. So, it is widely studied in teacher burnout research and is established as a variable with great influence.

Among psychological characteristics, neuroticism, one of the five personality traits in the relationship between burnout and personality type, includes anxiety, hostility, depression, self-consciousness, impulsivity, and weakness of mind. Neurotic people are emotionally unstable and easily suffer psychological stress. It has been reported that it is correlated with all sub-factors of burnout, making it a personality factor that best predicts teacher burnout [4, 28]. In addition, among the personality types that are classified based on temperamental attributes, members who are overly motivated about work and have a personality characterized by a competitive and time-pressured lifestyle, hostility, and excessive desire for control are prone to job stress, and they are reported to be vulnerable to burnout [29].

In the relationship between burnout and locus of control, an individual's attribution method for controlling job stress situations, that is, depending on the individual member's locus of control, can be divided into internal controllers and external

controllers. Internal controllers attribute success or failure to internal factors such as lack of effort, but external controllers are attributed to external factors such as luck or lack of opportunity [30]. Internal controllers have higher beliefs and expectations that they can control external events and respond appropriately to frustrating situations, but external controllers have relatively lower beliefs and expectations that they can control external events, making them anxious and having a lower desire for achievement [30]. Therefore, it was found that teachers who were subject to external control experienced emotional exhaustion, depersonalization, and decreased personal accomplishment at a higher intensity and frequency than teachers who were subject to internal control [31, 32].

In studies on the relationship between burnout and self-efficacy, self-efficacy is commonly reported as an internal personal variable that reduces the degree of burnout caused by stress [18, 32]. According to these studies, the group with high self-efficacy had a lower tendency to depersonalize, as well as physical and mental exhaustion due to stress, and a higher sense of personal accomplishment compared to the group with low self-efficacy. In other words, when self-efficacy, which is the perception of one's own internal strength, was high, burnout was low [18, 32].

In studies on the relationship between burnout and ego-resilience, self-confidence, a sub-factor of ego-resilience, showed that teachers who were more accepting of themselves and had higher self-confidence had a lower psychological exhaustion. Also, optimistic attitude was found to have a significant effect on all sub-factors of teacher burnout. In addition, through previous studies it was shown that anger control has a significant negative correlation with burnout, and it has been reported that people with higher ego-resilience experience less burnout [33–36].

3.2 Environmental causes of teacher burnout

Previous studies that emphasize the importance of the work environment as a cause of burnout clearly state that burnout is not an individual's problem but a problem of the social environment in which they work, and that environmental characteristics have a major influence in causing burnout [37, 38]. In addition, several recent studies support the fact that work environment and contextual variables contribute to triggering teacher burnout in the school setting [2, 39, 40]. Previous studies on job environmental characteristics focused on finding the causes of burnout in the internal and external environments of the organization related to job performance, and largely subdivided the job environment into job characteristic variables and organizational characteristic variables [1]. In this section, I will examine the relationship between burnout and job characteristic variables, such as role conflict, role ambiguity, lack of challenge opportunities, and work overload, and organizational climate, school principal leadership, and school size among organizational characteristic variables.

In the case of job characteristic variables, previous research has shown that role conflict and role ambiguity can be causes of teacher burnout [12]. Role conflict is said to be caused by the difficulty and embarrassment felt by the role holder in performing the role, the perception of ambiguity about one's role, and conflicting external role expectations of the role holder. Role conflict, role ambiguity, poor relationships between students, fellow teachers, and administrators, school policies that promote competition and evaluation, and time management problems are believed to be related to teacher burnout [1, 41, 42].

In the relationship between burnout and lack of challenge opportunities, it was said that teachers experience more burnout the less opportunities they have to receive

recognition for their abilities or be promoted in the work environment [20]. In other words, if you get an opportunity for an appropriate challenge in your work performance, you will have a sense of self-efficacy and be satisfied with your work while working, but if you do not get an opportunity for an appropriate challenge because you do not have a promotion opportunity to recognize your abilities or challenge yourself, this means that you may experience more psychological exhaustion.

The relationship between burnout and work overload highlights that an excessive workload is a major source of stress. Characteristics, such as too many counseling cases, tight deadlines, and long work hours, contribute significantly to burnout [21, 43].

Among organizational characteristics, previous studies on the relationship between burnout and organizational climate have shown that the closer the school organizational climate perceived by teachers is to an open climate, the lower the level of burnout. But the closer it is to a closed climate, the higher the level of burnout [39, 44].

Examining the relationship between the school principal's leadership and burnout, it was shown that when the school principal's leadership was bureaucrat-oriented, teachers' burnout was high, and when the school principal's leadership was human-oriented, teachers' burnout was low [45, 46]. The findings suggest that the type of leadership exhibited by a school principal has a significant impact on teachers' levels of burnout. Specifically, when a principal's leadership is bureaucrat-oriented teachers tend to experience higher levels of burnout. This is likely because such a leadership style can create a work environment that feels restrictive, impersonal, and lacking in support, leading to increased stress and feelings of helplessness among teachers. On the other hand, when a principal's leadership is human-oriented teachers are less likely to experience burnout. A human-oriented leader fosters a positive work environment where teachers feel valued, understood, and supported. This type of leadership likely reduces stress, enhances job satisfaction, and encourages a collaborative and nurturing atmosphere, which can mitigate the characteristics that contribute to burnout.

Regarding the relationship between burnout and school size, it was found that small schools had less stress and lower burnout, whereas the larger the school, the higher the burnout [24, 47]. Smaller schools typically have fewer students and staff, leading to a more manageable workload and closer, supportive relationships, which can reduce stress and burnout. In contrast, larger schools often face increased administrative demands, higher student-to-teacher ratios, and more complex organizational challenges, which can elevate burnout levels.

In addition, the inefficiency of bureaucracy, parental irrationality, indifference, criticism from society in general, overcrowded classes, isolation from the community, and school location were found to be potential characteristics causing burnout [22, 23, 48]. Inefficient bureaucracy and irrational parental behavior can add to teachers' stress by complicating their work environment. Additionally, societal criticism, overcrowded classrooms, social isolation, and an inconvenient school location further exacerbate the challenges teachers face, contributing to higher burnout rates.

The causes of burnout that have been examined through previous research so far can be found in both personal and environmental characteristics. However, in order to effectively alleviate burnout, the cause of burnout must be found in organizational environmental characteristics that can be intervened at the organizational level. This is because organization-level interventions can provide preventive support to more teachers more efficiently than individual-level interventions [39, 49].

4. Solutions to teacher burnout

Regarding the causes of burnout, many studies commonly report that organizational or institutional problems are more important than individual psychological causes [1, 50]. Therefore, in preventing and coping with burnout, intervention in the environment, such as organizations or institutions where burnout occurs, should be done along with intervention in the individual's psychological difficulties. This is presented in detail as follows.

First, for individual psychological problems, symptoms of burnout can be evaluated and intervention according to the symptoms can be carried out. In other words, differentiated intervention is needed, according to the symptoms and causes of teacher burnout. Counseling intervention for individual difficulties is mainly carried out to alleviate emotional difficulties, such as depression or anxiety, strengthen teachers' internal resources to cope with difficulties, and modify problem behaviors. For example, if anxiety is high, relaxation training or problem-solving-oriented coping can be given. Additionally, since teachers may experience difficulties because they do not know how to appropriately intervene in student problems, consulting on intervention methods for each type of student problem may be helpful. In addition, in the case of burnout related to work burden, practicing efficient communication methods with managers and fellow teachers to coordinate work, time management related to work division, setting work priorities, and setting limits on the work one can handle. In fact, looking at the coping strategies of teachers after experiencing burnout, it appears that they often used active coping strategies, such as requesting a change in duties, changing the classroom management method, or advancing to graduate school, to develop their own capabilities [51–53]. However, since individual change often has little power in school organizations, it is desirable that it be accompanied by organizational change.

Second, there is a need to intervene to change the school's job duties or school organization. The causes of teacher burnout, such as excessive workload, unreasonable distribution of work, and relationship problems with parents or fellow teachers and administrators, are not problems that can be solved by solving individual psychological problems of teachers, and require changes in the school organization. Organizational change is essential to prevent member burnout, but the difficulty is that change is not easy [1]. When teacher burnout occurs, schools can make efforts to diagnose and improve areas that need change in the organization through school consulting, etc., instead of blaming it on the teacher's individual ability or teacher efficacy. In addition, some examples include fair and transparent work assignment, ensuring that excessive work is compensated in a fair manner, and creating an environment that encourages teachers to express their opinions in the decision-making process [19, 54, 55].

Third, intervention can be carried out according to the teacher's developmental stage. New teachers face difficulties unique to the initial teacher development process, such as difficulty in providing guidance due to the duties of homeroom work for older grades, problems due to excessive workload and concentration of work imposed on new teachers, lack of time required for class preparation, and difficulties in self-expression in relationships with administrators [56–59]. Recently, changes in students' attitudes and perceptions toward teachers and complaints from parents have increased compared to the past, and new teachers are unable to respond appropriately to these situations and experience stress [60–62]. In a changing school environment, educational interventions, such as mentoring on how new teachers should

appropriately accept and respond to complaints from parents, and coaching to help them form smoother relationships with fellow teachers, parents, and administrators, would be helpful. It would also be helpful to use a support group where new teachers can share the problems they experience and provide emotional support. One area to consider in teachers' intervention at each stage of development is the meaning of work. In occupational relations theory, one outcome that people pursue through work is the meaning or importance of work [63]. In situations where teachers experience burnout, they often do not fully experience the meaning and importance of their work. Teachers not only teach, but also handle a variety of other tasks depending on their stage of development. So, finding the meaning and importance of various tasks seems to be helpful.

Establishing a social support system and providing support through it during the entire organizational intervention process is helpful in preventing and treating burnout. In the developmental model of burnout, social support is also assumed to act as a buffer to prevent problems experienced by teachers from leading to burnout [47, 54]. While teachers find it difficult to seek actual social support or professional help, they can overcome burnout if they build relationships with colleagues or senior teachers and receive empathy and emotional support for burnout situations and advice on solutions to problematic situations [64–67]. The social support system can help in many ways, including empathy and support for emotional difficulties, distinction between individual ability problems and organizational problems, distinction between parts that teachers need to solve on their own and parts that need help, and providing appropriate help.

5. Conclusions

Teacher burnout has become a serious problem in the modern education environment, with widespread impacts not only on the physical and mental health of individual teachers, but also on the education system as a whole. Key symptoms of teacher burnout include emotional exhaustion, depersonalization, decreased sense of personal accomplishment, job stress and physical symptoms, and increased job attitudes and turnover intentions. These symptoms reduce teachers' ability to perform their duties, seriously impair the quality of education, and have a negative impact on students' learning experience.

The causes of teacher burnout are complex, including heavy workload, low social support, lack of job autonomy, and conflict with students and parents, and can be broadly categorized into personal and environmental causes. Personal causes include demographic and psychological characteristics, and environmental causes include job characteristic variables and organizational characteristic variables. Because the causes of burnout are more related to organizational or institutional problems than to individual psychological causes, in preventing and responding to burnout, intervention in the environment, such as organizations where burnout occurs, should be done along with intervention in individual psychological difficulties. Therefore, a multifaceted and systematic approach is needed to solve the teacher burnout problem by referring to the solution to the teacher burnout problem presented in the previous section.

Through this comprehensive approach, the problem of teacher burnout can be effectively solved, which will ultimately contribute to improving the quality of education and creating an educational environment in which both teachers and students are satisfied. Solving the problem of teacher burnout is a key task that goes beyond

individual teachers and ensures the health and sustainability of the entire education system. Therefore, educational authorities and school managers must address the problem of teacher burnout through systematic and continuous interest in and support.

Thanks


My beloved family, thank you always.

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How to Reduce Burnout in Public Service Organizations during Times of Crisis? A Review of (Promising) Interventions

Enes Berk Sahin and Fabian Homberg

Abstract

Burnout among public service employees is a critical issue exacerbated by crises such as natural disasters, pandemics, and wars. This chapter explores effective strategies to prevent and manage burnout in public service organizations, emphasizing the unique stressors these employees face during crises. Burnout, characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment, severely impacts both individual well-being and organizational efficiency. The literature review highlights promising interventions, including stress management, workload adjustments, social support enhancement, and involvement in decision-making. Specific strategies are detailed for different crisis contexts, such as economic pressures, war, and pandemics. Implementing these holistic interventions can enhance resilience and ensure the effective delivery of essential services during emergencies. By addressing burnout comprehensively, public service organizations can support their employees' mental health and maintain high-quality service standards even under extreme conditions.

Keywords: burnout, crisis management, public services, mental health, well-being

1. Introduction

In the wake of recent crises such as natural disasters, pandemics, and wars, public service employees have faced unprecedented challenges. With the rapid changes and developments organizations have faced in recent years, occupational stress has increased occurrences of employee burnout [1, 2]. Addressing burnout in public service organizations is crucial, especially during crises, as these situations exacerbate the stress and strain experienced by public service employees.

Burnout is a syndrome that causes significant negative organizational and individual effects. Employees suffering from burnout become incapable of meeting the demands of their jobs and professions [3, 4]. The burnout syndrome does not arise suddenly and can become unmanageable if its symptoms are neglected [5]. Consequently, indicators of burnout must be diagnosed promptly, and necessary

measures must be taken. In particular, burnout is more common among those working in professions that require intense communication with people, such as public servants who engage intensively with citizens, including nurses in public hospitals during the pandemic [6]. It is described as a state that arises from the feeling of physiological and emotional exhaustion due to the inability to manage the stress inherent in the profession [7].

Burnout encompasses prolonged feelings of unhappiness, exhaustion, hopelessness, and helplessness in an individual [8]. If employees set lofty goals themselves and then fail to achieve them, they become disillusioned and feel drained of energy, known as occupational burnout [9]. Freudenberger made an attempt to define burnout as failing, beginning to wear out, or experiencing fatigue due to the effect of intense demands on individual energy, power, and other resources [5]. Subsequently, Maslach explained burnout as consisting of three dimensions, which include emotional exhaustion, depersonalization, and reduced personal achievement occurring in employees who have intense interactions with others due to their work [3].

Emotional exhaustion refers to a state of energy depletion where the person's emotional energy is fully consumed [9]. An individual who is emotionally unavailable sets limits on their relationships with the people around them and withdraws from others, manifesting the depersonalization dimension [7]. In the final stage, the person becomes aware of the change between their positive behaviors before burnout and their behaviors afterward. This will lead to thoughts of not contributing to the company and other feelings of inadequacies [3].

Each of these dimensions significantly affects a person's life, functioning, and responses and will over time reduce the desire, strength, effort, and positive behaviors through which the person tries to maintain their job and responsibilities in their private life, causing them to feel inadequate [9]. This situation leads the person to develop negative thoughts about themselves and feelings of failure [10]. Additionally, negative behaviors and disinterest in the environment emerge, all of which force the person to distance themselves from their surroundings, experience conflict in their relationships, and withdraw into themselves [11]. These losses lead to emotional and mental exhaustion in individuals, creating fatigue, hopelessness, helplessness, and lack of self-confidence [12]. Therefore, the person becomes unable to continue their responsibilities, and their relationships with their environment inside and outside the organization may deteriorate [13].

Burnout is not a disease but a syndrome and thus should not be medical treatment-focused [1]. Instead, prevention initiatives become essential. Hence, this chapter aims to explore effective strategies to prevent and manage burnout during crises, review existing research, and provide actionable recommendations. By understanding and addressing burnout, particularly in times of crisis, we can develop interventions that enhance the resilience and well-being of public service employees, ensuring they can continue to provide essential services effectively.

2. Understanding burnout during crises

2.1 Definition and symptoms

Burnout is a psychological syndrome emerging as a prolonged response to chronic interpersonal stressors on the job. It is characterized by three main dimensions: (i)

emotional exhaustion, (ii) depersonalization, and (iii) a reduced sense of personal accomplishment [3].

Emotional exhaustion refers to feelings of being emotionally overextended and depleted of one's emotional resources [4]. Individuals experiencing this dimension feel drained and fatigued, which can manifest in both physical and emotional symptoms, such as chronic fatigue, insomnia, and increased susceptibility to illness [8].

Depersonalization involves a negative, callous, or excessively detached response to various aspects of the job. It is characterized by distancing from the job and the people one is meant to serve, which can lead to a sense of cynicism and a negative attitude toward clients or patients [4]. This detachment serves as a coping mechanism to deal with the stress and emotional burden of the job [14].

Reduced personal achievement involves feelings of inefficacy and a lack of achievement and productivity at work. Individuals may feel incompetent, experience a decline in self-esteem, and believe they are no longer effective in their role [8]. This reduced sense of personal accomplishment can erode an individual's confidence and motivation, impacting overall job performance and satisfaction.

2.2 Antecedents and consequence of burnout of public service employees and organizations

In this section, we discuss crisis induced stressors relating to burnout. We distinguish between (i) stressors increasing the risk of experiencing burnout, (ii) individual, and (iii) organizational stressors occurring as a result of experiencing burnout.

In the first category, the literature has identified increased workload, emotional toll, safety concerns, role conflicts, and social isolation as potential stressors leading to burnout [15–19]. In the second category, individual consequences of burnout include mental and physical health issues, job dissatisfaction, impaired functioning, and interpersonal issues [20–24]. In the third category, we summarize organizational level consequences and discuss reduced efficiency, increased absenteeism, high turnover, and diminished service quality [7, 8, 25, 26].

2.2.1 Stressors increasing the risk for burnout

2.2.1.1 Increased workload

Crises often lead to a surge in demand for services, resulting in longer working hours and greater workloads for public service employees. This can increase the strain put on employees' physical and mental capacities, leaving them with little time for rest and recovery. For instance, in the aftermath of natural disasters like Hurricane Katrina in the United States, emergency responders faced overwhelming demands that stretched their capabilities and increased the risk of burnout [18]. The constant need to provide care under high-pressure conditions without adequate downtime exacerbates stress and fatigue [27].

2.2.1.2 Emotional toll

Continuously dealing with traumatic events, suffering, and death takes a significant emotional toll on public service employees. Healthcare workers and emergency responders are regularly exposed to distressing situations, leading to compassion fatigue and secondary traumatic stress [15]. The cumulative emotional

burden can lead to feelings of helplessness, anxiety, and depression, which are core components of burnout.

2.2.1.3 Safety concerns

Safety concerns, including the risk of exposure to dangerous situations or infectious diseases, add to the stress experienced by public service employees. During the COVID-19 pandemic, inadequate protective equipment and resources heightened these concerns, leading to increased anxiety and stress among healthcare workers [16]. The fear of contracting the virus and spreading it to family members further compounded their stress levels. In addition, war situations created security concerns among employees, causing burnout to increase [28].

2.2.1.4 Role conflicts

Balancing professional duties with personal and family responsibilities creates significant role conflicts. Public service employees often experience guilt or stress from feeling unable to meet the demands of both their job and their personal life. This is particularly evident in times of crisis when the demands of their roles intensify, and personal sacrifices become more pronounced [17]. The pressure to perform effectively at work while managing home responsibilities can lead to burnout.

2.2.1.5 Social isolation

The demanding nature of crisis work can lead to social isolation. Limited time for social interactions and support from colleagues and loved ones can contribute to feelings of loneliness and exacerbate the symptoms of burnout. Wright and Silard show in their study that loneliness at work is associated with factors such as a lack of social skills, certain personality traits (especially introversion), and a low-quality relational climate [19]. Social support is a crucial buffer against stress, and its absence can lead to increased vulnerability to burnout [29]. The global COVID-19 pandemic highlighted how isolation from support systems can worsen mental health outcomes for frontline workers.

2.2.2 Individual stressors as consequences of burnout

2.2.2.1 Mental health issues

Burnout is associated with a range of mental health issues, including depression, anxiety, and substance use disorders. The prolonged stress and emotional exhaustion experienced during crises can precipitate or exacerbate these conditions [22]. For example, during the COVID-19 pandemic, many healthcare workers reported high levels of psychological distress [16].

2.2.2.2 Physical health issues

Chronic stress and burnout can lead to physical health problems such as cardiovascular diseases, musculoskeletal disorders, and chronic fatigue syndrome [23]. The physical strain of prolonged work hours and the emotional toll of dealing with crises can weaken the immune system and increase susceptibility to illness.

2.2.2.3 Job dissatisfaction

Burnout leads to decreased job satisfaction and engagement, resulting in higher turnover rates and lower employee retention [20]. Dissatisfied employees are less likely to stay in their positions, which can lead to staffing shortages and increased workload for remaining staff, further perpetuating burnout.

2.2.2.4 Impaired functioning

Cognitive functioning and decision-making abilities are impaired in individuals experiencing burnout. This can reduce productivity and the quality of work, leading to errors and decreasing effectiveness in job performance [24]. The high-stress environment of crises can make it difficult for employees to focus and perform their tasks efficiently.

2.2.2.5 Interpersonal issues

Burnout can strain relationships with colleagues, family, and friends, leading to social withdrawal and decreasing support networks [21]. The emotional exhaustion and depersonalization aspects of burnout can cause individuals to become irritable, withdrawn, and less communicative, impacting their personal and professional relationships.

2.2.3 Organizational stressors as consequences of burnout

We now turn our attention to the organizational level and describe the organizational consequences of burnout. More specifically, we discuss reduced efficiency, increased absenteeism, high turnover, service quality, and financial costs in more detail.

2.2.3.1 Reduced efficiency

Burnout reduces overall organizational efficiency and productivity due to decreased employee performance and increased errors. Organizations rely on the optimal functioning of their staff to provide quality services, and burnout undermines this capability [8].

2.2.3.2 Increased absenteeism

Higher rates of absenteeism and sick leave among burnt-out employees can disrupt organizational operations and increase costs. The frequent absence of key personnel can lead to gaps in service delivery and overburdening of the remaining staff, exacerbating the burnout cycle [7].

2.2.3.3 High turnover

Increased turnover rates due to burnout result in the loss of experienced and skilled staff, further straining the organization. Recruiting and training new employees are costly and time-consuming processes, and high turnover can destabilize team dynamics and reduce institutional knowledge [26].

2.2.3.4 Diminished service quality

The quality of care and service delivery is compromised when employees are burnt out, leading to poorer outcomes for clients, patients, and citizens in general. Employees experiencing burnout may become less empathetic, make more mistakes, and be less engaged in their work, all of which can negatively impact service quality [25].

3. A literature review of burnout interventions

Public service organizations around the world have increasingly recognized the detrimental impact of burnout on their employees, leading to an increase in research focused on identifying effective interventions [30]. In this literature, there is also a significant emphasis on understanding burnout during times of crisis, as these times often increase stress levels and highlight the need for robust support mechanisms [31]. This literature review explores promising strategies for reducing burnout among public sector employees, drawing on a comprehensive review of recent studies conducted during crisis periods [10].

In our searches on the Web of Science we used the following keywords: Burnout, Crisis Management, Public Services, Mental Health and Well-being. The search yielded a total of 30 articles about burnout during crisis periods. Among these results, nine articles present strategies for preventing burnout during crisis periods in the public and private sectors. These articles were selected and further examined. The included studies provide a comprehensive look at how crises affect burnout and specific interventions that can alleviate these effects [28].

3.1 Effective strategies to combat employee burnout during a crisis

Gabriel and Aguinis propose five basic strategies to combat burnout in times of crisis [31]. These strategies are (i) providing stress management interventions, (ii) allowing employees to actively organize their work, (iii) encouraging and improving social support, (iv) involving employees in decision-making processes, and (v) implementing high-quality performance management. Stress management interventions include cognitive-behavioral training and mindfulness meditation groups. Cognitive-behavioral training and mindfulness meditation groups help workers adapt to stressful situations and reduce emotional exhaustion [32, 33]. Allowing employees to actively organize their work allows them to negotiate job content, choose tasks that suit their strengths, and provide development opportunities. Allowing employees to engage in job crafting, such as modifying tasks and work processes, increases motivation and engagement [34]. Encouraging and improving social support includes establishing genuine relationships with employees, demonstrating empathy, creating an environment of trust, and encouraging nonwork support. High-quality relationships with managers reduce emotional exhaustion, especially in high-demand jobs [18, 35]. Involving employees in decision-making processes, learning about the resources needed, transparently communicating how decisions are made, and involving employees in strategic decision-making processes. Transparent communication and encouraging employee voice increase perceptions of fairness and reduce burnout [36, 37]. Implementing high-quality performance management includes providing strengths-based feedback, setting development goals, associating performance management with rewards, and implementing fair performance management systems.

Providing strengths-based feedback and setting developmental goals motivates employees and aligns their goals with organizational goals [38]. These strategies aim to help organizations effectively combat burnout during times of crisis and improve the overall well-being of employees [31].

Additionally, it is possible to adapt these strategies to the public sector. Public sector workers are often tasked with delivering essential services under conditions of resource constraints, high public scrutiny, and complex bureaucratic structures. These factors contribute to increased stress levels and a higher risk of burnout among public sector workers [39]. To address this issue, it is of great importance to adapt and implement targeted burnout prevention strategies in this context. Strategies such as stress management interventions, work adjustments, promotion of social support, employee participation in decision-making, and high-quality performance management can be effectively tailored to meet the specific needs of public sector employees [40, 41]. To adapt these burnout prevention strategies to the public sector, the following steps can be followed:

- Integrating stress management techniques into employee assistance programs [32].
- Establishing policies that provide employees with greater autonomy and role adjustments [42].
- Developing a culture of collaboration and empathy through structured mentoring programs and team-building activities [43].
- Establishing participatory committees or councils that include representatives from various departments and levels [44].
- Creating transparent, fair, and development-oriented evaluation systems that recognize and reward employee contributions while providing clear pathways for career development and growth [45].

These adaptations can increase the motivation of employees in the public sector, increase job satisfaction, and support their general well-being, creating a more productive and healthier working environment [46].

