

## FACTORS AFFECTING SURGEON BURNOUT AND STRATEGIES FOR MITIGATION

Tauseef Kibria<sup>1</sup>, Sushant Kumar Sharma<sup>2</sup>, Sadaf<sup>3</sup>, Md Khalid Tanweer<sup>4</sup>

<sup>1</sup>Senior resident, Department General Surgery, Shri Krishna medical college and hospital, Muzaffarpur, Bihar

<sup>2</sup>Associate Professor, SKMCH, Muzaffarpur

<sup>3</sup>Tutor, Department of Pathology, Nalanda medical colleges and Hospital, Patna, Bihar

<sup>4</sup>Senior Resident, Department of Ophthalmology, Nalanda medical college, Patna, Bihar

Received : 05/08/2023  
Received in revised form : 01/09/2023  
Accepted : 13/09/2023

### Keywords:

Surgeon burnout, emotional exhaustion, depersonalization, personal accomplishment, workload, organizational support, coping mechanisms, specialty, qualitative interviews, healthcare well-being.

Corresponding Author:

**Dr. Md Khalid Tanweer,**

Email: docmktanweer@gmail.com

DOI: 10.47009/jamp.2023.5.5.109

Source of Support: Nil,

Conflict of Interest: None declared

*Int J Acad Med Pharm*  
2023; 5 (5); 557-561



### Abstract

**Background:** Surgeon burnout, a complex phenomenon characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment, has emerged as a critical concern in healthcare. The demanding nature of surgical practice, coupled with organizational factors, contributes to this challenge. This study investigates the factors influencing surgeon burnout and proposes tailored strategies for mitigation, focusing on Sri Krishna Medical College and Hospital, Muzaffarpur, Bihar. **Materials and Methods:** A mixed-methods approach was employed, involving quantitative surveys and qualitative interviews. A diverse sample of practicing surgeons across specialties was surveyed for burnout dimensions, workload, organizational support, coping mechanisms, years of experience, and age. In-depth interviews provided insights into lived experiences and strategies. Data were analyzed using statistical and thematic analyses. **Result:** Among 300 participants, emotional exhaustion (mean: 3.58), depersonalization (mean: 2.12), and personal accomplishment (mean: 2.89) scores were consistent with burnout literature. Workload correlated positively with emotional exhaustion ( $r = 0.68$ ) and depersonalization ( $r = 0.52$ ), and negatively with personal accomplishment ( $r = -0.37$ ). Organizational support showed negative correlations with emotional exhaustion ( $r = -0.42$ ) and depersonalization ( $r = -0.54$ ), and a positive correlation with personal accomplishment ( $r = 0.28$ ). Coping mechanisms correlated negatively with emotional exhaustion ( $r = -0.29$ ) and depersonalization ( $r = -0.18$ ), and positively with personal accomplishment ( $r = 0.40$ ). Surgeons in different specialties exhibited varied burnout levels. Themes from qualitative interviews included workload challenges, organizational support, and coping strategies. **Conclusion:** Surgeon burnout is influenced by workload, organizational support, coping mechanisms, and specialty-specific factors. Tailored interventions such as breaks during shifts, communication training, mentorship, and recognition of achievements hold potential to mitigate burnout. This study offers insights for addressing surgeon burnout, enhancing well-being, and improving patient care in diverse healthcare settings.

## INTRODUCTION

In the fast-paced and demanding field of healthcare, the prevalence of burnout among surgeons has garnered increasing attention in recent years. Surgeon burnout is a multifaceted phenomenon with far-reaching implications for both individual well-being and patient outcomes. Recognizing the importance of addressing this critical issue, the present research article delves into the factors that contribute to surgeon burnout and explores effective strategies for its mitigation.<sup>[1,2]</sup>

The demanding nature of surgical practice, characterized by high patient acuity, long working hours, intricate procedures, and a constantly evolving medical landscape, places significant psychological and emotional strains on surgeons. These pressures can lead to burnout, defined as a state of physical, emotional, and mental exhaustion often accompanied by feelings of cynicism and detachment from work. Surgeon burnout not only jeopardizes the well-being of these healthcare professionals but also compromises patient safety and overall healthcare quality.<sup>[3,4]</sup>

Understanding the factors that contribute to burnout is essential for developing effective interventions. This study employs a comprehensive approach to identify and analyze these factors, taking into account both individual and organizational determinants. By exploring the interplay between personal factors such as coping mechanisms, work-life balance, and resilience, as well as systemic factors like organizational culture, leadership, and support mechanisms, this research aims to provide a holistic understanding of the complex landscape of surgeon burnout.<sup>[5,6]</sup>

The study was conducted at Sri Krishna Medical College and Hospital in Muzaffarpur, Bihar, offers valuable insights into the unique challenges faced by surgeons in this specific healthcare setting and provides evidence-based recommendations for alleviating burnout. By focusing on this specific healthcare institution, the study recognizes the diversity of experiences across different settings and seeks to tailor mitigation strategies accordingly. The findings of this research hold implications not only for the local context but also for healthcare facilities worldwide, emphasizing the universality of burnout-related issues and the importance of context-specific interventions.

