

BURNOUT AMONG ANAESTHESIOLOGISTS IN INDIA. A QUESTIONNAIRE BASED STUDYANNIE SHEEBA JOHN^{1*}, SENTHIL KUMAR T²¹Department of Anaesthesiology, Mahatma Gandhi Medical College and Research Institute, Sri Balaji Vidyapeeth, Pondichery, Tamil Nadu, India. ²Medical Intensive Care Unit, Meenakshi Medical Hospital, Thanjavur, Tamil Nadu, India. Email: dr.anniej@yahoo.com

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ABSTRACT

Objectives: Small acute stress events occurring every day at work, can gradually lead to long-term, chronic stress. Burnout syndrome is the response to chronic occupational stress experienced by the person. We aimed to assess the prevalence of burnout among practicing anaesthesiologists in India and its association with personal and professional characteristics.

Methods: A cross-sectional survey study was conducted, wherein a questionnaire was emailed to 5000 anaesthesiologists. An anonymous self-administered questionnaire consisting of socio-demographic, career, and work conditions, and Maslach Burnout Inventory-Human Services Survey (MBI-HSS) was used. Data were analysed according to the guidelines for data processing with SPSS and an analysis of the scales used.

Results: There were 1238 responders, with a response rate of 24.7%. A total of 864 completed responses were considered for analysis. The prevalence of emotional exhaustion, depersonalisation, and low professional outcome among our responders was 39.5%, 65%, and 50.6%. Senior residents showed a high prevalence of burnout in all subsets compared to other designation ($p < 0.001$). Increased prevalence was seen in the 26–35 years age group, those working around 12 h/day, doing 7–10 night shifts per month, and perceived poor remuneration.

Conclusion: We conclude, that chronic stress and burnout are prevalent among anaesthesiologists in India at alarming levels. Coping strategies and relaxation techniques are necessary to reduce burnout and increase work efficiency.

Keywords: Burnout, India, Anesthesiologist, Survey.

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"While anaesthesia, like all of medicine, is considered to be increasingly safe for patients, it is becoming more dangerous for its practitioners."

Jackson, 1999

INTRODUCTION

Anaesthesiology is considered one of the stressful fields in medical practice [1-3]. Anaesthesiologists work in multiple domains including peri-operative care, intensive care, pain management, emergency, and trauma. They are active researchers, teachers, and bear hospital administrative responsibilities.

Burnout syndrome is chronic occupational stress affecting both physical and cognitive function. It can cause work exhaustion, sleepiness, decreased interest in work, lack of enthusiasm, low self-esteem, and increase susceptibility to illness leading to decreased work efficiency [4,5]. Continuous work in a fast-paced environment can lead to mental and physical exhaustion [6]. Mental wellness is as important as physical well-being but is often neglected. Prolonged mental stress and burnout are an important occupational hazard for health professionals. Most studies on Indian medical practitioners, especially anaesthesiologists, identified high levels of work stress and burnout [3,7,8].

An ever-changing workplace environment, the need to stay updated with every new revolution in our field, the drive to remain competent, the medico-legal trepidations, and the urge for research and publication are all passively burning us each day. We aimed to assess the prevalence of Burnout among practicing anaesthesiologists in India and its association with personal and professional characteristics.

METHODS**Study design and sampling**

An online survey was conducted over a period of two months during May-June 2015 after obtaining institutional ethical committee approval.

Delphi method was followed for questionnaire preparation. Initially, an in-depth literature search was done using various search engines- Google Scholar, PubMed, Proquest, and Delnet. Based on the literature gathered, questions were prepared related to the aim of this study. Next, the questions were analysed by the senior faculties in the department for relevance to the study (content validation). Following this, a pilot survey using the preliminary questionnaire (excluding Maslach Burnout Inventory-questionnaire) was conducted in our department and "test-retest" done for comprehension and flaws (format validation). After the validation of the questionnaire in the department, a final questionnaire was prepared.