3.2 Coping with employee burnout during economic and financial crises

Work by Breugh refers to a period characterized by increasing financial pressures, staff reductions, and increases in work intensity in the public sector [30]. During this period, public sector organizations faced challenges such as budget constraints, staff reductions, and increased workload, leading to increased stress levels in employees. The research examined 30 countries and eight public sector occupations using data from the European Working Conditions Survey (EWCS) [30]. The article emphasizes the importance of meeting employees' basic needs (autonomy, competence, and relationship) among empirically supported burnout prevention strategies.

Involving employees in business processes and participating in decision-making mechanisms plays a critical role in reducing burnout. Additionally, social support and strengthening relationships alleviate the negative effects of stress. The support provided by managers and colleagues makes it easier for employees to cope with stress

and increases job commitment. Competency development programs and continuing education opportunities also reduce burnout by increasing employees' competencies. These findings reveal the importance of social support programs, policies that encourage employee engagement, and continuing education opportunities to cope with burnout in times of crisis in the public sector [30].

3.3 Combating burnout in employees in war situations

Another major crisis situation is war. Khristich et al. discuss the design of a professional burnout recovery program based on life purpose orientations in combat conditions [28]. The research was conducted in August 2022, during the Ukraine-Russia war, on 30 personnel working in the Ukrainian social services department. Data were collected through surveys on employees' work and well-being, the Maslach Burnout Inventory, and the Life Purpose Orientations Test. The findings show that the perception of job difficulty increased during the war, and customers' psychological problems and characteristics of the service triggered fatigue. It has been determined that employees often feel anxiety, especially fear about the situation in the country and the lives of themselves and their relatives. Among professional burnout factors, emotional exhaustion predominates, with high levels of depersonalization and low rates of decline in personal accomplishment observed in women. In life goal orientations, while the awareness and time perspective of goals were low among women, they were found to be higher among men, especially in the 31–40 age group. While half of the women found their lives meaningful, the other half lost awareness of their goals due to the negative emotions brought on by the war situation. Women with a low locus of control were associated with high burnout rates, whereas men's locus of control was found to be high.

Empirical results of the study show that empathy training skills, self-regulation techniques, communication development, time management, and social support strategies are effective in preventing burnout. While empathy training can reduce emotional burnout levels by 10–15%, up to 20% reductions in burnout levels have been observed in those who apply self-regulation techniques. It was determined that those who improved their communication skills experienced 30% less depersonalization, and those who received time management training experienced 25% less burnout. A 15–20% decrease in the emotional burnout of employees who received social support was observed. These strategies can significantly reduce professional burnout levels by improving employee well-being [28].

In contrast, in war conditions, the risk of burnout increases as public sector employees face high demands and limited resources [47]. To prevent this situation, adapting the burnout prevention strategies outlined in Khristich et al.'s article—namely empathy training, self-regulation techniques, improving communication skills, time management, and social support strategies—to the public sector may be effective. These strategies can help public employees manage their workload more effectively, increase their emotional resilience, and strengthen their social support mechanisms.

One of the most important examples in war research is military personnel. The study conducted by Adler et al. examined burnout levels and associated factors in US military medical personnel serving in Afghanistan [12]. 344 military medical personnel participated in the survey and evaluated burnout, Post-Traumatic Stress Disorder symptoms, professional stressors, self-care behaviors, team care, and leadership perceptions. According to the results of the study, the three main factors that are

negatively related to burnout are self-care, team care, and health-promotion leadership. Self-care is the ability of individuals to replenish their personal resources, such as physical exercise, relaxation, seeking social support, and engaging in nonwork activities [12]. The most common self-care strategies among military personnel are exercising and being part of the team. Team care, in the military context, refers to the extent to which individuals support their teammates and can reduce burnout levels by strengthening a sense of belonging. Health-promotion leadership is specific behaviors of leaders that promote health and well-being. These leadership behaviors play an important role in reducing burnout through actions such as maintaining professional standards, emphasizing the importance of physical and mental care, providing positive feedback, and maintaining the team's emotional balance. These factors allow for the development of specific strategies to reduce burnout among military medical personnel and provide feasible solutions [12].

3.4 Combating employee burnout in workload crises caused by reform initiatives and mass disasters

The crisis period examined by Grima et al. results from the implementation of New Public Management (NPM) principles in French public hospitals [48]. The implementation of NPM aims to make resource management in hospitals more efficient, but these reforms have led to a significant increase in doctors' workload and complex changes in the nature of their work. With NPM, doctors had to deal with not only clinical tasks but also administrative tasks. This situation has caused doctors to face excessive workloads.

Between 2013 and 2014, semi-structured interviews were conducted with 25 doctors working in four different public university hospitals. Interviews were conducted in doctors' offices or by phone, and anonymity was guaranteed. The data obtained from the interviews were analyzed using the content analysis method. In the research, an interpretive position was adopted in order to understand the meaning attributed to social reality [48].

According to the findings of the research, doctors working in French public hospitals have developed various strategies to cope with excessive workloads. With the avoidance strategy, they reduce their stress by avoiding administrative tasks and performance indicators. With the delegation strategy, they lighten their burden by transferring their administrative duties to others. In the sabotage strategy, they reduce the hospital's workload by sabotaging its efforts to generate revenue. They accept the heroic strategy, increase the scope and intensity of their work, and make personal sacrifices. In the surrender strategy, they endure excessive workloads for career advancement. With the strategy of fatalism, they accept that workload is inevitable. In the overinvestment strategy, they proactively overinvest in administrative tasks. In the restructuring strategy, they balance the workload by increasing work hours and restructuring their time from clinical duties to administrative duties. These strategies are methods developed by doctors to increase their capacity to cope with stress [48].

The article by Sever et al. addresses the burnout experienced by nephrology staff during mass disasters such as the Marmara Earthquake, the Haiti Earthquake, and the COVID-19 pandemic [2]. Crises such as an increase in post-earthquake crush syndrome, an increase in kidney failure cases, shortages of medical supplies and personnel, an overload of healthcare services during the pandemic, and shortages of personal protective equipment all increase the risk of burnout among healthcare personnel. The article examines the effects of these crises and strategies for coping

with burnout. Such coping strategies include providing safe working environments at the organizational level, reducing workload, optimizing personnel and material supply, providing mental health support, flexibility in working conditions, and accurate and timely information.

In order to increase safety, it is recommended to work in durable buildings after the earthquake and to stock sufficient PPE during pandemics, to increase the number of personnel to reduce the workload, to use telemedicine applications, and to implement alternative programs such as dialysis twice a week. It is important to provide mental health support, provide professional support for staff showing signs of burnout, develop team spirit, implement short shifts, and allow time for medical staff to rest.

At the individual level, stress coping training, teaching relaxation techniques such as mindfulness and yoga, adequate nutrition to protect physical health, encouraging sleep and exercise, reducing alcohol and cigarette use, and providing mental health support to cope with emotional difficulties are emphasized. These measures aim to increase the effectiveness of healthcare services and reduce the risk of burnout [2]. The methods to combat burnout mentioned in the article can also be adapted to public sector employees. A study by Maslach and Leiter examined the effects of public sector employees' workload and stress coping mechanisms on burnout and showed that such measures can significantly reduce burnout [21]. It reviews research across psychology, psychiatry, and organizational behavior, discussing models like the Job Demands-Resources (JD-R) and Conservation of Resources (COR). Various measurement tools, including the Maslach Burnout Inventory (MBI), assess burnout dimensions. Empirical studies focus primarily on healthcare providers, including nurses and mental health professionals, with references to longitudinal studies and national surveys from countries like Sweden and the Netherlands. This study emphasized the positive effects of balancing workload, providing the resources needed by staff, and providing mental health support on burnout.

3.5 Coping with pandemic-related burnout in healthcare workers

In the review by Magnavita et al., medical literature databases were used to examine the burnout syndrome affecting healthcare workers between October 31, 2020, and March 31, 2021, without differentiating between the public and private sectors [1]. Magnavita et al., aimed to assess the prevalence of burnout syndrome among healthcare workers during the SARS, MERS, and COVID-19 outbreaks and the risk factors contributing to this condition [1]. Out of 270 records, 16 systematic reviews were read, and seven were included in this review. In the study by Salazar de Pablo et al., the prevalence of burnout among healthcare workers exposed to SARS, MERS, and COVID-19 was reported to be 34.4% (confidence interval 19.3–53.5%) [49]. Additionally, in the study by Serrano-Ripoll et al., the pooled prevalence of burnout syndrome was found to be 28% (with confidence intervals ranging from 26 to 31%) [50]. These rates indicate that burnout syndrome is a significant issue among healthcare workers and increases during pandemics.

The research results suggest various methods to protect the mental health of healthcare workers and prevent burnout syndrome. These methods include preventive care and workplace health-promotion programs, workload management, psychological support, education and information, communication and support, and improvement of the working environment. Such programs can reduce stress and prevent burnout syndrome. A fair division of labor can lighten the workload, and regular psychological support can help workers cope with difficulties. Additionally, providing

training on infection control and stress management can help workers feel safer. Well-organized communication systems and peer support programs can also positively impact mental health. Ergonomic improvements in the working environment and regular breaks can reduce job stress and lower the risk of burnout. These measures are considered critical steps to protect the mental health of healthcare workers in both the public and private sectors during and after the pandemic [1].

In another study by Ferreira and Gomes conducted in Portugal between November 2020 and January 2021 during the second wave of the COVID-19 pandemic, the burnout and resilience levels of healthcare workers were examined. The study collected data through an online survey, and 196 healthcare professionals (nurses, doctors, and healthcare assistants) participated in the survey [6]. Participants were assessed with scales such as the Maslach Burnout Inventory (MBI) and the Connor-Davidson Resilience Scale (CD-RISC-10). The results of the study revealed that resilience had significant effects on three dimensions of burnout: High levels of resilience were associated with lower emotional burnout and depersonalization and were also linked to higher personal accomplishment. These findings suggest that resilience is an important personal resource that reduces the risk of burnout in stressful work environments. Thus, fostering individual resilience can be considered a burnout prevention strategy.

Work by Förster et al. [51] supports this view. Förster et al. conducted an empirical study involving 20 in-depth interviews with healthcare leaders to identify key resilience factors. The study found that individual factors (e.g., positive attitude, self-efficacy), situational factors (e.g., supportive work atmosphere, social support), and behavioral factors (e.g., open communication, reflection) contribute to resilience [51]. An integrated framework was developed, emphasizing the need for targeted resilience training and organizational support to mitigate burnout and enhance leadership effectiveness, especially during crises like the COVID-19 pandemic [51].

4. Synthesis of interventions to reduce burnout

Addressing burnout among public service workers, particularly during emergencies, requires a multifaceted approach. To effectively mitigate burnout, interventions can be categorized into three main types: organizational, social, and individual.

Combining these three types of interventions may provide a comprehensive strategy to overcome burnout among public service workers. Organizational interventions create a supportive framework, social interventions build a resilient community, and individual interventions equip employees with personal coping mechanisms. This integrated approach can support public service workers at various levels, improving their ability to remain effective and motivated even in the face of crises. Customizing these interventions to address the specific stressors and conditions encountered in crisis situations further increases their effectiveness, as demonstrated by various case studies and research findings [28, 48]. In the subsequent section, we briefly illustrate each one of these three main types of burnout intervention strategies.

Organizational interventions focus on structural and policy-related changes within the workplace. Key strategies include workload management, resource allocation, and stimulating employee engagement.

Workload management: Implementing policies to ensure that workloads are manageable and evenly distributed can prevent the excessive stress that leads to burnout. For instance, the introduction of flexible working hours and balanced workload distribution has been shown to reduce burnout among public service employees [1].

Resource allocation: Providing adequate resources, both in terms of personnel and materials, helps employees perform their tasks efficiently without undue strain. During crises like the COVID-19 pandemic, ensuring the availability of personal protective equipment and other resources was crucial in reducing stress and burnout among healthcare workers [2].

Employee engagement: Involving employees in policy and decision-making processes fosters a sense of ownership and control, which can mitigate feelings of helplessness and increase job satisfaction. Research indicates that participatory management and employee involvement in decision-making processes can significantly reduce burnout and improve job satisfaction [44].

Social interventions aim to strengthen the support networks and interpersonal dynamics within the workplace. More specifically, social support networks, empathy training, and communication development training can be mentioned.

Social support networks. Encouraging the development of supportive relationships among colleagues can create a more cohesive and resilient workforce. High-quality relationships with managers and colleagues have been found to reduce emotional exhaustion, especially in high-demand jobs [35].

Empathy training. Training programs that enhance empathy and communication skills help employees understand and support each other better, reducing interpersonal conflicts and fostering a supportive work environment [28].

Communication development. Enhancing communication through structured training, regular team meetings, leadership modeling, and feedback systems reduces burnout and improves team dynamics by ensuring employees feel heard and valued [12].

Ultimately, individual interventions are tailored to the specific needs of employees, helping them develop personal coping mechanisms and resilience. Key strategies include:

Stress management programs. Offering programs that teach stress management techniques, such as mindfulness and relaxation exercises, can help employees manage their stress levels more effectively. Mindfulness meditation and cognitive-behavioral training have been found to be effective in reducing emotional exhaustion [32].

Professional development and resilience training. Providing opportunities for professional growth and resilience training equips employees with the skills needed to adapt to and overcome challenges. High levels of resilience are associated with lower emotional burnout and depersonalization, as well as higher personal accomplishment [6].

Mental health support. Ensuring access to mental health resources, such as counseling and therapy, helps employees address their mental health needs and prevents burnout from escalating. Regular psychological support and mental health courses are essential in maintaining a sense of community and stability during crises [1].

These interventions must be customized to the specific stressors and conditions faced by public service workers during emergencies.

The strategies proposed by Gabriel and Aguinis overlap and complement the three main categories of interventions discussed earlier [31]. For instance, their emphasis on stress management interventions aligns with the individual interventions aimed at stress management programs. Allowing employees to organize their work and involving them in decision-making processes are components of organizational interventions that focus on workload management and employee engagement. Encouraging and improving social support fits within the social interventions category, where social support networks and enhanced communication are key strategies.

Organizational interventions	Social interventions	Individual interventions
Workload management [2, 21, 27]	Social support networks [18, 31, 35]	Stress management programs [31, 32]
Resource allocation [2]	Empathy training [12, 28]	Professional development and resilience training [6, 51]
Employee engagement [31, 44, 45]	Communication development [12]	Mental health support [1, 21]
Flexibility in work conditions [42]	Resilience activities [51]	Self-regulation techniques [28]
High-quality performance management [31]		Mindfulness and cognitive-behavioral training [32, 33]

Table 1.
Summary of burnout interventions.

The different classifications provide a comprehensive framework that addresses burnout from various angles, ensuring a holistic approach. The categorization into organizational, social, and individual interventions helps in systematically targeting specific areas of improvement, while the strategies by Gabriel and Aguinis offer a more generalized set of actions that can be integrated into these broader categories [31]. Thus, using both frameworks together can provide a more robust and nuanced approach to reducing burnout among public service workers. **Table 1** summarizes the burnout interventions discussed in the preceding sections.

5. Further developments

While in this chapter we have primarily built on Maslach’s conceptualization of burnout, we also want to acknowledge debates surrounding it, as developments regarding the definition of burnout and associated assessment tools continue. For example, Hadžibajramović et al. [52] conceptualize burnout as a work-related condition in employees characterized by extreme fatigue, decreased ability to regulate cognitive and emotional processes, and mental distance, which is not fully congruent with Maslach’s model that emphasizes emotional exhaustion, depersonalization, and reduced personal achievement [4] as the primary factors of burnout. More specifically, Hadžibajramović et al. [52] focus on cognitive impairments such as concentration problems and forgetfulness and emotional impairments such as irritability and emotional instability, along with mental distance, which includes loss of motivation toward work, withdrawal, and cynicism [52]. These aspects extend beyond the scope of Maslach’s three dimensions, introducing additional symptoms and focusing on the regulation of cognitive and emotional processes. This alternative conceptualization has also triggered the development of new tools like the Burnout Assessment Tool (BAT) developed by Schaufeli et al. [53], which measures burnout using four factors: exhaustion, mental distance, cognitive impairment, and emotional impairment. Unlike the Maslach Burnout Inventory (MBI), which measures emotional exhaustion, depersonalization, and reduced personal achievement, the BAT provides a different assessment by including cognitive and emotional impairments and mental distance, allowing for a more detailed understanding of burnout and helping identify employees at risk more effectively [53]. Consequently, the BAT offers an alternative to the MBI, suitable for both research and practical applications in workplace health and well-being assessments [54].

Our review of the burnout literature in crisis situations and discussion of recent developments opens avenues for future research. For example, the different manifestations of burnout in crisis situations need further exploration. Different burnout interventions exist that have proven their effectiveness in normal circumstances, but will they be similarly effective in crisis situations or are adjustments needed? The literature is relatively silent on this matter. Additionally, professional settings might matter; hence, which interventions are most effective in preventing and managing burnout in different professional settings becomes a relevant question. Ultimately, as flagged in the final sections, there is some debate about how to measure burnout and what the factors are that constitute it, indicating that our understanding of burnout's multifaceted nature is still limited and under development.

6. Conclusion

By implementing a comprehensive approach that includes organizational, social, and individual interventions, public service organizations can effectively reduce burnout among their employees. These strategies not only increase the well-being and resilience of public service workers but also ensure the continuity and reliability of essential services during crises. Addressing burnout using a holistic perspective that includes the organizational, social, and individual domains benefits both employees and organizations. Additionally, it strengthens the stability and effectiveness of public services in crisis situations.

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Chapter 4

Demand-Resource Balance, Autonomy, and the Utility of Organizational Strategies in Addressing Healthcare Professional Burnout

Kate Parker, Lauren Nun Faokunla and Nathan Morrell

Abstract

Burnout is a chronic issue that has plagued the social service industry for decades. In healthcare, a common definition of burnout is the chronic imbalance between work demands and resources available to respond effectively. Workers must “do more with less.” To combat this, various interventions such as behavioral programs, leadership resource management and organizational interventions have all been studied. Organizational strategies aim to modify or redesign tasks and environmental features to better manage the demand-resource imbalance. There are several types of organizational programs discussed in the literature. Job crafting, reducing workload and increasing worker autonomy are a few which have been shown to be effective in reducing burnout. The goal is to grant workers the freedom to respond to work demands in ways that work best for them. This may reduce burnout by instilling a larger sense of control, ownership and pride derived from their work.

Keywords: burnout, autonomy, healthcare, organizational strategies, demand-resource

1. Introduction

The concept of burnout within the healthcare profession has become increasingly popular, and for good reason. Data reported in 2015 estimates that the prevalence of burnout among practicing physicians in the United States was over 50% [1]. The growing prevalence of burnout within medicine has sparked increased research on the topic. A research database search with the keywords “burnout” and “medicine” yielded just over 3000 results for the years 1952–2000, while the same keywords yielded over 81,000 results from 2001 to 2024 [2]. While burnout syndrome was first described in 1974, the first large, national study of burnout among physicians across all specialties in the United States did not occur until 2011 [2]. More recently, the

unique challenges of the COVID-19 pandemic and its strain on our healthcare system in particular brought necessary and increased awareness of the importance of healthcare worker wellness and its implications on burnout.

To best combat burnout, one must first attempt to understand it. Unfortunately, the definition of burnout remains debated. There are many theories that vary depending on culture, occupation, and period, to name a few. First, one must understand the vocabulary surrounding this phenomenon. Wellness and burnout are terms often incorrectly used interchangeably. Wellness is defined by the World Health Organization (WHO) as the optimal state of health of individuals and groups and encompasses “the realization of the fullest potential of an individual physically, psychologically, socially, spiritually, and economically, and the fulfillment of one’s role expectations in the family, community, place of worship, workplace and other settings” [3]. Thus, wellness, or well-being, is partially influenced by one’s profession, but is related to all facets of one’s life. Sonnentag defines job-related well-being as “a specific aspect of subjective well-being and comprises positive features such as work engagement, job satisfaction, job attachment, job involvement, and job morale” [4]. From these definitions, burnout can be considered “a specific form of disturbed job-related well-being” [4]. More specifically, burnout is a syndrome consisting of emotional exhaustion, depersonalization, and a diminished sense of personal accomplishment, which is primarily driven by workplace stressors [5].

The next step is understanding the overall causes and theories of burnout, as well as the unique demands within the healthcare profession that contribute to its prevalence. The Center for Disease Control (CDC) states that burnout is caused by a chronic imbalance between work demands and the resources needed to effectively respond [6]. Many unique factors place physicians at risk for burnout, including workload, clerical burden, inefficiency in the practice environment, lack of autonomy, difficulty with work-life integration, and loss of meaning in work [2]. Leading drivers of burnout include excessive workload, imbalance between job demands and skills, a lack of job control, and prolonged work stress [7]. Recently, there has been a shift from viewing burnout as an individual problem to a problem of the healthcare organization as a whole, rooted in issues related to working environment and organizational culture [8]. It has been suggested that reducing the risk of burnout in physicians requires changes in organizations, as well as support for individual physicians.

Arnold-Forster, Moses, and Schotland propose three key obstacles that hinder improvements in physician emotional health: medical exceptionalism, medicalization, and an emphasis on individual responsibility [9]. They define medical exceptionalism in terms of a belief that the field of medicine is “an extraordinarily self-sacrificing profession,” that confer social and financial advantages. Medicalization refers to physicians with mental health or substance use problems that make them “sick.” Finally, individual responsibility refers to the belief that physicians (and not their institutions) are responsible for maintaining their own wellness [9]. Among the different theoretical models on job-related well-being and burnout, perhaps one of the most applicable models to physicians is the job demand-job control model coined by Karasek and Theorell in 1990 [9]. In this model, burnout symptoms are reduced when the work ‘demands’ and matched by the ‘resources’ available to employees to carry out their tasks. From this perspective, insufficient resources combined with diminished autonomy in the context of the significant work demands within the healthcare profession creates a population that is particularly susceptible to burnout.

One specific contributor to physician burnout is workload and number of work hours leading to fatigue. For many physicians, particularly resident physicians, this is complicated by their lack of control over the number of hours on duty they are required to work. Widespread public awareness of resident duty hours was spurred by the death of medical resident Libby Zion in 1984, leading to the formation of the Bell Commission, which advocated for limited resident duty hours and increased resident supervision in New York [10]. In 2003, the Accreditation Council for Graduate Medical Education (ACGME) implemented duty hour regulations that limit resident work weeks to an average of 80 hours over a 4 week time period, as well as instituted a mandatory “adequate rest period” of 10 hours between duty periods among other changes [11].

In response to increased awareness of burnout within medicine, medical schools and residency programs increasingly implement wellness curricula and activities. This takes shape through lectures, events, and duty hour limitations. Nonetheless, increasing wellness lectures and activities shifts the onus of burnout prevention on the individual, rather than restructuring the systemic contributors, such as institutional policies, to burnout.

Electronic health records (EHRs) are the electronic systems that healthcare workers use to access patient charts, place orders, and document clinical and procedural data. While these systems have many benefits, such as consolidating patient data, improving security, and reducing medical errors, they can also contribute to physician burnout. One study, which involved the direct observation of 57 physicians across four specialties over 430 hours (about 2 and a half weeks) in an ambulatory setting, showed that 49% of work hours were spent completing clerical tasks and interfacing with the EHR, while only 33% of work hours were spent performing direct clinical work [12]. In a profession that often touts itself as a vocation in service to others, one can appreciate the strain of spending nearly half of one’s daily work in front of a computer rather than directly interacting with and treating patients.

It is not uncommon for healthcare workers to report feeling asked to do more with less. The seemingly unending requirement to complete their jobs in a shorter time, with less funding, resources and overall autonomy is not only stressful, but frustrating and isolating. Feeling a loss of control can cause employees to feel distant and reduce overall pride in their work; a very important concept we will dive into later in this chapter. To understand how best to address healthcare burnout, this chapter will first describe the different levels of interventions, including specific examples at each level, and then conclude with what interventions have been shown to be most effective within the healthcare workplace. Lastly, we will explore ideas for future areas of development.

2. Introduction to organizational strategies to address burnout

Healthcare workers suffering from burnout are often advised to meditate, trial a yoga class, or adopt cognitive-behavioral coping strategies. These are individually directed interventions, and while they have been reported to be beneficial, newer data suggests they are not as effective as organizational interventions. Organizational interventions for burnout are targeted structural changes that aim to remedy the demand-resource imbalance by changing an organization’s policies, procedures or work environment. This can be done from a top-down or bottom-up approach. These changes can be implemented by management decisions, such as altering workload or

expanding available resources, or through employee input that promotes job control and autonomy [13]. These interventions generally involve modifying or redesigning work tasks, as well as changing policies and procedures to allow workers more control over managing their job.

Several studies have demonstrated physician and organization-directed interventions are associated with statistically significant reductions in burnout. A recent systematic review found that the most effective interventions were those that modified resources, the working environment, or the work tasks themselves to decrease healthcare worker stressors. Interventions included scheduling changes, reductions in workload, improving teamwork, increased communication in work evaluations, and increasing the level of participation in decision making at work [14].

Later in this chapter, we will discuss the organizational techniques the literature has demonstrated to be effective, and those that have not. Those that have shown the most success include structural changes, fostering communication between team members, job crafting and peer support groups to cultivate teamwork. We will also briefly discuss control and autonomy, and the role we feel it plays in healthcare worker burnout.

3. Types of organizational strategies

Organizational interventions can be applied at several levels. These levels are based on the degree of personal involvement. The simpler levels include individual, group and leadership, and the broadest level is organizational. Below, we will break down the basics of each level, including examples of each.

3.1 Individual level

There is immense power in frame of mind, self-care and coping skills. Organizational interventions at the individual level aim to promote workers' ability to respond more effectively to demand-resource imbalances. They do so by implementing programs or resources to support health and well-being, like workshops on burnout or access to cognitive behavioral therapy. They also promote techniques like "job crafting," where workers take increased responsibility for how their jobs are performed. Finally, they may offer flexible work schedules, that allow the worker to choose how to best utilize their time. As we focus on techniques for addressing burnout that relate to autonomy and control, we will emphasize job crafting and scheduling as the individual level techniques.