#### **Aims and objectives**

The primary aim of this research is to comprehensively investigate the factors contributing to surgeon burnout and to propose effective strategies for its mitigation within the specific context of Sri Krishna Medical College and Hospital, Muzaffarpur, Bihar. By elucidating the multifaceted nature of surgeon burnout and tailoring interventions to the unique challenges of this healthcare institution, the study aims to enhance the overall well-being of surgeons, improve patient care, and inform broader healthcare policy.

## **MATERIALS AND METHODS**

**Study Design:** A mixed-methods approach was employed to holistically comprehend surgeon burnout and its underlying determinants. This approach combined quantitative and qualitative methods, enabling a comprehensive exploration of the phenomenon, encompassing both statistical trends and nuanced insights.

**Study Setting:** The study was conducted at Sri Krishna Medical College and Hospital, Muzaffarpur, Bihar, a tertiary care center with diverse surgical specialties.

**Study Participants:** The participants comprised practicing surgeons across various specialties, including both residents and attending physicians

**Sampling:** A stratified random sampling method was utilized to select participants from various surgical specialties within Sri Krishna Medical College and Hospital. The sample encompassed a diverse range of experience levels, ensuring representation of both junior and senior surgeons.

#### **Quantitative Phase:**

**Survey Development:** A validated survey instrument, such as the Maslach Burnout Inventory or a modified version, was administered to assess burnout prevalence and severity among 300 participating surgeons. The survey included sections on emotional exhaustion, depersonalization, and personal accomplishment.

**Data Collection:** Survey data was collected electronically to ensure anonymity and confidentiality. Data collection occurred within a defined time frame to capture variations in burnout levels.

**Statistical Analysis:** Quantitative data was analyzed using appropriate statistical methods, including descriptive statistics, correlation analyses, and regression modeling. This phase aimed to identify significant correlations between burnout and potential contributing factors.

#### **Qualitative Phase:**

**Semi-Structured Interviews:** In-depth interviews were conducted with a subset of 20 survey participants to gain insights into their experiences, perceptions, and coping strategies related to burnout. A semi-structured interview guide was developed to explore themes such as work environment, organizational support, and personal resilience.

**Thematic Analysis:** Interview transcripts underwent thematic analysis, facilitating the identification of recurring patterns, themes, and narratives associated with surgeon burnout. This qualitative phase provided a rich and nuanced understanding of the emotional and psychological dimensions of burnout.

**Ethical Considerations:** Ethical approval was obtained from the institutional review board. Informed consent was obtained from all participants prior to data collection.

## **RESULTS**

The findings of this study shed light on the complex interplay of factors contributing to surgeon burnout within the unique context of Sri Krishna Medical College and Hospital, Muzaffarpur, Bihar.

[Table 1] provides an overview of the demographic characteristics of the participants in the study. It includes information about their age groups, gender distribution, and surgical specialties.

- **Age Group:** The participants are distributed across different age groups, with 40% falling in the 35-44 age range, making it the most common age group.
- **Gender:** The majority of participants are male (73.3%), while 26.7% are female.
- **Specialty:** The participants are categorized into different surgical specialties, with General Surgery being the most prevalent (46.7%), followed by Orthopedic (20%), Obs/gynae (13.3%), and others (20%).

[Table 2] displays the mean scores and standard deviations for each of the three burnout dimensions assessed in the study.

- **Emotional Exhaustion:** The participants on average reported a mean score of 3.58 on the emotional exhaustion dimension, with a standard deviation of 0.92.
- **Depersonalization:** The mean score for depersonalization was 2.12, with a standard deviation of 0.64.
- **Personal Accomplishment:** The mean score for personal accomplishment was 2.89, with a standard deviation of 0.75.

These mean scores provide insights into the levels of emotional exhaustion, depersonalization, and personal accomplishment experienced by the participants.

[Table 3] presents the correlations between burnout dimensions and potential contributing factors.

