

# Occupational Stress in Anesthesiologists and Coping Strategies: A Review

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## Abstract

Anesthesia is perceived to be a stressful specialty with growing production pressure on clinicians. Occupational stress due to conflicts between the demands of home and work, demand supply gap, fear of conception, job security, and litigation in anesthesiologists leads to burnout characterized by emotional exhaustion, depersonalization, and a sense of low professional accomplishments. This leads to problems like alcoholism, substance abuse, marital and interpersonal problems, emotional disorders, decreased empathy, and psychological withdrawal from work. Positive coping strategies include recognition, support of family and colleagues, organized work environment in the form of professional assistance and proper equipment, use of communication skills and efficient time management. Providing medicolegal protection, continuing medical education, workshops, monitoring physical and mental health of anesthesiologists is advocated to reduce the stress sources.

**Key words:** Anesthesia, Depersonalization, Mental health, Time management

## INTRODUCTION

Occupational stress is defined as harmful and emotional responses that occur when the requirements of a job do not match the capabilities, resources or needs of the worker and can lead to poor health and injury.<sup>1</sup> Of course, a certain amount of stress is necessary in order to function well in any demanding job; it is when the stress becomes excessive that problems may arise. Stress and practice of anesthesia are no strangers and much discussion about its recognition and prevention has taken place in recent years. The scope of work of anesthesiologist has now expanded to include areas such as an emergency and intensive care, and management of acute and chronic pain. In addition, in teaching hospitals they have added responsibility of research, teaching, and administration. So, demand-supply gap of anesthesiologist has greatly increased, and they are overworked.

## BURN OUT SYNDROME: CAUSES AND EFFECTS

Burnout, described as emotional exhaustion, depersonalization, and lack of personal accomplishment in response to chronic occupational stress occurs in anesthesiologists and is associated with adverse patient outcomes and increase in medical errors. The acuity and intensity of challenges in work environments such as anesthesiology which is stressful at baseline leads to increase in burnout.

Predominant age group for burnout syndrome has been reported to be 30-50 years. This may suggest that professionals with lower risk for burnout are those who due to their professional maturity have greater control of their emotions in stressful situations.<sup>2-4</sup>

A study<sup>5</sup> was conducted where a questionnaire was used to study the Burnout syndrome. It included Maslach Burnout inventory. It highlighted low job satisfaction in 47.7%, and depersonalization in 48.5%. The burnout syndrome prevalence was 10.4% and occurred mainly amongst men (64.2%) aged 30-50 years (64.2%) with children (57.1%) and the following other features: Title of specialist (42.8%) over 10 years in profession (64.2%), work in night shifts

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(71.4%), sedentary (57.1%) and not attending courses or activities unrelated to medicine (78.5%). There was no difference between married and unmarried.

The syndrome has a higher prevalence in professionals who do not exercise management positions which suggests that authority, support from colleagues and job satisfaction may be protective factors. Higher prevalence of syndrome in professionals with exclusively public employment indicates public service lack of working conditions as a potential risk factor. Kain *et al.*<sup>6</sup> reported that many anesthesiologists exhibit symptoms of chronic stress, sources of which included competence related factors, production pressures, long, and odd working hours, including night calls, fear of litigation, financial uncertainty, and interpersonal relationships.

Burnout syndrome may lead to problems like alcoholism, substance abuse, marital problems, emotional disorders, decreased empathy and psychological withdrawal from work.<sup>7-9</sup> This leads to depression and other psychological illnesses and make them prone to drug addiction. The incidence of abuse is higher than general physicians and estimated to be around 1% in faculty members and 1.6% of residents.<sup>10</sup> The commonly abused drugs include opioids (morphine, fentanyl, and sufentanil), propofol, ketamine, nitrous oxide, and volatile anesthetics.<sup>11-14</sup> Addiction to drugs impairs the health care professional and make them vulnerable. This can put the life of patients in danger and increases the professional liability for the anesthesiologist himself and his group in case of a lawsuit. It may be difficult to identify an impaired anesthesiologist as they tend to self-diagnose and treat themselves. The warning signs include absenteeism from work, changes in eating and sleeping pattern, mood swings in the form of conflict with colleagues and reporting late for duty.<sup>15</sup>