Job crafting was originally defined in 2001 by Wrzensiewski and Dutton. They defined it as adjustments which employees make in their task, relational or cognitive boundaries of their work. These changes are all driven by the desires or mindset of the workers themselves. "Task crafting" involves altering the type, scope, sequence, or overall numbers of tasks that make up one's job. For example, a job may require an employee who enjoys painting art, or to sell lemonade. That employee can task craft by marketing their sales of lemons by painting pictures of lemons. Next, employees can "relationally craft" their job by altering who they choose to interact with. If a job requires one to create an operating room schedule, and the worker really enjoys the anesthesia department, they may choose to survey the Anesthesia department's thoughts and opinions regarding a proposed schedule. Finally, there is "cognitive crafting," where one's interpretation of their work task is

altered to encourage fulfillment. For example, a hospital housekeeper may see their work to promote healing for patients. Most importantly, job crafting puts responsibility in the hands of the workers. Thus, everyone decides what work style is the best fit to supply the work demand with the resources available. They participate in the development of their workflow, as opposed to their workflow being delegated in a strict and inflexible manner, which allows for a deeper sense of engagement, pride and fulfillment. Ultimately, this helps reduce the risk of depersonalization and burnout [15].

The literature shows that the proactive behavior of job crafting can be effective in improving employee well-being in several scenarios. Tims et al. [16] conducted a longitudinal study in 2013 of workers in a chemical plant, examining whether employees could impact their well-being by crafting their job demands and resources. After following workers for 3 months, they found that employees who crafted their job resources in the first month showed an increase in their structural and social resources throughout the remainder of the study. This was associated with an increase in engagement and job satisfaction and decreased burnout. They concluded that employee job crafting had a positive impact on well-being, and that employees should be offered the opportunity to craft their own jobs [16].

We can also simply teach and encourage job crafting to employees to combat burnout. Gordon et al. [17] studied this exact scenario. They conducted a prospective study of nurses and physicians, looking at how job crafting affected three indicators of well-being: work engagement, exhaustion, and personal health [17]. Two job crafting interventions and groups were studied, one with nurses and the other with physicians. Each group was compared to a control group. The study groups attended a workshop on job crafting and were tasked to set up individual and group “personal crafting plans,” which they felt would help achieve a certain goal within the workplace. For example, the nursing goal was to improve checklist screening for elderly patients. Investigators had each group fill out a survey reflecting on how well they were job crafting, how engaged they felt with their work, level of exhaustion, overall feelings of health, and a reflection regarding how well they felt they were adapting their performance. The research subjects were monitored for 3 weeks. Overall, the effects of the interventions were positive. The physician group reported significantly higher levels of work engagement and personal health when compared to the control group. The physicians also reported lower levels of exhaustion. The nursing group reported significantly higher levels of work engagement and lower exhaustion. They also found higher reported levels of adaptive performance, but this was not statistically significant. A final interesting data point is that they found no effect of the intervention on improvement in performance for either study group. This study’s short term follow up may, however, limit its ability to detect potential long-term improvement in work performance.

Another way employers can promote individual level techniques is to allow for flexible work schedules or working arrangements. Allowing workers to have flexibility over when or where they perform their work can help mitigate the demand-resource balance. With flexible scheduling and working arrangements, workers participate in deciding how they feel their time may be used best [18]. This provides workers some sense of control over their time and may allow for more efficiency. However, it should be noted that this freedom may also open doors for increased demands from other avenues of life, such as at home and with family. As protected work time becomes more fluid, workers should be aware and open to discussion regarding how to best set boundaries between work and home demands.

3.2 Group level

Moving up a tier, group level strategies are aimed more at changing social norms or creating a more cohesive network of peers. While not directly providing workers the control to change work demands or resources, group level interventions can address the work environment, such as improving communication between peers, addressing social issues like harassment or mistreatment, and encouraging support for coworkers.

Peer to peer support can foster a feeling of influence among coworkers. Having one's voice considered helpful for others, as well as the ability to voice one's concerns, is a powerful tool to make workers feel influential in their workplace. Additionally, these programs encourage workers to open up about their feelings and struggles related to their work environment. Peer to peer support programs also help workers directly improve their jobs as a team. Several examples of this exist in the literature. One example includes the First Responder Extension for Community Outcome (ECHO) tele-mentoring program, which teaches psychological aid and self-care strategies so workers can process these situations together and determine how to best support each other [19].

3.3 Leadership level

The leadership level of organizational strategy is aimed at how leaders in the workplace, including supervisors and managers, can better assist individual workers in managing and improving their work-life imbalances. One of the most important ways leaderships can reduce burnout is by ensuring their workers know they are supported, including consistently providing an avenue for feedback, both in the direction of leadership to worker and worker to leadership. When workers feel unsupported and unheard within their workplace, they become susceptible to burnout. Direct communication, whereby a worker's concerns are acknowledged and addressed, promotes a sense of control for the worker.

Examples of leadership level changes include implementing weekly group meetings with leadership, a comment box, regular wellness check-ins, and scheduled feedback meetings [20]. These approaches foster a collective trust within a group and opportunities to identify and jointly respond to concerns.

3.4 Organizational level

Organizational level strategies are the most overarching approach to addressing burnout. They include the broader industry, community or society which contributes to demand-resource imbalance and management. Thus, their influence can either be incredibly effective or detrimental to the individual worker. If the goal is increased worker positivity and decline in burnout, the organizational level seeks to permit healthcare workers to "do more, with more." This includes policies such as paid time off and healthcare and insurance benefits, as well as addressing inadequacies in workplace environments and advocating for burnout as a public health problem.

Environmental changes improve overall morale and reduce burnout, as workers are no longer preoccupied by unsafe or uninhabitable work environments. Job resources, such as proper lighting, temperature and humidity control, adequate furniture, presence of security cameras, and access to locks, allow workers to feel safe, cared for and comfortable. The need for these resources may seem obvious, but

there are several healthcare workplaces in which basic safety needs are not met, such as poor lighting or lack of security presence in an emergency department.

Organizational level changes can also address issues like understaffed departments, where employees are burdened with too many tasks or patients, leading to ineffective or unsafe work. Hiring more staff, is one direct way to address this.

4. Which strategies have been effective in healthcare?

Now that we have discussed the types of strategies to address burnout, it is important to determine what approaches have proven successful in the unique workplace environment of healthcare. There are several studies looking at the effects of organizational interventions on reducing burnout. In general, most of the interventions show a positive effect on the studied populations. The difficulty with making broad conclusions of the effectiveness of these interventions is the large variability of both the healthcare environments and the interventions being considered, as well as inherent bias of those implementing the changes. It is also difficult to collect large pools of data to compare these interventions with non-organizational level strategies, like meditation or yoga, which have been much more widely researched and utilized.

In 2017, a meta-analysis of 19 studies of individual level (i.e., physician) directed and organization level directed burnout interventions were reviewed and analyzed to determine their effectiveness in reducing burnout [14]. However, the number of studies that implemented organizational techniques (i.e., 7 studies) were much fewer than individual level techniques (i.e., 12 studies). The studies of individual or physician-directed interventions included mindfulness-based stress reduction techniques; educational interventions that targeted physicians' self-confidence and communication skills, physical exercise; or a combination of these features. Among the studies that focused on organizational interventions, five studies evaluated simple workload interventions such as rescheduling shifts and reducing workload. Only three studies tested more extensive organizational interventions, including meetings to enhance teamwork and leadership, structural changes, and communication skills training. All included studies had a control group and a validated tool for measuring burnout, such as the Maslach Burnout Inventory (MBI) [5]. The duration of interventions varied among the studies, ranging from 2 weeks to 9 months. Follow-ups also varied from visits occurring from 1 day to 18 months.

Overall, this meta-analysis showed that all individual and organizational interventions were associated with a small but significant reduction in burnout compared to the control groups (SMD = -0.29). When analyzing by type of intervention, they found that physician/individual-directed interventions were associated with a small but significant reduction in burnout scores (SMD = -0.18), but not as great as organizational interventions, which showed a statistically significantly larger reduction in burnout ($p = 0.04$; SMD = -0.45). Diving deeper into the specifics of these studies, most utilized alterations in workload or work hours. Shift scheduling was adjusted, or in one study, residents were allotted a five-hour period of protected time to sleep overnight for 4 weeks. Of note, no study in this meta-analysis utilized job crafting techniques to include workers in the decision making or planning of these workplace alterations.

Furthermore, there was no evidence that the specific content (i.e., mindfulness, communication, or educational components) or intensity (i.e., duration or frequency) of the intervention influenced the ultimate benefits. The authors concluded

that burnout is rooted in the organizational coherence of the healthcare system. Thus, the most effective remedy for burnout is not at the individual level, but rather at the organization level. The authors also concluded that it is necessary to research the best context for evaluation and implementation of burnout interventions, so that it is tailored to each specific location. Lead author Maria Panagiotti wrote, “Those that combined several elements such as structural changes, fostering communication between members of the health care team, and cultivating a sense of teamwork and job control tended to be the most effective in reducing burnout” [14].

In another more recent meta-analysis published in 2023, Bes et al. [21] aimed to assess if organizational interventions were effective in the reduction of exhaustion, which they consider the “core dimension” of burnout. After screening with strict criteria for quality control, 13 studies were identified, with 11 focusing on organizational interventions and two studies on a combination of organizational and individual interventions. Interventions involved workload (9 studies) and work schedule (2 studies). They found that the level of exhaustion decreased a small amount in the organizational intervention studies alone, but a larger reduction was seen in the combined intervention studies. They also found that with a subgroup analysis, interventions targeting workload provided the most effective reduction in exhaustion versus participatory interventions [21].

Studies classified as organizational included interventions such as implementing a supervision plan, an intervention team to identify problems, workshops for job crafting, specific job crafting interventions, workload alleviation by increasing human resources by 50%, stress management interventions, patient to nurse feedback, and providing a 5 hour dedicated sleeping period for residents [17, 22–28]. Combined studies included peer support groups, which began with a relaxation process, as well as a combined program for CNAs (certified nursing assistant) to improve their knowledge and skills [29, 30].

As previously mentioned, studies focused on reducing workload provided the most effective exhaustion reduction. More specifically, one study implemented remote access to more patients for 11 weeks, and another worked on improving employees’ knowledge to reduce their workload [30, 31]. The authors attributed this success to better job-resource balance. In one individual intervention study, employees were involved in identifying areas of improvement, developing action plans, and implementing initiatives [32]. While these individual interventions may provide employees with a sense of empowerment and control, motivating them to engage more at work, this was shown to be less effective compared to organizational level workload reduction at stress and burnout reduction.

While the authors of this meta-analysis felt their methodology was strong, they also commented on the inherent bias in the data set. The studies included a wide variability in intervention type, follow up, and documentation of pre-intervention exhaustion status and outcome measurements of exhaustion. They felt no practical recommendation could be suggested but had several recommendations for future research. Most notably, they hoped for the study of combined interventions to address exhaustion with appropriate documentation of baseline and follow up, and the addition of a control group.

From these two meta-analyzes, we conclude that interventions at the individual and organizational levels both show a statistically significant reduction in burnout, yet organizational interventions that alter workload are the most effective in reducing exhaustion and by extension, burnout. However, these studies did not screen patients for feelings of autonomy, nor compare these feelings between the various types of

organizational interventions. Additionally, there is an opportunity for larger, more robust studies on these types of interventions, especially comparative studies, given the current literature lacks sufficient control groups and long-term follow-up.

5. Obstacles to implementation of organizational interventions

Despite concluding that organizational rather than individual-based approaches are the most effective for reducing burnout, there still exists several challenges to widespread implementation of these techniques. Within the healthcare system and other occupations highly susceptible to burnout, there are several barriers to workload reduction and increased resources. Improving workload and access to resources requires organizational level changes to the budget, hiring practices, scheduling, and division of duties within each department and position. For example, supervisors in public health may face constraints when implementing changes secondary to collective bargaining agreements that exist in many public health work contexts. The CDC recommends that to address this issue, an overarching context of organizational strategies should be implemented to target the broader industry, community, or society [6]. When healthcare workers are asked to “do more with less” (in terms of available resources), this should be communicated with policy makers at local, state and federal levels. Leaders’ ought to look for opportunities to secure grants or strive to change the financial policies that direct funds to their hospital system. The CDC also suggests partnering with non-public health organizations to advance public health missions [6]. For example, partnering with sporting events or religious gatherings, where public health initiatives can be jointly held, will draw increased attention to the issue of burnout in healthcare. While these ideas are all valid, to transition from “doing more with less” to “doing more with more” requires a consistent line of communication between the healthcare system leadership and local, state and federal representatives [6].

6. Control and autonomy

In the healthcare profession, particularly among physicians, lack of control and autonomy in the workplace is a notable cause of burnout. Specifically, clinic scheduling, number of patients allotted per clinic day, support staff availability and training, operating room availability and efficiency of room turnover, and the pressure to meet institution-specific minimums or requirements for job retainment or advancement, are all areas where physicians might feel constrained within their scope of practice. Furthermore, this can limit the quality of and access to care for patients, which can further lead to healthcare worker exhaustion and burnout.

Healthcare workers are tasked with improving the health of all patients. This is expected from their employers, patients, and themselves. This is no small “demand.” When the “resources” and their utilization are restricted by an organizational source (which is often not in direct contact with patients or their providers), this can lead to significant stress if goals and policies are not mutually agreed upon. Physicians are often able to identify specific demand-resource imbalances that prevent efficient and effective patient care within their practice, yet they often feel powerless to institute appropriate changes. Even more, the very act of identifying demand-resource imbalances and their solutions leads to increased workload, thus worsening the cycle of

exhaustion and burnout. This emphasizes the importance of open and direct communication lines between healthcare workers and the healthcare organization.

In a meta-analysis published in 2009, Day et al. [33] evaluated the idea that job control moderates the relationship between work stressors and burnout, acting as a “buffer.” This study found that at higher levels of job control, work related stressors were not as positively correlated with increased levels of emotional exhaustion. Overall, exhaustion levels were quite low at higher levels of job control, regardless of the level of reported work-related stressors. On the other hand, there was a positive relationship between stressors and emotional exhaustion at low levels of job control, ultimately showing that low levels of control in the workplace may lead to a relationship with emotional exhaustion and burnout [33]. It should be emphasized that their findings showed that regardless of work-related tasks, job control and its absence greatly affected worker burnout.

This study, as well as the previously detailed meta-analyzes regarding organizational interventions, all touch on the topic of control and autonomy in some way. From personal adjustments to scheduling and workflow, to organizational level changes that make time for meetings and reflection, these methods incorporate the physician in the discussion of how their job is carried out. An increased level of responsibility in decision making promotes a sense of pride in one’s work and has been shown to decrease burnout. We feel the implementation of organizational strategies that improve communication and reflection between management and healthcare workers is worthwhile for reducing healthcare burnout. Maintaining a healthy demand-resource balance, while encouraging employee pride and fending off burnout, will all lead to the success of the healthcare system.

7. Conclusion

The phenomenon of healthcare burnout is multi-faceted and dependent on both individual and organizational level practices. The presence of burnout within healthcare poses a threat to personal well-being and health, the quality of care our patients receive, and the overall success and sustainability of the entire healthcare system. While there are several opportunities for individual-driven approaches to combat burnout, research shows that the greatest success lies with implementing organizational strategies at the individual, group, leadership, and organizational levels.

To best create and implement organizational changes at all levels first requires open and effective communication among healthcare workers and administrators. Scheduling routine opportunities for feedback with subsequent leadership meetings based on that feedback is the first step in understanding healthcare worker burnout. Furthermore, designating a seat at the table within these meetings at all levels of patient care, including physician, advanced practice provider, and nursing will ensure that leadership adequately hears and considers workers’ concerns. Beyond the administrative level, incorporating our communities and civil leadership in these discussions and solutions ensures an even more robust approach.

Among the various organizational level interventions that were studied and discussed, reducing workload, and enhancing provider autonomy were found to be two of the most effective means for reducing burnout. First, improving the workload does not necessarily mean simply reducing the number of work hours. While placing work duty hour limits and mandating rest periods are essential changes that have already been implemented at the resident physician level, there are many indirect ways to

improve workload as well. Hiring adequate staff to ensure safe patient care, altering the hospital budget to accommodate for improved hiring practices, and optimizing resources so that healthcare work, particularly logistical and non-patient facing tasks, is efficient and effective, are all opportunities for improving workload and preventing burnout. Secondly, healthcare worker autonomy requires both feedback opportunities and liberties to make appropriate changes to improve individual workflow. Permitting working from home when feasible, allowing flexibility within the schedule, and making clinic, inpatient, and operating room resource and procedural changes based on provider feedback, are all methods to optimize a sense of control over one's healthcare work.

Finally, while a great deal of data and research exists to quantify and describe burnout, there is significant need for increased research related to investigating the best organizational interventions for reducing healthcare burnout. This requires studies with large numbers of subjects across a wide range of healthcare systems and environments, as well as the inclusion of matched control subjects and longer follow-up periods. Increased large scale studies that can be applied broadly will alleviate redundancy of trial-and-error processes at the single hospital level. Our focus should always remain on the patients and how best to care for them, which is undoubtedly influenced by the presence and severity of burnout among the healthcare workers treating them. Combatting burnout not only keeps our healthcare workers happier, more satisfied, and within the workforce longer, but also improves the safety and efficacy of the treatment of each patient that walks through the hospital door.

Conflict of interest

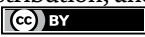
The authors declare no conflict of interest.

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Section 2

Empirical Studies

Antecedents of Stress Perception and Willingness to Recommend Employer in Healthcare Organization

David Giaouque, Frédéric Cornu and Samuel Pacht

Abstract

This study aimed to identify work-related factors contributing to perceived stress (SP) among employees at a large Swiss university hospital and to determine if these factors also affect employees' willingness to recommend their employer (WRE). Utilizing the Job Demands-Resources framework, this research involved a survey of over 13,000 employees, with data analyzed from over 5500 respondents. These findings indicate that resources such as value congruence, leadership and communication, and work schedule flexibility can mitigate stress and positively influence WRE. Conversely, time constraints have emerged as a significant organizational demand that exacerbates stress and diminishes WRE. The study also reveals a negative relationship between SP and WRE, highlighting that stress not only harms employee health but also reduces organizational attractiveness. Addressing work-related stress is crucial for maintaining employee well-being and enhancing hospitals' ability to retain and attract staff, particularly in the current context of nursing and medical staff shortages. These findings have significant implications for human resources management in hospitals.

Keywords: stress perception, willingness to recommend an employer, healthcare organization, job demands-resources, organizational attractiveness, value congruence, time constraints

1. Introduction

Stress is a significant concern for global public and private organizations, impacting employees facing significant work pressure, work overload, and performance-driven managerial rules and procedures. Professions dealing with staff shortages and high turnover rates are particularly affected. Stress can hinder an organization's ability to recruit and retain staff, making it crucial to examine the causes of stress. Numerous studies have shown a clear connection between health issues, particularly job stress, and employees' intention to leave [1–3].

Given its impact on an organization's ability to attract and retain staff, it is crucial to examine the relationship between employees' stress perception (SP) and their intention to

leave. This study explores the connection between SP and willingness to recommend an employer (WRE), which serves as an indicator of employee loyalty [4]. Data were collected through a satisfaction survey at a significant public training hospital in Switzerland, an appropriate choice due to the sector's financial issues and high turnover, particularly among specialized staff such as nurses and medical personnel. Public hospitals face numerous challenges, making them valuable benchmarks for studying SP and WRE. Given the pressures on public hospitals, our findings could be relevant to other organizations facing future crises that might affect staff retention and attractiveness [5–7].

The originality of our work is multifaceted. First, we examined employee-perceived stress to understand its impact on employer attractiveness, specifically in hospitals. Second, this research utilizes an extensive sample of over 5500 respondents, which is quite rare in scientific studies. The survey encompassed all major hospital professions: administrative, nursing, medical, technical, etc., providing a comprehensive view of the relationship between perceived stress and the willingness to recommend an employer. Additionally, this study identifies factors influencing perceived stress and the propensity to recommend an employer while also investigating the mediating role of SP between independent variables and employer recommendation. This study addressed three primary questions:

Q1: Which work-related factors influence employee stress perception the most in a large Swiss public hospital?

Q2: What motivates or demotivates employees to recommend their employers to others?

Q3: Can stress perception mediate the relationship between work-related factors and the willingness to recommend an employer?

To answer these three questions, this chapter is structured as follows. First, we revisit the general theoretical framework guiding our study, namely the Job Demands-Resources Model. Second, we provide a thorough yet non-exhaustive literature review, highlighting the main antecedents of perceived stress and intention to leave the hospital sector. The literature review enabled us to define our research hypotheses. We explain the methodological aspects used to analyze the data. Finally, we present and discuss our main findings. We conclude by highlighting some of the limitations of this study and suggesting avenues for future research.

2. Theoretical framework

The Job Demands-Resources (JD-R) Model originated from research on work-related stress [8] and was initially aimed at explaining burnout in professions related to human services, such as nursing [9]. Research has shown that this model can explain work outcomes such as work engagement, organizational commitment, and job performance [8, 10].

Although each organization is unique, research on the JD-R model indicates that any private company, public hospital, or nonprofit association is characterized by working conditions that can be classified as either job demands or job resources [8]. Job demands “refer to those physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort or skills and are therefore associated with certain physiological and/or psychological costs” [11]. Among job demands, we find a high workload, high emotional demands, or difficulty balancing private and professional lives [10]. Job demands are associated with health impairment [12].

Job resources “refer to those physical, psychological, social, or organizational aspects of the job that are either/or (a) functional in achieving work goals; (b) reduce job demands and the associated physiological and psychological costs; (c) stimulate personal growth, learning, and development” [11]. Examples of job resources include job security, organizational support, and role clarity [10]. Thus, job resources are determinants of work motivation [12].

A central element of the JD-R model is that it considers the interactions between job demands and job resources, with the latter counterbalancing the adverse effects that the former may have on employee health [8]. For example, perceived organizational support or the degree of autonomy at work can help relieve employees facing high workloads or demanding clients. We believe that the JD-R model is particularly relevant in the context of this chapter, which analyzes data on stress in a Swiss public hospital. Indeed, hospitals are organizations where demands, such as workload and emotional work in contact with patients, are high, which can affect the health of employees. However, studies have shown that resources such as organizational support, task variety, and training can mitigate these demands [13, 14].

In the literature related to the JD-R model, several work-related factors have been considered as constraints that can affect employees' health. These include work overload, organizational constraints, emotional demands, conflicts between private and professional life, interpersonal conflicts, and relations with hierarchical superiors [15–17]. Turning now to the category of resources, we can mention the following variables, which have been the subject of numerous previous surveys: opportunities to use varied professional skills, supervisor support, colleague support, financial rewards, professional and career development opportunities, work-team cohesion, autonomy in work, and coaching [9, 11, 18]. In the remainder of this chapter, we have drawn heavily on previous research and incorporated several of these resource and constraint variables.

3. Literature review and research hypotheses

Our study, based on a 2022 satisfaction survey conducted at a large public university hospital with over 13,000 employees, included questions on dimensions deemed strategic by both researchers and hospital management. Here, we present the primary variables from our questionnaire and research model. We recognize the scientific choices and limitations of our work, noting that we could not exhaustively integrate numerous resource and constraint variables.

The dependent variables in our study, aligned with the objectives stated in the introduction, are respondents' perceived stress and intention to recommend their employer. These variables were selected, as they serve as valuable proxies for assessing employees' health levels and their perceptions of organizational attractiveness. The propensity to recommend an employer is a good measure of the desire to remain within the organization and the employer's attractiveness to its employees. These variables are crucial for addressing the study's questions. We selected six independent variables considering organizational functioning and specific employee tasks. Most are resources, except for the constraint variable, time constraints. These variables cover the main categories found in satisfaction or climate surveys within organizations: (1) training and professional development opportunities, (2) organizational support, (3) leadership and communication, (4) work hour flexibility, (5) time constraints, and (6) value congruence. We now present these independent variables, justify their inclusion in our study, and propose research hypotheses.

3.1 Opportunities for training and professional development

Organizations can utilize training and professional development to engage their employees. Learning new skills and career development are key drivers of employee engagement, helping mitigate boredom, reducing the feeling of having no career prospects, and easing professional tasks. These factors act as resources to manage stressful work situations. Studies in healthcare organizations have shown that training and professional development are essential for employee commitment [19, 20]. Human resource management research also identifies development of HR practices as vital to employee health [21]. Furthermore, training and development opportunities are significant sources of motivation for improving employee retention [22]. Conversely, a lack of professional development and promotion prospects can harm motivation, causing demotivation and workplace health issues [23]. Furthermore, training and professional development help reduce work-related stress by providing additional resources that enable employees to meet the demands of their job [24]. Finally, the absence of promotion opportunities negatively affects job satisfaction and can lead to employee disillusionment, which is detrimental to workplace health [25, 26]. Based on previous research, we propose two hypotheses.

H1a: Training and promotion are negatively related to stress perceptions.

H1b: Training and promotion are positively related to the willingness to recommend the employer.

3.2 Organizational support

Perceived organizational support [27–29] is a well-known concept among organizational behavior specialists. It is a dimension that has been the subject of numerous studies, demonstrating that organizational support is important for employee satisfaction, motivation, organizational commitment, and health [13, 30–32].

In addition, a number of studies carried out in hospitals have shown that perceived organizational support leads employees to recommend their organization to friends and family, in other words, to become advocates [33–35]. Based on the abundant empirical evidence, we propose two hypotheses related to this resource variable.

