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Prevalence Of Burnout Among Anesthesiologists Practicing In Resource-Limited Settings: Evidence From Bangladesh

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Abstract
Background: *Burnout is one of the main chronic health problems with negative consequences among anesthesiologists in resource-limited settings despite implications for patient safety and workforce retention. Thus, this study aimed to determine burnout prevalence among anesthesiologists practicing in Bangladesh.*
Methods: *This cross-sectional study was conducted over 6 months among 50 anesthesiologists in Khulna city. Inclusion criteria included completion of postgraduate anesthesiology training (DA, FCPS) and current employment as practicing anesthesiologists. A semi-structured questionnaire captured socio-demographic, occupational, and lifestyle factors. Burnout was assessed using the abbreviated Maslach Burnout Inventory (aMBI) across three subscales- emotional exhaustions [EE], depersonalization [DP], personal accomplishment [PA]. Data were analyzed using SPSS version 23.0 and descriptive statistics was used.*
Results: *The mean age of the study participants was 34.7±3.8 (SD) years with equal male and female distribution. Most had 4-6 years of experience with a mean of 5.2±2.5 years, while majority worked in private hospitals (56%), exceeded 48 hours duty weekly (54%), and reported daily sleep duration as less than 7 hours/day (76%). Emotional exhaustion was most prominent (88% high; mean 15.6±1.5), followed by low personal accomplishment (62%; mean 12.8±2.3) and high depersonalization (56%; mean 12.8±1.6). Overall burnout prevalence was 66%.*
Conclusion: *Burnout was present in two-thirds studied anesthesiologists. Workload pressures and sleep deprivation in resource-limited settings amplify risk. Targeted interventions are urgently needed.*
Keywords: *Burnout, Anesthesiologists, Physicians, Job stress, Intensive care medicine*

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I. Introduction

Burnout is a state of physical, mental, and emotional exhaustion resulting from prolonged occupational stress, often leading to significant psychological distress.(1) In healthcare settings, it is driven by sustained job pressure, including long working hours, irregular shifts, limited professional autonomy, and poor work–life balance.(2–4) It has been documented across multiple medical specialties, including dentistry, psychiatry, and pediatrics; however, anesthesiology is consistently recognized as a high-risk field due to the intensity of clinical responsibilities and the critical nature of patient care.(5,6) Both anesthesiologists and intensive care physicians experience substantial workplace stress, characterized by prolonged duty hours, high-risk clinical scenarios, and increasingly complex care environments.(5,7)

Anesthesiology is certainly one of the most stressful medical disciplines, daily exposing physicians to high responsibilities and stressful situations such as the management of life-threatening scenarios. Moreover, their work frequently involves overnight duties, emergency procedures, and perioperative care of critically ill patients, all of which contribute to substantial psychological and physical strain.(5) An Italian study in 2020 assessed burnout among anesthesiologists and intensivists and showed that 79.9% (686) exhibited moderate levels of burnout.(8) A U.S. study included 3,898 members of the American Society of Anesthesiologists and showed that 59.2% of the study subjects were at high risk of burnout.(9) These findings highlight burnout as a pervasive global concern within this specialty.

In low- and middle-income countries such as Bangladesh, the risk may be further amplified by systemic challenges. A critical yet underexplored factor is the practice of anesthesiologists working across multiple healthcare institutions, often driven by workforce shortages, financial constraints, and uneven distribution of specialists.(10) This multi-institutional workload increases cumulative working hours, disrupts rest and recovery, and intensifies role strain, thereby potentially accelerating burnout. Additionally, increasing surgical demand, rising perioperative complexity, and limited institutional support further compound occupational stress.(10,11) Burnout is not solely determined by organizational factors; individual-level characteristics such as perfectionism, self-criticism, and emotional burden associated with patient outcomes may increase vulnerability.(12,13)

Additionally, stressful work environments involving frequent exposure to mortality, high-stakes decision-making, and emotional engagement with patients and families further intensify burnout risk. Physicians who demonstrate compulsiveness, remorse, or self-denial tendencies are particularly vulnerable.(4,5,8)

The consequences are substantial, affecting both physician well-being and patient safety. Burnout has been linked to impaired clinical judgment, reduced communication quality, increased medical errors, and diminished adherence to safety protocols.(5,14,15) It also contributes to adverse personal outcomes, including decreased productivity, absenteeism, and psychological morbidity. In Bangladesh, these risks are further amplified by a shortage of anesthesiologists, uneven distribution of healthcare resources, and a growing burden of complex perioperative cases, all of which increase occupational stress and threaten the safety and quality of anesthesia services.(14,16)

