

PREVALANCE OF OCCUPATIONAL STRESS & BURN OUT AMONG ANAESTHESIOLOGISTS

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Abstract

Burnout among anesthesiologists is a significant concern due to the demanding nature of their work, which includes responsibilities in emergency care, intensive care, and pain management, along with research, teaching, and administrative duties. Anesthesiologists in institutional settings experience workplace stress and burnout. This study examines sociodemographic factors, job requirements, and working conditions. This cross-sectional survey of 300 anesthesiologists used an online survey centred on Maslach Burnout Inventory-Human Services Survey (MBI-HSS). Results indicate that more than 50% of respondents experienced stress, with "Emotional exhaustion" being the most prevalent burnout subscale (61.3%). Significant predictors of stress and burnout include job demands, work schedule, and lack of job support. The findings highlight the need for well-organized institutional strategies to mitigate burnout and improve the well-being of anesthesiologists.

Keywords: Burnout, Job Stress, Anesthesiologists, "Emotional Exhaustion", Depersonalization, Personal Accomplishment, Job Demands.

INTRODUCTION

Burnout may result from unrelenting stress, but it is distinct from simply experiencing too much stress. Burnout is a long-term response to continuous job stress, even though anxious people think taking control will help. Maslach and Jackson initially identified this state as emotional weariness, sense of low individual achievement, and "Depersonalisation". Work-related weariness is "Emotional exhaustion". Low personal achievement is characterised by discontent with work-related successes, and "Depersonalisation" is a defence mechanism. Anesthesiology is notoriously stressful. Hospital anesthesiologists now address acute and chronic pain, emergency, and intensive care. Many anesthesiologists also teach, study, and administer. Anesthesiologists are overworked due to the demand-supply gap caused by this enlarged scope of practice. Training anesthesiologists may be susceptible to stress and burnout, even though they gain coping skills over time. Anesthesiologists in diverse institutional contexts are assessed for job stress and burnout in this study. It also examines sociodemographic factors, job characteristics, and working situations to identify the strongest symptom predictors. These criteria would help build anesthesiologist burnout prevention and well-being initiatives.

MATERIALS AND METHODS

The Anesthesia Department of "Vinayaka Mission's Kirupananda Variyar Medical College & Hospitals, Salem" conducted a cross-sectional survey from March to June 2024 wherein the respondents comprised of 330 anesthesiologists, including 70 senior residents, 65 junior residents, 65 associate professors, 73 assistant professors, and

57 professors. The survey was performed by way of google forms to anesthesiologists across several facilities after clearance from the Institutional Review Board, explaining the study's goals and maintaining anonymity and confidentiality. Participants gave verbal consent and completed the survey at their convenience, resulting in a 90% response rate. The final sample size was 300 and convenience sampling method was adopted for the present study. A four-section, anonymous, self-administered questionnaire wherein the MBIHSS was utilized to collect data with sociodemographic data and to measure "Emotional exhaustion", "Depersonalisation", and "Reduced personal capacity". Literature, Asian hospital work settings, and casual conversations with anesthesiologists provided job aspects and working conditions. Academic status, employment demands, hours worked distribution, weekly duty plans, monthly shift numbers, holidays, job assistance, and anaesthesia work were assessed.

With 22 items, the MBI-HSS evaluates "Emotional exhaustion", "Depersonalisation", and personal achievement. Items were graded 0 (never) to 6 (everyday). Burnout is indicated by high first-two and low last-subscale scores. Subscales measure burnout separately. The study comprises respondents with burnout above subscale thresholds. For service worker burnout detection and assessment, the MBI-HSS is reliable and valid. Twenty non-trial anesthesiologists participated in a pilot study. The participants were educated and employed in English, so this pilot tested the English MBI-HSS for clarity and simplicity. Data was analysed with SPSS 26.0. Statistics were numbers and percentages. Inventory criteria calculated burnout and stress. Pearson's correlation test compared job stress and burnout, while chi-squared compared career groups. Statistical significance was determined by a P-value ≤ 0.05 .

