

PREVALENCE AND DETERMINANTS OF BURNOUT AMONG ANESTHESIA RESIDENTS: A CROSS-SECTIONAL STUDY

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ABSTRACT

Background: Because of the ongoing care of severe cases and the dynamic nature of the operating room setting, anesthesiology is the most stressful medical specialty. Burnout, a condition that poses a serious risk to patient safety and the general standard of healthcare delivery, is frequently caused by prolonged exposure to certain professional pressures. **Objectives:** This study aims to determine how common burnouts are among anesthesia residents. **Methods:** Anesthesia residents from all Royal Medical Services (RMS) hospitals participated in a descriptive cross-sectional study, After Institutional Review Board (IRB) approval, data collection took place over the course of a month, The validated Maslach Burnout Inventory (MBI) was used to measure burnout aspects, and a private, self-administered internet questionnaire was used to collect sociodemographic and occupational information. **Results:** Most participants (70.4%) were men, with an average age of 30.2 ± 2.9 years, 77.4% scoring ≥ 50 and 15.1% scoring ≥ 75 , burnout was prevalent, the highest domain was personal burnout (67.4 ± 18.0), which was followed by work-related burnout (62.0 ± 15.8) and patient-related burnout (51.8 ± 18.3). **Conclusion:** Burnout was prevalent and clinically significant among anesthesia residents, these results support the need for program-level interventions to strengthen supervision, and improve residents' well-being, Personal burnout were the main affected domains, while patient-related burnout was lower.

KEYWORDS: Anesthesiology Residents Burnout, Maslach Burnout Inventory (MBI), Work Stress.

INTRODUCTION

Burnout has been identified as an occupational condition characterized by emotional weariness, depersonalization, and decreased personal achievement, Panagioti et al. (2018), Previous studies found that burnout had a negative impact on healthcare professionals, leading to lower quality care and patient safety (Rotenstein et al, 2018; West et al, 2018).

The prevalence of burnout differed widely, according to past studies, long work hours, frequent night work, insufficient sleep, and discontent with training were

factors linked to burnout (Hyman et al, 2021 and Sanfilippo et al, 2020).

Previous research in Jordan revealed a strong correlation between psychological distress, burnout, and long work hours, but there was still little research on anesthesia residents in Royal Medical Services hospitals (Al-Humadi et al., 2021; Alhawtmeh et al., 2022).

So, this study investigated the sociodemographic and occupational characteristics linked to burnout and evaluated the frequency and severity of burnout among anesthesia residents in Royal Medical Services hospitals.

METHODS

Study design and setting: this descriptive cross-sectional study was carried out over the course of a month in Jordan's Royal Medical Services institutions.

Study population: Regardless of postgraduate year, all anesthesia residents were enrolled at Royal Medical Services during the study period. every resident who qualifies was invited to take part, Current enrollment in the anesthesia residency program and the ability to provide electronic informed consent was prerequisites for inclusion, Refusal to participate and questionnaires with insufficient MBI replies that prevent domain scoring was the exclusion grounds.

Data-collection

Data were collected using a private, anonymous, self-administered web-based questionnaire distributed through official residency communication channels, no directly identifiable personal information was collected.

Study Instrument

There were two sections to the questionnaire, Age, sex, marital status, year of residency, working hours, night shifts, sleep length, and training satisfaction were among

the first demographic and occupational variables collected.

The second section consisted of an adapted 19-item Copenhagen Burnout Inventory (CBI), which assessed personal burnout (6 items), work-related burnout (7 items), and patient related burnout (6 items).^[11] Responses were converted to a 0-100 scale according to the CBI scoring approach, with higher scores indicating greater burnout. The positively worded work-related item was reverse scored, for descriptive classification in this study, scores below 50, 50-74.9, and 75 or higher were categorized as low, moderate, and high burnout, respectively.

Statistical Analysis

While categorical variables were displayed as frequencies and percentages, continuous variables were summarized as means $\pm$ standard deviations or medians and interquartile ranges. Cronbach's alpha was used to evaluate internal consistency.

Ethical Considerations

The Royal Medical Services Institutional Review Board gave their approval.

RESULTS

1. Sample Summary

Item	Result
Total target population	120 anesthesia residents
Valid responses included in the general analysis	54
Approximate response rate	45.0%
Valid responses included in the complete burnout score analysis	53
Excluded responses	21

Non-consenting responses, blank responses, and one response with a non-numeric age value were excluded from the analysis.