Survey tool

An anonymous self-administered questionnaire consisting of 44 questions, divided into three parts were prepared to collect data. Part 1 aimed to collect socio-demographic and family data, and Part 2 was related to career and work conditions. Part 3 was the Maslach Burnout Inventory-Human Services Survey (MBI-HSS) consisting of a set of 22 questions divided into three subsets. The subsets were Emotional Exhaustion (EE), Depersonalization (DP), and Low Professional Outcome (LPO). Each question was scored on a 7 point scale (0-6) {0 = never, 1 = few times a year, 2 = once a month, 3 = few times a month, 4 = once a week, 5 = few times a week, 6 = every day}. The subsets were scored separately and the degree of burnout is expressed independently for each subset and not by the cumulative score of all subsets. For emotional exhaustion, a score ≤ 17 is low, 18–29 as moderate, and ≥ 30 as high. Similarly, for depersonalisation score of ≤ 5 classified as low, 6–11 as moderate, and ≥ 12 as high. Contrary to EE and DP, Low Professional outcome is inversely related to the score, that is, higher the score better the perceived professional outcome. LPO is high if the score was ≤ 33 , moderate with 34–39, and low if score ≥ 40 . A high score in the first two subsets and a low score in the last subset indicate a high level of burnout [9-11].

Data collection and analysis

Anesthesiologists registered with the Indian Society of Anesthesiologists were emailed a link to the questionnaire. Data were analysed using Microsoft® Excel (2013), IBM SPSS Statistics for Windows version 22, Armonk, NY: IBM Corp. Descriptive data expressed as percentages and numbers. Burnout score was calculated using MBI guidelines and a Chi-square test was used for categorical data. Data were considered significant if $p < 0.05$.

RESULTS

Out of the 5000 emails sent, 1238 responded. The response rate was 24.7%. We excluded postgraduate students from the analysis as we aimed to concentrate on practicing anaesthesiologists and not pursuing residents. After excluding postgraduates, a total of 864 completed responses were analysed to assess the prevalence of Burnout. Data of those respondents with high and moderate burnout scores were included for correlation analysis. Our respondents were predominantly males (males = 69%, females = 30.4%, and transgender = 0.6%); assistant professors (22.3%) followed by senior residents (21.4%) and within age group of 26–35 years (36.1%). Personal data showed that 92% of our respondents were married and had two children (41.2%).

Table 1 shows the socio-demographic and professional data of the respondents. Table 2 shows the results of questions on job perception and coping strategy followed by the anaesthesiologists. The distribution of burnout subscales according to the socio-demographic and job characteristics of the respondent anaesthesiologists are summarized in Tables 3 and 4. Based on the analysis, 39.6% of the respondents had emotional exhaustion, 65% experienced depersonalisation, and 50.6% had low professional outcomes (Fig. 1). The majority of our responders (58.5%) felt that their work is not recognized by society or hospital administration (Fig. 2).

The analysis showed that the prevalence of burnout was significantly high in senior residents ($p < 0.001$), younger age group anaesthesiologist (26–35 years, $p < 0.05$), more than 8 h/day of work, and more than 10-night shifts per month. The three subsets of burnout are not mutually exclusive, so a person can have burnout in more than one subset or in all subsets, which indicates a high risk for burnout syndrome. Around

Table 1: Socio-demographic and job characteristics of respondent anesthesiologists (N=864)

Gender	% (n)	Designation	% (n)
Female	30.4 (263)	Junior Resident/post-graduate	11.1 (108)
Male	69 (597)	Senior Resident	21.4 (208)
Transgender	0.6 (5)	Assistant Professor	22.3 (217)
Age in years	% (n)	Associate Professor	12.2 (119)
26–35 years	36.1 (312)	Professor (138)	14.2 (138)
36–45 years	32.7 (283)	Consultant Anesthetist (Pvt Hosp)	18.7 (182)
46–55 years	17.1 (148)	Annual income	
56–65 years	11.4 (99)	<5 lakhs/annum	9.3 (79)
>65 years	2.7 (23)	6–10 lakhs/annum	32.6 (277)
Marital status	% (n)	11–15 lakhs/annum	30.7 (261)
Yes	92.5 (803)	16–20 lakhs/annum	12.6 (107)
No	7.06 (61)	>20 lakhs/annum	14.8 (126)
Children	% (n)	Average number of hours of work/day	% (n)
None	23.6 (204)	<4 h/day	2.3 (20)
1 child	32.6 (282)	4–8 h/day	30.4 (263)
2 children	41.2 (356)	8–12 h/day	57.5 (497)
>2 children	2.5 (22)	>12 h/day	9.7 (84)
Vacations/year	% (n)	Average number of night shifts/ month	% (n)
None	16.2 (140)	<4 shifts/month	45.3 (391)
1	37.2 (321)	4–6 shifts/month	33.6 (290)
2	31.4 (271)	7–10 shifts/month	15.6 (135)
>2	15 (130)	>10 shifts/month	5.6 (48)

5% (46) of the anesthesiologist had high burnout in all subsets while 16% (140) doctors showed moderate levels in the three subsets.