H2a: *Organizational support is negatively related to SP.*

H2b: *Organizational support is positively related to WRE.*

3.3 Leadership and communication

Leadership and organizational communication are crucial for studying employee behavior within an organization. Numerous studies have highlighted the significance of these variables in organizational efficiency [31, 36, 37]. While we will not delve into leadership “styles,” it is essential to note that supervisor-employee relationships significantly impact job satisfaction and occupational health [38, 39]. Certain leadership forms, such as servant leadership [40] and transformational leadership [41, 42], are particularly effective in fostering positive employee behavior. Leadership has also been examined in healthcare contexts [43, 44] and has been identified as a resource that positively influences employee behavior and health [45, 46]. Leader-member exchange (LMX) and team member exchange (TMX) are vital organizational elements. LMX refers to leader-subordinate interactions, where high-quality relationships, characterized by support, honesty, and exchange, motivate subordinates toward positive organizational behaviors [47]. TMX focuses on the quality of

reciprocity among team members, where strong relationships promote positive professional conduct [47]. Thus, high levels of LMX and TMX are expected to enhance job satisfaction, mitigate job stress, and foster positive professional attitudes, leading to favorable perceptions of the employer. These arguments and empirical evidence support these two hypotheses.

H3a: Leadership and communication are negatively related to SP.

H3b: Leadership and communication are positively related to WRE.

3.4 Work schedule flexibility

Since the 1970s, experts in organizational behavior have recognized that workplace autonomy is crucial for motivation and job satisfaction [48]. Therefore, it is vital to engage employees. The freedom employees have in scheduling activities, determining how tasks are performed, and arranging working hours fosters satisfaction and health [49, 50]. Autonomy significantly affects job satisfaction and turnover intentions among nurses [51, 52]. Studies indicate that long workdays with inflexible schedules harm employees' health and may cause burnout. Extensive literature on work-life balance highlights employees' growing desire to avoid sacrificing personal lives for work. Work-life balance significantly impacts job stress, burnout, and turnover among healthcare professionals. Hämmig [53] found that work-life imbalance strongly predicts burnout and thoughts of leaving the profession among health workers. Mosadeghrad [25] noted that quality of work life (QWL), including work-life balance, inversely relates to turn over intention. Enhancing QWL, which includes better work-life balance, can boost job satisfaction and reduce turnover among hospital staff. Based on this evidence, we propose two hypotheses.

H4a: Work schedule flexibility is negatively related to SP.

H4b: Work schedule flexibility is positively related to WRE.

3.5 Time constraints

This variable is the only one in our research model that is classified as demand. Time constraints in professional tasks are potentially stressful and not conducive to quality work, leading employees to deplete their physical and mental resources and potentially causing professional malaise. Several studies on healthcare organizations have indicated that work overload and restrictive hours are significant issues [53, 54]. Specifically, time pressure and workload are strongly associated with stress among care professionals [55]. Additionally, these factors can negatively impact professionals' commitment and increase their desire to leave the organization [56]. Based on this empirical evidence, we propose the following two hypotheses.

H5a: Time constraints are positively related to SP.

H5b: Time constraints are negatively related to the WRE.

3.6 Value congruence

Person-organization fit (P-O fit) refers to the compatibility between an individual and an organization [57–59], occurring when at least one entity meets the other's needs or shares fundamental characteristics. Studies emphasize the role of P-O fit in job satisfaction, organizational commitment, and turnover intention among healthcare professionals. Mosadeghrad [25] found that employees' quality of work life (QWL), including management support, job security, and job stress, correlates with

job satisfaction and organizational commitment, suggesting that QWL might foster P-O fit. Since the early 2000s, numerous studies have demonstrated the significance of work motivation. In particular, the Public Service Motivation literature [60–63] highlights that individuals with public service values aligned with their organization’s values experience higher satisfaction, motivation, and commitment. Research with healthcare executives indicates that person-job fit and person-vocation fit reduce stress, stressing the importance of value alignment between employees and their organizations [64]. These considerations lead to the following two hypotheses:

H6a: Value congruence is negatively related to SP.

H6b: Value congruence is positively related to WRE.

3.7 Stress: a variable through which independent variables affect WRE

Finally, we construct two new hypotheses linking SP and WRE. If we are to believe in the numerous research studies cited in this chapter, the degree of stress perceived by employees will influence their intention to leave their organization and, in so doing, their willingness or unwillingness to recommend their employer. Therefore, employee attractiveness depends, at least in part, on the state of health in which employees find themselves. It is also highly likely that the six independent variables we described can be indirectly influenced by employees’ stress levels, particularly when it comes to their willingness or unwillingness to recommend their employer. In other words, it seems reasonable and scientifically sound to believe that SP mediates the relationship between our independent variables and WRE (Figure 1). These arguments lead to two hypotheses:

H7a: SP is negatively correlated with WRE.

H7b: SP mediates the relationship between the independent variables and WRE.

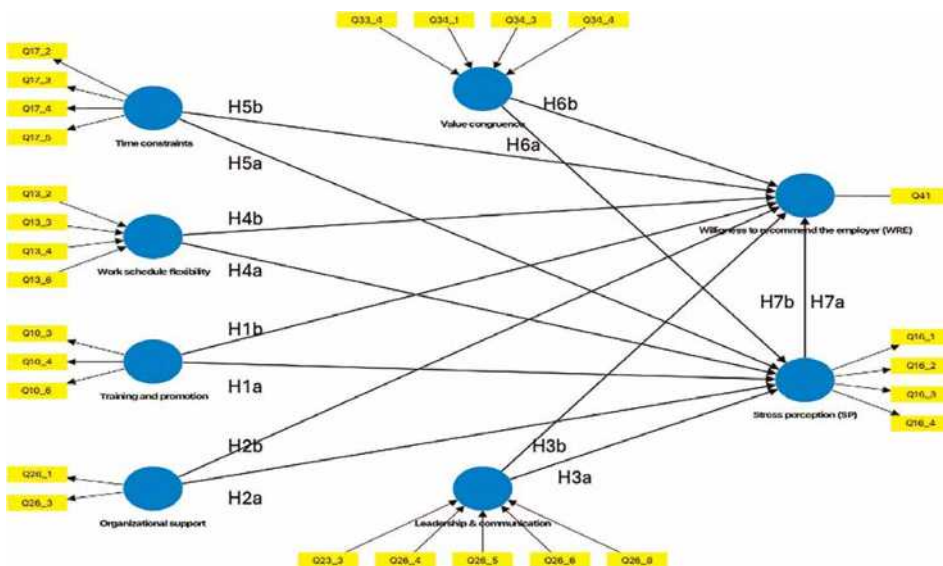


Figure 1. Research model and hypotheses.

4. Methods

4.1 Context of the research and sample

We tested our hypotheses through a questionnaire survey conducted at a major Swiss hospital that remained unnamed for confidentiality. This public university hospital offers both general and advanced services, and aims to train future doctors. The survey, conducted from June 20 to September 5, 2022, involved an anonymous online questionnaire distributed *via* the Qualtrics platform to all hospital staff with FORS (the Swiss center of expertise in the social sciences) ensuring data confidentiality and respondent anonymity. Reminder emails were sent to respondents on the following dates: July 7, 2022, August 3, 2022, and a final reminder on August 23, 2022. Out of 13,436 contacted individuals, 6844 completed the online questionnaire and 99 completed the paper version. The survey had a 51.7% return rate, with 5443 online and 92 paper responses usable, yielding an overall response rate of 41.2%, which is notably high.

The details of the respondents, compared to the overall population of 5535, are as follows (**Table 1**).

Organizational behavior research often encounters methodological biases, particularly with self-administered questionnaires [65], which can threaten the validity of the

	Survey sample		Actual figures provided by the studied hospital
	Number	%	%
Type			
Women	3638	66%	68%
Men	1815	33%	32%
Non-binary	56	1%	NA
Total (missing)	5509 (26)	100%	100%
Age			
Under 20	10	0%	0%
20 to 29 years	495	9%	11%
Age 30 to 39	1379	25%	28%
40 to 49 years	1674	30%	26%
50 to 59 years	1577	29%	27%
60 and over	372	7%	8%
Total (missing)	5507 (28)	100%	100%
Training			
Compulsory school	268	5%	
Federal Certificate of Competence (CFC)	889	16%	
Federal diploma	578	11%	
Bachelor's degree from a University of Applied Sciences (HES)	1174	22%	

	Survey sample		Actual figures provided by the studied hospital
	Number	%	%
Master's degree from a University of Applied Sciences (HES)	144	3%	
University bachelor's degree (half-bachelor's degree)	138	2%	
Master's degree	578	11%	
Post-graduate diploma (CAS, MAS, etc.)	968	18%	
PhD	677	12%	
Total (missing)	5414 (121)	100%	
Seniority			
Less than 1 year	280	5%	4%
From 1 to less than 3 years	701	13%	18%
From 3 to less than 5 years	583	11%	12%
From 5 to less than 10 years	1023	18%	20%
Over 10 years	2923	53%	46%
Total (missing)	5510 (25)	100%	100%

Table 1.
Sample characteristics.

findings [65, 66]. To mitigate these biases, an effective questionnaire design, clear data collection strategies, and post-hoc data analysis are essential. We ensured respondent anonymity [66], provided a study description, emphasized scientific ethics, encouraged participants to respond freely, and assured them of confidentiality. Although PLS-SEM does not rely on distributional assumptions [67], we performed post-hoc tests such as skewness and kurtosis to ensure normality. Additionally, our measurement and structural models were tested to meet PLS-SEM standards for human resource management [67].

5. Measures

Table 2 (see Appendix) lists all the variables and items in our research model, comprising two dependent and six independent variables. The questionnaire items were measured using a five-point Likert scale ranging from 1 (strongly disagree, very dissatisfied) to 5 (strongly agree, very satisfied).

6. Dependent variables

Stress perception (SP) was measured using a four-item scale inspired by the work tension scale [68]. Participants rated their agreement with statements on occupational health. The variable was constructed using these four items ($\alpha = 0.894$).

Willingness to recommend an employer (WRE) was assessed with a single-item question: "Would you recommend your organization as an employer?" Responses were recorded on a five-point Likert scale from (1) no to (5) yes.

7. Independent variables

Several independent variables were formative constructs; therefore, we did not report Cronbach's alpha for these variables. For the reflective variables, we reported Cronbach's alpha.

Training and promotion. Professional growth was critical for the respondents. This variable was measured using three items related to training and promotion opportunities. Respondents rated their satisfaction with individual and group coaching, time for training, and career development prospects on a scale from (1) very dissatisfied to (5) very satisfied ($\alpha = 0.814$).

Organizational support. Respondents' perceptions of organizational support were assessed using two items measuring satisfaction with the quality of support and recognition of hospital management ($\alpha = 0.892$).

Leadership and communication. This study measured respondents' perceptions of organizational governance by focusing on information flow and supervision quality. Two items evaluated internal communication and three items assessed supervision quality.

Work schedule flexibility. Given the significance of time in the health sector, time flexibility was measured using four items. Respondents rated their satisfaction with various work-hour management proposals on a five-point Likert scale from (1) very dissatisfied to (5) very satisfied.

Time constraints. To measure perceptions of time constraints, the respondents indicated the extent to which various factors caused workplace stress. Four items were used to gauge these variables ($\alpha = 0.813$).

Value congruence. We used a mixed strategy to assess the alignment with unit/team values. Two questions addressed identification with unit or team objectives and values. Four items evaluated whether respondents felt that they could embody their organization's values in their work, constituting the organizational value variable.

8. Statistical procedures

To test our hypotheses, we employed SmartPLS 4 for partial least squares structural equation modeling (PLS-SEM). PLS-SEM is ideal for evaluating models with numerous variables including formative constructs. We validated our reflective and formative constructs using confirmatory tetrad analyses with 10,000 subsamples, a two-tailed test at a 0.10 significance level, and a fixed-seed random number generator. The results indicate that several variables are better specified as formative (leadership and communication, value congruence, and time schedule flexibility), whereas others are better specified as reflective (SP, time constraints, training and promotion, and organizational support).

Given our research model's characteristics, PLS-SEM is recommended for hypothesis testing [67, 69]. Owing to the reflective and formative nature of our latent variables, we followed the recommended procedures for evaluating our measurement model [69, 70]. We ran the PLS-SEM algorithm, controlling for the variance inflation factor (VIF) values of all formative items, which were all below the threshold of 5 (see

Table 3 for collinearity statistics, outer model), indicating no collinearity issues. Bootstrapping with 10,000 subsamples at the 5% significance level using the percentile method verified the statistical significance of the item weights, all of which were significant, confirming the relevance and significance of the indicators in our PLS-SEM model. Additionally, we checked item loadings, all exceeding the 0.7 threshold and were significant.

We evaluated the structural model using the recommended steps. First, the PLS-SEM algorithm was applied to check collinearity, with variance inflation factor (VIF) values below three, indicating no collinearity issues (**Table 4**, inner model). Bootstrapping (5% significance level, percentile method) was used to assess the path coefficients between variables in the PLS-SEM model, with most relationships being statistically significant ($p < 0.05$). The independent variables explained substantial variance in SP (45.1%; R-square = 0.451) and WRE (47.3%; R-square = 0.473). We controlled for effect sizes (f-square), finding the weak ($0.02 \leq f\text{-square} < 0.15$), with one moderate ($0.15 \leq f\text{-square} < 0.35$). These results suggest that our SEM model is robust but could benefit from additional variables to explain more variance in SP and WRE.

We aimed to assess the predictive capacity of the PLS-SEM model [71, 72] using the PLSpredict/CVPAT command in SmartPLS 4 software. We also examined statistical differences within our sample to detect heterogeneity by performing measurement invariance of the composite model (MICOM) analysis [73] to confirm model invariance. Our analysis showed partial invariance, enabling multi-group analysis. This analysis revealed a few significant differences in variable relationships based on respondents' positions or gender through permutation multi-group analyses.

PLS-SEM models were not designed for developing goodness-of-fit indices, but we derived two significant ones: SRMR and NFI, indicating a good fit. The SRMR was 0.039, below the threshold of 0.05, and the NFI was 0.906, above the 0.9 threshold, confirming a good model-data fit. For missing data exceeding 5%, we used case-wise deletion, as recommended [70].

9. Results

9.1 Main antecedents of SP and WRE

Using bootstrapping, we updated the correlation coefficients between independent and dependent variables in the model (**Table 5**). All but one independent variable was significantly correlated with SP at the 0.05% level. Five of the six independent variables were significantly correlated with SP in the expected direction under our hypotheses. Training and promotion ($\beta = -0.038$; $p < 0.029$), leadership and communication ($\beta = -0.130$; $p < 0.000$), work schedule flexibility ($\beta = -0.058$; $p < 0.001$), time constraints ($\beta = 0.485$; $p < 0.000$), and value congruence ($\beta = -0.137$; $p < 0.000$) were significantly related to SP, thus supporting H1a, H3a, H4a, H5a, and H6a. Organizational support was negatively correlated with SP, but this correlation was not statistically significant ($\beta = -0.030$; $p < 0.128$); thus, H2a was not supported. The independent variables in our model explain 45.1% of the SP variance, a noteworthy result in the social sciences. Additionally, SP was negatively and significantly associated with WRE ($\beta = -0.096$; $p < 0.000$), indicating a deleterious effect of job strain on WRE, thus supporting H7a.

Examining the antecedents of WRE, all the independent variables showed significant statistical associations with this dependent variable. Training and promotion ($\beta = 0.039$;

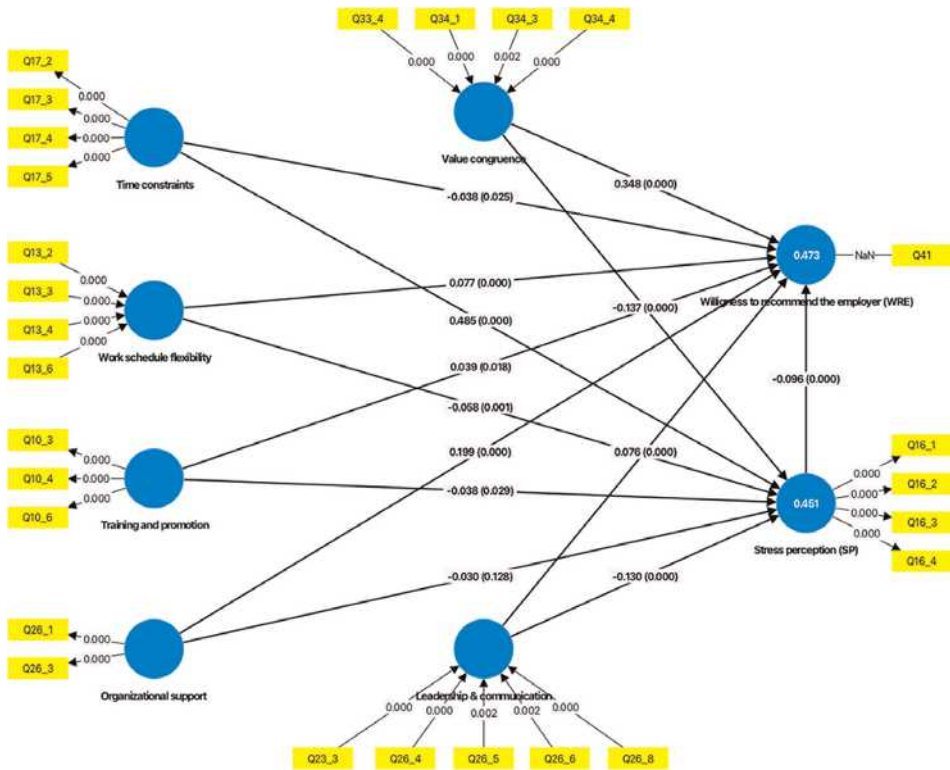


Figure 2.
 Relationships between variables.

$p < 0.018$), organizational support ($\beta = 0.199$; $p < 0.000$), leadership and communication ($\beta = 0.076$; $p < 0.000$), time schedule flexibility ($\beta = 0.077$; $p < 0.000$), time constraints ($\beta = -0.038$; $p < 0.025$), and value congruence ($\beta = 0.348$; $p < 0.000$) were crucial in explaining WRE in our study. These findings support Hypotheses H1b, H2b, H3b, H4b, H5b, and H6b. The independent variables in our model accounted for 47.3% of the variance in WRE. Value congruence and organizational support exhibited the strongest correlations with WRE, highlighting their importance (Figure 2).

9.2 Mediation analysis

Our PLS-SEM model revealed a partial mediation effect of SP (see Table 6), which supports H7b. The relationships between our independent variables and WRE exhibited significant statistical effects when SP was introduced as the mediator. Specifically, training and promotion ($\beta = 0.004$; $p < 0.042$), organizational support ($\beta = 0.003$; $p < 0.149$), leadership and communication ($\beta = 0.012$; $p < 0.000$), time schedule flexibility ($\beta = 0.006$; $p < 0.005$), and value congruence ($\beta = 0.013$; $p < 0.000$) showed decreased positive and statistically significant relationships with WRE when mediated by SP. Conversely, the negative relationship between time constraints and WRE intensifies with SP as a mediator ($\beta = -0.047$; $p < 0.000$), which aligns with our hypotheses. These are complementary and partial mediations, respectively. Additionally, the relationship between organizational support and WRE becomes statistically insignificant

with SP as a mediator, underscoring that high employee stress negatively impacts organizational attractiveness, as employees are less likely to recommend their employers when facing occupational health issues.

9.3 Predictive relevance of the PLS-path model

We executed the PLSpredict/CVPAT with tenfolds, ten repetitions, and fixed seeds. This procedure revealed that the q-square values for our latent variables were high (q-square > 0.44), indicating strong predictive power for the WRE and SP variables (Table 5). Additionally, the negative and statistically significant average loss differences (CVPAT-PLS-SEM vs. indicator average) showed that PLS-SEM outperformed the indicator average benchmark for our dependent variables (WRE and SP) and the overall model. Thus, our PLS-SEM model demonstrated a significantly better predictive power than the average indicator benchmark (see Table 7). These findings suggest that our model has moderate-to-strong predictive power.

9.4 Multi-group analyses

In our multi-group analyses, we found some interesting differences in the sociodemographic characteristics of our respondents. For example, the relationship between leadership and communication and WRE is stronger for women than for men (difference women-men: $\beta = 0.123$; $p < 0.005$), suggesting that women attach more importance to this dimension, particularly in relation to their willingness to recommend their employer, than do men. Another statistically significant and interesting result is that the association between training and promotion is much stronger for men than for women in our sample (difference women-men: $\beta = -0.078$; $p < 0.025$). In other words, men attach more importance to this work-related factor than women, particularly in terms of their propensity to recommend their employer.

Given that we were dealing with different professions and functions in our sample, we also carried out a multi-group analysis to identify whether any significant differences could be highlighted in relation to the categories of employees who responded to our questionnaire. In this respect, we can say that very few statistically significant differences between staff categories can be identified. Our multi-group bootstrap analyses show some notable differences between the staff categories of the hospital studied. For example, SP among medical-technical staff has a greater negative impact on WRE than for the population of administrative and technical staff. The association between leadership and communication and WRE is statistically significantly greater for medical-therapeutic staff than for administrative and technical staff. The relationship between organizational support and SP is statistically more significant among medical-technical staff than among nursing staff. Similarly, the leadership and communication dimension is statistically stronger among medical-therapeutic staff than among nursing staff. The relationship between time constraints and WRE is stronger for medical staff than for nursing staff. Indeed, in this study medical staff complain more about this dimension than nursing staff. The relationship between leadership and communication and SP is stronger among nursing staff than among medical staff, indicating that this variable is more fundamental for nurses than for the hospital's medical staff. Here are a few statistically significant differences that may be of interest, and which underline the fact that SP and WRE are also dependent on the positions held within the hospital. A more detailed analysis, by functions, could also add some nuance to the thinking behind this article.

10. Discussion

All of our independent variables correlate with willingness to recommend the employer (WRE). Five factors positively influence organizational attractiveness to employees, while the sixth, time constraints, negatively impacts WRE. This finding confirms that tight deadlines, overtime, excessive workload, and work-life balance challenges reduce an organization's attractiveness [74–77]. Additionally, alignment with institutional values, such as enthusiasm, creativity, interpersonal trust, team spirit, and skill recognition, enhances organizational attractiveness. This dimension significantly affected WRE in this study, demonstrating that P-O fit is crucial for organizational attractiveness and job stress management [57, 64, 75].

Support and recognition from hospital management are crucial, highlighting the need for leadership to understand employee realities [38, 41, 78, 79]. Additionally, flexibility in working hours and overtime management are essential for WRE, emphasizing its importance in the hospital setting [52, 80, 81].

All but one of our independent variables (organizational support) were associated with SP. Four factors—value congruence, leadership and communication, work schedule flexibility, and training and promotion—served as resources against stress for respondents. Time constraints were strongly and positively correlated with SP, highlighting their central role. Organizational support, defined as the quality of support and recognition from hospital management, was not significantly linked to SP, indicating that it was not a stress-coping resource in this context. Members of the Executive Board detached from employees' realities fail to protect against stress; instead, direct recognition and supervision are crucial. Our results underline the fact that line managers, who are close to employees and the field, are essential in limiting the effects of stress on employees. This is because it is these field supervisors who supervise, set standards, support employees and understand the difficulties of real-life work. Our findings point out other important resources, such as opportunities to live organizational values (person-organization fit regarding work values), as well as benefiting from flexible working hours. Finally, training, and career development are also important resources in the present study [81–83].

In our study, SP was negatively and significantly associated with WRE, confirming that higher stress levels among employees reduce their likelihood of recommending their employer. This aligns with previous research showing that stress promotes turnover and the intention to leave [53, 82]. Our findings clearly indicate that stress diminishes the attractiveness of an organization. Thus, addressing workplace stress is essential not only for employee health but also for staff retention and enhancing organizational appeal.

Our study confirmed the harmful impact of SP on WRE through its partial and complementary mediating role between our independent variables and WRE. Specifically, SP reduced the positive influence of four variables (training and promotion, leadership and communication, work schedule flexibility, and value congruence) that typically mitigate stress. Conversely, SP amplifies the negative effect of time constraints on WRE. Additionally, SP does not mediate the relationship between organizational support and WRE because organizational support is not significantly associated with SP. These findings underscore the urgent need to address employee stress in hospitals, not only for employee health, which is vital for human resource management, but also for hospitals' ability to retain and attract staff.

10.1 Limitations and future research avenues

This quantitative research study has some limitations. First, it employed a one-time cross-sectional questionnaire, which did not allow for causal inferences between the variables. Thus, we discuss only the relationships, correlations, and associations among the variables. Future research could adopt a longitudinal approach by repeating the questionnaire. Second, the study used a self-report survey for both predictor and outcome variables, potentially leading to a common method bias [65]. To mitigate this, we conducted a full collinearity assessment, as recommended by Kock [83] and found no evidence of common method bias. Additionally, a common method bias test using a random dependent variable was performed, which showed VIF values below the threshold of 3.3, indicating the absence of common method bias. Lastly, while our model includes several significant variables influencing SP and WRE, other factors, such as human resource management, job characteristics, and psychological factors, could have been included. Therefore, although our model explained a considerable portion of the variance in SP and WRE, future research should incorporate additional variables to better understand the antecedents of SP and WRE in public academic hospitals.

11. Conclusion

Our study aimed to explore the antecedents of SP and WRE through a questionnaire survey at a large Swiss university hospital with over 13,000 employees. Grounded in the job demands-resources model and a literature review of stress and turnover intention in healthcare, we examined the impact of six variables on SP and WRE: training and promotion, organizational support, leadership and communication, work schedule flexibility, time constraints, and value congruence. Using PLS-SEM, we identify several explanatory factors for SP and WRE. Time constraints, categorized as work-related demands, significantly influenced stress and negatively affected WRE. Resources such as value congruence, leadership and communication, time flexibility, and training and promotion opportunities mitigated the effects of stress and positively influenced WRE. Organizational support improved WRE, but was not significantly linked to SP. The key findings suggest that identifying resources to limit stress and enhance hospital attractiveness is feasible. SP adversely affects WRE, undermining efforts to reduce turnover and attracting or retaining employees. Therefore, HR policies addressing occupational stress benefit employees' health and are strategic for hospital attractiveness and sustainability.

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Conflict of interest

The authors declare no conflicts of interest.

