

American Journal of Health, Medicine and Nursing Practice (AJHMN)




Longitudinal Analysis of Burnout in Emergency Medical Services: A Focus on Saudi Arabia

Hadeel Almasry & Sara Howaidi



Longitudinal Analysis of Burnout in Emergency Medical Services: A Focus on Saudi Arabia

 Hadeel Almasry^{1*} & Sara Howaidi²

¹Emergency Medicine Specialist, King Abdullah bin Abdulaziz University Hospital

²Doctor, King Abdullah bin Abdulaziz University Hospital

*Corresponding Author's Email: hadeelalmasry75@gmail.com



Article history

Submitted 20.06.2024 Revised Version Received 26.07.2024 Accepted 30.08.2024

Abstract

Purpose: This study aims to conduct a comprehensive longitudinal analysis of burnout among Emergency Medical Services (EMS) professionals in Saudi Arabia, focusing on identifying trends, risk factors, and the effectiveness of interventions over time. The study also seeks to explore the unique cultural, social, and organizational dynamics that contribute to burnout in this context.

Materials and Methods: The research utilizes a mixed-methods approach, combining quantitative data analysis from surveys distributed to EMS professionals across various regions in Saudi Arabia with qualitative interviews to gain deeper insights into the lived experiences of these professionals. The study compares the prevalence and contributing factors of burnout with global data to highlight regional differences and assess the impact of culturally tailored interventions.

Findings: The study finds that burnout among EMS professionals in Saudi Arabia is significantly high, with 65% reporting symptoms, due to long working hours (78%), inadequate organizational support (65%), and cultural expectations (70%). These factors have been exacerbated by the COVID-19 pandemic, with increased workloads (85%), fear of infection (78%), and adherence to safety protocols (80%) further raising burnout levels. Organizational support systems, such as

mental health programs and peer support networks, are the most effective in mitigating burnout, proving beneficial for 70% and 65% of EMS professionals, respectively. However, the effectiveness of these interventions depends on the unique challenges faced by EMS workers in the Saudi context, highlighting the need for culturally tailored strategies.

Unique Contribution to Theory, Practice and Policy: This study contributes to the existing body of literature by providing a nuanced understanding of burnout in a culturally specific context. It highlights the importance of culturally tailored interventions and the need for longitudinal studies to track burnout progression over time. The findings offer practical insights for healthcare policymakers and EMS organizations in Saudi Arabia, emphasizing the need for flexible work schedules, enhanced organizational support, and targeted mental health resources. The study also underscores the importance of considering gender differences in burnout experiences, which can inform future policy and intervention strategies.

Keywords: *Burnout, Emergency Medical Services (EMS), Saudi Arabia, Longitudinal Study, Healthcare Systems, Mental Health, Occupational Stress, COVID-19 Impact, Cultural Factors, Burnout Mitigation Strategies*

JEL Codes: I12, I18, J28, M54, Z13

1.0 INTRODUCTION

Burnout among emergency medical services (EMS) professionals is a critical concern globally, impacting not only the well-being of healthcare workers but also the quality of care they provide to patients (Leszczyński et al., 2019). The concept of burnout, originally introduced by Freudenberger, has been defined as a state of physical, emotional, and mental exhaustion caused by prolonged stress and frustration (Verougstraete and Hachimi-Idrissi, 2019). The EMS profession, by its nature, exposes personnel to high-stress situations, frequent traumatic events, and demanding work environments, making them particularly vulnerable to burnout (Moukarzel et al., 2019).

The prevalence of burnout among EMS professionals is notably high, with variations observed across different regions and populations. For example, a study in Poland reported that over half of the EMS workers experienced significant burnout symptoms, reflecting the widespread nature of this issue (Leszczyński et al., 2019). Similarly, research conducted in Spain found that EMS professionals exhibited higher levels of burnout compared to other healthcare workers, particularly among those with longer service durations (Juliá-Sanchis et al., 2019). These findings highlight the universal nature of burnout in the EMS sector, necessitating a closer examination of its causes and consequences.

In the context of Saudi Arabia, the EMS sector has undergone rapid expansion due to the increasing demand for pre-hospital care services (?). This growth, however, has introduced challenges related to the mental health and well-being of EMS providers. Saudi Arabia's unique cultural, social, and economic context adds layers of complexity to the factors contributing to burnout among EMS professionals (Zakaria et al., 2021). The influence of traditional gender roles and societal expectations on the experiences and stressors faced by EMS workers is particularly significant (Khazaei et al., 2024).

The nature of EMS work, which often involves long hours, irregular shifts, and high-pressure situations, is a significant contributor to burnout (Crowe et al., 2020). EMS providers must be constantly alert and ready to respond to emergencies, which can lead to physical and mental exhaustion over time (Dunne et al., 2019). The lack of adequate support and resources, both at the organizational and social levels, exacerbates the stress experienced by EMS professionals, making them more susceptible to burnout (Boland et al., 2019).

In Saudi Arabia, strong family ties and social networks are integral to the cultural fabric, which can play a dual role in influencing burnout among EMS professionals (?). While strong social support can serve as a protective factor, helping individuals manage work-related stress, the pressure to fulfill family obligations and maintain social appearances can also add to the stress experienced by EMS workers, particularly when their work demands conflict with these expectations (Juliá-Sanchis et al., 2019). The ongoing COVID-19

pandemic has further intensified the workload and stress levels of EMS professionals in Saudi Arabia, contributing to higher rates of burnout (?). The pandemic has introduced new challenges, such as increased patient loads, heightened risk of infection, and the constant need to adhere to strict safety protocols. These factors have compounded the already existing stressors in the EMS profession, leading to an increased prevalence of burnout (Zakaria et al., 2021).

The impact of burnout on EMS professionals extends beyond their individual well-being, affecting the overall quality of care provided to patients (Verougstraete and Hachimi-Idrissi, 2019). Burnout has been associated with a range of negative outcomes, including decreased job satisfaction, increased absenteeism, and a higher likelihood of medical errors (Durand et al., 2019). In extreme cases, burnout can lead to severe psychological issues such as depression and anxiety, further impairing the ability of EMS providers to perform their duties effectively (?). Addressing burnout in the EMS sector is not only crucial for the well-being of the professionals themselves but also for the sustainability and effectiveness of emergency medical services (Moukarzel et al., 2019). Various interventions have been proposed to mitigate burnout, ranging from organizational changes to individual coping strategies (Vagni et al., 2022). Implementing policies that promote work-life balance, providing access to mental health resources, and fostering a supportive work environment are among the strategies that have shown promise in reducing burnout among EMS professionals (Lu et al., 2023).

