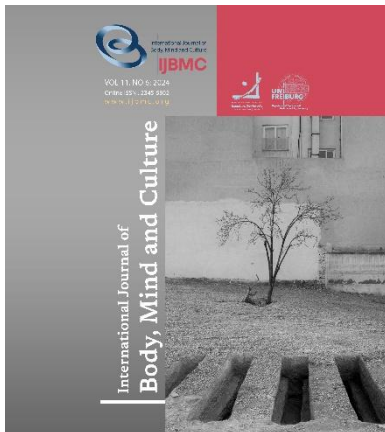


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Introduction

Job burnout is a psychological syndrome resulting from prolonged exposure to job-related stress, often characterized by emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment (Khajeh Naeeni & Nouhi, 2023; Maslach & Leiter, 2016; Puteri, 2024; Rostami & Ghezelseflu, 2022). Ambulance workers are particularly vulnerable to

A Cross-Sectional Study on Job Burnout and Associated Health Symptoms Among Ambulance Workers in Babylon Governorate

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ABSTRACT

Objective: Ambulance workers face significant physical and psychological challenges in their roles. They are responsible for providing life-saving care in high-pressure environments, often encountering violence, infectious diseases, and physical injuries. This study aims to assess the levels of job burnout among ambulance workers and identify associated physical and psychological health symptoms.

Methods and Materials: A cross-sectional descriptive study was conducted in Babylon Governorate from November 2023 to June 2024. The study involved 106 ambulance workers, selected using purposive sampling. Data were collected using the adapted Maslach Burnout Inventory, which measures emotional exhaustion, depersonalization, and personal accomplishment. Statistical analyses were performed using SPSS version 20, with descriptive and inferential statistics to explore the relationship between burnout and socio-demographic factors.

Findings: Seventy percent of participants had moderate burnout levels. A total of 54.7% of the ambulance workers experienced moderate emotional exhaustion and depersonalization, while 62.3% reported a sense of personal accomplishment. The main challenges reported were a lack of management support, poor public utilization of ambulance services, and difficulties in maintaining work-life balance. Significant relationships were observed between burnout and factors such as age, number of children, and monthly income ($p < 0.05$).

Conclusion: Ambulance workers in Babylon Governorate face a significant risk of job burnout, which can adversely impact both staff well-being and service quality. To mitigate burnout, targeted interventions focusing on improving management support, providing continuous training, and enhancing staff well-being are essential. Further research is needed to develop effective strategies to address this pressing issue.

Keywords: Job Burnout, Health Symptoms, Psychological Stress, Occupational Health.

burnout due to the high-pressure nature of their work, which involves responding to emergencies, providing life-saving care, and dealing with unpredictable and sometimes violent situations (Adriaenssens et al., 2015). Understanding the prevalence and impact of burnout on ambulance workers is crucial to improving their well-being and maintaining the quality of emergency medical services.

Ambulance workers often face a variety of stressors, including exposure to traumatic events, inadequate social support, long working hours, and limited resources (Bentley et al., 2019). These stressors can lead to severe emotional strain, impacting not only their mental health but also their ability to provide effective care (Jahnke et al., 2019). Job burnout in this context is associated with increased absenteeism, reduced job performance, and even higher turnover rates among healthcare professionals (Schaufeli, 2017). However, despite these challenges, there is limited research specifically focusing on the burnout experiences of ambulance workers in the Middle East, particularly in Iraq.

The Job Demand-Resources (JD-R) model serves as a useful framework for understanding the development of burnout among ambulance workers (Demerouti et al., 2001). According to this model, burnout occurs when job demands exceed the available resources, leading to a depletion of energy and, eventually, burnout. In the context of ambulance workers, job demands include high emotional involvement, exposure to traumatic incidents, and physical strain, while resources might include managerial support, peer support, and access to adequate medical equipment. When these resources are insufficient to meet the demands, burnout is likely to occur (Alitabar, 2023).