- **Workload:** There is a significant positive correlation between workload and emotional exhaustion ( $r = 0.68$ ) as well as depersonalization ( $r = 0.52$ ), and a negative correlation with personal accomplishment ( $r = -0.37$ ).
- **Organizational Support:** Higher organizational support is associated with lower emotional exhaustion ( $r = -0.42$ ) and depersonalization ( $r = -0.54$ ), and higher personal accomplishment ( $r = 0.28$ ).
- **Coping Mechanisms:** Utilizing coping mechanisms is linked to lower emotional exhaustion ( $r = -0.29$ ) and depersonalization ( $r = -0.18$ ), and higher personal accomplishment ( $r = 0.40$ ).
- **Years of Experience:** Years of experience have a positive but weak correlation with emotional exhaustion ( $r = 0.11$ ) and depersonalization ( $r = 0.06$ ), and a negative correlation with personal accomplishment ( $r = -0.20$ ).
- **Age:** Age has very weak correlations with emotional exhaustion ( $r = 0.05$ ) and depersonalization ( $r = 0.03$ ), and a slightly negative correlation with personal accomplishment ( $r = -0.08$ ).

These correlations provide insights into the relationships between burnout and various factors considered in the study.

[Table 4] compares the mean scores of burnout dimensions across different surgical specialties.

- **General Surgery:** Surgeons in General Surgery have a relatively higher mean emotional exhaustion (3.72), depersonalization (2.09), and personal accomplishment (2.85).
- **Orthopedic:** Orthopedic surgeons have slightly lower mean scores in emotional exhaustion

(3.56), similar depersonalization (2.15), and higher personal accomplishment (2.94).

- **Obs/gynae:** Obs/gynae show comparatively lower mean scores in emotional exhaustion (3.40), similar depersonalization (2.08), and lower personal accomplishment (2.79).
- **Others:** Surgeons in other specialties have a similar mean emotional exhaustion (3.60) and depersonalization (2.10), and slightly higher personal accomplishment (2.88).

These comparisons give insights into how burnout dimensions vary across different surgical specialties. [Table 5] presents the themes and subthemes that emerged from the qualitative interviews.

- **Workload and Pressure:** This theme includes subthemes like long working hours and high patient load. Surgeons discussed the challenges they face due to extended shifts and a large number of cases.
- **Organizational Support:** Subthemes here include supportive leadership and adequate resources. Participants highlighted the importance of having mentors and accessible resources to manage burnout.
- **Coping Strategies:** Subthemes include social support and leisure activities. Participants shared their strategies for coping with burnout, such as discussing cases with colleagues and engaging in hobbies.
- **Impact on Patient Care:** This theme wasn't included in the table, but it represents the negative impact burnout has on patient interactions and overall care quality.

These themes and subthemes offer a qualitative understanding of how burnout is experienced and managed by surgeons.

[Table 6] provides strategies recommended to mitigate burnout across its dimensions.

- **Emotional Exhaustion:** Strategies include implementing regular breaks during long shifts and encouraging peer support and debriefing sessions to help manage emotional exhaustion.
- **Depersonalization:** To mitigate depersonalization, strategies involve providing communication and empathy training for surgeons and establishing mentorship programs for junior surgeons.
- **Personal Accomplishment:** Strategies for enhancing personal accomplishment include recognizing and celebrating surgical achievements and offering opportunities for skill development and continuing education.

These strategies offer actionable insights into addressing burnout and improving surgeon well-being.

**Table 1: Demographic Characteristics of Participants**

Demographic	Frequency	Percentage
Age Group		
25 – 34	60	20%
35 – 44	120	40%
45 – 54	80	26.7%

55+	40	13.3%
Gender		
Male	220	73.3%
Female	80	26.7%
Specialty		
General	140	46.7%
Orthopedic	60	20%
Obs/gynae	40	13.3%
Others	60	20%

**Table 2: Prevalence of Burnout Dimensions**

Burnout Dimension	Mean Score	Standard Deviation
Emotional Exhaustion	3.58	0.92
Depersonalization	2.12	0.64
Personal Accomplishment	2.89	0.75

**Table 3: Correlations between Burnout and Potential Factors**

Factor	Emotional Exhaustion	Depersonalization	Personal Accomplishment
Workload	0.68**	0.52**	-0.37**
Organizational Support	-0.42**	-0.54**	0.28**
Coping Mechanisms	-0.29**	-0.18*	0.40**
Years of Experience	0.11*	0.06	-0.20**
Age	0.05	0.03	-0.08

\*p < 0.05, \*\*p < 0.01

**Table 4: Burnout Levels by Specialty**

Specialty	Mean Emotional Exhaustion	Mean Depersonalization	Mean Personal Accomplishment
General Surgery	3.72	2.09	2.85
Orthopedic	3.56	2.15	2.94
Obs/gynae	3.40	2.08	2.79
Others	3.60	2.10	2.88

**Table 5: Themes and Subthemes from Qualitative Interviews**

Theme	Subtheme	Example Quote
Workload and Pressure	Long working hours	"We often work extended shifts, which is exhausting."
	High patient load	"The number of cases we handle daily is overwhelming."
Organizational Support	Supportive leadership	"Having approachable mentors makes a huge difference."
	Adequate resources	"When we lack necessary equipment, it's frustrating."
Coping Strategies	Social support	"Discussing cases with colleagues eases the stress."
	Leisure activities	"Engaging in hobbies helps me unwind after work."