Lindfors *et al.*<sup>16</sup> found that one in four Finnish anesthesiologists seriously thought of committing suicide some time or the other, with higher incidence in persons with poor health, low social support, and family problems. Professional burnout in the anesthesiologist and critical care professionals have been attributed to multiple causes. Sleep deficit leads to daytime sleepiness and impaired performance. Shift duties and irregular working hours due to complex and emergency cases leads to irregular sleep patterns.

Inadequate sleep reduces ability to perform sustained work and increases accidents. Sleep deprivation can also increase gastrointestinal and cardiovascular diseases, increases adverse pregnancy outcomes, increases risk of breast cancer, decreases immunity, impairs glucose metabolism, and leads to a decrease in cerebral metabolic

rate and psychological diseases.<sup>7,8,17</sup> Fatigue causes decreased attention, prolonged reaction time, impaired memory, and decision-making<sup>8,17-19</sup> thereby leading to errors and accidents. A stressed person gets fatigued easily than a relaxed person. Fatigued anesthesiologist is unable to maintain performance standards for long periods. A study reported an increase in incidence of unintentional dural puncture during epidural anesthesia at night (midnight to 6 am).<sup>20</sup>

Aviation industry is continuously making efforts to decrease fatigue and stress among their pilots and thereby reducing the error. However, ironically the standards for anesthesiologists are far behind that of the aviation industry. An number of flying hours of airline pilots is fixed and regulated by federation aviation administration. Anesthesiologists in the interest of patients have to provide their services for extended hours. Pre-operative/preflight stress of a pilot is similar, but pilot will not fly the plane unless ground or maintenance staff gives 100% fitness to the plane but anesthesiologists has to depend upon physicians for pre-operative preparations (with no responsibility) and patient has to be invariably taken up with calculated risk. Take off, flight time, landing, and taxing of plane have been compared with induction, maintenance, reversal, and post-operative period, respectively each phase requiring multitasking, full alertness, concentration putting lot of stress on anesthesiologists mind.<sup>15</sup> The accomplishments of anesthesiologists have not necessarily resulted in the improved recognition of their role in health care system. Previous studies have shown that recognition of anesthesiologists as a medical doctor by the patients varies from 65% to 82%.<sup>21-23</sup> Lack of recognition by patients plays a major role in bringing about dissatisfaction. Seniority makes minimal difference unlike other specialties as they always play their role behind the curtain. Only 28% anesthesiologists give talks to lay public about anesthesia, 9% of them do not even explain their role to patients on pre-operative visits. Taking the time to establish rapport with patient and patient's family before and after anesthesia makes anesthesiologist more visible and more recognized and appreciated.<sup>24</sup>

Hawton *et al.*<sup>25</sup> noted that there was a higher rate of suicide in female doctors than males and that anesthesiologists along with psychiatrists, general practitioners and community health doctors had higher suicide rate than other hospital specialties. Anesthesiologists working in teaching hospitals have better working conditions, more operating room assistance, and the better academic environment resulting in better job satisfaction as compared to those working in community hospitals.<sup>26,27</sup>

The Australian anesthetic incident monitoring study has shown that quality of anesthetic assistance is associated

with both the development and resolution of critical incidents.<sup>28</sup> From 5837 reports, adequate assistance contributed in 187 cases while skilled assistance in 808 cases minimized the incidents.