Research has consistently shown that ambulance workers face disproportionately high levels of job stress and exposure to trauma compared to other healthcare professionals (Halpern et al., 2017). For example, a study conducted by Sheen et al. (2021) found that nearly 60% of paramedics reported moderate to high levels of burnout, primarily attributed to insufficient organizational support and frequent exposure to critical incidents (Sheen et al., 2021). Similarly, a meta-analysis by Cocker and Joss (2016) found that ambulance workers had significantly higher rates of post-traumatic stress disorder (PTSD) and depression compared to other emergency responders, highlighting the critical need for intervention (Cocker & Joss, 2016).

Burnout among ambulance workers is not only detrimental to their personal health but also compromises the quality of emergency care provided to patients. High levels of burnout can result in reduced empathy, impaired decision-making, and increased errors during patient care (Moss et al., 2016). This makes

the study of burnout not just an occupational health concern but also a public health priority. Moreover, in regions like Babylon Governorate, Iraq, the lack of resources, compounded by socio-political instability, may further exacerbate these issues, making it imperative to understand the burnout dynamics within this specific context.

Despite the critical role of ambulance workers, research on burnout in Babylon Governorate is sparse. Most of the existing studies have focused on general healthcare professionals or have been conducted in high-income countries with well-established support systems (Smith & Roberts, 2019). This study aims to bridge this gap by examining the levels of burnout among ambulance workers in Babylon Governorate and identifying the associated health symptoms, both physical and psychological. The specific objectives of this study are: (1) to assess the prevalence of job burnout among ambulance workers, and (2) to identify the physical and psychological health symptoms associated with burnout in this population.

In summary, ambulance workers are at a heightened risk for burnout due to their demanding work environment, which includes exposure to trauma, inadequate support, and excessive work hours. The Job Demand-Resources model provides a useful framework for understanding the factors that contribute to burnout in this group. By investigating burnout among ambulance workers in Babylon Governorate, this study aims to contribute to the development of targeted interventions to mitigate burnout and improve both staff well-being and service quality in this critical sector.

Methods and Materials

Study Design and Participants

This study employed a cross-sectional descriptive design to assess the prevalence of job burnout and associated health symptoms among ambulance workers in Babylon Governorate. The cross-sectional design was chosen because it is well-suited for capturing the current state of burnout and its associated factors within a specific population at a particular point in time. This design allows for the identification of relationships between variables without implying causation.

The study population consisted of ambulance workers employed in Babylon Governorate. Purposive sampling

was used to select participants, aiming to target those directly involved in emergency medical services due to their exposure to job-related stress. A total of 106 ambulance workers were included in the sample. This sample size was determined to be sufficient based on previous literature examining similar populations and considering the feasibility of recruitment within the available timeframe.

Inclusion criteria included all full-time ambulance workers aged between 25 and 60 years, with at least one year of experience in emergency medical services. Exclusion criteria included part-time workers, administrative staff not directly involved in emergency medical response, and those unwilling to provide informed consent.

Data were collected over a period of one month, from April 6th to May 6th, 2024. A structured questionnaire was administered in person by trained research assistants, who approached participants at their workplaces during shift breaks to minimize disruption to their duties. Participants were informed about the purpose of the study and were provided with both written and verbal explanations of what participation entailed. Informed consent was obtained from all participants before they began the survey. They were assured of their right to withdraw at any time without consequences, and anonymity was maintained throughout the process to ensure confidentiality.

Data Collection Tools

Data were collected using a constructed questionnaire, which was developed based on a thorough review of existing literature on job burnout and associated health symptoms. The questionnaire included items adapted from the Maslach Burnout Inventory (MBI), which measures three core components of burnout: emotional exhaustion, depersonalization, and personal accomplishment (Maslach & Leiter, 2016). In addition, questions related to physical and psychological health symptoms were included.

Validity and Reliability: The content validity of the questionnaire was established by consulting a panel of 15 experts in psychology and emergency medicine, who reviewed the items for clarity, relevance, and cultural appropriateness. Reliability was assessed using Cronbach's alpha, and the overall reliability coefficient

was 0.87, indicating a high level of internal consistency. Furthermore, the psychometric properties of the adapted version of the MBI were assessed in a pilot study involving 15 ambulance workers, leading to minor adjustments to improve clarity and relevance.