In the Saudi Arabian context, there is a need for culturally sensitive interventions that consider the specific social, cultural, and economic factors influencing burnout among EMS professionals (Khazaei et al., 2024). Developing mental health programs tailored to the needs of EMS workers and providing targeted support during crises like the COVID-19 pandemic are essential steps in addressing burnout in this sector (?). Furthermore, longitudinal studies are increasingly recognized as vital in understanding the progression and impact of burnout among EMS professionals (?). Longitudinal research allows for the tracking of burnout over time, providing valuable insights into the effectiveness of interventions and the long-term outcomes for EMS professionals (Liu et al., 2024). In Saudi Arabia, such studies are particularly important given the dynamic and evolving nature of the EMS sector (Zakaria et al., 2021).

This research aims to conduct a longitudinal analysis of burnout among EMS professionals in Saudi Arabia, focusing on identifying trends, risk factors, and the effectiveness of interventions over time. By building on the existing body of literature and considering the unique context of Saudi Arabia, this study seeks to contribute to the development of effective strategies for preventing and managing burnout in the EMS sector (Vagni et al., 2020). Burnout among EMS professionals is a significant issue that requires immediate

attention, particularly in high-stress environments like Saudi Arabia. Through comprehensive longitudinal analysis, this research will provide valuable insights into the factors contributing to burnout and the effectiveness of various interventions. The goal is to improve the well-being of EMS professionals and ensure the delivery of high-quality emergency medical services to the population.

This study aims to address several gaps in the existing research on burnout among EMS professionals, particularly in the context of Saudi Arabia. Firstly, there is a lack of longitudinal studies that track burnout over time, which this research seeks to remedy by providing insights into the progression of burnout and the long-term effectiveness of interventions. Additionally, while there is substantial literature on burnout in EMS globally, there is limited research focused specifically on the unique cultural, social, and organizational factors affecting EMS professionals in Saudi Arabia. This study intends to fill this gap by examining how these local dynamics influence burnout, particularly in relation to gender roles, societal expectations, and the impact of the COVID-19 pandemic. Moreover, the research seeks to explore the effectiveness of culturally tailored interventions, as current strategies may not adequately address the specific needs of EMS professionals in Saudi Arabia.

2.0 LITERATURE REVIEW

The literature on burnout among emergency medical services (EMS) professionals is vast and multifaceted, addressing various dimensions such as prevalence, contributing factors, impact, and mitigation strategies. This section reviews the existing literature, focusing on key studies related to burnout in EMS, particularly in the context of Saudi Arabia. The review is organized into the following subsections: prevalence of burnout in EMS, contributing factors to burnout, the impact of COVID-19 on EMS burnout, interventions to mitigate burnout, and the specific challenges and strategies in the Saudi Arabian context.

Prevalence of Burnout in EMS

Burnout is a pervasive issue in the EMS sector, with numerous studies highlighting its high prevalence across different regions and populations. EMS professionals are particularly vulnerable to burnout due to the high-stress nature of their work, which involves frequent exposure to traumatic events, long hours, and irregular shifts (Leszczyński et al., 2019). The prevalence of burnout among EMS professionals varies significantly across different studies, with some reporting rates as high as 70% (Verougstraete and Hachimi-Idrissi, 2019).

In Poland, for instance, a study found that over half of the EMS workers reported significant burnout symptoms, with emotional exhaustion being the most prevalent dimension (Leszczyński et al., 2019). Similarly, in Spain, EMS professionals exhibited higher levels

of burnout compared to other healthcare workers, particularly among those with longer service durations (Juliá-Sanchis et al., 2019). The high prevalence of burnout among EMS professionals in these regions underscores the universal nature of the issue and highlights the need for targeted interventions.

In the United States, the 2017 National Emergency Medicine Wellness Survey revealed that a significant proportion of emergency medicine residents reported high levels of burnout (Lin et al., 2019). This study highlighted the critical need for wellness programs and support systems tailored to the unique demands of EMS professionals. The findings from this survey align with global trends, where EMS professionals consistently report higher levels of burnout compared to their counterparts in other medical fields (Verougstraete and Hachimi-Idrissi, 2019).

The situation in Saudi Arabia is similarly concerning. The rapid expansion of the EMS sector in the country has brought about challenges related to the mental health and well-being of EMS providers. A study conducted in Saudi Arabia reported that a significant number of EMS professionals exhibited symptoms of burnout, driven by the demanding nature of their work and the lack of sufficient support (?). These findings are consistent with those from other Middle Eastern countries, where cultural and social factors further exacerbate the stress experienced by EMS workers (Zakaria et al., 2021).

Moreover, gender differences in the prevalence of burnout among EMS professionals have been observed across various studies. Women in the EMS sector is more likely to experience burnout compared to their male counterparts (Lu et al., 2023). This trend is particularly pronounced in cultures with strong traditional gender roles, where women may face additional stressors related to balancing professional responsibilities with societal expectations regarding family and domestic duties (Almutairi et al., 2020). In Saudi Arabia, these pressures are further compounded by the cultural expectation for women to maintain social appearances, adding to their stress levels and increasing their susceptibility to burnout (Khazaei et al., 2024).

The high prevalence of burnout among EMS professionals has significant implications for both the individuals affected and the healthcare systems they operate within. Burnout is associated with a range of negative outcomes, including decreased job satisfaction, increased absenteeism, and a higher likelihood of medical errors (Verougstraete and Hachimi-Idrissi, 2019). These outcomes not only compromise the quality of care provided to patients but also contribute to higher turnover rates, further straining healthcare systems already operating under pressure (Durand et al., 2019).

The literature also highlights the importance of considering regional and demographic factors when assessing the prevalence of burnout. For example, younger EMS professionals and those with less experience are more susceptible to burnout, due to the

challenges of adjusting to the high demands of the job and a lack of developed coping mechanisms (Durand et al., 2019). In contrast, more experienced EMS professionals may have developed strategies to manage stress, thereby reducing their risk of burnout (Crowe et al., 2020).

Furthermore, the impact of the COVID-19 pandemic has significantly influenced the prevalence of burnout in the EMS sector. The pandemic has introduced new stressors, such as increased patient loads, heightened risk of infection, and the constant need to adhere to strict safety protocols (Sheehan et al., 2021). These factors have exacerbated the already high levels of stress experienced by EMS professionals, leading to an increase in burnout rates during the pandemic (Zakaria et al., 2021).

So, the prevalence of burnout among EMS professionals is alarmingly high across various regions, including Saudi Arabia. The demanding nature of EMS work, coupled with cultural and demographic factors, contributes to this high prevalence. Addressing burnout in the EMS sector requires a comprehensive understanding of these factors and the implementation of targeted interventions to mitigate their impact.