RESULTS:

Table 1: "job characteristics and working conditions of the studied anaesthesiologists"

| Designation | Categories | n | % |
|---|-------------------|------|------|
| | Professor | 53 | 17.7 |
| Assistant professor | 71 | 23.7 | |
| Associate professor | 63 | 21.0 | |
| Senior Residents | 52 | 17.3 | |
| Junior Residents | 61 | 20.3 | |
| Job Characteristics | Categories | n | % |
| Job demands both physical and mental effort | Yes | 172 | 57.3 |
| | No | 128 | 42.7 |
| Work time directed mainly to | Patient care only | 198 | 66.0 |
| | Research only | 0 | 0.0 |
| | Both | 102 | 34.0 |
| On duty all week | Yes | 183 | 61.0 |
| | No | 117 | 39.0 |
| Shifts per month | ≤ 6 shifts | 178 | 59.3 |
| | > 6 shifts | 122 | 40.7 |
| Availability of vacations | Yes | 84 | 28.0 |
| | No | 216 | 72.0 |
| Job support | Yes | 156 | 52.0 |
| | No | 144 | 48.0 |

Table 1 provides an overview of the job characteristics and working conditions of anesthesiologists. The data indicates that there are 53 professors with an average of 17.7 years of experience, 71 assistant professors with an average of 23.7 years of

experience, 63 associate professors with an average of 21.0 years of experience, 52 senior residents with an average of 17.3 years of experience, and 61 junior residents with an average of 20.3 years of experience. A large percentage (57.3%) say their job requires mental and physical exertion. Patients take up most of their time (66.0%), with no responses focused on research. Over half (61.0%) are on duty all week, and a majority (59.3%) work six or fewer shifts per month. Notably, 72.0% do not have vacation availability, and slightly more than half (52.0%) receive job support.

Table 2: “Prevalence of Burnout Subscales and Job Stress Among the Studied Anaesthesiologists”

| Subscales | n | Percentage |
|-----------------------------|-----|------------|
| “Emotional exhaustion” | 184 | 61.3 |
| “Depersonalisation” | 155 | 51.7 |
| “Reduced personal capacity” | 172 | 57.3 |
| “Encountering job stress” | 169 | 56.3 |

Anesthesiologists' burnout subscales and occupational stress are shown in Table 2. “Emotional exhaustion” is the most prevalent, affecting 61.3% of the participants. “Depersonalisation” impacts 51.7%, while 57.3% experience “Reduced personal capacity”. Job stress is encountered by 56.3% of the anesthesiologists.

Table 3: “Distribution of Burnout Subscales and “Encountering Job Stress” According to the Sociodemographic Characteristics of the Studied Anesthesiologists”

| Characteristics | Sociodemographic Characteristics | “Emotional exhaustion” n = 184 n (%) | “Depersonalisation” n = 155 n (%) | “Reduced personal capacity” n = 172 n (%) | “Encountering job stress” n = 169 (%) |
|-----------------|----------------------------------|--------------------------------------|-----------------------------------|---|---------------------------------------|
| Age | ≤35 years | 13 (7.07%) | 19 (12.26%) | 19 (11.05%) | 38 (22.49%) |
| | >35 years | 171 (92.93%) | 136 (87.74%) | 153 (88.95%) | 131 (77.51%) |
| P value | | .003* | .000* | .000* | .000* |
| Sex | Male | 80 (43.48%) | 44 (28.39%) | 141 (81.98%) | 115 (68.05%) |
| | Female | 104 (56.52%) | 111 (71.61%) | 31 (18.02%) | 54 (31.95%) |
| P value | | .58 | .785 | .955 | .61 |
| Residence | Urban | 44 (23.91%) | 131 (84.52%) | 89 (51.74%) | 104 (61.54%) |
| | Rural | 140 (76.09%) | 24 (15.48%) | 83 (48.26%) | 65 (38.46%) |
| P value | | .005* | .003* | .023* | .008* |
| Marital Status | Single | 125 (67.93%) | 90 (58.06%) | 126 (73.26%) | 52 (30.77%) |
| | Married | 59 (32.07%) | 65 (41.94%) | 46 (26.74%) | 117 (69.23%) |
| P value ** | | .005* | .138 | .08 | .000* |
| No of Children | 0 children | 43 (23.37%) | 56 (36.13%) | 92 (53.49%) | 32 (18.93%) |
| | 1 child | 101 (54.89%) | 17 (10.97%) | 75 (43.6%) | 3 (1.78%) |
| | ≥2 children | 40 (21.74%) | 82 (52.9%) | 5 (2.91%) | 134 (79.29%) |
| P value | | .000* | .006* | .02* | .000* |
| Job of Spouse | Physician | 161 (87.5%) | 148 (95.48%) | 84 (48.84%) | 49 (28.99%) |
| | Others | 23 (12.5%) | 7 (4.52%) | 88 (51.16%) | 120 (71.01%) |
| P value | | .008* | .003* | .023* | .008* |
| Income | Able to save | 54 (29.35%) | 7 (4.52%) | 26 (15.12%) | 89 (52.66%) |
| | Satisfactory | 95 (51.63%) | 102 (65.81%) | 106 (61.63%) | 37 (21.89%) |
| | Not satisfactory | 35 (19.02%) | 46 (29.68%) | 40 (23.26%) | 43 (25.44%) |
| P value | | .01* | 0.193 | .023* | .008* |