In Bangladesh, existing evidence suggests a considerable burden of burnout among healthcare professionals. A previous study reported a prevalence of 21.3% among ICU physicians and nurses, while during the COVID-19 pandemic, burnout among physicians reached 55.4%.(10,17) However, there remains a critical gap in understanding burnout among anesthesiologists, particularly those engaged in multiple institutional practices—a common yet understudied phenomenon in the country. Therefore, this study aims to assess the prevalence of burnout and identify associated factors among anesthesiologists working across multiple healthcare institutions in Bangladesh. Understanding this context-specific burden is essential for informing targeted interventions, workforce planning, and policies to safeguard both physician well-being and quality of care.

II. Methods

Study design and setting

This cross-sectional survey was conducted among anesthesiologists working across multiple healthcare institutions in Khulna city, Bangladesh, from September 2025 to February 2026. The study specifically targeted physicians engaged in multi-institutional practice, a common workforce pattern in urban healthcare settings. The Khulna city is a major urban referral center in southwestern Bangladesh. This place was selected due to its unique combination of resource-constrained healthcare infrastructure, multi-institutional anesthesiology practice, and high regional patient inflow, making it an appropriate setting to examine structural and workload-related determinants of burnout.

Study population and sampling

A total of 50 practicing anesthesiologists were recruited using a convenience sampling technique. Eligible participants were physicians who had been working as anesthesiologists for at least six months and possessed a postgraduate qualification (Diploma in Anesthesiology [DA], or, Fellow of the College of Physicians and Surgeons [FCPS]). Physicians were excluded if they were on sick leave or vacation during the data collection period (approximately three weeks per institution), had experienced prolonged absence from clinical practice exceeding one year within the past five years (due to reasons such as overseas training or chronic illness), or had recent exposure to significant non-occupational psychological or physical trauma that could confound burnout assessment.

Data collection procedure

Data were collected using a structured, paper-based, self-administered questionnaire. Participation was voluntary, and informed written consent was obtained from all respondents prior to enrollment. The survey was anonymized to ensure confidentiality and reduce response bias. All questionnaire items were mandatory, and only fully completed responses were included in the final analysis to maintain data integrity.

The questionnaire consisted of two sections. The first section included 13 items capturing socio-demographic characteristics (e.g., age, gender) and work-related variables (e.g., years of experience, working hours, number of institutions served).

The second section assessed burnout using the abbreviated Maslach Burnout Inventory (aMBI), a widely validated and commonly used instrument for measuring burnout among healthcare professionals. The abbreviated Maslach Burnout Inventory (aMBI) tool is a concise 9-item instrument with 3 items per subscale specifically adapted for healthcare professionals. The aMBI evaluates three core dimensions: emotional exhaustion (EE) assessing emotional depletion from work demands; depersonalization (DP) measuring detached or impersonal attitudes toward patients/colleagues; and personal accomplishment (PA) evaluating feelings of professional competence and achievement. Each item is scored on a 7-point frequency Likert scale (0 = "Never" to 6 = "Every day"), yielding subscale score ranges of 0-18 for each dimension. Higher scores indicate greater burnout risk for EE and DP, while lower PA scores indicate burnout. Median values of subscale scores from this study population served as cutoffs to classify high and low burnout. High EE and high DP were defined as scores above the median, while low PA was defined as scores below the median. Participants were classified as having burnout if they exhibited high scores in more than one subscale (EE+DP, EE+PA, DP+PA, or all three).

Statistical Analysis

Data were analyzed descriptively using SPSS version 23. Categorical variables were presented as frequencies and percentages. Continuous variables were reported as means ± standard deviations (SD) and medians. Results were presented in tables and figures.

III. Result

Half of the participants (50%) were aged 31–35 years, followed by 36–40 years (32%), while only 14% were aged ≤30 years and 4% were older than 40 years. The mean age of the participants was 34.7±3.8 (SD) years. An equal proportion of male and female participants (50% each) were observed. Most of the participants were married (64%), whereas 30% were unmarried and 6% were divorced. Slightly more than half of the participants (52%) had children. Among them, 28% had two children and 20% had one child, while only 2% each had three and four children.