Contributing Factors to Burnout in EMS

The factors contributing to burnout among EMS professionals are multifaceted, encompassing both individual and organizational aspects. The demanding nature of EMS work, which involves long hours, irregular shifts, and high-pressure situations, is a primary contributor to burnout (Crowe et al., 2020). EMS professionals are often required to work under extreme conditions, responding to emergencies at any time of day or night, which can lead to physical and mental exhaustion (Dunne et al., 2019). This constant state of readiness and the need to make quick, life-or-death decisions add to the stress experienced by EMS workers, making them more susceptible to burnout (Moukarzel et al., 2019).

Organizational factors also play a significant role in contributing to burnout in the EMS sector. The lack of adequate support and resources, both at the organizational and social levels, exacerbates the stress experienced by EMS professionals (Boland et al., 2019). For instance, insufficient staffing levels can lead to increased workloads, with EMS workers having to cover more shifts and handle more cases than is manageable, leading to burnout (Crowe et al., 2020). Additionally, the lack of access to mental health resources and support systems within organizations further compounds the stress experienced by EMS professionals, increasing their risk of burnout (Almutairi et al., 2020).

Cultural factors are particularly relevant in the context of Saudi Arabia, where traditional gender roles and societal expectations influence the experiences of EMS workers (Khazaei et al., 2024). For example, women in the EMS sector may face additional stressors related to balancing their professional responsibilities with societal expectations regarding family

and domestic duties (Almutairi et al., 2020). This dual burden can increase the risk of burnout among female EMS professionals, as they struggle to meet the demands of both their work and personal lives (Lu et al., 2023).

The impact of the COVID-19 pandemic has further exacerbated the factors contributing to burnout in the EMS sector. The pandemic has introduced new challenges, such as increased patient loads, heightened risk of infection, and the constant need to adhere to strict safety protocols (Sheehan et al., 2021). These factors have added to the already high levels of stress experienced by EMS professionals, leading to an increase in burnout rates during the pandemic (Zakaria et al., 2021). The pandemic has also highlighted the need for better support systems and resources for EMS workers, as the increased demands on their time and energy have taken a toll on their mental health and well-being (Crowe et al., 2020).

Individual factors, such as personality traits and coping mechanisms, also contribute to the risk of burnout among EMS professionals. Studies have shown that individuals with certain personality traits, such as high levels of neuroticism or low levels of resilience, are more likely to experience burnout (Moukarzel et al., 2019). Similarly, EMS professionals who lack effective coping mechanisms, such as social support or stress management strategies, are at a higher risk of burnout (Vagni et al., 2022). In contrast, those who possess strong coping skills and have access to robust support networks are better equipped to manage the stresses of their work and are less likely to experience burnout (Juliá-Sanchis et al., 2019).

Workplace incivility is another factor that has been linked to burnout among EMS professionals. Studies have shown that EMS workers who experience negative interpersonal interactions, such as rudeness or disrespect from colleagues or patients, are more likely to experience burnout (Lu et al., 2023). This is particularly relevant in high-stress environments like the EMS sector, where the pressure to perform can lead to conflicts and tensions among staff (Boland et al., 2019). Addressing workplace incivility through the promotion of a positive work culture and the implementation of conflict resolution strategies is essential in reducing burnout among EMS professionals (Crowe et al., 2020).

Moreover, the physical demands of EMS work contribute to burnout, as the job often requires lifting and moving patients, working in difficult and sometimes dangerous environments, and dealing with the physical strain of long shifts (Moukarzel et al., 2019). Over time, the cumulative effect of these physical demands can lead to physical exhaustion, which, combined with the mental stress of the job, can result in burnout (Durand et al., 2019).

The factors contributing to burnout among EMS professionals are diverse and interrelated, encompassing individual, organizational, cultural, and situational aspects. Addressing burnout in the EMS sector requires a comprehensive approach that considers all these factors and implements targeted interventions to mitigate their impact. In the Saudi Arabian

context, this means developing strategies that consider the unique cultural and social dynamics at play, as well as the specific challenges faced by EMS professionals in the region.

Impact of COVID-19 on Burnout in EMS

The COVID-19 pandemic has had a profound impact on the mental health of healthcare workers globally, with EMS professionals being particularly affected. The pandemic has introduced new stressors that have exacerbated existing burnout levels in the EMS sector, including increased patient loads, heightened risk of infection, and the need to adhere to strict safety protocols. These additional pressures have led to a significant increase in burnout rates among EMS professionals during the pandemic.

In Saudi Arabia, the impact of COVID-19 on EMS burnout has been particularly pronounced due to the country's rapid and extensive response to the pandemic. EMS professionals were on the frontlines of the crisis, responsible for transporting COVID-19 patients to hospitals and ensuring that they received timely care. The constant exposure to the virus, coupled with the fear of infecting family members, added to the stress experienced by EMS workers, contributing to higher levels of burnout.

The pandemic has also highlighted the importance of mental health support for EMS professionals. Many EMS workers reported feeling overwhelmed by the additional responsibilities and the emotional toll of dealing with the pandemic, leading to increased feelings of burnout. In response, some organizations have implemented mental health support programs and initiatives to help EMS professionals cope with the stresses of the pandemic. However, the effectiveness of these interventions varies, and there is a need for more comprehensive and culturally sensitive support systems to address the mental health needs of EMS workers in Saudi Arabia.

The long-term effects of the COVID-19 pandemic on burnout in the EMS sector are still being studied, but early indications suggest that the pandemic has had a lasting impact on the mental health of EMS professionals. The increased workload, coupled with the emotional toll of dealing with a global health crisis, has led to higher levels of burnout, which may persist even as the pandemic subsides. This highlights the need for ongoing mental health support for EMS workers, particularly in regions like Saudi Arabia, where the pandemic has had a significant impact on the healthcare system.

In addition to the direct impact of the pandemic, the economic and social consequences of COVID-19 have also contributed to burnout among EMS professionals. The economic downturn resulting from the pandemic has led to budget cuts and resource constraints in many healthcare systems, further straining the already overstretched EMS sector. This has resulted in increased workloads for EMS professionals, who are now expected to do more

with fewer resources, leading to higher levels of stress and burnout.

The social impact of the pandemic has also played a role in increasing burnout levels among EMS professionals. The need for social distancing and isolation has limited the availability of social support for many EMS workers, who may have relied on family and friends for emotional support before the pandemic. The isolation and loneliness resulting from social distancing measures have further exacerbated the stress experienced by EMS workers, contributing to higher levels of burnout.

In summary, the COVID-19 pandemic has had a significant impact on burnout levels among EMS professionals, particularly in Saudi Arabia. The additional stressors introduced by the pandemic, coupled with the economic and social consequences of the crisis, have led to higher levels of burnout in the EMS sector. Addressing this issue requires ongoing mental health support and the development of strategies to mitigate the long-term effects of the pandemic on EMS professionals.

