# **Burnout in neurosurgeons**

- In Reply to the Letter to the Editor Regarding: Burnout Among Neurosurgeons and Residents in Neurosurgery: A Systematic Review and Meta-Analysis of the Literature
- An integrated neurophenomenological framework for naturalistic assessment of work-related stressors in healthcare professionals: a pilot study in neuro-surgery
- Professional realization of female neurosurgeons in context of the main indicators of quality of life
- Needs, rationale, and outcomes of leadership education in neurosurgery
- A national study of burnout, psychosocial work environment, and moral distress among neurosurgical doctors in Denmark
- Meaningful work, organizational commitment and administrative burden among attending neurosurgeons
- Balancing the Scalpel and the Heart: A Neurosurgeon's Guide to Empathy
- Empathy burnout among neurosurgeons

Neurosurgeons exhibit a high prevalence rate of burnout, ranging from 33% to 67%.

### Epidemiology

This condition is very common among medical professionals. Burnout syndrome is a prevalent and serious, yet overlooked, condition among neurosurgeons. Adequate assessment and steps should be encouraged to ensure physician and patient safety <sup>1)</sup>.

### **Risk factors**

Burnout risk factors in neurosurgeons

## Signs

Some of the signs of burnout in neurosurgeons include:

Emotional exhaustion: Feeling emotionally drained or overwhelmed by work.

Depersonalization: Treating patients as objects rather than individuals.

Reduced personal accomplishment: Feeling that one's work is not making a difference or that one's skills are not being used effectively.

#### Prevention

Burnout Prevention for neurosurgeons.

### Systematic review

A systematic review with meta-analysis was performed following PRISMA guidelines. A search of bibliographic databases was conducted, from inception to February 2020. A total of 16377 studies were found. In the final analysis, 6 papers were included. Their references were checked for additional studies, but none were found.

From the initial 16377, only 6 met the inclusion criteria, for a total of 3310 physicians. The general prevalence of 48%. When considered alone, neurosurgeons showed a prevalence of 51.1%, which was higher than the prevalence shown by residents in neurosurgery (45.4%). Regarding sub-dimensions, personal accomplishment seemed to be the most influential factor for burnout development among neurosurgeons (42.57%) and residents (51.56%).

Neurosurgery is a rewarding career choice, but numerous challenges and stressors can lead to lower levels of satisfaction and dangerously increased levels of burnout. Zaed et al hoped that the article will generate discussion, raise awareness, stimulate further studies, and lead to programs designed to mitigate excessive stress and burnout in neurosurgeons.<sup>2)</sup>.

Are Neurosurgery Residents Burned Out?<sup>3)</sup>.

### Surveys

A study aimed to evaluate prevalence and severity of professional burnout in a sample of Lithuanian neurosurgeons and to analyze its personal, interpersonal, and organizational correlates.

Thirty-one out of 79 (response rate 39 %) Lithuanian neurosurgeons participated in the study. Professional burnout was evaluated using the Maslach Burnout Inventory - General Survey. Participants also answered questions about professional stressors, sources of professional dissatisfaction, life-style factors, sickness absenteeism/presenteeism, and professional practice.

The majority of neurosurgeons were between 41 and 60 years of age (48 %), were married (97 %), had children (84 %). Most neurosurgeons had 20 or more years of professional experience (54.9 %), worked from 41 to 60 h per week (58 %), and performed up to 150 surgeries per year (77.4 %). Eight (26 %) neurosurgeons reported a high level of emotional exhaustion, five (16 %) reported high level of cynicism, and eight (26 %) reported low professional efficacy. Correlation analyses revealed that higher number of surgeries per year, more hours devoted to clinical work, opportunities for professional development, intellectual challenges at work, appreciation by the patients and prestige of the profession were related to lower level of burnout. Greater general workload, unpredictability of the work schedule, lack of necessary technical equipment, dissatisfaction with colleagues, and uncertainty about the future were related to a higher level of burnout.

Burnout was reported by one-quarter of neurosurgeons who chose to participate in the study. Personal, interpersonal, and organizational factors arising while fulfilling professional duties were important correlates of neurosurgeons' burnout.

Due to the moderate response rate, the results should be interpreted with caution. Larger studies evaluating burnout among European neurosurgeons are needed <sup>4)</sup>.

All US members (3247) of the American Association of Neurological Surgeons (AANS) were invited to participate in a survey between September and December 2012. Responses were evaluated through univariate analysis. Factors independently associated with burnout and career satisfaction were determined using multivariable logistic regression. Subgroup analysis of academic and nonacademic neurosurgeons was performed as well.

The survey response rate was 24% (783 members). The majority of respondents were male, 40-60 years old, in a stable relationship, with children, working in a group or university practice, and trained in a subspecialty. More than 80% of respondents reported being at least somewhat satisfied with their career, and 70% would choose a career in neurosurgery again; however, only 26% of neurosurgeons believed their professional lives would improve in the future, and 52% believed it would worsen. The overall burnout rate was 56.7%. Factors independently associated with both burnout and career satisfaction included achieving a balance between work and life outside the hospital (burnout OR 0.45, satisfaction OR 10.0) and anxiety over future earnings and/or Healthcare reform (burnout OR 1.96, satisfaction OR 0.32). While the burnout rate for nonacademic neurosurgeons (62.9%) was higher than that for academic neurosurgeons (47.7%), academicians who had practiced for over 20 years were less likely to be satisfied with their careers.

The rates of burnout and career satisfaction were both high in this survey study of US neurosurgeons. The negative effects of burnout on the lives of surgeons, patients, and their families require further study and probably necessitate the development of interventional programs at local, regional, and even national levels <sup>5)</sup>.

A 107-item questionnaire was developed and sent to 169 American neurosurgeons to evaluate career satisfaction and stressors, quality of professional life, and burnout. Participants were also asked about the survey itself. Most variables were evaluated using the Likert-type scale. Burnout was measured using the validated Maslach Burnout Inventory.

The 85 (50%) respondents were typically male, full-time, board-certified neurosurgeons. Ninety-five percent were satisfied as neurosurgeons (73% very satisfied). Most (88%) would choose neurosurgery again as a career, but only 55% would recommend it to a child. Low salary/income, low collections/billing, and uncertainty regarding future earnings/Healthcare reform were reported as stressful factors by the majority of participants. Compared with published norms, the median scores were lower for emotional exhaustion and depersonalization and higher for personal accomplishment. The burnout rate was 27%.

Our survey was well received and, according to respondents, encompassed the major issues associated with career stress, satisfaction, and burnout but needs to be shortened. Respondents were generally satisfied with their career but identified several major stressors. A larger study to identify predictors of career satisfaction/dissatisfaction will help generate dialogue on improving the quality of professional life for neurosurgeons <sup>6</sup>.

1)

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