“*Significant at P ≤0.05 level. Categories are not mutually exclusive;”

Table 3 presents the distribution of the study parameters among anesthesiologists based on their sociodemographic characteristics. Age is a significant factor, with those over 35 years experiencing higher rates of “Emotional exhaustion” (92.93%), “Depersonalisation” (87.74%), “Reduced personal capacity” (88.95%), and job stress (77.51%). Gender differences show males predominantly affected by “Reduced personal capacity” (81.98%) and job stress (68.05%), while females experience higher “Depersonalisation” (71.61%). Urban residents show higher “Emotional exhaustion” (23.91%) and job stress (61.54%). Marital status reveals singles have higher “Emotional exhaustion” (67.93%) and “Reduced personal capacity” (73.26%), while married individuals face more job stress (69.23%). The number of children impacts stress, with those having two or more children experiencing the highest job stress (79.29%). Spouses' job roles influence burnout, with those whose spouses are non-physicians facing more job stress (71.01%). Income levels show those able to save report lower burnout and stress. Significant differences were noted at $P \leq 0.05$ for many characteristics.

Table 4: “Distribution of Burnout Subscales and Job Stress According to Job Characteristics and Working Conditions of the Studied Anaesthesiologists”

| Job Characteristics and Working Conditions | “Emotional exhaustion” n = 184 n (%) | “Depersonali sation” n = 155 n (%) | “Reduced personal capacity” n = 172 n (%) | “Encountering job stress” n = 169 n (%) |
|--|--------------------------------------|------------------------------------|---|---|
| Designation | | | | |
| Professor (53) | 19 (10.33%) | 27 (17.42%) | 12 (6.98%) | 36 (21.3%) |
| Asst. professor (71) | 32 (17.39%) | 41 (26.45%) | 19 (11.05%) | 15 (8.88%) |
| Associate Professor (63) | 34 (18.48%) | 19 (12.26%) | 53 (30.81%) | 38 (22.49%) |
| Senior Resident (52) | 61 (33.15%) | 17 (10.97%) | 46 (26.74%) | 24 (14.2%) |
| Junior Resident (61) | 38 (20.65%) | 51 (32.9%) | 42 (24.41%) | 56 (33.14%) |
| P value | .000* | .000* | .000* | .000* |
| Job demands both physical and mental effort | | | | |
| Yes (172) | 121 (65.76%) | 71 (45.81%) | 137 (79.65%) | 145 (85.8%) |
| No (128) | 63 (34.24%) | 84 (54.19%) | 35 (20.35%) | 24 (14.2%) |
| P value | .045* | .012* | .039* | .010* |
| Work time is directed mainly to | | | | |
| Patient care only (198) | 116 (63.04%) | 107 (69.03%) | 40 (23.26%) | 124 (73.37%) |
| Research only (0) | 0 | 0 | 0 | 0 |
| Both (102) | 68 (36.96%) | 48 (30.97%) | 132 (76.74%) | 45 (26.63%) |
| P value | .046* | .915 | .695 | .001* |
| On duty all week | | | | |
| Yes (183) | 140 (76.09%) | 95 (61.29%) | 113 (65.7%) | 130 (76.92%) |
| No (117) | 44 (23.91%) | 60 (38.71%) | 59 (34.3%) | 39 (23.08%) |
| P value | .000* | .000* | .000* | .000* |
| Shifts per month | | | | |
| ≤6 shifts (178) | 99 (53.8%) | 131 (84.52%) | 79 (45.93%) | 43 (25.44%) |
| >6 shifts (122) | 85 (46.2%) | 24 (15.48%) | 93 (54.07%) | 126 (74.56%) |
| P value | .000* | .000* | .000* | .000* |
| Availability of work vacations | | | | |
| Yes (84) | 84 (45.65%) | 21 (13.55%) | 29 (16.86%) | 56 (33.14%) |
| No (216) | 100 (54.35%) | 134 (86.45%) | 143 (83.14%) | 113 (66.86%) |
| P value | .04* | .196 | .582 | .002* |
| Job support | | | | |
| Yes (156) | 83 (45.11%) | 24 (15.48%) | 51 (29.65%) | 26 (15.38%) |
| No (144) | 101 (54.89%) | 131 (84.52%) | 121 (70.35%) | 143 (84.62%) |
| P value | .038* | .024* | .028* | .01* |