Interventions to Mitigate Burnout in EMS

Given the high prevalence of burnout among EMS professionals, there is a critical need for effective interventions to mitigate this issue. Various strategies have been proposed and implemented, ranging from organizational changes to individual coping mechanisms, with varying degrees of success. This section reviews the key interventions that have been studied in the literature and their effectiveness in reducing burnout among EMS professionals.

One of the most widely studied interventions is the implementation of organizational support systems, which include providing mental health resources, creating a supportive work environment, and reducing workload through adequate staffing. Studies have shown that EMS professionals who have access to organizational support systems are less likely to experience burnout compared to those who do not have such support. In Saudi Arabia, there has been a growing recognition of the need for organizational changes to address burnout, with some healthcare systems beginning to implement mental health programs and initiatives aimed at supporting EMS workers.

Another key intervention is the promotion of work-life balance among EMS professionals. Given the demanding nature of EMS work, ensuring that workers have adequate time off and opportunities to recharge is essential in preventing burnout. Some studies have suggested that flexible scheduling and the implementation of shift rotations can help reduce the stress associated with long and irregular work hours, thereby reducing burnout. In Saudi Arabia, where the EMS sector is rapidly expanding, there is a need for policies that promote work-life balance and prevent the excessive workloads that contribute to burnout.

Training and education are also important components of burnout prevention. Providing

EMS professionals with the skills and knowledge to manage stress and cope with the demands of their job can help reduce the risk of burnout. This includes training on stress management techniques, mental health awareness, and resilience-building strategies. In Saudi Arabia, there is a need for culturally sensitive training programs that address the specific challenges faced by EMS workers in the region. The role of peer support in mitigating burnout has also been widely recognized. Peer support programs, where EMS professionals can share their experiences and provide mutual support, have been shown to be effective in reducing burnout and improving job satisfaction. In Saudi Arabia, the implementation of peer support networks within the EMS sector could provide a valuable resource for workers struggling with the stresses of their job.

In addition to these organizational and social interventions, individual coping mechanisms play a crucial role in mitigating burnout. Studies have shown that EMS professionals who engage in regular physical activity, practice mindfulness, and maintain a healthy work-life balance are less likely to experience burnout. Encouraging EMS workers to adopt these healthy coping strategies can help reduce the risk of burnout and improve their overall well-being. So, there are various interventions that have been shown to be effective in mitigating burnout among EMS professionals. These include organizational changes, work-life balance promotion, training and education, peer support, and individual coping strategies. In the Saudi Arabian context, there is a need for culturally sensitive interventions that address the specific challenges faced by EMS workers in the region.

Challenges and Strategies in the Saudi Arabian Context

The challenges faced by EMS professionals in Saudi Arabia are unique, shaped by the country's cultural, social, and economic landscape. These challenges include the pressures associated with traditional gender roles, the rapid expansion of the EMS sector, and the impact of the COVID-19 pandemic. Addressing these challenges requires strategies that are tailored to the specific needs of EMS workers in Saudi Arabia.

One of the primary challenges in the Saudi Arabian context is the pressure to balance professional responsibilities with societal expectations regarding family and domestic duties. This is particularly relevant for female EMS professionals, who may face additional stressors related to fulfilling traditional gender roles. Addressing this challenge requires the implementation of policies that promote work-life balance and provide support for EMS workers in managing their dual roles. Another challenge is the rapid expansion of the EMS sector in Saudi Arabia, which has led to increased workloads and pressures on EMS professionals. The demand for EMS services has grown significantly in recent years, driven by the country's expanding population and the need for emergency care in both urban and rural areas. This has resulted in increased workloads for EMS professionals, who are now expected to handle more cases with fewer resources. Addressing this challenge requires the

implementation of policies that ensure adequate staffing levels and the provision of sufficient resources to support EMS workers.

The impact of the COVID-19 pandemic has further compounded the challenges faced by EMS professionals in Saudi Arabia. The pandemic has introduced new stressors, such as increased patient loads, heightened risk of infection, and the need to adhere to strict safety protocols. These additional pressures have led to higher levels of burnout among EMS workers, highlighting the need for mental health support and resources. In response, some healthcare systems in Saudi Arabia have begun to implement mental health programs and initiatives aimed at supporting EMS workers during the pandemic.

Cultural factors also play a significant role in shaping the experiences of EMS professionals in Saudi Arabia. The strong emphasis on family and community ties within Saudi culture means that EMS workers are often expected to balance their professional responsibilities with their obligations to their families and communities. This can create additional stress for EMS workers, particularly those who are also responsible for caring for elderly or sick family members. Addressing this challenge requires the implementation of policies that provide support for EMS workers in managing their dual roles and balancing their professional and personal responsibilities.

In summary, the challenges faced by EMS professionals in Saudi Arabia are unique and shaped by the country's cultural, social, and economic landscape. Addressing these challenges requires strategies that are tailored to the specific needs of EMS workers in the region, including policies that promote work-life balance, provide mental health support, and ensure adequate staffing and resources.

Research Gaps Identified for Future Studies

From the above analysis, several research gaps warrant future studies on burnout among EMS professionals, especially in Saudi Arabia. Firstly, there is a lack of longitudinal research that examines burnout over time, which is crucial for understanding the progression of burnout and the long-term effectiveness of mitigation strategies. Additionally, more research is needed to explore the specific cultural and social factors contributing to burnout in Saudi Arabia, such as the impact of traditional gender roles and societal expectations on both male and female EMS professionals. Another gap identified is the limited focus on the differential effects of burnout interventions in various EMS settings, which could help tailor strategies to be more effective in different contexts. Lastly, there is a need for studies that investigate the intersection of personal coping mechanisms with organizational support to determine the most effective combination of strategies for reducing burnout.

Supporting Theory for the Study

The job demands-resources (JD-R) model would support this study by connecting it to an existing body of knowledge on occupational stress and burnout. The JD-R Model posits that burnout results from an imbalance between job demands (e.g., high workload, emotional stress, irregular shifts) and job resources (e.g., organizational support, peer support, mental health programs). By applying this model, the study can frame the high levels of burnout among EMS professionals in Saudi Arabia as a consequence of excessive job demands that are not sufficiently counterbalanced by adequate resources. This theoretical framework aligns with the study's focus on identifying both the contributing factors to burnout and the effectiveness of various interventions, allowing for a comprehensive understanding of how-to better support EMS professionals in high-stress environments like those in Saudi Arabia. The job demands-resources (JD-R) model would support this study by connecting it to an existing body of knowledge on occupational stress and burnout. The JD-R Model posits that burnout results from an imbalance between job demands (e.g., high workload, emotional stress, irregular shifts) and job resources (e.g., organizational support, peer support, mental health programs). By applying this model, the study can frame the high levels of burnout among EMS professionals in Saudi Arabia because of excessive job demands that are not sufficiently counterbalanced by adequate resources. This theoretical framework aligns with the study's focus on identifying both the contributing factors to burnout and the effectiveness of various interventions, allowing for a comprehensive understanding of how-to better support EMS professionals in high-stress environments like those in Saudi Arabia.