2. Demographic data

Variable	Number / Result	Percentage
Mean age	30.2 $\pm$ 2.9 years	—
Age range	25–39 years	—
Male	38	70.4%
Female	16	29.6%
Single	30	55.6%
Married	24	44.4%
Have children	18	33.3%
No children	36	66.7%

3. Residency Year

Residency year	Number	Percentage
R1	11	20.4%
R2	19	35.2%
R3	14	25.9%
R4	10	18.5 %

7. Sleep Duration During Working Days

Sleep duration	Number	Percentage
Less than 5 hours	28	51.9%
5–6 hours	13	24.1%
6–7 hours	13	24.1%

8. Overall Satisfaction with Training

Satisfaction level	Number	Percentage
Very satisfied	2	3.7%
Satisfied	13	24.1%
Neutral	28	51.9%
Dissatisfied	9	16.7%
Very dissatisfied	2	3.7%

9. Burnout Results

Burnout scores were calculated on a 0–100 scale, where higher scores indicate greater burnout.

Burnout domain	n	Mean $\pm$ SD	Median	Score ≥ 50	Score ≥ 75
Personal burnout	54	67.4 $\pm$ 18.0	65.0	49 / 54 = 90.7%	19 / 54 = 35.2%
Work-related burnout	53	62.0 $\pm$ 15.8	62.5	44 / 53 = 83.0%	14 / 53 = 26.4%
Patient-related burnout	54	51.8 $\pm$ 18.3	56.3	35 / 54 = 64.8%	6 / 54 = 11.1%
Overall burnout score	53	59.9 $\pm$ 13.5	61.8	41 / 53 = 77.4%	8 / 53 = 15.1%

10. Overall Burnout Classification

Burnout level	Number	Percentage
Low burnout, <50	12	22.6%
Moderate burnout, 50–74.9	33	62.3%
High burnout, ≥ 75	8	15.1%

11. Key Individual Burnout Items

Item	Main finding
Feeling tired often/always	43 / 54 = 79.6%
Physical exhaustion often/always	37 / 54 = 68.5%
Emotional exhaustion often/always	36 / 54 = 66.7%
Feeling emotionally exhausted by work, high/very high	37 / 54 = 68.5%
Feeling burned out because of work, high/very high	39 / 53 = 73.6%
Feeling exhausted in the morning at the thought of another workday, often/always	33 / 54 = 61.1%
Having enough energy for family and friends, often/always	7 / 54 = 13.0%

12. Internal Consistency of the Questionnaire

Domain	Cronbach's alpha	Interpretation
Personal burnout	0.861	Very good
Work-related burnout	0.791	Good
Patient-related burnout	0.845	Very good
All burnout items combined	0.877	Very good

DISCUSSION

77.4% of participants had an overall burnout score of ≥ 50 , whereas 15.1% had a high burnout score of ≥ 75 . This trend indicates that burnout in this sample was more closely associated with general weariness and inadequate sleep than with patient care.

Research from around the world indicates that burnout is prevalent among medical professionals and residents (World Health Organization, 2019).

Other research has connected physician burnout to workload imbalance, poor work-life balance and unfavorable work environments (Dyrbye et al., 2018; Shanafelt et al., 2012; West et al., 2018). More than half of the participants reported sleeping for less than five hours on workdays, which is consistent with the high rates of morning fatigue, emotional exhaustion, physical exhaustion and fatigue while Only 27.8% of participants were satisfied with their training.

The questionnaire demonstrated good internal consistency, Cronbach's alpha was 0.861 for personal burnout, 0.791 for work-related burnout, 0.845 for patient-related burnout, and 0.877 for all burnout items combined and no discernible statistically significant differences were found according to sex, marital status, residency year, or hospital. This may reflect similar exposure to work-related stressors across residents.

The high level of burnout among anesthesia residents should be taken seriously because fatigue may impair alertness, communication, and clinical decision-making in a high-risk specialty. Previous systematic reviews have demonstrated that physician burnout is linked to worse patient safety, decreased professionalism, and lower patient satisfaction (Panagioti et al., 2018). This study did not specifically evaluate medical errors or patient outcomes.

CONCLUSION

Burnout was prevalent and clinically significant among anesthesia residents. These results support the need for program-level interventions to improve sleep opportunities, strengthen supervision, and improve residents' well-being. Personal and work-related burnout were the main affected domains, while patient-related burnout was lower.

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