DISCUSSION

Herbert Freudenberger, an American psychologist, coined the term “Burnout” in 1974 [10]. Subsequently, in 1986, Christian Maslach categorized Burnout into three domains including Emotional exhaustion, Depersonalization, and Low professional outcome, and introduced a questionnaire-based tool called “Maslach Burnout Inventory” to identify the risk of Burnout syndrome among individual [11].

Despite a good professional environment and remuneration, studies done in western countries have also shown a high prevalence of burnout among doctors and more so among anaesthesiologists [12,13]. Studies conducted in India, similarly, have shown high-stress levels and burnout among different categories of health professionals. The majority of these studies used self-prepared questionnaires and targeted smaller samples. We aimed to assess the prevalence of burnout on a larger sample using an online platform and use a standardized questionnaire. Job and personal characteristics associated with burnout were also assessed, as the burden of burnout depends not only on work demand or workplace environment but also on personal and social impact [14]. Our study revealed that more than half of our respondents were experiencing burnout. Our findings were similar to a survey conducted by Bakshi *et al.* in 2017, which showed a high prevalence of work stress, significantly in males and associated with increased work hours and work on weekends [7]. Senior residents, in our study, had more prevalence of burnout compared to assistant professors and professors. ($p < 0.05$). Steve *et al.* studied burnout on perioperative physicians and concluded that busy, young doctors are at risk for Burnout [15].

The higher the designation, the lower was the prevalence of burnout. ($p < 0.05$) Academic physicians grow up in the hierarchy to achieve higher positions, they learn to manage stress and develop coping strategies more effectively [16]. Anesthesiologists working in corporate hospitals also showed scores similar to faculties in a teaching institution.

Studies have shown varying results relating gender with burnout. In our study, there was no statistical difference in the prevalence of

Table 2: Job perception and coping strategy among respondent anesthesiologists

How would I grade my remuneration?	% (n)	Pressure for publication and presentation?	% (n)
Poor	26.6 (230)	Yes, for promotion	18.5 (160)
Satisfactory	51 (441)	Yes, for increment/ incentives	6.7 (58)
Good	20.5 (177)	yes, for academic reasons	22.3 (193)
Excellent	1.9 (16)	No; I have the liberty to work by my interests	62 (536)
How do I relax/ de-stress?	% (n)	Which factors at work, if changed would decrease my stress level to large extent?	% (n)
Music	45 (389)	Increase in remuneration	30.5 (259)
Movies	39.7 (343)	Decrease the number of night duties/per month	22.4 (190)
Yoga	11.3 (98)	Better anesthesia equipment at work	27.1 (230)
Sports activities	10.1 (87)	Decrease in family related issues	11.1 (94)
Physical exercise	31.9 (276)	Better surgeon-anesthetist rapport	31.1 (264)
Reading	31.1 (272)	All the above	40.8 (346)

Table 3: Distribution of burnout subscales according to the socio-demographic characteristics of the respondent anesthesiologists

Data n=Total respondents in each category	Emotional exhaustion (n=342) % (n)	Depersonalisation (n=567) % (n)	Low professional outcome (n=438) % (n)
Gender			
Male (596)	68 (240)	67.7 (384)	68 (298)
Female (263)	28 (99)	31.7 (180)	31.3 (137)
Transgender (5)	1 (3)	0.5 (3)	0.7 (3)
p value	0.428	0.703	0.000
Age (Years)			
26-35 (312)	44.7 (153)	41.6 (236)	40.1 (176)
36-45 (282)	34.2 (117)	33.6 (191)	36.7 (161)
46-55 (148)	11 (41)	15.3 (87)	13.4 (59)
56-65 (99)	7 (27)	8.4 (48)	7 (33)
>65 (23)	0.1 (4)	0.9 (5)	1.8 (8)
p value	0.000	0.071	0.577
Family			
Nuclear (608)	70 (240)	69(394)	70.5(309)
Joint (256)	29.8 (102)	30.5(173)	29.5(129)
p value	0.935	0.072	0.578
Vacation/Year			
None (140)	23.3 (80)	16 (95)	18 (80)
1/yr (321)	36.2 (124)	39.1 (222)	40 (178)
2/yr (271)	29.5 (101)	30.6 (174)	28 (123)
>2/yr (130)	11 (37)	11.6 (76)	12.7 (56)
p value	0.000	0.064	0.013