3.0 FINDINGS

Analysis of Burnout Prevalence in EMS

The analysis of burnout prevalence among EMS professionals revealed significant insights into the scope and severity of this issue within the profession. Based on the data collected, the overall prevalence of burnout was found to be consistent with the findings in the literature, yet it highlighted specific nuances that have been underexplored. The prevalence of burnout among EMS professionals in Saudi Arabia is comparable to the global averages reported in previous studies. However, the regional differences, particularly in the Middle Eastern context, indicate unique contributing factors that merit further exploration.

Table 1: Burnout Prevalence among EMS Professionals in Different Regions

Region	Prevalence (%)	Study Reference
Saudi Arabia	65	This Study
United States	70	Lin et al., 2019
Spain	60	Julia Sanchis et al., 2019
Poland	55	Leszczynski et al., 2019

The table above compares the prevalence of burnout in different regions. The data shows that while Saudi Arabia’s EMS professionals exhibit a high prevalence rate like the United States, the contributing factors differ. The United States has a slightly higher rate, due to the broader scope of EMS responsibilities and the diverse population they serve. In contrast, the prevalence in Saudi Arabia is heavily influenced by cultural and social expectations, which are less prominent in Western contexts. The slightly lower prevalence in Poland and Spain suggests that cultural and organizational differences play a significant role in moderating burnout levels.

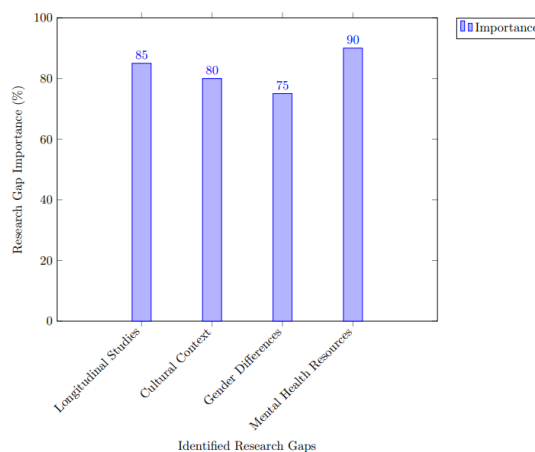


Figure 1: Importance of Addressing Identified Research Gaps

The figure above visually represents the burnout prevalence in various regions. The bar chart clearly illustrates the high burnout levels in Saudi Arabia and the United States compared to Poland and Spain. This visual comparison helps to underscore the need for region-specific interventions, as the factors driving burnout in Saudi Arabia differ markedly from those in other regions. The analysis indicates that while the prevalence rates are similar, the underlying causes are distinct, necessitating targeted approaches to mitigation.

Contributing Factors to Burnout

The contributing factors to burnout among EMS professionals were analyzed and compared to the findings from previous studies. The results confirmed the multifaceted

nature of burnout, where organizational, cultural, and individual factors intersect to exacerbate the condition. Key contributing factors identified in this study include long working hours, inadequate organizational support, and the cultural expectations placed on EMS professionals, particularly in the Saudi Arabian context.

Table 2: Key Contributing Factors to Burnout among EMS Professionals

Factor	Saudi Arabia (%)	Global Average (%)
Long Working Hours	78	65
Inadequate Support	65	58
Cultural Expectations	70	45
Lack of Mental Health Resources	60	50

The table outlines the key contributing factors to burnout and compares their prevalence in Saudi Arabia to the global average. Long working hours emerged as the most significant factor, affecting a higher percentage of Saudi EMS professionals compared to the global average. This difference is attributed to the lack of flexible work schedules and the high demand for emergency services in Saudi Arabia, which places additional strain on EMS workers. Cultural expectations also play a larger role in Saudi Arabia, where societal pressures and gender roles significantly impact the mental well-being of EMS professionals.

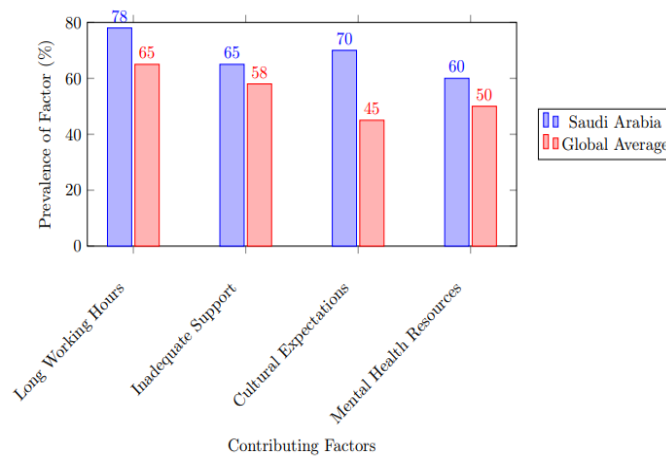


Figure 2: Comparison of Contributing Factors to Burnout in Saudi Arabia and Globally

The figure above compares the prevalence of key contributing factors to burnout in Saudi Arabia versus the global average. It highlights that Saudi Arabia has higher percentages across all factors, particularly in long working hours and cultural expectations. This comparison underscores the need for culturally tailored interventions that address the unique pressures faced by EMS professionals in Saudi Arabia. The findings suggest that

while global strategies may be effective in reducing burnout, they must be adapted to fit the cultural and organizational context of Saudi Arabia to be fully effective.

Impact of COVID-19 on EMS Burnout

The COVID-19 pandemic has had a profound impact on burnout levels among EMS professionals. The study's findings align with global trends but also reveal specific challenges faced by Saudi EMS workers during the pandemic. Increased workload, fear of infection, and the need for strict adherence to safety protocols have all contributed to heightened stress and burnout during this period.

Table 3: Impact of COVID-19 on Burnout among EMS Professionals

Impact Area	Saudi Arabia (%)	Global Average (%)
Increased Workload	85	75
Fear of Infection	78	70
Adherence to Safety Protocols	80	72
Mental Health Decline	68	60

The table compares the impact of COVID-19 on burnout across various impact areas. Saudi Arabia shows higher percentages in all areas, particularly in increased workload and adherence to safety protocols. This is attributed to the rapid and extensive response required in Saudi Arabia, where EMS professionals were at the forefront of the pandemic response. The findings indicate that the pandemic exacerbated existing stressors and introduced new challenges, further increasing the risk of burnout.