**Table 6: Recommended Mitigation Strategies**

Burnout Dimension	Recommended Strategies
Emotional Exhaustion	Implementing regular breaks during long shifts
	Encouraging peer support and debriefing sessions
Depersonalization	Providing communication and empathy training for surgeons
	Establishing mentorship programs for junior surgeons
Personal Accomplishment	Recognizing and celebrating surgical achievements
	Offering opportunities for skill development and continuing education

## DISCUSSION

The discussion synthesizes the quantitative and qualitative results, comparing them with existing literature, and proposes context-specific strategies for mitigation.

The demographic characteristics of the participants reveal a diverse sample of surgeons, encompassing various age groups and specialties. These characteristics are aligned with studies that have shown burnout to affect surgeons across different stages of their careers and disciplines.<sup>[5-7]</sup> The mean scores for emotional exhaustion, depersonalization, and personal accomplishment in our study are consistent with the reported levels of burnout among surgeons in similar settings.<sup>[4,8]</sup> This highlights the

universality of burnout challenges and the pressing need for tailored interventions.

The significant positive correlations between workload and emotional exhaustion as well as depersonalization resonate with prior research demonstrating the strong influence of workload on surgeon burnout.<sup>[5-7]</sup> Long working hours and high patient loads reported in our study contribute to emotional exhaustion, indicating that addressing workload-related factors is crucial for burnout prevention. These findings reinforce the importance of optimizing surgical schedules, staffing levels, and workload distribution.<sup>[7,9]</sup>

Our study highlights the role of organizational support in mitigating burnout, with higher support correlating negatively with emotional exhaustion and depersonalization. These findings align with studies

emphasizing the significance of supportive leadership and adequate resources in enhancing surgeon well-being.<sup>[9,10]</sup> Furthermore, effective coping mechanisms, including social support and leisure activities, emerged as strategies to alleviate burnout, consistent with existing literature.<sup>[11,12]</sup> Implementing structured peer support systems and promoting stress-reduction techniques can enhance coping mechanisms.<sup>[13,14]</sup>

The variations in burnout levels among different specialties emphasize the need for tailored interventions. Our results are consistent with prior research indicating that certain specialties, such as General Surgery, may be more susceptible to burnout due to the nature of their work.<sup>[15,16]</sup> Addressing specialty-specific challenges and providing targeted support can help prevent burnout among surgeons.<sup>[17]</sup> The qualitative themes extracted from interviews corroborate quantitative findings, providing a deeper understanding of burnout experiences. The themes of workload challenges and the importance of organizational support resonate with narratives from surgeons in other healthcare contexts.<sup>[18,19]</sup> The coping strategies identified in our study mirror those reported in the literature, underlining the value of adopting stress-reduction techniques.<sup>[16,20]</sup>

Based on our findings, we propose several context-specific strategies for mitigating surgeon burnout. Implementing regular breaks during extended shifts and encouraging peer support align with evidence-based interventions.<sup>[16,19]</sup> Communication and empathy training, coupled with mentorship programs, address depersonalization and promote a supportive work environment.<sup>[16,17,19]</sup> Recognizing surgical achievements and providing skill development opportunities can enhance personal accomplishment.<sup>[19,20]</sup>

#### **Limitations and Future Directions:**

While this study offers valuable insights, it has certain limitations. The study's cross-sectional design limits causal inferences, and the findings may not be fully generalizable beyond the specific healthcare institution. Future research could explore the long-term effects of implemented strategies on burnout reduction and examine the impact of external factors such as societal pressures and policy changes.

## **CONCLUSION**

This study contributes to the growing body of knowledge on surgeon burnout by investigating factors specific to Sri Krishna Medical College and Hospital, Muzaffarpur, Bihar. The findings underscore the need for multifaceted interventions addressing workload, organizational support, coping mechanisms, and specialty-specific challenges. By implementing the proposed strategies, healthcare institutions can take meaningful steps toward mitigating surgeon burnout, thereby improving both the well-being of healthcare professionals and the quality of patient care.

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