Table 1: Demographic characteristics of the study participants (n=50)

	n	%
Age group (year)		
≤ 30	7	14
31-35	25	50
36-40	16	32
>40	2	4
Mean±SD	34.7±3.8	
Gender		
Male	25	50
Female	25	50
Marital status		
Unmarried	15	30
Married	32	64
Divorced	3	6
Children		
No	24	48
Yes	26	52
1	10	20
2	14	28
3	1	2
4	1	2

Majority of participants had 4–6 years of experience as anesthesiologists (48%), followed by 7–9 years (24%) and ≤3 years (22%). Only 6% had 10 years or more experience. The mean duration of professional experience was 5.2±2.5 (SD) years. More than half of the respondents (56%) were working in private hospitals, whereas 44% were employed in public hospitals. Regarding workload, 54% of the participants worked more than 48 hours per week, with a mean weekly working duration of 52.7±8.6 hours. About 76% reported sleeping less than 7 hours daily, the mean sleep duration was 5.8±1.4 (SD) hours. Furthermore, 22% of the participants were current smokers, while the majority (74%) were non-smokers. Tea consumption was common, with 60% of participants consuming more than two cups per day.

Table 2: Occupational and lifestyle factors among study participants (n=50)

	n	%
Experience as an anesthesiologist (years)		
≤ 3	11	22
4-6	24	48
7-9	12	24
≥ 10	3	6
Mean±SD	5.2±2.5	
Type of institution currently working		
Public hospital	22	44
Private hospital	28	56
Weekly working hour		
≤ 48 hours	23	46
> 48 hours	27	54
Mean±SD	52.7±8.6	
Average sleep duration in 24 hours		
≤ 7 hours	38	76
>7 hours	12	24
Mean±SD	5.8±1.4	
History of smoking		

Currently smoker	11	22
Currently non-smoker	37	74
Consumption of tea		
Not frequent (≤ 2 cups a day)	20	40
Frequent (>2 cups a day)	30	60

Emotional exhaustion was the most prominent dimension, with 88% of the participants having a high level of emotional exhaustion, while only 12% had a low level. The mean emotional exhaustion score was 15.6±1.5 (SD). More than half of the participants (56%) also had high depersonalization, whereas 44% had low depersonalization, with a mean score of 12.8±1.6 (SD). In contrast, low personal accomplishment was observed in 62% of the participants, while only 38% demonstrated high personal accomplishment. The mean score for personal accomplishment was 12.8±2.3 (SD).

Table 3: Distribution of burnout across the burnout subscale among the study participants (n=50)

	n	%
Emotional exhaustion		
High	44	88
Low	6	12
Mean±SD	15.6±1.5	
Depersonalization		
High	28	56
Low	22	44
Mean±SD	12.8±1.6	
Personal accomplishment		
High	19	38
Low	31	62
Mean±SD	12.8±2.3	

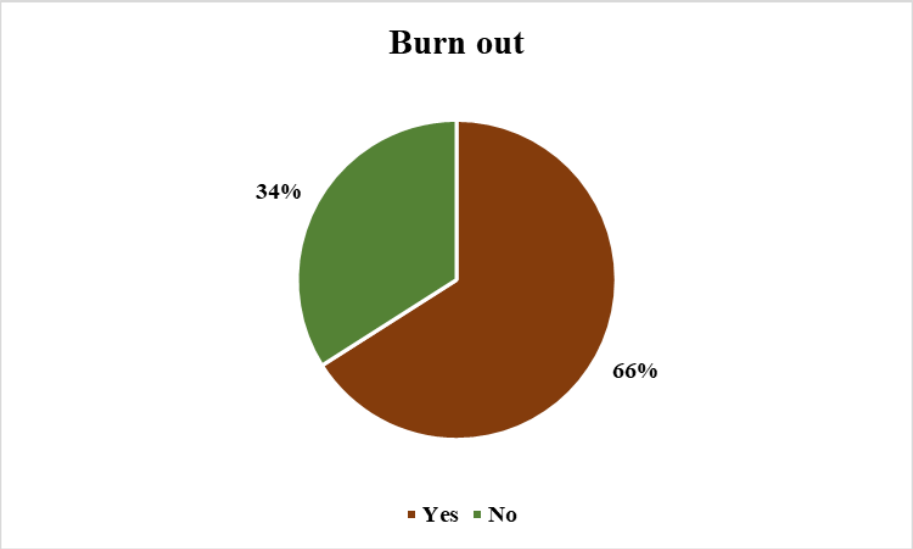

Figure 1: Prevalence of overall burnout among the study participants (n=50)

The prevalence of overall burnout was 66%.

IV. Discussion

This cross-sectional study explored burnout through its three subscales -emotional exhaustion (EE), depersonalization (DP) and personal accomplishment (PA) among 50 anesthesiologists practicing in Bangladesh.