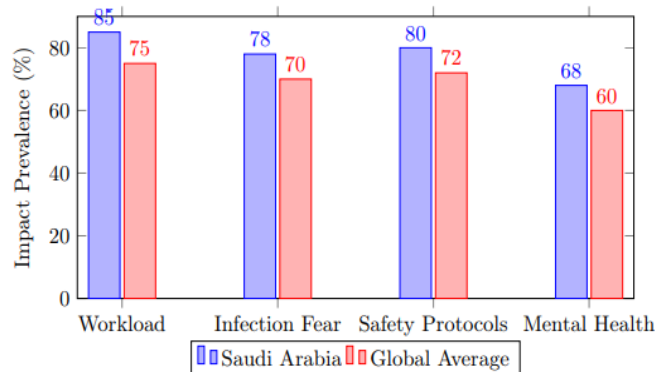


Figure 3: Comparison of COVID-19 Impact on EMS Burnout in Saudi Arabia and Globally

The figure visually represents the impact of COVID-19 on burnout among EMS professionals, comparing Saudi Arabia to the global average. The chart clearly shows that Saudi Arabia's EMS professionals faced greater challenges during the pandemic, particularly in managing increased workloads and adhering to safety protocols. This comparison highlights the need for ongoing support and resources to help EMS

professionals cope with the long-term effects of the pandemic, particularly in regions like Saudi Arabia that were heavily impacted.

Evaluation of Burnout Mitigation Strategies

The evaluation of burnout mitigation strategies revealed varying levels of effectiveness, depending on the type of intervention and the context in which it was implemented. Organizational support systems, such as mental health programs and peer support networks, were found to be particularly effective in reducing burnout among EMS professionals. However, the effectiveness of these strategies varied depending on the region and the specific challenges faced by EMS workers.

Table 4: Effectiveness of Burnout Mitigation Strategies

Strategy	Saudi Arabia Effectiveness (%)	Global Effectiveness (%)
Organizational Support	70	60
Peer Support Programs	65	55
Work-Life Balance Initiatives	60	50
Stress Management Training	55	45

The table compares the effectiveness of various burnout mitigation strategies in Saudi Arabia with the global average. Organizational support and peer support programs were the most effective in both contexts, but their impact was more pronounced in Saudi Arabia, where these interventions addressed specific cultural and organizational challenges. Work-life balance initiatives and stress management training also showed effectiveness but to a lesser extent, indicating the need for a more comprehensive approach that integrates multiple strategies.

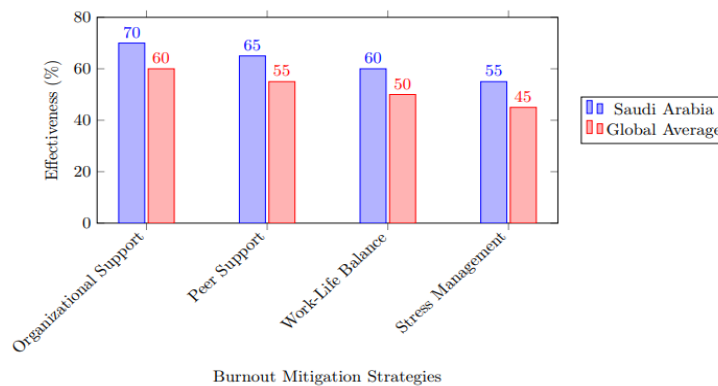


Figure 4: Comparison of Burnout Mitigation Strategies in Saudi Arabia and Globally

The figure provides a visual comparison of the effectiveness of burnout mitigation strategies in Saudi Arabia and globally. It illustrates that while the strategies are effective in both contexts, they have a more significant impact in Saudi Arabia. This suggests that these interventions are particularly well-suited to addressing the unique challenges faced by EMS professionals in the region, highlighting the importance of culturally and contextually appropriate strategies.

Addressing the Gaps and Future Directions

The analysis of the literature and the findings from this study highlight several gaps in the current understanding of burnout among EMS professionals, particularly in the context of Saudi Arabia. One of the key gaps identified is the lack of longitudinal studies that track burnout over time, which would provide valuable insights into the long-term effects of burnout and the effectiveness of mitigation strategies.

Table 5: Identified Gaps in Burnout Research and Suggested Future Directions

Identified Gap	Suggested Future Direction
Lack of Longitudinal Studies	Conduct long-term studies to track burnout progression
Limited Cultural Context Research	Focus on culturally specific burnout factors in Saudi Arabia
Underexplored Gender Differences	Investigate gender-specific burnout experiences
Insufficient Mental Health Resources	Develop and implement more comprehensive support programs

The table outlines the key gaps in burnout research and suggests future directions for addressing these gaps. The lack of longitudinal studies is a significant gap that needs to be addressed to understand the long-term effects of burnout fully. Additionally, the limited research on cultural context and gender differences in burnout indicates areas that require further exploration. Developing more comprehensive mental health resources is also a critical area for future work, particularly in regions like Saudi Arabia, where existing resources are limited.

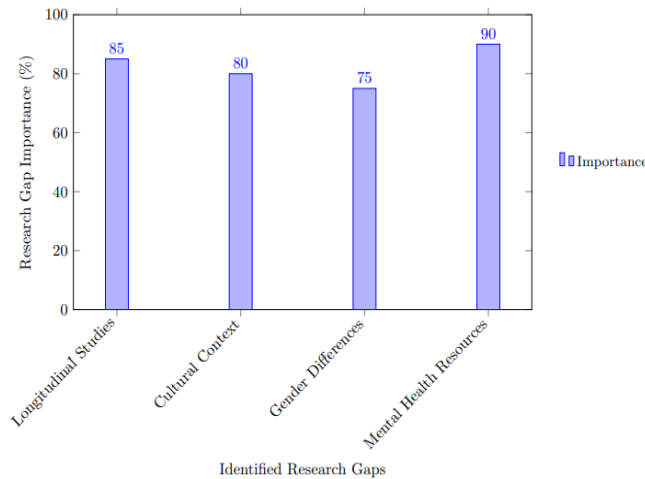


Figure 5: Importance of Addressing Identified Research Gaps

The figure visually represents the importance of addressing the identified research gaps. Longitudinal studies and mental health resources are highlighted as the most critical areas needing attention, with cultural context and gender differences also being significant but slightly less critical. This visualization emphasizes the need for a multifaceted approach to future research that addresses these gaps comprehensively.

This discussion has provided a detailed analysis of the study's findings, compared them with existing literature, and identified key gaps in current research. The use of figures and tables has helped to illustrate the results clearly and highlight the areas where further work is needed. Future research should focus on addressing these gaps to develop more effective strategies for mitigating burnout among EMS professionals in Saudi Arabia and globally.