A. Appendixes

Variables	Type of measure	Question and measurement scale	Items
Stress perception (SP)	Reflective	Please indicate your level of agreement with the following proposals, which refer to health at work. Five-point Likert scale (1 = strongly disagree to 5 = strongly agree)	You have the impression that your work tends to affect your health You feel under a lot of pressure at work Your work makes you nervous and/or agitated You feel exhausted by your work
Willingness to recommend the employer (WRE)		Five-point Likert scale (1 = no to 5 = yes)	Would you recommend your hospital as an employer?
Training and promotion	Reflective	Please indicate your level of satisfaction with the following proposals, which refer to your prospects for career and professional development. Five-point Likert scale (1 = very dissatisfied to 5 = very satisfied)	Coaching and individual or group supervision Time available for training The career development prospects offered
Organizational support	Reflective	Please indicate your level of satisfaction with the following proposals, which refer to the hospital management. Five-point Likert scale (1 = very dissatisfied to 5 = very satisfied)	The quality of support from hospital management Recognition from hospital management
Leadership and communication	Formative	Please indicate your level of satisfaction with the following proposals, which refer to line management. Five-point Likert scale (1 = very dissatisfied to 5 = very satisfied)	The opportunity for you to pass on information to your superiors Recognition from your line manager The quality of the supervision you receive The quality and regularity of professional appraisals The quality of the decisions taken by the management of your unit
Work schedule flexibility	Formative	Please indicate your level of satisfaction with the following proposals relating to the management of working hours. Five-point Likert scale (1 = very dissatisfied to 5 = very satisfied)	Flexibility in the daily and weekly management of your working hours Fairness in timetable planning Management of overtime The possibility of taking your statutory breaks
Time constraints	Reflective	To what extent do the following factors cause you problems at work? Five-point Likert scale (1 = No, not at all to 5 = yes, very much)	Deadlines too tight to get the job done Overtime Long working hours Work-life balance

Variables	Type of measure	Question and measurement scale	Items
Value congruence	Formative	Of the following values promoted by the HUG, do you feel you can live them in your work? Five-point Likert scale (1 = No to 5 = yes)	The hospital wants to promote enthusiasm and creativity. They encourage their teams to be responsible and to meet the challenges of the future in a spirit of solidarity. The hospital emphasizes trust. Trust is built on the relationship between professionals and patients. Hospital staff value team spirit. They make room for others, whether patients or colleagues. The hospital recognizes and values, the skills, and work of each individual on a daily basis

Table 2.
Variables and items included in our research model.

	VIF
Q10_3	1.856
Q10_4	1.797
Q10_6	1.740
Q13_2	2.320
Q13_3	2.142
Q13_4	1.788
Q13_6	1.638
Q16_1	2.062
Q16_2	2.597
Q16_3	2.711
Q16_4	2.616
Q17_2	1.425
Q17_3	2.118
Q17_4	2.141
Q17_5	1.583
Q23_3	1.796
Q26_1	2.849
Q26_3	2.849
Q26_4	2.332
Q26_5	2.865
Q26_6	2.058
Q26_8	2.322

	VIF
Q33_4	2.116
Q34_1	1.877
Q34_3	2.053
Q34_4	2.092
Q41	1.000

Table 3.
Collinearity statistics (VIF)—outer model.

	VIF
Leadership & communication - > Perceived stress	2.232
Leadership & communication - > Recommendation	2.263
Organizational support - > Perceived stress	1.990
Organizational support - > Recommendation	1.991
Organizational values - > Perceived stress	2.137
Organizational values - > Recommendation	2.171
Perceived stress - > Recommendation	1.822
Time constraints - > Perceived stress	1.348
Time constraints - > Recommendation	1.778
Time flexibility - > Perceived stress	1.703
Time flexibility - > Recommendation	1.709
Training and promotion - > Perceived stress	1.688
Training and promotion - > Recommendation	1.690

Table 4.
Collinearity statistics (VIF)—inner model.

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Leadership & communication - > Perceived stress	-0.130	-0.130	0.021	6.191	0.000
Leadership & communication - > Recommendation	0.076	0.077	0.021	3.585	0.000
Organizational support - > Perceived stress	-0.030	-0.029	0.019	1.521	0.128
Organizational support - > Recommendation	0.199	0.198	0.020	10.189	0.000
Organizational values - > Perceived stress	-0.137	-0.137	0.021	6.620	0.000
Organizational values - > Recommendation	0.348	0.348	0.021	16.776	0.000
Perceived stress - > Recommendation	-0.096	-0.095	0.017	5.621	0.000

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Time constraints -> Perceived stress	0.485	0.485	0.015	31.422	0.000
Time constraints -> Recommendation	-0.038	-0.038	0.017	2.248	0.025
Time flexibility -> Perceived stress	-0.058	-0.059	0.018	3.326	0.001
Time flexibility -> Recommendation	0.077	0.078	0.018	4.352	0.000
Training and promotion -> Perceived stress	-0.038	-0.038	0.017	2.189	0.029
Training and promotion -> Recommendation	0.039	0.039	0.016	2.375	0.018

Table 5.
Path coefficients—Mean, STDEV, T values, p values.

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Leadership & communication -> Perceived stress -> Recommendation	0.012	0.012	0.003	4.160	0.000
Organizational support -> Perceived stress -> Recommendation	0.003	0.003	0.002	1.443	0.149
Organizational values -> Perceived stress -> Recommendation	0.013	0.013	0.003	4.280	0.000
Time constraints -> Perceived stress -> Recommendation	-0.047	-0.046	0.008	5.554	0.000
Time flexibility -> Perceived stress -> Recommendation	0.006	0.006	0.002	2.831	0.005
Training and promotion -> Perceived stress -> Recommendation	0.004	0.004	0.002	2.034	0.042

Table 6.
Specific indirect effects—Mean, STDEV, T values, p values.

	PLS loss	IA loss	Average loss difference	t value	p value
Perceived stress	0.966	1.463	-0.497	23.590	0.000
Recommendation	0.565	1.056	-0.491	22.217	0.000
Overall	0.886	1.381	-0.496	27.365	0.000

Table 7.
CVPAT LV summary—PLS-SEM vs. Indicator average (IA).

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Causes and Consequences of Stress at the Workplace of Nursing Employees in Slovenian Hospitals

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Abstract

Nursing employees often encounter various stressors during their professional activities, which reduce their work efficiency and can affect their mental health. The aim of this study was to investigate the correlation between job stress and the quality of workplace. The study found that, on average, nurses feel constant pressure ($M = 1.33$, $SD = 0.77$), that they have psychological problems due to work ($M = 0.73$, $SD = 0.62$), which are most closely related to information support, electronic rather than paper documentation ($r = 0.347^{***}$, $p < 0.001$). The strongest correlation was between poor work organization and intention to quit the job ($r = -0.378^{***}$, $p < 0.001$). The results show that psychological problems are significantly associated with lack of support ($\beta = 0.138$, $p = 0.006$). Factors that significantly affect the occurrence of stress among nursing employees are the organization of work, and the competences and skills of health management for working with nursing employees. The chapter addresses why it is important that nursing management and policymakers develop strategies to ensure adequate numbers of competent staff and establish a supportive management system.

Keywords: overload, mental health, job stress, education, patient, work life

1. Introduction

Workplace stress [1] is a specific form of stress that is related to the work environment and working conditions. It can be caused by various factors such as:

- High Work demands, overload, tight deadlines, and high expectations.
- Lack of control over one's work tasks, and/or autonomy.
- Poor relationships and/or lack of support received from colleague or superiors.
- Poor Work and life that results in difficulties in reconciling the expectations of professional and private life.

- Poor work environment and/or physical conditions that contain constant noise, inadequate lighting, and unsafe conditions.

Although “workplace stress” and “general/everyday stress” are closely related concepts, there are important differences between them that are worth pointing out. On one hand, general stress encompasses workplace stress and includes various sources of stress from an individual’s life and can cause a variety of physical, emotional, and behavioral symptoms such as headaches, anxiety, and irritability [2]. Physical effects may also include sweating, back or chest pain [3], spasms or muscle spasms, erectile dysfunction and loss of libido, dizziness, headache, heart disease, high blood pressure, lower resistance to disease, muscle pain [3], tingling, sleep problems, stomach problems. All this results in psychological discomfort [4–6].

On the other hand, workplace stress is specifically related to the working conditions and environment and, in addition to general symptoms, can also be manifested in reduced work efficiency, increased sick leave, and dissatisfaction with work.

Nurses have warned that a failure to adequately address stress can result in general and mental health [1] problems such as depression, anxiety, burnout, and reduced patient care quality [7]. Management must identify/address stressors and take related measures with stressors that nursing staff often associate with work organization, such as inclusive/just leadership, work control, night work, adequate job resources and, work experience, job strain, understaffing, job insecurity, major occupational concerns, and needle sticks and injuries with sharp objects [8].

2. Causes, consequences of stress at the workplace of nursing employees

Workplace stress negatively affects nurses’ health-related quality of life. It can also affect medical care, which affects the outcome of patient treatment [8]. Almost a decade ago, nursing staff and nursing associations warned that employment in nursing is stressful, related to complex work requirements and needs, and high expectations, excessive responsibility and minimal authority are defined as the main factors of stress. The result of stress is mental fatigue and also physical consequences, which increase absenteeism among nursing employees by 80% [9].

There is a statistically significant and negative association between total job stress scores and quality of life. Workplace stress can predict one-third of the changes in nursing employees’ quality of life scores and one-fifth of the changes in the overall caring behavior score [8].

The aim of this study was to investigate the correlation between job stress and quality of life and care behaviors in nurses.

3. Methods

We used quantitative research, and the research method was descriptive and causal-non-experimental design. Data collection was carried out with the help of a survey questionnaire. For sampling, we used the cross-sectional/transversal sampling method, as we wanted to clarify the existing situation or look for the causes of the existing situation.

In order to determine the potential causes of stress, we used the measurement instrument “Potential stressor for health care workers” [10], which consists of 56 items,

and for each item, the respondents assessed the extent to which each given situation represented stress at the workplace according to a 5-point Likert scale (1 – not stressful, 2 – rarely stressful, 3 – occasionally stressful, 4 – stressful and 5 – extremely stressful).

To determine the consequences of stress, we used the General Health Questionnaire 12 (GHQ) questionnaire on a four-point scale [11]. Until confirmation, the respondents defined themselves on a 4-point Likert scale, where they evaluated their general well-being (0 – more than usual, 1 – the same as usual, 2 – worse than usual, 3 – much worse than usual). The reliability of the measuring instrument is satisfactory, as the value of Cronbach's alpha coefficient is 0.874.

The third set also contained questions (48 questions attached in the Appendix) regarding the consequences of stress at work and was adapted from the Impact of Event Scale – Revise (IES-R) [12]. The IES-R contains 22 statements on a 5-point scale. The claim includes symptoms such as anger and irritability, problems with concentration, alertness, and experiencing events. Other questions were added after the literature review [13–15] and obtained six variables (Desire to stop performing the current job we formulated the following statement “I would leave the hospital if I could” and “If I could, I would change jobs”; Incorrect attitude toward others we formulated the following statement Incorrectness in relation to others and closest colleagues, relatives and patients; Physical symptoms we designed based on responses to feelings of heartbreak, nausea, dreams about stressful situations, insomnia. Already known diseases, unhealthy lifestyle we designed based on answers about unhealthy vices. Reduced motivation for work, we designed based on answers about well-being, motivation, satisfaction, etc.. Cognitive/psychological symptoms were designed based on answers about helplessness, concentration, anger, feelings of distress, etc. Respondents defined the statements on a 5-point Likert scale (1 – always, 2 – often, 3 – rarely, 4 – almost never, 5 – never). The measuring instrument is reliable, as the value of the Cronbach α coefficient of internal consistency is 0.87.

Data were analyzed using statistical software SPSS 23. Statistical significance was set at the $p < 0.05$ level.

3.1 Sample

In research involved 21 of 26 Slovenian public hospital. The questionnaire was completed by 983 respondents.

The research was conducted on the observed population, which was those units of the target population that were in the work process at the time of the research. The criterion was completion of at least secondary school education ($N = 8787$). A total of 1802 (20.5%) questionnaires were distributed, and the response rate was 55% ($n = 983$). The sample represents 11.18% of nurses in 21 Slovenian hospitals. Sampling was random, and we are talking about probability samples, a simple random sample in which all units in the population have the same probability of being selected for the sample.

Before conducting the research, we obtained written consent from the participating hospitals. With a written request, we forwarded the request for participation in the research to the assistants of the director for the field of nursing or to the committees designated for this purpose in the institute. After receiving approval for participation, we followed the institute's instructions on distributing and collecting questionnaires. A research coordinator was appointed for the course of the research in the institutes. 11.7% ($n = 115$) men and 88.3% ($n = 868$) women participated in the study. The respondents were, on average, 39.94 ($SD = 10.18$) years old, their working years were, on average, 18.53 ($SD = 11.31$) years, and they have been employed in the

institution for 16.81 years (SD = 11.43). According to the level of education in nursing, 461 (46.9%) respondents participated in the survey with secondary education, 438 (44.6%) with university education, 54 (5.5%) with university education outside of nursing, 28 (2.8%) with Master’s/Ph.D. and 2 (0.2%) indicated other.

4. Results

From the factor analysis, it can be seen that, on average, most of the respondents believe that stress among nursing employees is the result of poor work organization (M = 3.51, SD = 0.83), where the highest value defines overload (M = 4, 0, SD = 0.90) and the least that these are hazards at work (M = 2.75, SD = 1.00), where the highest value defines the fear of the possibility of infection (M = 3.04, SD = 1,14) (**Table 1**).

Using the factor analysis of the individual statements from the questionnaire consequences of stress at the workplace, we obtained six factors, presented in **Table 2**. Among the factors of the consequences of stress at the workplace, the largest arithmetic mean is incorrect attitude toward others (M = 4.42, SD = 0.75), where the most frequently assessed variable is incorrect attitude toward patients (M = 4.50,

Variable	M	SD	min	max
Hazards at work	2.75	0.96	1	5
Conflicts and communication in the workplace	2.9	1.07	1	5
Lack of support	3.08	0.96	1	5
Shift work	3.2	1.12	1	5
Criticism from patients and relatives due to inadequate information	3.29	0.92	1	5
Professional and intellectual requirements	2.96	0.94	1	5
Information system	3.15	1.03	1	5
Problems due to work equipment and infrastructure	3.08	0.89	1	5
Poor work organization	3.51	0.83	1	5

M – arithmetic mean; SD – standard deviation.

Table 1.
Descriptive statistics of individual variables of the questionnaire on potential factors of stress in nurses.

Variable	M	SD	min	max
Desire to stop performing the current job	3.37	1.20	1	5
Incorrect attitude toward others	14.42	0.75	1	5
Physical symptoms	311.37	0.81	1	5
Unhealthy lifestyle	4.140	0.82	1	5
Reduced motivation for work	3.48	0.68	1	5
Cognitive / psychological symptoms	3.60	0.78	1	5

M – arithmetic mean; SD – standard deviation.

Table 2.
Descriptive statistics of individual variables of the questionnaire on consequences of stress at the workplace.

	General Health	Desire to stop performing the current job	Incorrect attitude toward others	Physical symptoms	Unhealthy lifestyle	Reduced motivation for work	Cognitive/psychological symptoms
Hazards at work	0.248***	-0.202***	-0.144***	-0.303***	-0.018	-0.267***	-0.259***
Conflicts and communication in the workplace	0.220***	-0.217***	-0.115***	-0.240***	0.011	-0.204***	-0.280***
Lack of support	0.343***	-0.333***	-0.140***	-0.305***	0.035	-0.296***	-0.372***
Shift work	0.292***	-0.351***	-0.130***	-0.344***	-0.011	-0.292***	-0.346***
Criticism from patients and relatives due to inadequate information	0.192***	-0.189***	-0.051	-0.224***	-0.002	-0.172***	-0.237***
Professional and intellectual requirements	0.302***	-0.195***	-0.152***	-0.322***	0.019	-0.309***	-0.362***
Information system	0.347***	-0.302***	-0.136***	-0.286***	0.008	-0.307***	-0.314***
Problems due to work equipment and infrastructures	0.341***	-0.346***	-0.144***	-0.268***	-0.004	-0.297***	-0.302***
Poor work organization	0.322***	-0.378***	-0.126***	-0.247***	-0.003	-0.245***	-0.314***

*Correlation is statistically significant at the level of $p < 0.05$.

**Correlation is statistically significant at the level of $p < 0.01$.

***Correlation is statistically significant at the $p < 0.001$ level.

Table 3.
 Correlation between potential stress factors in nurses and psychological problems, the presence of the consequences of stress at work.

R² = 0,307				
	b	SE _b	β	p
NSS Faktor 3	0,070	0,026	0,138	0,006
NSS Faktor 4	0,044	0,019	0,099	0,022
NSS Faktor 6	0,053	0,023	0,105	0,018
NSS Faktor 7	0,040	0,020	0,087	0,039

R² = coefficient of determination, b = unstandardized coefficient, SE_b = standard error, β = standardized coefficient, p = statistical significance (p < 0,05); NSSF3 – Lack of support; NSSF4 – Shift work; NSSF6 – Professional and intellectual requirements; NSSF7 – Information system.

Table 4.
Multiple linear regression results (GHQ).

SD = 0.78). The smallest consequence of stress at work is the desire to quit the current job (M = 3.37, SD = 1.20), and most often, they think that if they could (M = 3.40, SD = 1.33), they would change jobs.

We performed a correlation analysis between (Table 3) potential factors of stress among nursing employees, the presence of psychological problems and other consequences of stress at work. We found a statistically significant insignificant positive correlation between all factors of psychological problems and potential stress factors at the workplace, where psychological problems are most correlated with the information system ($r = 0.347^{***}$, $p < 0.001$), which means that nursing employees have this causes the most problems and the least psychological problems are caused ($r = 0.192^{***}$, $p < 0.001$) by criticism from patients and relatives due to inadequate information—consequences of workplace stress correlate with potential stressors in nurses in five of the six factors. There is no correlation between an unhealthy lifestyle and any of the nine factors of potential consequences of stress. The highest statistically significant insignificant negative correlation is between the desire to stop performing the current job and poor work organization ($r = -0.378^{***}$, $p < 0.001$), which means that poor organization has the greatest influence on the desire to leave.

In general, it turned out that where more potential stress factors are present, more mental disorders and other consequences of stress at the workplace are also present.

Table 4 shows the summary results of the regression analysis according to the dependent variables of the GHQ. The results show that the presence of psychological problems was explained in 30.7% by four statistically significant predictors. Nursing stress scale (NSS) factor 3 “lack of support” ($\beta = 0.138$, $p = 0.006$) has the strongest statistically significant negative impact, followed by NSS factor 6 “professional and intellectual demands” ($\beta = 0.105$, $p = 0.018$), NSS factor 4 “shift work” ($\beta = 0.099$, $p = 0.035$) and NSS factor 7 “information system” ($\beta = 0.087$, $p = 0.002$).

5. Conclusions

Work-related stress is a major problem for nursing employees and can negatively affect work performance. Therefore, it is critical to investigate variables that can reduce the negative effects of work stress [16, 17]. In analyzing the responses regarding stress among nursing employees, it becomes evident that a significant portion of respondents attribute this stress primarily to poor work organization. This finding

aligns with existing literature on workplace stress, which frequently identifies organizational factors as critical contributors to employee well-being. Research has shown that the physical and emotional aspects of the work environment are directly related to nurses' stress ratings. Many studies have found that poor work organization, overload, and lack of management support lead to stress levels [18–21].

In our research, the most respondents estimate that they feel constant pressure because they believe that there is poor organization of work, there is no adequate support from the management, and there is no adequate equipment and informational support at work. Research has shown that adequate management support can significantly contribute to improving the psychological well-being of employees [22–24]. García-Camacho et al. [24] found that employees who work long shifts without adequate rest are more prone to emotional exhaustion. Research by Sonnentag et al. [25] emphasizes that supportive management practices, such as regular check-ins and open lines of communication, directly contribute to reduced stress levels and increased job satisfaction among employees. Similarly, Luthans and Youssef-Morgan [26] argue that when leaders provide emotional support, employees are more likely to exhibit higher levels of psychological resilience.

Poor work organization was associated with employee dissatisfaction during work, which contributed to feelings of frustration and helplessness [27–29], which was also shown by the results of our research.

Addressing workplace stress in nursing is critical for the health and well-being of nursing employees and for ensuring the delivery of high-quality patient care. Strategies may include improved staffing ratios, support systems, training in emotional coping skills, and fostering a collaborative and supportive work environment. Organizations that proactively address these stressors can enhance nurse satisfaction, retention, and ultimately improve patient outcomes.

Nurses who led an unhealthy lifestyle are exposed to a significantly higher risk of developing many chronic diseases and are more susceptible to burnout, job dissatisfaction, and turnover [30]. The nursing workforce worldwide faces major challenges that are closely related to various modifiable risk factors, nurses' lifestyles, social support, workplace violence, job demands, and job resources [5]. In our research, we did not find an increase in unhealthy lifestyles and management, workloads, shift work, etc., which did not confirm the findings of past research. For this purpose, it would be necessary to carry out additional research in the future, which would determine whether the lifestyle habits and interpersonal relationships among nursing employees in Slovenia differ in comparison to existing research.

The research contributes to the understanding of the connections and the influence of different dimensions of interactions between stress factors among nursing employees in Slovenian hospitals. Results showed the connection between the individual dimensions of the causes and consequences of stress variables. Future research could look for interactions between individual factors that have the greatest impact on the health of nursing employees. In addition, future research could use a larger sample (secondary and tertiary level in the existing research) that would also cover the primary level of health care and give the research even more weight.

Conflict of interest

The authors declare no conflict of interest.

A. Appendix

See **Table A1**.

Symptoms	Always	Often	Rarely	Almost never	Never
I feel indifferent toward work					
Work often makes me sad					
Work does not motivate me					
Work does not give me satisfaction					
I am tense at work					
Work fills me with anxiety					
I am distracted at work					
My immune system is weakened					
I have headaches					
I have problems with insomnia					
Problems at work affect my relationships in the family					
I have high blood pressure					
I only go to work for the salary					
I cannot do the assigned work					
My weight has changed noticeably					
Body reaction (pain in the spine, arms, neck)					
I have stomach problems					
I feel my heart pounding					
A stressful situation makes me feel sick					
I dream about stressful situations					
I am constantly tired					
I eat improperly					
Symptoms	Always	Often	Rarely	Almost never	Never
Insufficient physical exercise					
I have cardiovascular disease					
Feeling affects social activity					
I smoke					
I drink too much coffee					
Prone to frequent infections					
I take sleeping pills to sleep					
I feel pressure					
If I could, I would change my job					

Symptoms	Always	Often	Rarely	Almost never	Never
If I could, I would leave the hospital					
Memory problems					
Tension					
Irritability, anger					
Feeling powerless					
Anxiety					
Depression					
Due to fatigue, I lack self-initiative					
I have poor concentration – I do not find myself in stressful situations					
Going to the hospital due to exhaustion					
Despite being exhausted, I do not go to the hospital due to a financial shortfall					
I often smoke during working hours					
I stay at lunch for a long time					
I have no interest in the hobby I used to do					
Incorrectness in relation to patients					
Incorrectness in relation to relatives					
Incorrectness in relation to other colleagues					

Table A1.
Consequences of stress at work.

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Section 3

Stress Management Strategies



Chapter 7

Perspective Chapter: Meditation as a Self-Care Routine to Prepare for and Cope with Stress

Femke E. Bakker

Abstract

Public servants are experiencing enduring occupational stress. Stress hinders the ability of professionals to process information, potentially leading to bad decisions. Moreover, chronic stress has the potential to develop into a full-blown burnout. (Neuro)scientific findings strongly suggest that meditation can help to cope with stress. This chapter maps out the current scientific insights about how meditation can decrease stress. It argues that an effective meditation practice can help professionals to prepare for and cope with stress on a long-term basis. The chapter concludes with several practical and easy-to-perform meditative exercises that are suited for anyone who wants to learn to help themselves prepare for and deal better with stress.

Keywords: meditation, mindfulness, stress management, mental health, burnout

1. Introduction

There has been surprisingly little attention given for practical stress-coping mechanisms that can support public servants who are enduring occupational stress. Healthcare professionals, teachers in all levels of the educational system, social workers, correctional officers, soldiers, civil servants, and public officials are all working to support the public. The nature of their jobs makes that they often have to pay the price of chronic stress. How can public workers prepare themselves to avoid that stress will negatively impact their mental health? What can they do to cope with increasing stress levels? This chapter suggests meditation as a particular tool to deal with stress and looming burnouts, and aims to map out the scientific insights to support that suggestion. The chapter ends with several practical and easy-to-perform meditative exercises that are suited for anyone who wants to learn how to help themselves prepare for and deal better with stress.

2. The challenge of the public job

Public servants are increasingly experiencing mental health challenges due to the demanding nature of their work. In the Netherlands, more and more people

are experiencing chronic stress due to their work. In fact, the research conducted by the National Institute for Public Health and the Environment (RIVM) and the Netherlands Organization for Applied Scientific Research (TNO), commissioned by the Dutch Ministry of Social Affairs and Employment, shows that currently one in five people suffer from a burnout that is work related [1]. Due to the increasing aging population and the tight labor market, work pressure in the Netherlands is rising. This is especially noticeable for healthcare workers and those in education, where the largest shortages are occurring. In a national newspaper, one of the researchers warned that

“The Netherlands risks falling into a negative spiral. If we continue like this, even more people will call in sick with stress-related complaints. Then there will be even fewer workers left, while the labor market is already so tight. For those remaining, the workload will become even higher. The likelihood of long-term absenteeism will increase for a large group. This will cost society a lot of money.”

The Netherlands is not the only country showing this trend. Also in the US, public servants continue to struggle with work-related stress. One of the most significant cases of burnout occurred among public health workers during the COVID-19 pandemic. Surveys found that about one in three state and local public servants reported experiencing burnout, while one in five showed signs of compassion fatigue, the inability to remain calm, and with a compassionate attitude toward patients. The sudden increase in job demands, coupled with the emotional toll of dealing with a public health crisis, led to widespread psychological distress among these workers. This situation was exacerbated by the perception that they were on the front lines of an unprecedented crisis, which amplified their stress and burnout [2]. Another notable example involves 911 dispatchers. This group of public servants faced extreme stress during the pandemic, which was compounded by the high stakes of their job and the emotional weight of the emergencies they handled daily. Programs aimed at reducing burnout among dispatchers highlighted the importance of peer support and social belonging. Despite these efforts, many dispatchers struggled with the overwhelming nature of their responsibilities, leading to high levels of burnout [3].