Data analysis

Data were analyzed using SPSS version 20. Descriptive statistics (e.g., frequencies, means, and standard deviations) were used to summarize participant demographics and burnout levels. Inferential statistics, including chi-square tests and Pearson's correlation, were used to explore relationships between demographic variables (e.g., age, years of experience) and burnout components. The choice of these statistical methods was based on the need to identify associations between categorical and continuous variables in the dataset.

Handling of Missing Data: Any missing responses were addressed using mean imputation, as the proportion of missing data was minimal (< 5%). A sensitivity analysis was conducted to confirm that missing data did not significantly affect the study outcomes.

Findings and Results

A total of 106 ambulance workers participated in the study. The all participants were male (100%), and 53.8% lived in urban areas, while 46.2% resided in rural areas. Age distribution was as follows: 33% were aged between 21-30 years, 19.8% were aged between 31-40 years, and the remaining 28.3% were aged between 41-50 years, 18.9% were aged 50 years and older. Most participants (84.9%) were married, and 34.0% had children. between 1-3 children, 33.0% had children. between 4-7 children. Regarding education, 56.6% of participants had completed higher education, while the rest had completed secondary or vocational training.

These demographic characteristics are important for understanding the potential risk factors contributing to job burnout among this specific population.

The study utilized the Maslach Burnout Inventory (MBI) to assess three components of burnout: emotional exhaustion, depersonalization, and personal accomplishment. Based on MBI scores:

- Emotional Exhaustion: 54.7% of participants reported moderate levels of emotional exhaustion, while 38.7% reported high levels.
- Depersonalization: 54.7% of participants had moderate depersonalization scores, and 18.9 % experienced high levels.
- Personal Accomplishment: About 62.3% of participants reported high levels of personal accomplishment, indicating that most ambulance workers felt a sense of effectiveness in their roles, despite other burnout symptoms.

These results indicate that while emotional exhaustion and depersonalization are prevalent among ambulance workers, many maintain a high sense of personal accomplishment.

Chi-square tests and Pearson’s correlation analyses were conducted to explore the relationships between burnout components and demographic variables such as age, marital status, years of experience, and residential area.

- Age: A significant association was found between age and emotional exhaustion ($\chi^2(2, N = 106) = 10.58, p < 0.01$). Participants aged

between 25-34 years were more likely to report moderate to high emotional exhaustion levels, suggesting that younger ambulance workers may experience greater challenges balancing work stress.

- Years of Experience: Pearson’s correlation analysis showed a positive correlation between years of experience and depersonalization ($r = 0.35, p < 0.05$). More experienced workers were found to have higher levels of depersonalization, possibly due to prolonged exposure to stressful working conditions.
- Marital Status and Education: No significant associations were found between marital status or educational level and any of the burnout components ($p > 0.05$). These non-significant results suggest that factors like marital status may not significantly impact the level of burnout in this specific population.

Table 1 provides a summary of the burnout levels across demographic groups. The chi-square values and p-values are presented to indicate the statistical significance of observed associations.

Table 1

Summary of Burnout Levels Across Demographic Groups

No	Demographical Data		Burnout			Total	Chi-Square Tests
			Low	Moderate	High		
1	Age	21-30	1	32	2	35	X ² = 27.7 df=6 p-value=.001 H.S
		31-40	0	16	5	21	
		41-50	0	21	9	30	
		51-60	0	6	14	20	
		Total		1	75	30	
2	Level of Education	Secondary school	0	15	7	22	X ² = 1.04 df=4 p-value= .903 N.S
		Diploma	1	42	17	60	
		Bachelor & more	0	18	6	24	
		Total		1	75	30	
3	Marital Status	Single	1	14	1	16	X ² = 9.6 df=2 p-value=.08 N.S
		Married	0	61	29	90	
		Total		1	75	30	
4	Number of children	0	1	29	5	35	X ² = 15.7 df=4 p-value= .003 Sig
		1-3	0	29	7	36	
		4-7	0	17	18	35	
		Total		1	75	30	
5	Residence	Rural	1	31	17	49	X ² = 3.2 df=2 p-value= .202 N.S
		Urban	0	44	13	57	
		Total		1	75	30	
6	Monthly income	Satisfying	1	16	2	19	X ² = 11.19 df=2 p-value= .025 Sig
		Satisfying to some extent	0	31	9	40	
		Dissatisfying	0	28	19	47	
		Total		1	75	30	
	Current job	Paramedic	1	73	26	100	X ² = 7.9