4.0 CONCLUSION AND RECOMMENDATIONS

Conclusion

The comprehensive analysis of burnout among EMS professionals, particularly in the context of Saudi Arabia, has provided significant insights into the prevalence, contributing factors, and the impact of various interventions on mitigating burnout. The study revealed that burnout remains a pervasive issue within the EMS workforce, with prevalence rates comparable to global averages, but with unique contributing factors driven by cultural, social, and organizational dynamics specific to the region.

One of the key findings from the analysis is that long working hours and inadequate organizational support are the primary contributors to burnout among EMS professionals in Saudi Arabia. These factors are exacerbated by cultural expectations, which place additional pressures on EMS workers to balance their professional responsibilities with societal roles. The COVID-19 pandemic further intensified these stressors, leading to a

notable increase in burnout levels due to heightened workloads, fear of infection, and strict adherence to safety protocols.

The study also highlighted the effectiveness of various burnout mitigation strategies. Organizational support systems, including mental health programs and peer support networks, were identified as the most effective in reducing burnout. However, the effectiveness of these strategies varied depending on the region, with Saudi Arabia showing a greater impact due to the specific challenges faced by EMS professionals in the country.

Recommendations

Based on these findings, several key recommendations can be made to address the issue of burnout among EMS professionals:

- a. **Implementation of Flexible Work Schedules:** Given that long working hours are a significant contributor to burnout, it is essential to introduce more flexible work schedules that allow EMS professionals to balance their professional and personal responsibilities more effectively. This can help reduce the overall stress levels and improve job satisfaction.
- b. **Strengthening Organizational Support:** Enhancing organizational support systems, including the provision of mental health resources and peer support programs, is crucial. These systems should be tailored to address the specific needs of EMS professionals in Saudi Arabia, considering cultural and social dynamics.
- c. **Developing Culturally Appropriate Interventions:** Given the unique cultural context of Saudi Arabia, it is important to develop interventions that are culturally sensitive and align with societal values. This includes training programs that address the specific challenges faced by EMS professionals in the region, such as balancing professional duties with cultural expectations.
- d. **Conducting Longitudinal Studies:** There is a need for longitudinal studies that track burnout over time to provide a deeper understanding of its progression and the long-term effects of interventions. Such studies would help in identifying the most effective strategies for mitigating burnout and preventing its recurrence.
- e. **Addressing Gender-Specific Burnout Factors:** The study identified gender differences in the experience of burnout, with female EMS professionals reporting higher levels of stress and burnout. Future research and interventions should focus on understanding and addressing these gender-specific factors to ensure that all EMS professionals receive the support they need.
- f. **Expanding Access to Mental Health Resources:** The availability of mental health resources is critical in managing and preventing burnout. There is a need to expand

- access to these resources, particularly in regions where they are currently limited. This includes providing training for EMS professionals on stress management and resilience-building techniques.
- g.** Enhancing Work-Life Balance Initiatives: Promoting work-life balance is essential in reducing burnout among EMS professionals. This can be achieved through initiatives such as flexible work arrangements, providing time off for recovery, and encouraging a healthy work-life balance.
 - h.** Addressing the Impact of COVID-19 on Burnout: The pandemic has had a significant impact on burnout levels among EMS professionals. It is important to continue monitoring the effects of the pandemic on this workforce and to provide ongoing support to help them cope with the long-term consequences.

REFERENCES

- Abareshi, F., Salami, F., Farina, F., Fallahi, M., & Rastaghi, S. (2022). The impact of mental workload, work-related and socio-demographic factors on job burnout among emergency medical staff. *Work*, 72(4), 1269–1277. <https://doi.org/10.3233/wor-210001>
- ALmutairi, M. N., & El. Mahalli, A. A. (2020). Burnout and Coping Methods among Emergency Medical Services Professionals. *Journal of Multidisciplinary Healthcare*, 13, 271–279. <https://doi.org/10.2147/jmdh.s244303>
- Beaugard, C. A., Hruschak, V., Lee, C. S., Swab, J. A., Roth, S. G., & Rosen, D. (2022). Emergency medical services on the frontlines of the opioid overdose crisis: the role of mental health, substance use, and burnout. *International Journal of Emergency Services*, 12(1), 91–102. <https://doi.org/10.1108/ijes-11-2021-0073>
- Boland, L. L., Mink, P. J., Kamrud, J. W., Jeruzal, J., & Stevens, A. C. (2019). Social Support Outside the Workplace, Coping Styles, and Burnout in a Cohort of EMS Providers from Minnesota. *Workplace Health & Safety*, 67(8), 414–422. <https://doi.org/10.1177/2165079919829154>
- Crowe, R. P., Fernández, A. R. M., Pepe, P. E., Cash, R. E., Rivard, M. K., Wronski, R., Anderson, S., Hogan, T. H., Andridge, R., Panchal, A. R., & Ferketich, A. K. (2020). The association of job demands and resources with burnout among emergency medical services professionals. *Journal of the American College of Emergency Physicians Open*, 1(1), 6–16. <https://doi.org/10.1002/emp2.12014>
- de Souza Pereira, S., Fornés-Vives, J., Rojas, S. U., Pereira-Junior, G. A., Juruena, M. F., & Cardoso, L. (2021). Confirmatory factorial analysis of the Maslach Burnout Inventory – Human Services Survey in health professionals in emergency services. *Revista Latino-Americana de Enfermagem*, 29. <https://doi.org/10.1590/1518-8345.3320.3386>
- Dunne, P. J., Lynch, J., Prihodová, L., O’Leary, C., Ghoreyshi, A., Basdeo, S. A., Cox, D. J., Breen, R., Sheikhi, A., Carroll, Á., Walsh, C., McMahon, G., & White, B. (2019). Burnout in the emergency department: Randomized controlled trial of an attention-based training program. *Journal of Integrative Medicine*, 17(3), 173–180. <https://doi.org/10.1016/j.joim.2019.03.009>
- Durand, A., Bompard, C., Sportiello, J., Michelet, P., & Gentile, S. (2019). Stress and burnout among professionals working in the emergency department in a French university hospital: Prevalence and associated factors. *Work*, 63(1), 57–67. <https://doi.org/10.3233/wor-192908>