But we cannot put all the blame on the impact of the COVID-19 pandemic. Public servants are increasingly experiencing work-related stress and burnouts due to working in an environment marked by divisive politics, economic concerns, and public safety issues. Especially those who work in high-pressure roles, such as those involved in, for example, homeland security [4], emergency response, health care, correctional facilities, and education are experiencing significant stress [2, 3, 5].

Public recognition efforts, such as the #GovPossible campaign in 2023 and 2024, sought to acknowledge and appreciate the efforts of these public servants, but the underlying stressors remain significant. The campaign aimed to boost morale by highlighting the positive impact of public service work, but the ongoing challenges faced by these workers underscore the need for more systemic support to address their mental health and well-being [6].

Being just the tip of the iceberg, these examples illustrate how the stress experienced by public servants is both a reflection of broader societal pressures and the unique demands of their roles.

3. What is stress and how can it lead to a burnout?

Everyone can experience stress when they experience or perceive a threat, even if that threat is imagined or expected and not actually present. When stress is experienced, a complex biological process prepares the body to the perceived threat: to fight or to flight. The adrenal glands produce the stress hormones: adrenaline and cortisol. Blood sugars and blood pressure rise, and as a result, the heart beats faster, the muscles get more energy, the lungs get more oxygen, the eyes can focus better, and reaction time increases. All bodily functions that are needed during rest, such as digesting food and recovery, are non-prioritized. The body is now ready to prioritize fighting the threat off or running away from it [7].

All in itself, a stress response is a healthy and normal biological process that has been part of human (and animal) survival since existence. As human survival has changed significantly since then, stress responses are often more common in response to perceived threats in contemporary times. Where once the focus was on actual threats, like wild animals in the dark, it now centers on challenges within professional contexts [8]. Actual threatening situations aside, the public servants' workplace is likely to offer stressors. Decisions have to be made, services must be offered, often while working under time pressure, with limited resources and sometimes quite uncertain conditions [7]. Stress in itself does not have to be problematic. Some people can even thrive on experiencing stress. A limited amount of stress can help some to focus and have the concentration to get the work done. Even in crisis, stress can boost performance [9, 10]. And in a healthy environment, when the stressful situation is under control again and the threat diminished, the stress hormone levels will drop, so the body will calm down and start recovering.

But if stress levels are too high or enduring because stressful situations keep on showing up, the stress hormones will not drop. If this lasts long enough, your body loses the ability to return to rest mode at all. This can happen not only in extreme situations such as in a war zone, but also if you have not slept enough for a long time, experience persistent work pressure, or live in poverty. This is what is called chronic stress [7].

Chronic stress is detrimental for our mental and physical health, since the body is in a permanent alarm state [7]. When stress is experienced for too long, it can hamper cognitive abilities [11, 12], produce cognitive biases [11], and trigger anxious and fearful emotions [13, 14]. This can lead to suboptimal decision-making [15]. Decisions are then made without careful consideration of the alternatives, and of material and immaterial costs [16]. The next phase of chronic stress can be a burnout [17, 18].

The World Health Organization (WHO) included burnout in 2019 as an *occupational* phenomenon in the International Classification of Diseases (ICD-11). It's defined as "Burnout is a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed. It is characterized by three dimensions: (a) feelings of energy depletion or exhaustion; (b) increased mental distance from one's job, or feelings of negativism or cynicism related to one's job; and (c) reduced professional efficacy. Burnout refers specifically to phenomena in the occupational context and should not be applied to describe experiences in other areas of life" [19]. In other words, burnout is always understood as the result of chronic stress in the context of an occupation.

4. What is meditation?

Rooted in Eastern spiritual traditions, meditation techniques were originally practiced as a path to enlightenment and spiritual development. Western approaches have recontextualized meditation as a tool for enhancing well-being, stress management, or therapeutic intervention [20], often stripping away the philosophical and cultural nuances inherent in traditional practices [21]. Formulating a clear-cut singular definition of meditation is therefore not that easy [22]. Some traditions emphasize focused attention or concentration, as in Transcendental Meditation or certain forms of yoga, while others prioritize open monitoring and mindfulness, as seen in Vipassana and Zen practices [23].

Meditation is rather an umbrella concept that describes many different cognitive and contemplative practices, such as mindfulness, breathing, mantra meditation, loving-kindness practices—to name a few—mostly aimed at enhancing mental clarity and emotional regulation. Many techniques are characterized by their intentional focus on present-moment awareness and the cultivation of a nonjudgmental attitude toward one's thoughts and emotions. The expected outcomes can be the cultivation of mindfulness and compassion, an enhanced focus and concentration, improved cognitive performance, and a heightened state of awareness. All were expected to lead to mental clarity and emotional regulation.

For the purpose of this chapter, I will define meditation as a set of mental training practices designed to enhance awareness and foster a calm, focused state of mind, thereby enabling individuals to manage stress and emotional distress more effectively. This definition emphasizes the common thread across various meditation practices [24]—their capacity to reduce stress—while acknowledging the diverse methodologies employed and the Western shift toward using meditation as a tool for psychological well-being rather than spiritual enlightenment.

5. What can meditation do?

Meditation and mindfulness practices have been increasingly recognized as effective strategies for reducing stress and improving overall well-being. A wealth of (neuro) psychological studies strongly suggests that meditation can have a significant impact on individuals (see for a nice overview of how meditation can impact several areas [25]).

One of the primary outcomes of mindfulness and meditation practices is the reduction of stress, primarily through enhanced emotional regulation [25, 26]. Mindfulness, which involves paying attention to the present moment without judgment, allows individuals to observe their thoughts and feelings as they arise, rather than becoming overwhelmed by them. This practice fosters a sense of emotional balance, which is critical for stress management [27]. Mindfulness meditation training helps individuals develop greater control over their emotional responses, reducing the likelihood of stress-induced reactions. This enhanced emotional regulation is one of the key mechanisms through which meditation can alleviate stress.

Moreover, regular meditators show to have improved cognitive function [28–32]. The practice of mindfulness increases activity in the prefrontal cortex [33], the area of the brain responsible for decision-making, problem-solving, and regulating emotions [34]. Enhanced cognitive function enables individuals to approach stressful situations with greater clarity and effectiveness, reducing the overall impact of stress on their lives.

Meditation has been shown to lower physiological markers of stress, such as cortisol levels [26, 35–37]. Cortisol is a hormone released in response to stress, and

chronic high levels of cortisol are associated with a range of negative health outcomes, including impaired cognitive function and weakened immune response [38]. A meta-analysis found that mindfulness practices were associated with significant reductions in cortisol levels [39]. The reduction in cortisol suggests that meditation can indeed mitigate the physical impacts of stress, thereby contributing to overall health and well-being. Additionally, many neuroscientific studies show that (mindfulness) meditation has the potential to alter brain structure and function, notably in areas associated with attention and emotional regulation [25, 34, 35, 40–42]. The ability of the brain to adapt (also called neuroplasticity) suggests that (mindfulness) meditation not only provides immediate stress relief but also contributes to long-term mental health benefits.

All in all, regular meditators experience an increased sense of well-being [43–46]. Individuals who engage in mindfulness-based stress reduction (MBSR) programs reported higher levels of well-being, including increased life satisfaction, and a more positive outlook on life [26]. Also, mindfulness meditation leads to greater self-compassion, which is strongly correlated with improved well-being [47]. Individuals who practice mindfulness tend to develop a kinder and more accepting attitude toward themselves, which reduces self-criticism and promotes a more positive perception of life [48]. Cultivating compassion for self and others through loving-kindness meditation shows that also interactions with other people become easier, since this type of meditation enhances prosocial behavior [49, 50]. Self-compassion is an intrinsic element of maintaining mental health and enhancing overall life satisfaction. Interestingly, long-term meditators show to be better able to manage stress than beginners, which indicates that stress resilience can be learned [25]. Thus, meditation can be a valuable tool in preparing for and dealing with stress.

Several studies investigate how meditation can help public servants in specific roles. For instance, teachers who deal with daily challenges in and out of the classroom. Teachers are likely to experience chronic stress, and many of them experience burnout symptoms [51]. Several studies show that, together with cognitive-behavioral training [52], physical exercise [53], and prayer [54], meditation and mindfulness techniques can be of real support for teachers to reduce stress and to prevent burnout [52, 55, 56]. Also, healthcare practitioners often experience high occupational stress. Increased stress levels among nurses can likely lead to “compassion fatigue.” Cultivating self-compassion through meditation, physical exercise, and mindfulness turns out to be supportive for nurses to reduce stress and to stay clear of that compassion fatigue [57–61]. Police officers are known to experience high levels of occupational stress. Being first responders to stressful situations in which they need to keep their cool, while also having to enforce law, can create high stress levels [62]. Also, police officers are more likely to experience Post-Traumatic Stress Disorder (PTSD) symptoms [63]. Due to the nature of their jobs, stress levels are likely to build up and turn into chronic stress, which will be of negative impact on their job performance. Chronic stress in police officers is also associated with misconduct, potentially leading to the loss of public trust. Law enforcement organizations therefore started special stress reduction programs, from which meditation and mindfulness was one of the interventions [64–66]. While most studies focus on public servants in these roles, there are a few other studies that focus on military personnel (see e.g., [67, 68]), animal protection servants [69], as well as medical doctors (see e.g., [70, 71–73]).

In conclusion, there is a wealth of scientific evidence to suggest that meditation can be a very effective tool for public servants to prepare for and cope with stress.

6. Some meditative practices to start dealing with stress

Learning to meditate is not difficult, you just need to know which practice to pick and how you would like to start meditating. Below I will discuss a few accessible practices that offer a great start into meditation for stress release.

6.1 Breathing

Breathing is special in and of itself. We do not need to think about breathing, anyone who ever tried to hold their breath long enough knows that the body takes over when you need to breathe. At the same time, we also have the ability to control our pattern of breath. We can take long deep breaths, shallow in-and-out breath strokes, and we can also decide to breathe out longer than we breathe in. Conscious breathing patterns are part of almost all meditation traditions. The rule of thumb that meditation teachers have told their students for centuries is that when you make your outbreath longer than your inbreath, your body will start to de-excite. The breath calms down, less inbreaths are necessary, and the body calms down. Reversed, a shorter outbreath can do the opposite: the body can be prepared to fight or to flight. There is some scientific support to the claims that conscious breathing makes a difference psychologically for participants. That is, participants who engaged in conscious breathing experienced a significant difference in their stressed feelings before and after the breathing exercise [74], even when stress hormone levels decrease slightly [75]. Several studies show that deep breathing or conscious breathing exercises decrease psychological and physiological stress, and significantly decreased cortisol levels [59, 76, 77].

There are thousands of breathing techniques. If you would be interested to learn many of those, you could visit a Kundalini Yoga class or teacher, where breathing is an intrinsic part of the tradition. If you would just like to experience what your breath can do for you, try this breathing exercise below.

Breathing exercise

- Sit up straight, but comfortable. You can lean against the back of the chair
- Hands in your lap. Eyes closed
- Note for a moment how you feel
- Breathe in on the count of 2
- Breathe out on the count of 4
- In again, on the count of 2
- Out again, on the count of 4
- Continue to breathe like this for a few minutes
- If you feel you can inhale for more (or less) counts without feeling uncomfortable, do so. Just make sure you make your exhale twice as long (i.e., in on 3—out on 6; in on 4—out on 8)
- After a few minutes, let go of the counting and just be for a moment. Do you feel any difference compared to when you started? There is no wrong or right answer, just your own

For more breathing exercises, check out the suggestions at the end of the chapter (or appendix). There is an audio available, in which the author—who is also a meditation teacher—guides you in this breathing exercise.

6.2 Mindfulness

Mindfulness meditation and practices are by far the most researched techniques. Therefore, we know most of their impact. In the 1970s, Jon Kabat-Zinn, professor emeritus of Medicine at the University of Massachusetts Medical School, and lifelong student of meditation, “translated” mindfulness techniques from different spiritual backgrounds into a secular and science-based 8-week Mindfulness-Based Stress Release (MBSR) training course. Since then, the course has helped many patients to deal with stress, pain, and several illnesses, and start to feel better and more empowered. His research and research by other scholars back up these claims, next to the experiences of individuals taking these trainings [21, 78–81].

At the core of mindfulness training, including meditation, stand all practices that help to bring the attention to the present moment. By being attentive of what is happening right here and now, it is easier to let go of those thoughts that are nagging about what went “wrong” in the past and what “scary things” might be out there in the near future. Being in the “now” brings the quality of awareness of who you are right now and how you feel in any moment in time. This allows you to connect with your own needs and makes you more sensitive to what it is that you would really want to do right now. To give an example, when we wake up we often get up fast, after a few snoozing rounds, and we dive deep into life with a coffee in our hand, off to bringing the kids to school moving on to work. If we would experience the “now” of that moment, we would feel stressed out. Becoming aware of how rushed you might feel, might help you realize that you would like to start your day differently. With more quality time, actually sitting down for breakfast, and looking your kids in their eyes before you kiss them goodbye for the day. Alternatively, you might decide to take a day off, so you could replenish your energy because you know that you’ll be way better at work the next day, when you have rested. In a world where we rush according to expectations, those of others and more commonly our own, we tend to forget to rest when we are tired, to cry when we feel sad, and to reach out to friends and family when we need to feel connected. Becoming mindful is becoming aware of the present moment, and all that is important to you in that moment of time.

For those who are ready to dive in deep immediately into what mindfulness can do for you, you could consider taking an MBSR training course, as developed and studied by Jon Kabat-Zinn, by a certified MBSR teacher. If you do not want to get your feet completely wet, but would like to explore what mindfulness can do for you, you could try one of these practices below.

Mindfulness practice 1 – Five Senses

- Sit up straight, but comfortable, you can lean against the back of the chair
- Hands on your lap, eyes closed
- Note for a moment how you feel

Hearing

- When you inhale, notice the most subtle sound in your environment
- Listen
- Listen for the softest sounds, your own breath, your heartbeat, small movements of your body
- Just listen and be aware of the sounds, all are welcome.

Seeing

- On your next inhale, what are you seeing?
- Even with eyes closed, you may see light coming in through youreyelids or just pitch black. That's also a type of seeing. Sometimes, you see swirling colors or points of light.
- Just see with your eyes closed. Be aware of what you see. No need to change anything.

Taste

- On your next inhale, bring your awareness to your taste
- What do you taste? Something you just ate? Neutrality? Acidity?
- Just taste, be aware, and do not try to change it

Smell

- On your next inhale, what can you smell?
- Even if there is a strong aroma, like perfume, bring your attention to the subtle smells in the room.
- Maybe there is the smell of coffee, the fabric of your clothes, or the air coming through a window
- Just smell, be aware

Touch

- Now bring your attention to your sense of touch
- You may become aware of the sensations of sitting, the way the chair, the cushion, the mattress, or the mat feels under your body
- You may notice your clothes resting on your skin
- Just feel, you do not need to change anything
- Let your attention go off your senses
- Just sit for a moment, be aware of you sitting in this environment
- Notice again how you feel now
- Take a minute, or two, to slowly open your eyes.

Mindfulness practice 2 – Observing breath

- Sit up straight, but comfortable, you can lean against the back of the chair
- Hands in your lap, eyes closed
- Note for a moment how you feel
- Bring your awareness to your nostrils and observe how the air flows in and out
- No need to alter your breath, just notice the air flowing in and out
- This is all you do, observe your breath
- Whenever you notice that you are distracted by thoughts or feelings or sensations, you gently bring your attention back to your nostrils

A few notes about meditating:

- a. It is ok to be distracted. If you bring your attention back to your nostrils whenever this happens (even when it means you have to do this every 15 seconds), you are meditating perfectly well.
- b. Your environment does not need to be silent. If you are distracted, you know what to do. Back to the nostrils. That's all there is to it. Now you are training your mental muscle, well done!
- c. Start with practicing this technique for just a few minutes, let us say 3–5. Slowly expand those minutes when you get the hang of it.
- d. Can you meditate too long? No. Unless you feel that you get time shortage again. Better to meditate for a few minutes than not because you think 'you don't have time'!
- e. If you need some auditory guidance with these three practices, please check out the three audio recordings that are available with this chapter. In these audios, author and meditation teacher Femke E. Bakker, Ph.D. guides your practices. You can use these, until you feel you can do it on your own.

6.3 Meditation

While mindfulness meditations fall in the category of present-moment meditation techniques, there are also thousands of other techniques out there that you might be able to benefit from. There are simply too many techniques and practices to mention them all here. Next to that, even though there is scientific evidence for their impact on mental health, these techniques are less rigorously and systematically studied by scientists, compared to mindfulness meditation. But of course, most are supported by anecdotal evidence by the students of these techniques [82]. For the purpose of introduction and comprehension, I'll collapse some techniques in three categories that seem relevant for this chapter.

Transcendental meditations, such as TM, Vedic Meditation, aim less at being here and now, and focus more on reaching a mental state of transcendence, and an awareness of connection between everyone and everything. These types of meditation techniques are also often experienced as a great way to release stress, over time [83, 84].

Visualization meditations are often used to help people deal with difficult experiences, or heal their childhood wounds [85]. Other visualization techniques aim at preparing for difficult situations, like athletes before a competition (see, e.g., [86]) or surgeons before an operation [87], to lower stress when the performance is expected. Loving-kindness meditation also falls into the category of visualization, and this technique is more often studied. Loving-kindness meditation cultivates (self) compassion, and it is prone to help its meditators deal with stress that is related to interactions with others and society. It is studied more in depth and offers evidence that people meditating with loving-kindness meditation are decreasing implicit biases and prejudices [88–91].

If you would like to explore any of these or other different meditation techniques, try one of the meditations apps mentioned below.

6.4 A caveat

When you learn to use meditation, mindfulness or basically any other tool to help you reduce stress, and you find that it works, there is a caveat. In public service, it is unlikely that the stressors will disappear. The pressure of time, duties, uncertainty, and challenging circumstances will remain. This means that, besides learning how to prepare for and deal with stress when it occurs, it remains important to be aware of what triggers a stress response, and also when too much is asked. The wise words from a physician I once spoke about the release of stress were: ‘You might be good in cleaning up the mess, but when new mess comes in faster than you can clean, you’re in trouble’. In other words, especially when you become more sensitive for your own stress responses, it remains important to keep healthy boundaries at work and to ensure a healthy work-life balance. The good news is that when people become regular meditators, they will also become more aware. Of what they think, feel, and experience. This enhances the ability to act before it is too late, and to turn to self-care rather than keep pushing yourself to the limits.

Also know, meditation is not for everybody. Even though some meditation teachers might tell you otherwise, you need to actually like the practice to be able to surrender to a daily meditation routine. From teaching many meditation students myself, I know that it is of the greatest importance that you start exploring meditation techniques, until you find one that fits your default relaxed state of mind, your lifestyle, and your wishes. If not, you will need way too much discipline to make it work. And most people are not that good in maintaining discipline, especially when it is about our mental and physical health. So, by all means, take some time to explore what breathing, mindfulness, and some meditation techniques can do for you. And if this is not for you, that is perfectly fine. Just make sure you find a different way to release stress. As some of studies above show, physical activity is one of those [53]. Some might try yoga [92, 93], which is often seen as a form of meditation, while it was originally a way to prepare the body before sitting in meditation. Or go for a run, a swim, or a game of tennis or soccer. Take hot showers, read a book in a hammock, or go have fun with your friends or family. Binge a TV series that makes

you feel good. Get into nature, take off your shoes, and put your feet in the dirt: you are part of this earth. Listen to the tree leaves whispering, feel the wind and sun on your skin. Whatever it is that you need to relax. Because the main message this chapter conveys is that stress can be released when you help yourself to release it. No one else will do it for you.

7. Suggestions to dive a bit deeper

Here are some interesting (nonacademic) books about meditation you might want to start with. It's just the tip of the iceberg!

- 10% Happier by Dan Harris
- The Power of Now by Eckhart Tolle
- Lovingkindness: The Revolutionary Art of Happiness by Sharon Salzberg
- The Untethered Soul by Michael A. Singer
- Stress Less, Accomplish More Meditation for Extraordinary Performance by Emily Fletcher
- The No-Nonsense Meditation Book by Steven Laureys, MD
- The Miracle of Mindfulness by Thich Nhat Hanh
- Radical Compassion by Tara Brach

There is a wealth of meditation apps available online. In these days, with almost everyone having a smart phone, a meditation app at hand is the easiest way to go. You just pick and choose the technique you would like to meditate with, and the app helps you to find the right teacher or technique. Most apps work with a subscription model and for a modest monthly or yearly fee, you will get access to guided meditations. The most popular apps are Calm and Headspace. Just as famous but also *free* is Insight Timer. It offers its (well over 200,000) guided meditations and meditative music for free. About 20,000 meditation teachers and musicians worldwide are on the app, teaching in English (and many more languages), creating guided work, and conducting live online events, completely free of charge, unless you would like to donate to a specific teacher. Insight Timer does also have a paid subscription that will also unveil 2000 courses that use meditation as their core tool.

Additional materials

The auditory guidance recordings for the practices referenced in the chapter can be downloaded here: <https://bit.ly/3WZhNtL>


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Chapter 8

A Theoretical Review of Eight Natural Remedies for Stress, Anxiety, and Depression Management

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Abstract

In the modern era, characterized by the omnipresence of technology and rapid globalization, mental well-being emerges as an urgent challenge. The constant flow of information and social pressure can trigger psychological disorders such as stress, anxiety, and depression. This study reviews the effectiveness of the eight natural remedies as an integral approach to addressing these challenges. From promoting a healthy diet to fostering a spiritual connection, these remedies offer a path toward emotional balance and resilience. In a world where stress is omnipresent, educating society about these practices is essential for promoting a fulfilling and satisfying life. This article presents a practical and crucial proposal to those seeking to manage their mental well-being in an increasingly complex and demanding world.

Keywords: natural remedies, stress, depression, anxiety, mental well-being

1. Introduction

In recent decades, societal lifestyles have undergone significant transformations. The roles of individuals across all demographics—regardless of age or gender—have experienced profound shifts. Multiple factors have contributed to these changes, including evolving social demands, the recognition of new rights, technological advancements, the COVID-19 pandemic, and cultural integration resulting from increased migration. These individual, social, and structural determinants collectively affect people's lives [1]. Together, they signify the gradual emergence of a new societal framework. This transformation is evident in various sectors where individuals perceive substantial impacts on their roles and daily lives [2].

Consequently, people experience various emotions that lead them to question their life's purpose in a scenario of existential confrontation or vital crisis, which affects their mental health [3]. Mental health encompasses an individual's cognitive,

emotional, and behavioral well-being [4]. It enables individuals to realize their potential, cope with normal stresses, work productively, contribute to their community [5], make healthy decisions, and build relationships [1]. However, mental health can be compromised when individuals face demands that exceed their resources and capabilities. This can result in poor mental health, manifesting as stress, anxiety, and depression [6–9]. Various factors can contribute to the onset of depression, anxiety, and posttraumatic stress disorder symptoms. These include older age, lack of employment, gender differences, exposure to numerous traumatic events, low-income levels, substance abuse disorders, the specific nature of the trauma experienced, witnessing severe injuries or fatalities, and sociodemographic characteristics such as socioeconomic status and marital condition [10].

Although terms such as stress, anxiety, depression, mental health, and emotional health have become more common in everyday conversations, and more publications on these topics are released each year, many people still lack knowledge about them [2, 11] and awareness about its importance [12]. This lack of awareness can prevent individuals from recognizing when they are experiencing a disorder, knowing when and how to seek help, understanding their limits, or facing the stigmas associated with these issues; in severe cases, it can even lead to death. Therefore, this review aims to introduce eight natural remedies that people can use to manage stress, anxiety, and depression, with a special focus on their implications for public service employees.

2. Common manifestations of poor health

In recent years, the prevalence of affective disorders has been increasingly reported worldwide. According to the World Health Organization [12], an estimated 3.8% of the global population suffers from depression, equating to approximately 280 million individuals. Depression is a common mental disorder globally [13]. It manifests through a wide range of cognitive, physical, and behavioral symptoms that negatively impact individuals' attitudes and moods toward life. As such, it can be considered a global affliction with both physical and psychological dimensions, predominantly affecting the emotional aspect [14]. It is characterized because of more intense and long-lasting feelings of sadness, accompanied by irritability. Depression is frequently preceded by stress and often accompanied by anxiety. Anxiety is an important psychological phenomenon associated with low healthy behaviors and great unhealthy ones [15]. It affects the instrumental activities of daily living diminishing personal, professional, and other aspects of life [16]. Different from depression, anxiety is characterized by feelings of panic or being in danger as well as experiencing obsessive thoughts. It is estimated that 264 million people suffer from this disorder, according to the World Health Organization (2017, as cited in [17]). Both depression and anxiety often occur simultaneously [comorbid]; however, if they do not coincide, one typically follows the other [18]. When these two emotional disorders coexist, individuals must navigate stressful situations.

Stress, a universally experienced phenomenon, significantly impacts people's lives [19]. The frequency and/or intensity of the stress exposure and the individual's assessment of his or her ability to cope with the stress stimuli are two elements responsible for the intensity of perceived stress [20]. In this sense, the stress response is fundamental to maintaining homeostasis and survival, so anxiety, depression, or other affective disorders may be caused by chronic stress and maladaptive responses to stressors [21]. Various factors can contribute to differing stress levels. Being a

student, for instance, often results in elevated stress due to intense academic competition, high demands on emotional, physical, financial, and social coping abilities, and the relentless pressures of a highly competitive university context [22]. Likewise, it has been shown that medical students show more signs of depression or anxiety, increased stress, and increased sensitivity to stress [23]. Among other factors are the social restrictions, which tend to lead to stress in different areas of life, such as family life (e.g. organizing work and childcare at home) [24]; the limited socioeconomic resources can heighten susceptibility and vulnerability to stress in different areas of life, leading to less effective and less healthy coping mechanisms [25]; educational level, which increases the prevalence of stress; etc. One study found that women with lower levels of education or income were more likely to be stressed in other areas, such as family, partnership, or psychological well-being, during the pandemic [26].