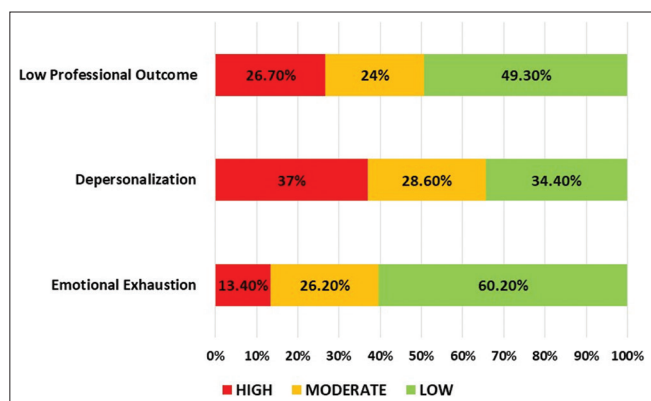


Fig. 1: Prevalence of burnout subsets among respondent anesthesiologists

Burnout among different genders. A study by Linzer *et al.* showed that female physicians had more work stress compared to males in the USA. (28% vs. 21%, p<0.05), whereas the difference in Dutch physicians was not significant [17]. It is apparent from previous studies and our study that there is still no consensus regarding gender playing a role in the occurrence of burnout among doctors.

Finnish anesthetists studied the occurrence of stress in on-call consultants and positively proved that being frequently on-call correlated with severe stress symptoms and burnout. The symptoms increased with the increasing on-call workload and decreased during vacations, they also found that younger anesthetists had more symptoms compared to their older colleagues [18]. Burnout and night duties were positively correlated, the higher the number of duties, the higher the risk of burnout. Burnout was high in doctors doing 7-10 night shifts. (EE and DP p<0.001, LPO p<0.05)

Long working hours and sleep deprivation cause fatigue and mental exhaustion, which can reduce attention span and memory. Surgeons with high levels of burnout reportedly committed more medical errors compared to others. Each point increase in depersonalization was associated with an 11% increase in the likelihood of reporting an error and a 5% raise of error with each point increase in emotional exhaustion [19]. Gravenstein *et al.* found that anesthesiologists who often worked beyond their limitations lead to more errors [20]. Our survey showed that more than 50% of our respondents who work beyond 8 h/day had emotional exhaustion and depersonalisation (p<0.001) but their professional outcome was not affected. (p=0.551).

Good remuneration is very important for job satisfaction and improved quality of life. The impact of remuneration on job satisfaction mainly depends on the employee's perception of the given remuneration [21]. This is confirmed by our findings that were 26.6% of our respondents felt that remuneration offered for their designation or qualification was poor. Doctors with a perception that their remuneration is good had a low prevalence of Burnout in comparison to those who were not satisfied with the remuneration. (p<0.001).

The debate on whether research is mandatory for clinicians with regard to promotion is a never-ending argument. Studies suggest that the quality of teaching improves if the faculty is involved in research activities and has an extra edge during promotions, compared to their counterparts [22]. On the contrary, few authors identified that if research is essential for promotion then it may pressurize the teachers and increase stress [23]. In our study, the majority of our respondents (62%) expressed that they have the liberty to conduct research based on their interests whereas 25% accepted that there is pressure for publication to gain promotion or increment.

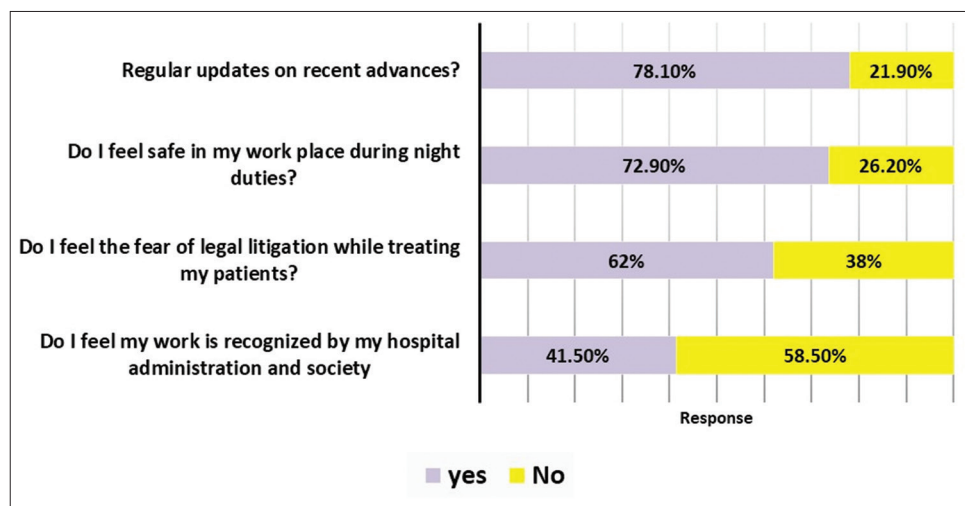


Fig. 2: Work perception

Table 4: Distribution of burnout subscales according to job characteristics of the respondent anesthesiologists