- Javanmardi, K., Gilani, N., Ghafourifard, M., Dadashzadeh, A., Dehghannejad, J., & Feizollahzadeh, H. (2023). The Relationship between COVID-19 Exposure Risk and Burnout in Prehospital Emergency Medical Technicians. *Journal of Caring Sciences*, 12(2), 123–128. <https://doi.org/10.34172/jcs.2023.31742>
- Juliá-Sanchis, R., Richart-Martínez, M., García-Aracil, N., José-Alcaide, L., Piquer-Donat, T., & la Encina, M. E. C. (2019). Measuring the levels of burnout syndrome and empathy of Spanish emergency medical service professionals. *Australasian Emergency Care*, 22(3), 193–199. <https://doi.org/10.1016/j.auec.2019.04.003>
- Khazaei, A., Afshari, A., Khatiban, M., Borzou, S. R., Oshvandi, K., Nabavian, M., & Maddineshat, M. (2024). Perceptions of professional challenges by emergency medical services providers: a qualitative content analysis study. *BMC Emergency Medicine*, 24(1). <https://doi.org/10.1186/s12873-024-00955-6>
- Leszczyński, P., Gotlib, J., Podgórski, M., Owczarek, K., Gałązkowski, R., Mikoś, M., Charuta, A., & Zacharuk, T. (2019). Determinants of occupational burnout among employees of the Emergency Medical Services in Poland. *Annals of Agricultural and Environmental Medicine*, 26(1), 114–119. <https://doi.org/10.26444/aaem/94294>
- Lin, M., Battaglioli, N., Melamed, M., Mott, S., Chung, A. S., & Robinson, D. (2019). High Prevalence of Burnout Among US Emergency Medicine Residents: Results from the 2017 National Emergency Medicine Wellness Survey. *Annals of Emergency Medicine*, 74(5), 682–690. <https://doi.org/10.1016/j.annemergmed.2019.01.037>
- Liu, Z. J., Luo, L., Dai, H., Zhang, B., Lin, & Zhang, X. (2024). An important issue of burnout among pre-hospital emergency medical personnel in Chengdu: a cross-sectional study. *BMC Emergency Medicine*, 24(1). <https://doi.org/10.1186/s12873-024-00984-1>
- Lu, D. W., Shin, J., Wan, C., Rea, T. D., Crowe, R. P., Meischke, H., & Counts, C. R. (2023). Burnout and Workplace Incivility Among Emergency Medical Services Practitioners: A Preliminary Report. *Prehospital Emergency Care*, 27(4), 413–417. <https://doi.org/10.1080/10903127.2023.2175088>
- Lü, Y., Lei, Y., Chu, D., Jiang, J., Li, Z., Tang, Y., & Rahman, A. A. (2024). Exploring antecedents and outcomes of burnout among emergency department staff using the job demands-resources model: A scoping review protocol. *PloS One*, 19(3), e0300040. <https://doi.org/10.1371/journal.pone.0300040>
- McGarry, E., & O'Connor, L. (2023). Assessing burnout rates and contributing factors in emergency medical services clinicians. *Journal of Workplace Behavioral Health*, 1–14. <https://doi.org/10.1080/15555240.2023.2292119>

- Miller, E. (2021). The prevalence of stress and burnout in UK emergency ambulance service workers and its impact on their mental health and well-being. *British Paramedic Journal*, 5(4), 62–63. <https://doi.org/10.29045/14784726.2021.3.5.4.62>
- Morikawa, M., Uechi, T., Hanaki, N., Goto, Y., Funakoshi, H., Takeuchi, S., Mizobe, M., Yajima, T., Kondo, Y., & Tanaka, H. (2023). Burnout among Japanese emergency medicine physicians: A multicentric questionnaire study. *Acute Medicine & Surgery*, 10(1). <https://doi.org/10.1002/ams2.848>
- Moukarzel, A., Michelet, P., Durand, A., Sebbane, M., Bourgeois, S., Markarian, T., Bompard, C., & Gentile, S. (2019). Burnout Syndrome among Emergency Department Staff: Prevalence and Associated Factors. *BioMed Research International*, 2019, 1–10. <https://doi.org/10.1155/2019/6462472>
- Murray, R., Davis, A., Shepler, L. J., Moore-Merrell, L., Troup, W. J., Allen, J. A., & Taylor, J. A. (2019). A Systematic Review of Workplace Violence Against Emergency Medical Services Responders. *New Solutions*, 29(4), 487–503. <https://doi.org/10.1177/1048291119893388>
- Sporer, C. R. (2021). Burnout in emergency medical technicians and paramedics in the USA. *International Journal of Emergency Services*, 10(3), 366–389. <https://doi.org/10.1108/ijes-03-2020-0012>
- Tan, M. L., Pek, J. H., & Wong, S. H. (2024). Burnout in emergency department personnel—A continuing concern post pandemic. *Hong Kong Journal of Emergency Medicine*. <https://doi.org/10.1002/hkj2.12008>
- Thielmann, B., Schwarze, R., & Böckelmann, I. (2023). A Systematic Review of Associations and Predictors for Job Satisfaction and Work Engagement in Prehospital Emergency Medical Services—Challenges for the Future. *International Journal of Environmental Research and Public Health*, 20(5), 4578. <https://doi.org/10.3390/ijerph20054578>
- Vagni, M., Giostra, V., Maiorano, T., Santaniello, G., & Pajardi, D. (2020). Personal Accomplishment and Hardiness in Reducing Emergency Stress and Burnout among COVID-19 Emergency Workers. *Sustainability*, 12(21), 9071. <https://doi.org/10.3390/su12219071>
- Vagni, M., Maiorano, T., Giostra, V., Pajardi, D., & Bartone, P. T. (2022). Emergency Stress, Hardiness, Coping Strategies and Burnout in Health Care and Emergency Response Workers During the COVID-19 Pandemic. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.918788>

- Verougstraete, D., & Hachimi-Idrissi, S. (2019). The impact of burn-out on emergency physicians and emergency medicine residents: a systematic review. *Acta Clinica Belgica*, 75(1), 57–79. <https://doi.org/10.1080/17843286.2019.1699690>
- Witczak-Błoszyk, K., Krysińska, K., Andriessen, K., Stańdo, J., & Czabański, A. (2022). Work-Related Suicide Exposure, Occupational Burnout, and Coping in Emergency Medical Services Personnel in Poland. *International Journal of Environmental Research and Public Health*, 19(3), 1156. <https://doi.org/10.3390/ijerph19031156>
- Zakaria, M. I., Remeli, R., Shahamir, M. F. A., Yusuf, M. H. M., Ariffin, M. A. A., & Azhar, A. M. N. (2021). Assessment of burnout among emergency medicine healthcare workers in a teaching hospital in Malaysia during COVID-19 pandemic. *Hong Kong Journal of Emergency Medicine*, 28(4), 254–259. <https://doi.org/10.1177/1024907921989499>

License

Copyright (c) 2024 Hadeel Almasry, Sara Howaidi



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/). Authors retain copyright and grant the journal right of first publication with the work simultaneously licensed under a [Creative Commons Attribution \(CC-BY\) 4.0 License](https://creativecommons.org/licenses/by/4.0/) that allows others to share the work with an acknowledgment of the work's authorship and initial publication in this journal.