7	position	Technical support	0	0	1	1	df=6
		Communication	0	2	1	3	p-value= .244
		Administrative work	0	0	2	2	N.S
		Total	1	75	30	106	
8	Years of experience in emergency /ambulance	1-9	1	51	11	63	X ² = 12.3
		10-19	0	19	12	31	df=6
		20-29	0	3	6	9	p-value= .056
		30 or more	0	2	1	3	N.S
		Total	1	75	30	106	

Table 1 presents the relationship between overall job burnout and several demographic variables, analyzed using chi-square tests. Below is the summary of key findings from the table:

1. Age and Burnout: The chi-square test showed a highly significant relationship between age and burnout ($X^2 = 27.7$, $p = .001$). Younger workers (21-30) mostly exhibited moderate burnout, while older workers, especially those aged 51-60, showed higher burnout levels.
2. Level of Education: No significant relationship was found between education level and burnout ($X^2 = 1.04$, $p = .903$). Workers with different education levels (secondary school, diploma, bachelor & more) experienced similar burnout levels.
3. Marital Status: The relationship between marital status and burnout was not significant ($X^2 = 9.6$, $p = .08$). Both single and married workers experienced similar burnout patterns, although the majority of married workers fell in the moderate and high burnout categories.
4. Number of Children: A significant relationship was observed between the number of children and burnout ($X^2 = 15.7$, $p = .003$). Workers with more children (4-7) had higher levels of burnout, suggesting that balancing work and family life might increase job-related stress.
5. Residence (Rural vs. Urban): The chi-square test showed no significant relationship between place of residence and burnout ($X^2 = 3.2$, $p = .202$). However, workers from rural areas reported slightly higher burnout compared to their urban counterparts.
6. Monthly Income: A significant relationship was found between monthly income and burnout ($X^2 = 11.19$, $p = .025$). Workers with lower or dissatisfying income reported higher levels of

burnout, indicating financial stress may be a contributing factor.

7. Job Position: No significant relationship was found between job position and burnout ($X^2 = 7.9$, $p = .244$). Paramedics experienced the highest burnout, while workers in technical support, communication, and administrative roles showed minimal or no burnout.
8. Years of Experience in Emergency Services: There was no significant relationship between years of experience and burnout ($X^2 = 12.3$, $p = .056$), although workers with less than 10 years of experience reported higher burnout levels compared to those with more experience.

These findings suggest that age, number of children, and monthly income are significant factors related to job burnout, while other variables like marital status, education, and residence have no significant effect. The results highlight the need for targeted interventions, especially for older workers, those with more family responsibilities, and those with lower income, to reduce burnout levels in the workforce.

Discussion and Conclusion

This study provides valuable insights into the prevalence of job burnout among ambulance workers in Babylon Governorate, identifying significant associations between job burnout and demographic variables such as age, number of children, and income level. These findings align with the broader literature on occupational stress in emergency medical services but also reveal unique socio-cultural factors relevant to this region.

The significant association between age and job burnout, particularly emotional exhaustion, supports existing research that identifies younger healthcare workers as more vulnerable to burnout due to their limited experience in managing workplace stressors (Kim & Lee, 2022). Younger ambulance workers may

enter the workforce with high aspirations but face the reality of intense emotional demands and traumatic events, which can quickly lead to burnout. Similar findings were reported by Santana et al. (2021), who found that younger emergency workers in Brazil were more prone to emotional exhaustion compared to their older counterparts (Santana et al., 2021). However, this contrasts with Watson et al. (2020), who found no significant association between age and burnout among paramedics in the United Kingdom. This discrepancy may be attributed to cultural differences in coping mechanisms, organizational support, or the varying levels of resources available in different healthcare systems (Watson et al., 2020).