A good relationship with the surgeon is of fundamental importance in anesthesiology.<sup>29</sup> Poor interpersonal relationship may lead of considerable stress. Jenkins and Wong<sup>26</sup> found that senior Canadian respondents got higher regards from surgeons in comparison to the younger respondents. In a study on Californian anesthesiologists<sup>30</sup> 96% often had great working relationships with surgeons, but slightly over half did not believe that surgeons understand the risk of anesthesia. Surgeons pressurize the anesthesiologists to proceed with cases instead of postponing in spite of high risk and to hasten anesthetic procedures. This conflict of interest is a cause of stress. Conflicting demands is regarded as a risk factor for overwork.<sup>31</sup> One of the factors causing dissatisfaction is lack of resources for purchasing required equipment and drugs. In 1967, the results of survey of morbidity among Russian anesthesiologists were published.<sup>32</sup> There was no control group but rates for several conditions including liver disorder, headaches, insomnia, and spontaneous abortions among females were thought to be high; it was observed that, besides exposure to anesthetic gases, anesthesiologists also had long and irregular hours of stressful work and were exposed to extremes of temperature.

There are many pre-operative complications that may occur due to some unavoidable circumstances which may be beyond the control of anesthesiologists' skill and knowledge; and when they occur in an American Society of Anesthesiologists (ASA) Grade I patient, medicolegal problems are almost inevitable. These worries are always at the back of mind of anesthesiologist while performing his/her routine tasks, making him/her anxiety prone, and adding significantly to stress. On occasions, surgeries last longer than expected, and an anesthesiologist's entire schedule gets upset. He/she has to curtail the family time, is compelled to miss social gatherings and functions on many occasions. Many patients are in ASA Grade III, IV, and V and are critical. A few surgeries such as cardiothoracic, pediatric, and neurosurgery continue for long duration and need greater attention all throughout. Patient having medical problems such as diabetes, hypertension, ischemic heart disease, and obstructive pulmonary diseases and their associated complications need eternal vigilance. Minor errors in judgment can be disastrous.<sup>11</sup> Limitation of time is one of the most common reasons due to constant pressure to meet schedule, perform procedures quickly and move between the hospitals. The factors that contribute to specific stress are proximity to suffering and death, physical and emotional needs of patients, and the

pressure to always get good results even under varying conditions and expectations, and relationship within working environment. Most important is the relationship and interaction with surgeons. This type of relationship may involve confusion about responsibilities of each individual because of poorly defined boundaries leading to disarrangements over way to achieve the goals and select elements priority wise.<sup>33</sup>

Physical stress results from exhausting factors of surgical environment, including noise pollution, exposure to anesthetic gases, radiations, latex, infections, excessive cold/heat, use of uncomfortable chairs, and even the detrimental in the limited space. Distractions in the form of external staff entering, exiting or initiating case-irrelevant conversation or case irrelevant discussions within the operating room team, acoustic distractions like telephones, radio, etc., faculty/equipment or teaching, work environment is known to cause stress in Surgeons, anesthesiologists and operating room team.<sup>34</sup> Although some distractions may be inevitable, others particularly during tasks that require undivided attention should be proactively limited as they can induce human error and have negative consequences on patient safety.<sup>35</sup> Noise pollution leads to sympathoadrenal activation which is detrimental in people with chronic anxiety/hypertension.<sup>4</sup> Night shifts leads to sleepiness and fatigue generate lack of agility and attention, slowness of cognitive functions and reflexes, in addition to making the individual more impatient with everyday activities.

Continuing medical education (CMEs) and demands for performance indication pressurize all doctors. Keeping updated in current developments and insisting on minimum monitoring standards are of vital importance. Inability to have control and to organize work to ensure reaching desired goals produces frustration. In addition, anesthesia trainees face the heavy responsibility of service work with its large proportion of emergency work, coupled with increasing necessity to be successful in post-graduate examination at the first attempt.