In terms of gender, it has been shown that women have higher levels of stress and feel more depressed than men [27]. Among all the different factors that exist and lead to stress and the gender they belong to, they need to know how to adapt their lifestyle in order to live a better and happier life.

On the other hand, while stress is a normal human response to specific situations, depression, and anxiety are serious conditions that can emerge as reactions to stress, jeopardizing one's well-being. Health is a precious gift that human beings must treasure as their richest possession [28]. When health is compromised, true happiness becomes elusive. As a healthy and natural defense against stress, anxiety, and depression, individuals need to develop a good character in terms of positive traits manifested in a better lifestyle. These include proper Nutrition, regular Exercise, adequate consumption of Water, exposure to Sunlight, Temperance, fresh Air, sufficient Rest, and Trust in God (collectively known as NEW START for their initials) [29].

Additionally, it is necessary to mention that public employees face unique stressors such as high workloads, limited resources, bureaucratic constraints, and the pressure to meet public expectations [30]. Research on stress and affective disorders, which was mentioned in the last paragraphs, indicates a need for targeted interventions to support their mental health. Implementing wellness programs that promote stress management, provide mental health resources, and encourage a balanced lifestyle can mitigate stress's adverse effects. Studies show that public service employees often lack access to wellness resources, with many workplaces not offering comprehensive wellness programs, leading to higher rates of stress-related health issues and feelings of being undervalued and overworked. These findings highlight the urgent need for implementing a new style of life inside public service organizations to enhance employee well-being and productivity.

3. Eight natural remedies

Human beings have been provided with everything needed to live a prosperous life in every aspect: a perfectly designed body to care for, five senses through which they can experience their environment and nourish their being, and plentiful resources in a world where they are the masters and managers of everything. Thus, human beings were made to live in the best way possible. The presence of stress, anxiety, and depression is inevitable in a constantly changing world, but dealing with them properly depends significantly on how they respond. There are no secrets to maintaining a healthy physical and emotional life; everything necessary is within and around them in nature through eight natural remedies: Nutrition, Exercise, Water, Sunlight,

Temperance, Air, Rest, and Trust in God. Therefore, they can experience a NEW START every day.

3.1 Nutrition

The nutrition system consists of various food components such as macro and micronutrients, fiber, water, and non-nutrient elements. The well-being of this system depends on an individual's health condition, which is influenced by the proper digestion, absorption, and use of nutrients in the body. It is essential for a person to be in good physical shape to effectively utilize food and its nutrients for optimal health. This efficient utilization requires to maintain a balanced diet, live in a healthy environment, have access to clean water, understand the nutritional needs of women and children, improve infant feeding practices, ensure fair food distribution within households, uphold proper sanitation and hygiene, reduce the impact of infectious diseases, and be knowledgeable about self-care and food safety and preparation [31].

According to World Health Organization [32], nutrition plays a significant role in promoting health and growth. Improved nutrition is linked to better health for infants, children, and mothers, stronger immune systems, safer pregnancies and childbirth, reduced risk of diseases like diabetes and heart disease, and longer life expectancy.

The consumption of fruits, vegetables, whole grains, legumes, and nuts in moderation is recommended by the Healthy Eating Patterns. Considering the limited consumption of lean meat, fish, and dairy products, the diet should be low in saturated, trans, and solid fats; salt (sodium); added sugars; and refined grains [33]. It is important to mention that there is a growing interest, both among scientists and the public, in vegetarian diets. For example, in the 2015–2020 Dietary Guidelines for Americans, one of the recommendations is to eat a healthy vegetarian diet [34]. Among the potential health and environmental benefits of vegetarian diets and other diets that limit the consumption of animal-based foods, studies of large groups of vegetarians have shown that vegetarians have a lower risk of developing heart disease and some types of cancer [35].

In fact, research shows that certain food groups are linked to stress and depression. People who are stressed or depressed tend to eat more sweets and fast food, while those with depression often eat fewer fruits and vegetables [36]. Dietary tips to reduce the risk of depression are to increase the intake of produce, seafood, whole grains, beans, and olive oil, while reducing the consumption of processed grains, red meat, fried foods, and sweets [37].

The risk of obesity, heart disease, diabetes, osteoporosis, and cancer is reduced by a nutritious diet. Not surprisingly, it also increases life expectancy. Conversely, an unhealthy diet is a major preventable factor in premature death. Healthy eating can also improve mental health, potentially delaying or reducing dementia risk and improving memory [38]. Inadequate nutrient intake results in malnutrition, and malnutrition in turn affects all other health factors [39]. In this sense, it is important to identify foods that support health and wellness and those that are unhealthy.

In addition, it is advisable to avoid ultra-processed foods, such as soft drinks and sweet or savory packaged snacks, because ultra-processed foods are often rich in unhealthy fats and deficient in fiber, essential nutrients, and beneficial compounds. Consequently, in many countries, a higher intake of ultra-processed foods is associated with poor nutrient profiles and numerous chronic health conditions [40].

3.2 Implications for public service employees

For public service employees, proper nutrition can mitigate the effects of stress and improve overall mental well-being. Public service workers, such as firefighters, police officers, and social workers, often face high-stress environments and irregular working hours. These conditions can lead to poor dietary habits, exacerbating stress and anxiety. Proper nutrition supports cognitive function, mood regulation, and physical stamina, all of which are important for maintaining high performance in demanding public service roles. Implementing healthy eating programs and providing access to nutritious food in public service workplaces can enhance employees' resilience to stress and improve job performance. Organizations can offer healthy meal options in cafeterias, provide nutritional counseling, and organize workshops on healthy eating habits.

3.3 Exercise

Exercise is a powerful tool for improving brain function and protecting against cognitive decline. Studies in humans and animals have shown that aerobic exercise can improve various aspects of cognition and performance. Lack of physical activity, especially among children in developed countries, is a major contributor to obesity. Exercise not only benefits physical health but also has the potential to improve academic performance [41].

Physical activity has been shown to be an effective treatment for depression [42, 43] and anxiety [44, 45]. Similar to psychotherapy, running reduced symptoms of depression [46]. There is substantial proof that lifelong exercise is connected with a longer healthy life, and postpones the onset of 40 chronic diseases: accelerated aging or early mortality, cardiovascular fitness (vo2max), abnormal cholesterol levels in the blood, coordination and stability, risk of bone fractures and falls, risk of breast cancer, impaired cognitive function, risk of colon cancer, heart failure, digestive issues like constipation, coronary artery disease, risk of blood clots in the veins, mental health issues such as depression and anxiety, inflammation of the colon (diverticulitis), risk of cancer of the uterine lining, poor function of blood vessel linings, sexual dysfunction, problems with the gallbladder, diabetes during pregnancy, blood clotting processes, high blood pressure, immune system function, insulin resistance, decreased elasticity in large arteries with age, metabolic syndrome, fat accumulation in the liver not related to alcohol, overweight or obesity, joint inflammation and pain (osteoarthritis), loss of bone density (osteoporosis), risk of ovarian cancer, general pain, poor circulation in the legs and feet, pregnancy-related high blood pressure (preeclampsia), hormonal disorder affecting ovaries (polycystic ovary syndrome), elevated blood sugar levels indicating prediabetes, inflammatory joint disease (rheumatoid arthritis), loss of muscle mass and strength (sarcopenia), risk of stroke, decreased stiffness of tendons, type 2 diabetes [47].

Regarding the benefits of exercise, in a study designed to examine the effects of aquatic exercise on mental health, functional autonomy, and oxidative stress parameters in depressed older adults, the aquatic exercise program was found to reduce depression and anxiety, improve functional autonomy, and reduce oxidative stress in depressed older adults [48]. Another study found that medical students reported high levels of stress, depression, and anxiety, so yoga was found to be an effective way to reduce these symptoms [49]. The primary objective of yoga is to unite the mind and body through exercise, breathing, and meditation [50].

3.3.1 Implications for public service employees

Regular physical exercise is fundamental for maintaining mental health and managing stress, anxiety, and depression. For public service employees, who often work in high-stress and physically demanding environments, incorporating exercise into daily routines can be challenging yet highly beneficial as it is proven to reduce symptoms of depression and anxiety, enhance mood, and improve physical health. Public service organizations can promote physical fitness by providing on-site exercise facilities, organizing group fitness activities, or offering incentives for employees to engage in regular physical activity, offer discounted gym memberships, and encourage physical activity through workplace wellness programs and team sports. Exercise can help public service workers maintain their physical health, enhance their mental resilience, and improve their overall job performance.

3.4 Water

An increase in water intake may have a positive effect on the reduction of tension and anxiety, which in turn may have a positive effect on the quality of life [51]. Increased daily water intake can improve health, as recommended by nutrition experts. High water intake is important for preventing obesity and managing diabetes [52]. Adequate hydration is essential for maintaining balance in the body. Not drinking enough water can disrupt this balance, leading to cognitive problems and, in extreme cases, delirium, coma, and possibly death within a short period of time [53]. The primary effects of mild dehydration on mood include sleep disturbances [such as increased fatigue and decreased energy levels] and an increase in symptoms such as headaches, thirst, drowsiness, and difficulty concentrating [54, 55].

In this sense, the recommended daily intake of four to six cups of water is generally suitable for healthy individuals, but this amount may vary depending on the intake of water from other drinks and food sources. Factors such as health conditions, medications, physical activity, and environmental temperature can also affect the overall daily hydration needs [56]. However, consumption of other types of drinks, such as sugar-sweetened beverages, has been identified as the primary dietary cause of obesity, especially in children, based on the most reliable evidence [57]. Some evidence suggests that because the liquid calories are not fully offset by a reduction in solid food intake, sugar-sweetened beverages may lead to the accumulation of excess body fat. The more soda consumption, the more extra calories and the greater the relative weight gain [58]. Concerning fruit juice drinks, there are comparable amounts of fructose and glucose per ounce in fruit juice drinks and many sugary sodas [59].

Furthermore, there are concerns about how caffeinated energy drinks could harm mental health, especially in young people, who are the main target for these products [60]. It is crucial to examine the connection between mental health and caffeine consumption, as caffeine seems to be the primary active component in energy drinks [61]. Preliminary characteristics of caffeine are likely to differ between consumers and non-consumers. For example, [62] found that the daily caffeine intake of undergraduate psychology students and the levels of anxiety and depression were higher among moderate and high caffeine consumers than among non-consumers. Therefore, it is essential to take these findings into account when deciding whether to consume caffeine products.

3.4.1 Implications for public service employees

For public service employees, staying hydrated is particularly important due to the physically demanding nature of their work. Ensuring access to clean and safe drinking water in the workplace can help the employees maintain their hydration levels, reduce stress, and improve overall health as pure water is essential for cognitive function and mood stability. Therefore, encouraging them to stay hydrated can help prevent fatigue, improve concentration, and reduce the likelihood of stress-related health issues. Public service organizations can implement hydration programs and educate employees about the importance of regular water intake to enhance their well-being and job performance, likewise, they must ensure the availability of clean drinking water throughout the workplace.

3.5 Sunlight

Increased exposure to sunlight has a positive effect on mental health, so ensuring adequate levels of sunlight can improve overall well-being [63]. Vitamin D is a type of vitamin that can be stored in fat and is increased in the body when exposed to sunlight. Without sunlight, humans may not be able to maintain good health. Sunlight helps to purify and energize, while also protecting against various diseases, including both physical and mental conditions [64]. One study showed that prolonged exposure to moderate levels of ultraviolet B rays can prevent the onset of depression [65]. Another study found that people with mental illness who live in rooms with plenty of sunlight tend to have shorter hospital stays [66]. Experts recommend spending about 5–30 minutes in the sun without sunscreen on your face, arms, legs, or back, at least twice a week, between 10 a.m. and 3 p.m. to get the right amount of vitamin D [67]. Therefore, incorporating natural elements, such as adequate sunlight exposure into our daily routines, can significantly enhance our mental and physical well-being.

3.5.1 Implications for public service employees

Public service employees, especially those who work indoors or during night shifts, may have limited exposure to natural sunlight. This can lead to vitamin D deficiency and negatively impact their mental health. Exposure to natural light increases vitamin D levels, which is linked to improved mood and energy, and as a consequence it enhances their mental health and productivity. Public service organizations can address this issue by encouraging outdoor activities or breaks, providing access to natural light in the workplace by creating outdoor workspaces where feasible, and offering vitamin D supplements if necessary. Enhancing exposure to sunlight can improve the mental well-being and job satisfaction of public service workers.

3.6 Temperance

Often understood as moderation or self-control, temperance manifests in avoiding everything detrimental and making judicious use of what is beneficial. It encompasses strengths that protect against excess, such as forgiveness and mercy, humility and modesty, prudence, and self-regulation or self-control [68]. Practicing a healthy and balanced lifestyle in every aspect of life involves being moderate in all spheres.

Research has shown that self-regulation influences well-being and may play a mediating role in depression and anxiety disorders [69, 70]. In terms of eating, temperance includes consuming food at regular times, avoiding anything between meals except water, enjoying a variety of natural and whole foods, not too much at one meal, and avoiding refined foods, among others [71].

3.6.1 Implications for public service employees

Practicing moderation in all aspects of life, including work habits, can prevent burnout. Public employees who maintain a balanced lifestyle with controlled work hours and healthy boundaries are less likely to experience chronic stress. Temperance is particularly important to them due to the high-stress nature of their work, which can lead to unhealthy coping mechanisms such as substance abuse. Public service organizations can promote work-life balance through policies that limit excessive overtime, encourage regular breaks, support flexible work schedules, provide education on healthy lifestyle choices, offer support for addiction recovery, and foster a culture of balance and self-care. Encouraging temperance can help public service workers manage stress, improve their mental health, and boost their overall quality of life.

3.7 Air

Air is essential for life; humans can survive weeks without food and days without water, but only minutes without air [71]. Proper circulation, facilitated by pure and fresh air, is crucial for a good and active life. Breathing deeply increases oxygen levels in cells, improving bodily functions. Research shows that air quality impacts life satisfaction, happiness, and optimism [72]. And this may be because clean air promotes healthy blood circulation, leading to a calm and serene mind, increased appetite, improved digestion, and better sleep [73]. Thus, enjoying fresh air is one of the most powerful tools for health [74].

3.7.1 Implications for public service employees

Public service employees, particularly those working in urban areas with high levels of pollution, may have limited access to fresh air. And access to fresh air is vital for physical and mental health. Improving air quality in public service workplaces can enhance employees' respiratory health, reduce fatigue, and improve overall mood. Therefore, public service organizations can mitigate this by creating green spaces around workplaces, encouraging outdoor breaks, implementing air purification systems indoors, using air purifiers, and incorporate indoor plants. Providing access to clean air can improve the mental and physical health of public service workers, making them more effective in their roles.

3.8 Rest

Overwork combined with a lack of rest can lead to illness, fatigue, nervousness, and decreased efficiency, causing disability and functional impairment [75]. In contrast, rest is a fundamental natural remedy for maintaining overall health and well-being. The revitalizing power of rest becomes essential in restoring energy and maintaining both mental and physical health [71]. Without proper rest, individuals are at risk of developing

various health problems. Resting involves engaging in activities that differ from daily routines, allowing the mind and body to relax and unwind. This change of pace helps to alleviate stress and promote relaxation. Additionally, rest includes sound, quiet, and sufficient sleep, vital for replenishing and repairing the body's organs [76]. Research in the field of occupational health and psychology supports the benefits of regular rest and recovery periods for mental and physical well-being. It shows that taking regular breaks and having days off work can reduce stress, prevent burnout, and improve overall health and productivity.

3.8.1 Implications for public service employees

Public service employees often work long hours and may have irregular sleep patterns due to shift work. This can significantly impact their mental health and job performance. Sufficient rest and regular breaks are vital for recovering from work-related stress. Public employees who get adequate sleep and take periodic breaks are more likely to maintain high performance and avoid burnout. Public service organizations can address this by encouraging regular rest breaks, providing quiet areas for relaxation, promoting adequate sleep through educational programs, fostering healthy sleep habits, providing flexible scheduling to ensure adequate rest, and creating a work environment that prioritizes well-being. Ensuring that public service workers get sufficient rest can reduce stress levels, enhance mental resilience, and improve their effectiveness in their roles.

3.9 Trust in god

The spiritual factor is a formidable and indomitable aspect of well-being and a healthy life. Research increasingly supports the relationship between spirituality and overall health [77]. Trust in God is linked to psychological well-being and healthy behaviors [78]. Additionally, spirituality positively influences coping with illness, serving as a source of strength and support through the relationship with the Most High, and providing a sense of meaning and purpose in life [79].

Stress relief through spiritual means can improve physical, mental, and spiritual health. Despite a good diet and active lifestyle, personal issues can worsen overall well-being since mental and emotional issues cannot be easily discarded, and they often lead to repeated failures, necessitating constant restarts.

Recognizing these weaknesses reveals the need for divine support. Many find renewal by seeking God's help, who, as the Creator, understands our health needs best. Biblical health principles, validated by modern science, offer stress relief and hope.

3.9.1 Implications for public service employees

Public service employees, who often face high-stress and traumatic situations, can benefit from incorporating spirituality into their lives. For those with spiritual beliefs, trust in a higher power can provide significant stress relief and emotional support. Public service organizations can offer non-denominational spiritual support or spaces for reflection to cater to employees' spiritual needs. They can offer access to chaplaincy services, spaces for meditation and prayer, workshops on mindfulness and stress reduction, and promote a culture of inclusivity and respect for diverse spiritual beliefs. Encouraging trust in a higher power can help workers manage stress, enhance their emotional well-being, and find meaning in their work.

4. Conclusions

In conclusion, this review article emphasizes the significant impact of societal changes on individual mental health. These changes are driven by various factors, including technological advancements, cultural integration, and the global pandemic. Also, they have profound implications on individuals' lives and mental well-being, leading to emotional responses that can affect overall health [80]. However, many people lack awareness and knowledge about the importance of mental health in functioning and contributing to society [81]. Poor mental health can be influenced by factors such as socioeconomic status, trauma, and others. Despite increased discourse on mental health, many individuals still struggle to recognize and address their own mental health issues. Therefore, this review highlights the importance of managing stress, anxiety, and depression through eight natural remedies: nutrition, exercise, water, sunlight, temperance, air, rest, and trust in God. Each element contributes a unique role in promoting overall wellness. So, nutrition supports physical health and disease prevention, exercise boosts fitness and mental resilience, and hydration and sunlight enhance cognitive function and mood stability. Additionally, temperance encourages moderation and emotional balance, fresh air and rest rejuvenate the body and mind, and spiritual trust offers strength and meaning in facing life's challenges [82]. By integrating these practices into one's lifestyle, individuals can foster a healthy balance between physical vitality and mental resilience, promoting lasting wellness.

Public service employees play a key role in maintaining the well-being and safety of society. However, the high-stress nature of their work can take a toll on their mental health. Implementing the eight natural remedies—Nutrition, Exercise, Water, Sunlight, Temperance, Air, Rest, and Trust in God—can provide them with practical tools to manage stress, anxiety, and depression. By fostering a supportive work environment that prioritizes mental health and well-being, public service organizations can enhance the resilience and effectiveness of their employees, ultimately benefiting society as a whole.

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Chapter 9

Harnessing the Body, Breath, and Mind: Yoga Strategies for Resilience over Stress and Burnout in Public Service

Praag Bhardwaj, Navdeep Ahuja, Parul Malik, Dilasha Sethi, Arpit Singh and Monika Pathania

Abstract

In the high-pressure environment of public service, professionals are frequently exposed to chronic stress and burnout, leading to significant physical, mental, and emotional health challenges. This chapter explores the physiological and psychological underpinnings of stress and burnout, providing a comprehensive overview of the yogic strategies that can be employed to foster resilience and well-being in this demanding field. The chapter delves into the effects of asanas on cardiovascular and orthopedic health, the impact of pranayama on mental stability and respiratory function, and the role of dhyana in enhancing cognitive control and ethical values. By integrating evidence-based yoga practices, public service professionals can develop a holistic approach to managing stress, improving overall health, and enhancing professional effectiveness. This chapter aims to bridge the gap between ancient yogic wisdom and modern scientific understanding, offering practical applications of yoga as a sustainable solution for the prevention and management of burnout in public service organizations.

Keywords: coping, mindfulness, resilience, stress, vagal tone

1. Introduction

This chapter illuminates the readers about the intricate physiology of stress, detailing the body's response mechanisms and the crucial role of the autonomic nervous system. Exploring the connection between stress and neural pathways and the relevance of having a high vagal tone, it then discusses the need to build resilience among public servants, further delving into the concept of window of tolerance, while mentioning various tools utilized to evaluate employee resilience. Briefly touching upon coping mechanisms and stress management strategies, the chapter then explores the transformative potential of yoga in managing stress and preventing burnout within public service organizations. It highlights how yoga techniques involving the body, breath, and mind can recalibrate the

stress response, promoting physical, mental, and emotional resilience. Finally, it provides evidence-based and actionable insights, empowering public servants to integrate yoga practice into their routines, thereby enhancing well-being, performance, and resilience against workplace stress.

2. Understanding stress and its types

Stress is defined as a state of mental, emotional, or physical strain arising from demanding circumstances. It is a complex phenomenon manifesting in various forms, each with distinct characteristics and implications for individual well-being. Understanding different types of psychosocial stress and their effects is crucial for developing effective interventions to mitigate adverse consequences.

Acute stress is an immediate and short-term response to a specific stressor, typically lasting from minutes to days. Acute stress usually has a sudden onset, triggered by new demands or changing environmental conditions [1]. On the other hand, chronic stress involves prolonged exposure to stressors, which can persist over days, months, or even years. Chronic stress often results from repeated exposure to physical or social stressors and is frequently associated with adverse health outcomes [2].

The terms acute and chronic stress are sometimes used replicably with eustress and distress, respectively. Eustress refers to positive or beneficial stress that motivates individuals and enhances performance. It is typically short-term and perceived as manageable, leading to feelings of excitement and fulfillment [3]. Whereas distress represents negative or harmful stress that exceeds an individual's ability to cope, resulting in feelings of anxiety, overwhelm, and dysfunction. Distress can have detrimental effects on physical and mental health, underscoring the need to identify and manage negative stressors [4]. While we try to manage the distress, it can have a long-term impact on our nervous system, including our autonomic nervous system (ANS) and parasympathetic nervous system (PNS).

3. Understanding body's stress response systems

The human body's stress response system, colloquially referred to as the "fight-or-flight" response, encompasses a complex interplay of physiological reactions designed to prepare one to confront or evade perceived threats [5]. **Figure 1** depicts the body's stress response system in a nutshell. It involves the coordinated efforts of the brain, nervous system, and endocrine system and involves the following series of events:

- *Perception of Stress:* Stress perception initiates when an individual encounters a stressor, whether physical (e.g., an imminent threat or a physiological disturbance such as hypovolemia) or psychological (e.g., social stresses or job-related stress). The brain identifies this as a threat, setting off a cascade of responses.
- *Activation of the Hypothalamus and other brain regions:* Central to this response is the hypothalamus, a small but critical region at the brain's base. The hypothalamus functions as the control center, activating the ANS, specifically the sympathetic nervous system (SNS).
- *SNS Response:* Upon activation, the SNS signals the adrenal glands, located atop the kidneys, to release catecholamines—adrenaline (epinephrine) and

Body's Stress Response

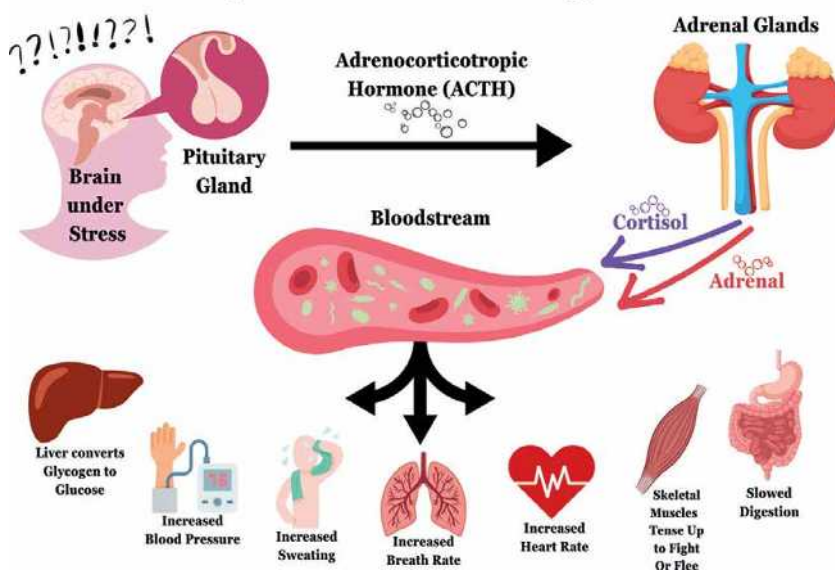


Figure 1.
Body's stress response.

noradrenaline (norepinephrine). These hormones precipitate a series of physiological changes like increased heart rate, increased blood pressure, rapid breathing, sweating, vasoconstriction, tensing up of peripheral muscles, etc.

Concurrently, the hypothalamus activates the hypothalamic-pituitary-adrenal (HPA) axis, resulting in a sequence of hormonal release [6]. Hypothalamus secretes corticotropin-releasing hormone (CRH), CRH stimulates the pituitary gland to release adrenocorticotropic hormone (ACTH), and the ACTH in turn stimulates the adrenal cortex to produce cortisol.

Cortisol, often termed the “stress hormone,” sustains the body’s heightened state of alertness by ensuring a steady supply of blood glucose, suppressing non-essential physiological processes, such as digestion and immune responses, to allocate resources toward addressing the stressor [6].