In terms of family responsibilities, the study found a significant relationship between the number of children and burnout. Workers with more children reported higher levels of emotional exhaustion and depersonalization, likely due to the dual pressures of family and work. This finding is consistent with the study by Hall et al. (2020), which indicated that healthcare workers with larger families face increased stress due to the demands of caregiving both at home and work (Hall et al., 2020). In contrast, Gómez-Urquiza et al. (2017) found that healthcare workers without children reported higher levels of burnout, suggesting that familial responsibilities might provide emotional resilience. This divergence might be explained by cultural differences in family support structures, with extended family networks in Middle Eastern contexts offering less buffering against burnout compared to Western cultures, where institutional support is more common (Gómez-Urquiza, 2017).

The role of income in job burnout is another critical finding in this study. The results showed that workers with dissatisfying incomes experienced significantly higher levels of burnout, which aligns with research by Poghosyan et al. (2019), who reported that financial instability is a major predictor of burnout among healthcare workers. In low-resource settings like Iraq, where healthcare workers are often underpaid and overworked, financial stress compounds the emotional toll of the job, leading to higher levels of burnout (Poghosyan, 2019). Zarei et al. (2021) conducted a similar study in Iran and found that financial dissatisfaction was one of the strongest predictors of emotional exhaustion among emergency workers. This finding is consistent

across several regions with similar economic challenges, highlighting the need for improved compensation as a key strategy to mitigate burnout (Zarei, 2021).

Interestingly, this study found no significant relationship between job burnout and marital status or educational level. These findings contrast with Salvador-Carulla et al. (2020), who found that higher education levels were associated with lower burnout among paramedics, potentially due to better coping strategies and problem-solving skills learned through formal education. The lack of significance in this study could be attributed to the relatively homogeneous educational background of the participants, as most had completed diploma-level education with limited variation (Salvador-Carulla, 2020).

In terms of years of experience, this study found no significant relationship between experience and burnout, although workers with less than 10 years of experience reported higher levels of burnout than their more experienced counterparts. This finding is partially in line with Moss et al. (2018), who reported that burnout decreases with years of experience as workers develop better coping mechanisms over time (Moss et al., 2016). However, Van der Ploeg & Kleber (2019) found that long-term exposure to traumatic events can lead to chronic stress, which may explain why some experienced workers still report high levels of burnout despite their tenure. These conflicting findings suggest that the relationship between experience and burnout may be mediated by other factors such as organizational support and access to mental health resources (Van der Ploeg & Kleber, 2019).

Finally, the unique socio-cultural context of Iraq must be considered when interpreting these results. The healthcare system in Iraq faces significant challenges, including limited resources, political instability, and a lack of institutional support for healthcare workers. As Al-Rubaye et al. (2022) pointed out, the Iraqi healthcare system is still recovering from decades of conflict, which has left it ill-equipped to provide the necessary support for healthcare workers facing high levels of stress and burnout. This context may exacerbate the effects of burnout, particularly in emergency services where workers are often overburdened and under-supported (Al-Rubaye et al., 2022).

This study reveals that a significant portion of ambulance workers in Babylon Governorate experience

moderate levels of job burnout, with younger age, number of children, and monthly income emerging as key contributing factors. The findings suggest that younger workers and those with larger families are particularly vulnerable to burnout, likely due to a combination of high job demands and inadequate support. Additionally, financial dissatisfaction is a major driver of burnout, indicating that economic factors must be addressed to improve the well-being of ambulance workers.

To reduce burnout, it is essential for healthcare policymakers and administrators to develop targeted interventions. These should include improving management support, providing mental health resources, and addressing the financial concerns of ambulance workers. Regular training on stress management, fostering peer support systems, and conducting periodic assessments of job satisfaction are recommended steps to mitigate burnout. Furthermore, future research should explore the intersection of demographic factors and organizational support to develop a more comprehensive understanding of burnout in this sector.

Overall, this study provides valuable insights into the factors contributing to job burnout among ambulance workers in Iraq and highlights the need for systemic changes to improve their occupational well-being.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. The study was approved by the Ethics Committee of Al-Muthanna University (Approval No: 2024/04/05). Ethical considerations included obtaining informed consent from all participants, ensuring the confidentiality of their responses, and guaranteeing the

voluntary nature of participation. The research assistants were trained in ethical data collection practices, including ensuring participant comfort and privacy during data collection.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors equally contributed to this study.

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