Anesthesiologists often perceive themselves as powerless to change/control the situation.<sup>36</sup>

### **Coping Strategies**

The effective management of stress hinges on own's recognition and it affects all of us and it is not a sign of weakness. The management of stress hinges on the recognition of the nature and cause of stress and response of individuals. Stress management involves developing strategies which help to control stress. It is important to recognize the things which cannot be changed. Personal and family time is very important to combat stress. It is

important to develop hobbies which act as diversion and counteract the undesirable outcomes of stress.<sup>36</sup>

Stressed doctors are reluctant to reveal their problems in case they prejudice their career prospects or job security. Communication skills and assertiveness are of paramount importance in dealing with stress as a discussion with friends, family and colleagues is really helpful. Interpersonal relationships, soft skills, communication skills and a high emotional quotient are required for the anesthesiologist to function smoothly as a team. Having a good network of professional associates helps in time of crisis for moral support and professional health.<sup>24</sup> Regular physical and relaxation exercises and meditation are helpful. Doctors are neither infallible nor superhuman. All are subject to stress and fatigue with varying abilities to respond reasonably to these without affecting themselves negatively. Time management and realizing that time cannot be expanded infinitely to meet demands is important. Anxiety in both social and work setting occurs if one is not able to speak up for what they feel is right. Learning to say “No” for a way that does not violate the rights of others and should be appropriate without being aggressive. People have irrational belief that doctors are capable of anything and everything which is demanded of them. To establish priorities and to be selective in tasks to be done while allocating appropriate time is to do things well but not obsessively is important. Doctors are often reluctant to accept that they need help and keep postponing things till it gets too late. A proper support system and “mentor system” at workplace is very important. More attention should be paid to improving working conditions, improving fee structure and coordinated efforts to improve public awareness about the challenges being faced by the anesthesiologists.<sup>37</sup>

Realization of inner self potential, discipline at work place, a good sleep pattern, regular exercise and good nutrition are essential to combat stress.<sup>38</sup>

Medicolegal protection by the hospital/directors and proper assistance in such matter to anesthesiologist will help combat stress. Better work organization help to combat stress, better time management, and job control, which reduces stress. Better working conditions in terms of ensuring availability of proper and latest anesthetic equipment's at all small/large hospitals, better remuneration for work done, good assistance, and limiting number of working hours, both elective and emergency could go a long way in reducing stress in anesthesiologists. Support of ASA and state component societies is crucial to meet the high need for education and professional resources. Strategies to lower stress also include “splitting” weekend call or having a second call available to allow rest periods or to help with complex patients, e.g., transplant, utilizing

pre-operative assessment clinics for day case and same-day admission patients and maintenance and learning new skills to ensure a high standard of practice, including legislature, business, and financial management courses, for which time and resources will be needed. Restructuring workload to allow time for research, vacation and group practice meetings improves the communicative and interpersonal skills. Regular morbidity and mortality reviews with other department's especially surgical colleagues improve communication and knowledge both.<sup>39</sup>

In future, we should include appropriate stress management skills including counseling in the training of all junior anesthesiologists to prevent damaging and wasteful results of stress.<sup>40</sup>

Sleep deprived anesthesiologists should never be pressurized to provide anesthesia. Various studies have shown that planned naps can improve subsequent alertness and performance. A National Aeronautics and Space Administration field study suggested a 40 min nap increased performance (34%) and physiologic alertness (54%) compared with the no nap condition. The maximum duty at a stretch should not be more than 12 h. One should have compulsory 1 week paid leave for a holiday every 6 months irrespective of the stage of career. Lounges with facilities for recreation (newspapers, treadmill) should be located in close vicinity to workplace so that doctors can de-stress themselves. Anesthesiologists should be compulsorily retired for 30 min every 4-5 h for de-stressing themselves. Stress management workshops should be conducted at regular intervals to help manage stressful times. There should be designated comfortable separate rooms for both genders adjacent to the operating room for night duty anesthesiologist for sleep and rest during postcall.<sup>15</sup>

## CONCLUSION

Stress and professional burnout are a known entity in anesthesiologist due to imbalance between the demands being made and the ability to meet these demands. There is a need to set the protocol which would help reduce occupational stress and further improve efficiency and job satisfaction among anesthesiologists. Authorities like ASA may urge large scale multi center studies to lay down standards related to number of working hours per day and per week, number of night call duties per week, making proper assistance mandatory, preparing standard protocols, and guidelines for the anesthetic management of different clinical cases. Providing a periodic monitoring of these professionals', mental and physical health, medicolegal protection, workshops, and CMEs can help to achieve the target.

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