Table 4 demonstrates anesthesiologists' burnout subscales and job stress by job characteristics and working situations. Job stress is high yet "Emotional exhaustion" and "Reduced personal capacity" are lowest for professors. Associate professors have the greatest rate of "Reduced personal capacity" burnout. Junior and senior residents had high "Emotional exhaustion" and depersonalisation. Burnout and job stress are increased by high job demands, intense handling of patients, staying on duty all week, doing more than six shifts er month, lack of holidays, and insufficient employment support. The P values show that these factors significantly affect burnout and job stress.

DISCUSSION

This study found substantial "job stress and burnout" among institutional anesthesiologists. Most respondents reported stress, with two-thirds "Encountering job stress" highly linked with all burnout aspects. Age was a significant factor, with those over 35 experiencing higher rates of "Emotional exhaustion", "Depersonalisation", "Reduced personal capacity", and job stress. Gender differences showed males predominantly affected by "Reduced personal capacity" and job stress, while females experienced higher "Depersonalisation". Urban residents showed higher "Emotional exhaustion" and job stress. Marital status revealed singles had higher "Emotional exhaustion" and "Reduced personal capacity", while married individuals faced more job stress. The number of children impacted stress, with those having two or more children experiencing the highest job stress. Spouses' job roles influenced burnout, with those whose spouses were non-physicians facing more job stress. Income levels showed those able to save reported lower burnout and stress.

Associate All professors scored higher on "burnout subscales" than residents, but nearly all were better at handling job stress, rating below average. Postgraduate medical education in all disciplines, including anaesthesia, requires tremendous mental and physical work, which rises if the anaesthetist chooses an academic career. Professors were fewer impacted by stress and burnout because they could better manage stress and change their work surroundings as they aged and rose in rank. They mentor research and clinical trainees and work shorter hours and shifts.

Stress causes burnout, and some jobs produce greater stress than others. Uncertain working conditions, exorbitant job duties, intense demands without time for recovery, stressful work surroundings, lack of personal control, recognition, interactions at work, unrealistic job expectations, low earnings, and poor support or administration can cause burnout.

Younger anesthesiologists, particularly those with good incomes, married to doctors, and two or more children, may experience more professional stress and burnout due to social pressures. Our study indicated more stress and burnout in marriage and family groups, contrary to some studies that imply they provide social support. This may be linked to academic pressure and anesthesiology stress.

In this study, male anesthesiologists exhibited higher stress and burnout rates than females, maybe due to the belief that raising children is a personal achievement for women, preventing depersonalisation. A Turkish study found that female anesthesiologists feel more accomplished but less depersonalised than males.

Extrinsic work-related stresses and organisational elements are more important than personal aspects in medical job stress and burnout, according to multiple research.

Anesthesiologists who work in anaesthesia while studying are more anxious and burn out due to the physical and mental demands of their jobs. An heavy workload and lack of employment assistance also caused job stress. Anesthesiologists who spend most of their time on patient care and research, work different shifts, and lack job support had higher job stress and burnout scores. Vacation time had little impact on this study.

We found similarities and differences with other studies. A Turkish physician study indicated that working more shifts and taking fewer holidays increased burnout risk. Another study found that health centre workers had the most burnout due to patient loads and lengthy hours. Cultural and specialisation differences may alter the prevalence and levels of stress and burnout, making universal results challenging. Our result that 72.4% of respondents deemed anaesthesia "boring" may explain this survey's greater burnout rate. We found more burnout in all dimensions than other studies.

This study contains flaws. Despite using validated measures, our occupational stress and burnout measures may not have properly reflected anesthesiologists' experiences. Cross-sectional design may have made causality determination challenging. Using self-reported data at one time to make inferences about working conditions and job stress or burnout is risky. Our results may not apply to all anesthesiologists because we focused on academics.

However, we hope this study will help us comprehend academic anesthesiologists' heavy academic demands, occupational qualities, and critical social traits. They will help track medical college structural changes and implement healthcare improvements. Future studies should compare findings with non-academic anesthesiologists and analyse system-level solutions to optimise workloads, increase efficiency, and lessen academic demands on anesthesiologists. Chronic stress sources in anesthesiologists include competence factors, production pressures, noisy environments, poorly-designed workspaces, long hours, night calls, fatigue, fear of litigation, low organisational justice, economic uncertainty, and conflicts with coworkers and superiors. More research is needed.