Following the resolution of the stressor, the parasympathetic nervous system (PNS), known for its “rest-and-digest” functions, assists in returning the body to homeostasis. The PNS promotes relaxation and restoration, counterbalancing the SNS to maintain homeostasis, by normalizing heart rate and blood pressure, slowing respiratory rate, resuming digestive processes, and decreasing cortisol levels through feedback mechanisms that inhibit CRH and ACTH production [6].

4. The adverse effects of stress

Our bodies are equipped to handle short-term stress, but prolonged stress can negatively impact health. Both acute and chronic stress, whether eustress or distress, can disrupt the ANS, leading to various physiological effects. Acute stress triggers immediate responses like changes in heart rate, blood pressure, and cortisol levels,

preparing the body for a fight-or-flight reaction [7]. Chronic stress, however, can dysregulate the HPA axis, resulting in prolonged inflammation and increased risk of conditions such as bronchial hyperresponsiveness, hypertension, immune suppression, metabolic disorders, and mental health issues [2].

Stress also affects psychological well-being, influencing mood, cognition, and behavior [8]. In public service organizations, workplace stress significantly impacts performance and well-being, leading to emotional exhaustion, burnout, and reduced job satisfaction [2]. Common stressors include work-life balance challenges, hierarchical pressures, public interactions, work overload, communication gaps, time constraints, and demanding workloads [9].

Organizational stress can lead to negative outcomes like reduced productivity, decreased Professional Quality of Life (ProQOL), increased absenteeism, and higher turnover rates [9]. It can also cause turnover intention, service sabotage, and deteriorating mental health [9]. Identifying these stressors and implementing preventive measures is essential for mental and emotional well-being. Unaddressed stress can escalate into burnout.

The emphasis on efficiency and cost reduction in service organizations places significant pressure on employees, contributing to workplace stress [10]. Therefore, understanding stress and addressing burnout in public service is critical to prevent adverse effects and promote the well-being of public servants.

Burnout, characterized by emotional, physical, and mental exhaustion, results from prolonged stress, overwork, and overwhelm [11]. Symptoms include fatigue, cynicism, reduced job performance, and detachment from work [12]. Burnout can affect daily functioning, including sleep, appetite, mood, and physical health. Research links burnout to increased risks of physical and mental health issues, such as high blood pressure, cardiovascular disease, anxiety, and depression [13].

In addition to burnout, public servants often experience compassion fatigue from continuously addressing others' needs. This can lead to emotional and physical strain, with symptoms similar to burnout, including reduced sleep, irritability, and increased fatigue [14].

High workload, lack of social support, and poor work-life balance are common risk factors for burnout and compassion fatigue in public service settings. These issues significantly affect public servants' well-being, job performance, and the overall functioning of public institutions. Effective leadership [15], intrinsic motivation [16, 17], psychological resilience [18], and organizational support [19] are crucial in mitigating burnout in public sector employees. From an individual perspective, it's important to note how chronic stress and burnout can impair vagus nerve function, which is key to disengaging the SNS's fight-or-flight response.

5. Relevance of vagal tone for public servants

Understanding the role of the PNS and the vagus nerve is crucial for public servants and those in public sector undertakings due to the high-stress nature of their work environments. Vagal tone, which reflects the vagus nerve's influence on heart rate and other bodily functions, serves as a key indicator of the body's ability to manage stress and maintain homeostasis [20]. High vagal tone is associated with better emotional regulation, reduced anxiety, improved physiological stress responses [21], and enhanced resilience to stress [22].

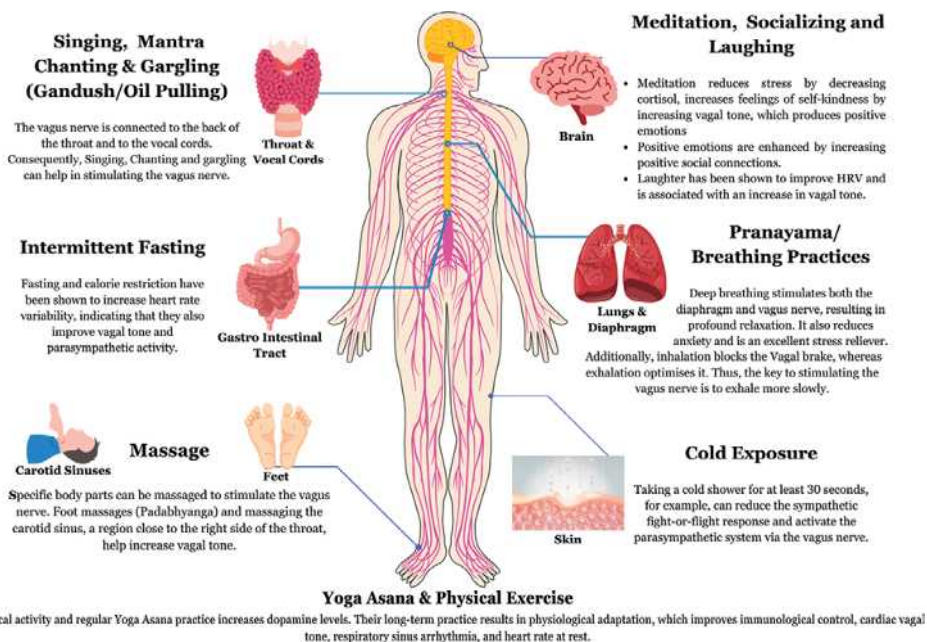


Figure 2.
Ways to stimulate the vagus nerve and increase vagal tone: suggested practices and areas involved.

In public sector roles, multiple stress factors can impact an individual, affecting vagal tone. However, strong vagal tone helps the body recover from stress by activating the PNS, signaling the body to rest and digest, leading to numerous physiological and psychological benefits [21]. Vagal tone is typically measured through heart rate variability (HRV), with higher HRV indicating better cardiovascular health and stress resilience, while lower HRV suggests reduced vagal tone, foreshadowing stress-related health issues such as cardiovascular diseases and mental health disorders [23].

Elevated vagal tone helps these professionals manage stress more effectively, fostering resilience and preventing burnout [24]. It enhances emotional stability, crucial for managing public interactions and making decisions under pressure, and supports positive social interactions essential for teamwork, leadership, and public relations [22]. High vagal tone is also associated with lower levels of anxiety and depression, promoting overall mental well-being and supporting cognitive functions like attention, memory, and executive decision-making, all of which are critical in high-pressure situations [21].

As shown in **Figure 2**, by adopting strategies such as meditation, exercise, yoga, dance, cold water immersion, and humming or singing to enhance vagal tone, public servants can boost their resilience, emotional regulation, social engagement, and overall health [25–28]. This ensures sustained performance and well-being in demanding environments while increasing their capacity to recover from stress.

6. Resilience and its importance in public service settings

Resilience is the process of effectively negotiating, adapting to, or managing significant sources of stress or trauma [29]. Resilient individuals are better equipped

to handle stress, recover from setbacks, and adapt to change. In organizational settings, resilience correlates with higher job satisfaction, lower burnout rates, and overall well-being [29]. It acts as a protective factor against the adverse effects of stress, enabling emotional regulation, maintaining a positive outlook, and persevering through difficulties [30]. Importantly, resilience is not fixed, it can be developed through mindfulness, cognitive-behavioral therapy, and social support [31].

In public service, understanding resilience is crucial for promoting well-being, enhancing performance, and fostering adaptive responses to challenges. Resilience encompasses flexibility, problem-solving skills, emotional regulation, and social support networks that enable individuals to navigate difficulties effectively [32].

Resilience in public service is influenced by personal, social, and organizational factors. Personal factors include traits, coping strategies, self-efficacy, and emotional intelligence. Social factors, such as support networks and community connections, provide emotional support and a sense of belonging. Organizational factors, including leadership, communication, training opportunities, and a positive work culture, foster resilience among employees [33].

Resilient public servants are more adaptable to challenging situations, using experiences to grow and develop personally and professionally [34]. Adaptability enables them to effectively respond to changing demands and stressors, improving their responses over time.

The “window of tolerance,” a concept by Dr. Daniel J Siegel, MD, describes the optimal zone for managing emotions [35]. When within this window, individuals effectively manage and cope with emotions. However, overwhelming stressors can push them out of this zone, leading to hyperarousal (feeling overwhelmed) or hypoarousal (feeling numb). Resilience helps individuals return to their optimal functioning levels. Resilient employees show better work productivity and improved performance during crises [36]. Given the importance of resilience in public sector employees, measuring it is essential due to its multidimensional nature [36].

Resilience can be evaluated using self-report measures, surveys, interviews, and observation techniques at individual, team, and organizational levels [37]. Organizational resilience audits, scenario planning, and resilience indicators assess preparedness, response capabilities, and recovery strategies [38]. Standardized assessment tools include the Connor-Davidson Resilience Scale [39], a 25-item scale validated across diverse samples, and the Brief Resilience Scale, a 6-item measure assessing the perceived ability to bounce back from stress [40].

Promoting resilience in public service involves creating a supportive work environment, providing stress management resources, and fostering a culture of well-being [41]. By enhancing personal, social, and organizational factors, public service organizations can empower employees to navigate challenges effectively and maintain high-performance levels.

Building resilience is akin to strengthening a muscle—it takes time. Strategies to enhance resilience include psychoeducation on sleep management, nutrition, finding purpose, joining support groups, and setting goals. These strategies can be integrated into daily routines for sustained impact [42].

7. Coping mechanisms and stress management strategies

Coping mechanisms are vital for managing stress and can be categorized as adaptive or maladaptive [43]. Adaptive coping strategies, such as problem-solving, seeking

social support, and planning, effectively help individuals manage stress and navigate challenges [44]. In contrast, maladaptive coping mechanisms, like substance abuse, self-harm, aggression, social withdrawal, self-blame, distraction, binge eating, and excessive gadget use, worsen stress and harm mental and physical health [44]. These maladaptive strategies can significantly impact overall well-being and reduce work productivity.

Constructive approaches that promote well-being include active coping, planning, positive reframing, acceptance, seeking social support, and humor [45]. Detrimental responses, such as denial, substance use, self-blame, behavioral disengagement, venting, and avoidance, can lead to increased stress, emotional distress, mental health issues, and impaired functioning [44]. Encouraging adaptive coping strategies like active problem-solving, seeking social support, and positive reframing empowers employees to navigate challenges constructively, enhancing resilience, reducing burnout, and improving job performance and satisfaction [44].

Effective stress management is crucial in public service organizations. Research highlights the importance of stress management in improving public service sector performance [46]. Organizations should raise awareness about available stress management strategies to help employees cope with stress and enhance performance [46]. Additionally, fostering caring and service-oriented climates can prevent turnover intention and service sabotage, leading to better performance outcomes [47].

At the individual level, self-care practices, setting boundaries, seeking support, and practicing mindfulness can help prevent and manage burnout and compassion fatigue [48, 49]. Organizational strategies include promoting work-life balance, providing mental health resources, offering stress management training, and fostering a supportive work culture to address burnout and compassion fatigue [50].

Research shows that interventions like mindfulness-based stress reduction, cognitive-behavioral therapy (CBT), yoga, and self-care practices effectively reduce symptoms of burnout and compassion fatigue among healthcare professionals [51]. CBT, in particular, can help individuals work on their cognitions and belief systems, building resilience through the “three Cs” of resilience: commitment (believing in the importance of what you do), control (believing you have some influence on outcomes), and challenge (viewing stressful events as challenges rather than threats) [52]. In addition to CBT, grounding and mindfulness techniques can support stress management and prevent burnout. Mindfulness fosters self-compassion, helping individuals confront their suffering with warmth and kindness without judgment [53].

8. Yogic perspective on stress and role of yoga in stress management

Rooted in ancient Indian traditions, yoga emphasizes the interconnectedness of the body, breath, and mind to promote overall well-being. It integrates physical postures (asanas), breath control (pranayama), and meditation to harmonize the body, breath and mind, fostering balance, and inner peace [54]. This holistic approach addresses various dimensions of human experience, including physical, mental, emotional, and spiritual aspects.

According to yogic philosophy, stress results from an imbalance within the body-mind complex, disrupting energy flow in the body and thus creating disharmony. Physical postures strengthen the body, breathing practices regulate energy flow, and meditation calms the mind. Each of these three offers a unique set of benefits, while providing an overall comprehensive approach to managing stress and promoting inner peace [54].

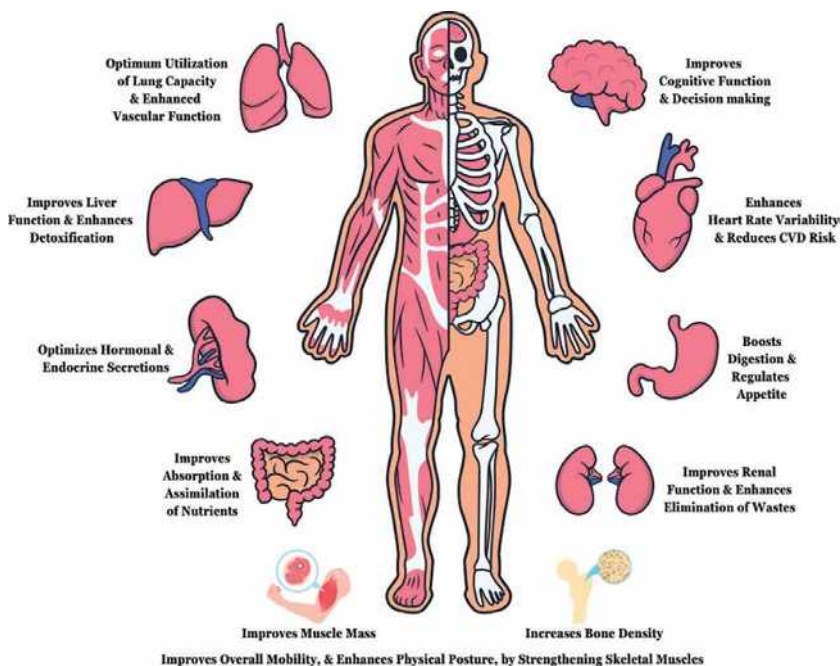


Figure 3.
The multifarious benefits of regular yoga practice.

Studies have demonstrated that yoga practices significantly reduce stress levels, improve emotional well-being, and enhance overall quality of life [55]. Yoga has been shown to lower blood pressure, heart rate, respiratory rate, oxidative stress, and inflammatory conditions, contributing to stress reduction and improved health outcomes [56]. It also has been proven to improve sleep quality and HRV [55, 57], both of which are directly related to vagal tone and work-related quality of life.

Yoga influences neuroendocrine and autonomic pathways that regulate the body's stress response. It modulates the HPA axis and the sympathetic nervous system, helping to regulate stress hormones such as cortisol and promoting a state of relaxation and balance [58]. Yoga and mindfulness-based stress reduction interventions have been found to be associated with significant reductions in self-reported measures of stress and improvements in physiological markers of stress reactivity [59].

Apart from the multifarious benefits of regular yoga practice, as depicted in **Figure 3**, its emphasis on the mind–body connection, breath awareness, and relaxation techniques sets it apart as a comprehensive approach to stress management that addresses both physical and psychological aspects of stress.

9. Effects of yogic practices on the body, breath, and mind

Asanas, or yogic postures, are integral to yoga, fostering physical health by enhancing cardiovascular, musculoskeletal, and orthopedic stability. Regular practice improves cardiovascular fitness by elevating heart rate and circulation, reducing blood pressure, lowering cholesterol, and supporting heart health—essential for those in high-stress public service roles where sedentary lifestyles and job demands

often strain cardiovascular health [60]. Evidence-based yoga modules have proven effective in preventing and managing lifestyle diseases associated with sedentary lifestyles [61].

Asanas also boost overall physical fitness by increasing flexibility, strength, and endurance. By improving oxygenation and circulation to specific body parts, standing asanas, balancing asanas, and inversions enhance muscle strength, posture, and balance, which contributes to better physical resilience and mitigates physical ailments related to stress, like musculoskeletal disorders [54].

Certain asanas target the skeletal system and joints to promote orthopedic stability. For instance, Tadasana (Mountain Pose) and Vrksasana (Tree Pose) improve joint alignment, while Trikonasana (Triangle Pose) and Virabhadrasana (Warrior Pose) strengthen muscles supporting the spine and key joints [54]. This helps prevent and manage orthopedic issues, such as back pain or joint stiffness [62, 63], prevalent in high-stress occupations. For individuals with sedentary jobs, yoga practices like Surya Namaskar (Sun Salutations) can counteract postural problems and improve spinal mobility [54, 64].

Breath plays a crucial role in mind management, as per the yoga philosophy [54]. Pranayama, the practice of yogic breathing, enhances mental stability, resilience, and respiratory function. Techniques such as Anulom Vilom (Alternate Nostril Breathing) and Bhramari (Humming Bee Breathing) calm the nervous system, reduce anxiety, and promote relaxation by activating the PNS [65, 66].

Pranayama practices also lower cortisol levels, improve HRV, and foster relaxation responses [67]. Techniques like Ujjayi (Victorious Breath) and Kapalabhati (Skull Shining Breath) enhance the body's stress resilience, crucial for maintaining focus and composure in high-stress public service roles [67, 68].

Moreover, pranayama improves lung capacity, oxygen intake, and strengthens respiratory muscles. Practices such as Bhastrika (Bellows Breath) and deep diaphragmatic breathing increase respiratory efficiency [69], vital for sustaining energy and reducing fatigue in demanding jobs. Enhanced respiratory health supports cardiovascular function and overall well-being [70].

Sudarshan Kriya Yoga (SKY), an evidence-based breathing technique, has demonstrated significant benefits in managing burnout and improving ProQOL [55, 71, 72]. SKY effectively reduces stress, anxiety, and PTSD symptoms while enhancing HRV and sleep [55, 57, 73], contributing to mental and physical well-being. Its holistic approach, integrating rhythmic breathing with mindfulness, enhances resilience and emotional stability, making it a valuable tool for diverse high-stress environments like public sector undertakings [55, 56].

Dhyana, or meditation, is a core yogic practice with profound impacts on cognitive control, the upliftment of values and morals, and mental stability [54]. It involves deep, focused concentration followed by a relaxed flow of thoughts. Various forms of meditation, such as Transcendental Meditation, Vipassana, Mindfulness Meditation, and Yoga Nidra, have gained popularity and are now well-researched for their benefits [74].

Research shows that Transcendental Meditation can reduce burnout and promote overall well-being [75]. Similarly, Mindfulness meditation has been demonstrated to reduce perceived stress, improve emotional well-being, and enhance physiological markers of stress reactivity [76]. It involves present-moment awareness and non-judgmental acceptance, helping to regulate stress responses and promote emotional resilience [77, 78]. Additionally, mindfulness meditation has been shown to optimize the functional connectivity of the default mode network, reducing inflammation and improving the brain's ability to manage stress and anxiety.

Dhyana enhances cognitive control by improving attention, focus, and executive function [74, 79]. Practices like mindfulness and loving-kindness meditation train the mind to stay present, reduce distractions, and improve decision-making [80], all of which are critical for public service professionals managing complex tasks in high-pressure environments. It also fosters self-reflection and ethical awareness, leading to the upliftment of values and morals [81]. Vipassana, for example, helps individuals develop empathy, compassion, and integrity, essential for maintaining ethical standards and promoting positive interactions in public service roles [82].

Lastly, Dhyana promotes long-term mental stability by reducing stress, anxiety, and depressive symptoms [83, 84]. Regular meditation creates a more balanced and resilient mind, aiding individuals in coping with emotional challenges and maintaining a calm demeanor in stressful situations [74].

10. Integrating yoga and mindfulness into public service routines

Integrating yoga and mindfulness into public service routines offers substantial benefits for employees in high-stress environments, helping manage stress, enhance well-being, and improve job performance. These practices build resilience, reduce burnout, and promote overall health by improving both physiological and psychological well-being. Education on yoga's benefits empowers individuals to recognize the value of mind-body interventions, emphasizing the importance of regular practice [85].

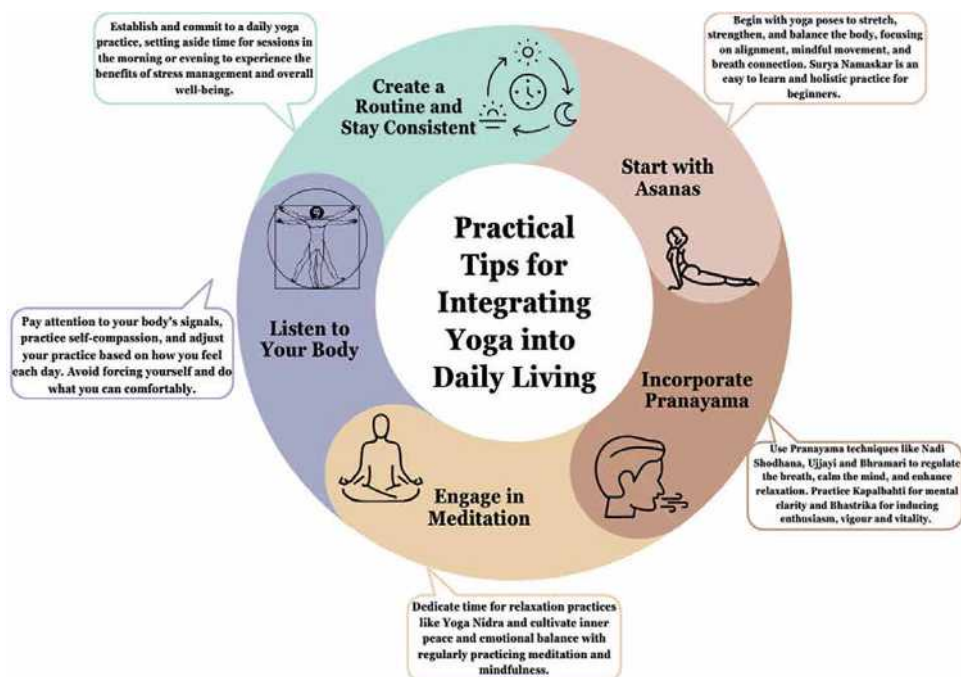
Yoga is practical and accessible, requiring minimal equipment and space, making it an ideal stress-management tool for busy individuals [86]. Tailoring yoga techniques to individual needs enhances its sustainability as a holistic stress management approach. Yoga's effectiveness across diverse populations, including cancer survivors, nurses, college students, and those with chronic pain, highlights its versatility and inclusivity [86], encouraging adoption in public service settings.

The rise of mHealth and telehealth services offers a promising avenue for delivering stress management interventions to public servants, allowing flexible participation that fits their schedules [87, 88]. Utilizing technology for yoga and meditation enhances accessibility and effectiveness, providing valuable resources, guidance, and support [87, 88].

To successfully integrate yoga in public service settings, organizations can offer yoga classes, workshops, or wellness programs. Micro-practice sessions, like the Y-Break modules designed by the Government of India, can be easily incorporated into daily routines [89]. Providing these practices during breaks or after work hours can support employee well-being by reducing stress and refocusing energy [90]. Promoting a culture of self-care, mindfulness, and stress management in the workplace fosters a supportive environment that enhances employee health and productivity.

At a personal level, establishing a consistent yoga routine is crucial. Even brief energizing sessions in the morning or short winding down sessions in the evening can lead to substantial benefits, promoting both physical and mental health. Starting with basic asanas, such as Surya Namaskar, provides a foundation that stretches and strengthens the body while fostering a connection between movement and breath.

To deepen the practice, public servants can integrate pranayama techniques like Nadi Shodhana and Bhramari. These practices are effective in regulating breath, calming the mind, and reducing anxiety, making them ideal for high-stress environments. Adding relaxation and meditation practices like Yoga Nidra, Breath Awareness,



Incorporating yoga into daily routines for stress management can have profound benefits for physical, mental, and emotional well-being. By following these practical tips, individuals can harness the transformative power of yoga to reduce stress, promote relaxation, and cultivate resilience in their daily lives.

Figure 4.
Practical tips for integrating yoga into daily living.

Body Scan, etc. further enhances this routine by cultivating mindfulness and inner balance, essential for maintaining focus and clarity during demanding tasks. These breathing and meditation practices can also be incorporated in the workplace as short micro-practice.

Listening to one's body is another critical aspect of yoga practice. By paying attention to physical and emotional signals, individuals can adjust their practice to suit their current state, ensuring it remains a source of comfort and resilience rather than an additional strain.

By following these strategies, as delineated in **Figure 4**, public servants can seamlessly incorporate yoga into their lives, using it as a tool to build resilience, manage stress, and maintain overall well-being in their demanding roles. However, when beginning for the first time, yoga must be learned under the supervision of a trained expert and in case of previous medical history, a medical expert's guidance must be considered to ensure safety and avoid risk of injury.

11. Conclusion

The chapter provides a comprehensive understanding of how the integration of yoga into public service environments can serve as a powerful tool to enhance resilience, manage stress, and prevent burnout. By focusing on the body, breath, and mind, yoga offers a holistic approach that addresses both the physiological and psychological dimensions of stress. Public service roles are inherently stressful, often leading to chronic stress and burnout, which can have detrimental effects on both

individuals and organizations. The insights provided here emphasize the importance of understanding stress responses, the critical role of the vagus nerve, and the significance of maintaining a high vagal tone for emotional regulation and resilience. Yoga practices have been shown to positively influence these factors, promoting overall well-being and enhancing an individual's ability to cope with the demands of public service.

Resilience is not a static trait but a skill that can be developed and strengthened through consistent practice. By incorporating active and adaptive coping into daily routines, public servants can not only improve their personal health and emotional well-being but also contribute to a more supportive and effective workplace culture. The application of yoga as a strategy for stress management and resilience building in public service is both evidence-based and practical. As public servants navigate the complexities of their roles, these strategies offer a path to sustaining performance, enhancing mental and physical health, and fostering a more resilient workforce. The long-term benefits of these practices underscore the need for their broader adoption within public service organizations to mitigate stress and prevent burnout, ultimately leading to a more effective and compassionate public service sector.

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Conflict of interest

The authors declare no conflict of interest.

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