Participants were primarily aged 31–35 years with a mean of 34.7 years. An equal male-female distribution was observed where almost two-thirds were married, and slightly over half were with children. The concentration of participants in mid-career stages aligns with Bangladesh's acute anesthesia workforce shortage-forcing relatively junior providers into high-responsibility roles without sufficient mentorship or systemic support. This demographic equalization across genders deviates from broader Bangladeshi physician trends favoring higher female risk but reflects the workload-dominated nature of procedural anesthesia practice. Concurrent family responsibilities, evident in 70% of participants through marriage and children, likely intensify psychological strain in environments lacking flexible scheduling or parental leave policies typical of high-income countries.

The majority possessed 4–6 years of experience as anesthesiologists with a mean experience of 5.2 years. About 56% worked in private hospitals. More than half exceeded 48 working hours per week, reported sleep durations under 7 hours daily, while 22% were current smokers and 60% were frequent tea consumers. Predominance in private institutions underscores a dual healthcare system's disparity, where financial incentives drive intensified schedules absent the regulatory safeguards of public sectors. Profound sleep deprivation directly correlates with the unremitting vigilance required in operating rooms equipped with unreliable anesthesia machines and monitors, fostering a vicious cycle of fatigue that manifests in stimulant-dependent behaviors like excessive tea intake and smoking. This mid-level experience profile captures the precise adaptation phase where providers confront resource improvisation without established coping frameworks.

EE prevailed as the most severe dimension with 88% high levels of participants reporting high EE, 62% reporting low PA and 56% reporting high DP. The overall burnout prevalence was 66%. The subscale distributions mirror findings from regional and global studies. In Bangladesh, a COVID-era survey of 2,705 doctors and nurses across four major hospitals found significantly elevated EE, DP, and reduced PA scores among frontline staff, with over 50% exhibiting anxiety-like burnout symptoms and nearly 20% meeting full burnout criteria- particularly those in high-workload settings like intensive care units.(18) Similarly, a multicenter study of Bangladeshi physicians identified long work hours as a key risk factor, with EE dominating as the core dimension amid resource constraints.(11)

In comparable resource-limited South Asian contexts, South Asian rheumatologists reported 67.8% burnout prevalence during the pandemic, driven by early-career stressors and peaking in EE among younger professionals.(19) Indonesian healthcare workers showed 48.2% moderate-to-high EE, 51.8% DP, and 96.9% high PA, with hospital-based staff at 28.6% overall burnout.(20) Among anesthesiology trainees in low-resource settings, burnout reached concerning levels due to stress and scarcity, often exceeding 50% across subscales.(21) Attending anesthesiologists in developed countries during post-COVID exhibited 67.7% high burnout risk, with critical care subspecialists at 77%- primarily from staffing shortages and poor support, aligning with our 88% EE rate.(22) These comparisons validate our findings: extreme EE reflects chronic vigilance in under-resourced settings, DP emerges as detachment from overload, and low PA signals eroded efficacy amid systemic barriers, all amplified in this low- and middle-income country.

This study has several limitations. The small sample size, primarily from urban facilities, limits generalizability to rural or nationwide contexts. The cross-sectional design prevents establishing causality between burnout and associated factors. Self-reported measures risk social desirability bias. Unmeasured variables—such as on-call frequency, income levels, and patient safety outcomes—further constrain causal attribution. Multicenter, longitudinal studies with objective measures are warranted.

V. Conclusion

This study demonstrates a high burden of burnout among anesthesiologists working across multiple healthcare institutions in Bangladesh. Emotional exhaustion emerged as the most prominent dimension, accompanied by substantial levels of depersonalization and reduced personal accomplishment. These results suggest that multi-institutional practice, compounded by systemic challenges such as workforce shortages and increasing clinical demands, plays a critical role in exacerbating burnout. Addressing this issue requires targeted interventions, including workload regulation, improved staffing distribution, structured support systems, and strategies to promote work–life balance. Strengthening institutional policies and prioritizing physician well-being are essential to ensure sustainable anesthesia services and maintain the quality and safety of patient care in Bangladesh.

Declarations

Ethics declaration: Ethical clearance for this study was received by the Institutional Review Board (IRB) of Khulna Medical College.

Participant consent: Written informed consent was ensured before the enrollment in this study.

Declaration of Interest Statement: Author declare that there are no conflicts of interest regarding the publication of this paper.

Availability of data and materials: Data and materials pertaining to individual participant can be accessed upon request from the corresponding author.

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