CONCLUSION

Academic anesthesiologists, especially residents and associate professors, were most agitated and burned out due to a lack of job support. These professionals need a well-organized institutional approach to meet their academic expectations and increase their career support network. This method could dramatically reduce stress and burnout.

References

- 1) Smith, M., Segal, J., & Segal, R. (2012). Preventing Burnout: Signs, Symptoms, Causes, and Coping Strategies. Retrieved from HelpGuide.
- 2) Ozyurt, A., Hayran, O., & Sur, H. (2006). Predictors of Burnout and Job Satisfaction among Turkish Physicians. *Quarterly Journal of Medicine*, 99, 161–169.
- 3) Maslach, C., & Jackson, S. E. (1986). *Maslach Burnout Inventory Manual* (2nd ed.). Palo Alto, CA: CPP, Inc.
- 4) De Oliveira, G. S., Ahmed, S., Stock, M. C., Harter, R. L., Almeida, M. D., Fitzgerald, P. C., et al. (2011). High Incidence of Burnout in Academic Chairpersons of Anesthesiology: Should We Be Taking Better Care of Our Leaders? *Anesthesiology*, 114, 181–193.

- 5) Kain, Z. N., Chan, K. M., Kaz, J. D., Fleisher, L., Doler, J., & Rosenfeld, L. E. (2002). Anesthesiologists and Acute Perioperative Stress: A Cohort Study. *Anesthesia & Analgesia*, 95, 17–83.
- 6) Holmstrom, I. (2006). Being a Young and Inexperienced Trainee Anesthetist: A Phenomenological Study on Working Conditions. *Acta Anaesthesiologica Scandinavica*, 50, 653–658.
- 7) The American Institute of Stress (AIS). (2011). Handling Job Stress Questionnaire. Retrieved from Stress.org.
- 8) Enzmann, D., & Kleiber, D. (1989). *Helfer-Leiden: Stress und Burnout in psychosozialen Berufen*. Heidelberg: Assange.
- 9) Nyssen, A. S., & Hansez, I. (2008). Stress and Burnout in Anesthesia. *Current Opinion in Anesthesiology*, 21, 406–411.
- 10) Abut, Y. C., Kitapcioglu, D., Erkalp, K., Toprak, N., Boztepe, A., Sivrikaya, U., et al. (2012). Job Burnout in 159 Anesthesiology Trainees. *Saudi Journal of Anaesthesia*, 6, 46–51.
- 11) Scott, E. (2010). Job Burnout: Job Factors That Contribute to Employee Burnout. Retrieved from About.com.
- 12) Castelo-Branco, C., Figueras, F., Eixarch, E., Quereda, F., Cancelo, M. J., González, S., et al. (2007). Symptoms and Burnout in Obstetric and Gynecology Residents. *British Journal of Gynecology*, 45, 63–84.
- 13) Visser, M. R. M., Smets, E. M. A., Oort, F. J., & de Haes, H. C. J. M. (2003). Stress, Satisfaction, and Burnout among Dutch Medical Specialists. *Canadian Medical Association Journal*, 168, 271–275.
- 14) Nirel, N., Shirom, A., & Ismail, S. (2004). The Relationship between Job Overload, Burnout, and Job Satisfaction, and the Number of Jobs of Israeli Consultants. *Harefuah*, 143, 779–784.
- 15) Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job Burnout. *Annual Review of Psychology*, 52, 397–422.
- 16) Goehring, C., Bouvier Gallachi, M., Kunzi, B., & Bovier, P. (2005). Psychosocial and Professional Characteristics of Burnout in Swiss Primary Care Practitioners: A Cross-sectional Survey. *Swiss Medical Weekly*, 135, 101–108.
- 17) Olkinuora, M., Asp, S., Juntunen, J., Kauttu, K., Strid, L., & Aarimaa, M. (1990). Stress Symptoms, Burnout, and Suicidal Thoughts in Finnish Physicians. *Social Psychiatry and Psychiatric Epidemiology*, 25, 81–86.
- 18) Keeton, K., Fenner, D. E., Johnson, T. R., & Hayward, R. A. (2007). Predictors of Physician Career Satisfaction, Work-life Balance, and Burnout. *Obstetrics & Gynecology*, 109, 949–955.