Data N= Total respondents in each category	Emotional Exhaustion (n=342) % (n)	Depersonalization(n=567) % (n)	Low professional outcome (n=438) % (n)
Designation (N)			
Senior Resident (208)	31 (106)	28.3 (161)	29.4 (129)
Assistant professor (217)	28.3 (97)	27.1 (154)	30.1 (132)
Associate Professor (119)	11.4 (39)	11.2 (64)	11.1 (49)
Professor (138)	10 (34)	12.1 (69)	12.3 (54)
Consultant Anesthesiologist (182)	19.2 (66)	20.9 (119)	16.8 (74)
p value	0.000	0.000	0.000
Night shift/month			
<4 shifts/month (391)	33.6 (115)	38.6 (219)	40.6 (178)
4-6/month (290)	39.1 (134)	36.5 (207)	37.2 (163)
7-10/month (135)	17.2 (59)	18.1 (103)	15.5 (68)
>10/month (48)	10 (34)	6.7 (38)	7.3 (32)
p value	0.000	0.000	0.0462
Work hours/day			
<4 h/day (20)	1.1 (4)	5 (6)	2.2 (10)
4-8 h/day (263)	22 (75)	27.1 (154)	29.2 (128)
8-12 h/day (497)	60 (207)	60.1 (341)	57 (250)
>12 h (84)	15.7 (54)	11.6 (66)	11.4 (50)
p value	0.000	0.000	0.551
Remuneration			
Excellent (16)	0.05 (2)	0.5 (3)	0.2 (1)
Good (177)	12.8 (44)	17.1 (97)	15 (66)
Satisfactory (441)	54.3 (186)	51.1 (290)	52.5 (230)
Poor (230)	32.4 (111)	31.2 (177)	32.1 (141)
p value	0.000	0.000	0.000

A survey conducted to assess the psychological impact caused by medico-legal issues on Australian doctors showed that 59% of their respondents had a medico-legal matter at some point in their career while 13% were having current issues. It highlighted that doctors with current medico-legal matters reported increased levels of disability (in work, social, or familial) and psychological morbidity [24]. To the best of our knowledge, no such survey has been done in our country to identify the impact of medico-legal issues on the well-being of doctors or the steps taken by the individual to prevent and handle such situations. In our survey, 62% of respondents felt that they have fear of medico-legal issues and concerns while treating patients. Studies have shown a wide gap in medico-legal knowledge and practice among both practicing doctors as well as pursuing postgraduates [25,26]. Regular updates and continuing professional development programs on medico-legal issues and their consequences are a need of the hour for health care professionals.

Recreation or relaxation techniques help to combat and reduce work stress. Various studies have proven that yoga and meditation reduce pain, relieve stress, increase energy, and attention span [6,27,28]. Music therapy is also an effective way to relax and de-stress. Music is the most preferred way to de-stress in our respondents (45%) while 39% of them prefer movies. A pre-post observational study was conducted by Goodman *et al.* based on mindfulness-based stress reduction on health-care professionals. Training in mindfulness practices, including the body scan, mindful movement, meditation, and application of mindfulness at work was taught and concluded that significant reduction in burnout level and improve mental well-being was noted [29]. We also identified that doctors taking more than two vacations per year have experienced less burnout (emotional exhaustion) compared to those who do not take vacations at all.

There are several limitations to our study. First, the questionnaire was distributed by e-mail, and this can lead to responder bias, but such a mode of data collection was the feasible method to enroll a large number of participants into the study. Second, a pre-formed questionnaire may not have completely elicited the feelings of the

responded anaesthesiologists. Third, causal associations are difficult to identify due to the cross-sectional design of this study.

CONCLUSION

We conclude that chronic stress and burnout are prevalent among Indian Anaesthesiologists at alarming levels. A combined effort needs to be undertaken by the individual and the institution to implement coping strategies to mitigate work-related burnout for a stress-free professional life to experience work efficiency at its best level.

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AUTHORS' CONTRIBUTIONS

Dr. Annie Sheeba J was involved in the planning of the study, preparation of the questionnaire, and writing, reviewing, and editing of the manuscript. Dr. Senthil Kumar collected and analyzed the data.

CONFLICTS OF INTEREST

The authors affirm no conflicts of interest, finance, or otherwise.

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