Burnout in anaesthesiology residents - A systematic review of its prevalence and stressors.

Margaret YF Chong[1,2#], Sarah HX Lin[1,2#], Wan Yen Lim[1,2], John Ong[3,4], Peter CA Kam[5], Sharon GK Ong[1,2,6,7]

1. Division of Anaesthesiology and Perioperative Sciences, Singapore General Hospital. Singapore. 2. Department of Anaesthesiology, Sengkang General Hospital. Singapore. 3. Department of Engineering, University of Cambridge 4. Department of Medicine, National University of Singapore. Singapore. 5. Emeritus Professor. Department of Anesthetics. Royal Prince Alfred Hospital, Faculty of Medicine and Health, University of Sydney, Camperdown, NSW 2050. Australia. 6. Department of Surgical Intensive Care, Singapore General Hospital. Singapore 7. Adjunct Assistant Professor, Duke-NUS Medical School, Senior Lecturer, Yong Loo Lin School of Medicine. Singapore . # denotes joint first author

Aims

Burnout is a work-related syndrome comprising emotional exhaustion, depersonalisation and reduced personal accomplishment.[1] With COVID-19,[2] burnout is gaining more attention due to implications on patient safety and medical errors, [3,4] yet this problem among at-risk anaesthesiology residents [5–7] is not well-evaluated. We aim to determine the prevalence and risk factors of burnout in anaesthesiology residents.

Methodology

A systematic literature search was conducted in PubMed, Embase, Scopus and PsycInfo till 26 July 2020. Studies were included if burnout prevalence in anaesthesiology residents was reported using a validated burnout assessment tool.

Results

Thirteen studies were included; 12 utilised the full Maslach Burnout Inventory or modified MBI.[5–16] Prevalence of burnout among anaesthesiology residents was 11.3%[14] to 65.1%[6] due to different criteria and cut-off scores used.

Figure 1: PRISMA

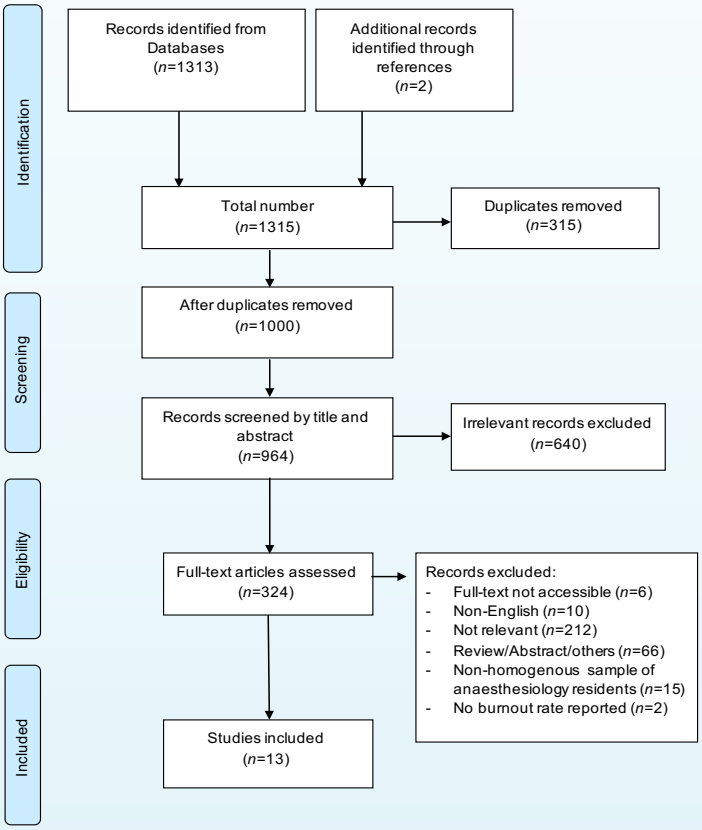

Table 1: Burnout-related stressors in anaesthesiology residents

Category	Stressor
Workload	Unpredictable work schedule[5,6,10] Time pressures[8,12] Long hours[7–9,12,13,15] Frequent night shifts[7] No autonomy over roster[5,8,12] Non-clinical duties[5,16]
Interpersonal relationships and support	Dealing with colleagues, surgeons, patients[6,8,12] Department hierarchy[12] Lack of psychological support[8,12] Mental fatigue[17]
Academic and training	Workplace assessments[12,16] Specialist examinations[8,12,16] Research requirements[5,12] Poor supervision[5] Lack of protected teaching time[12]
Clinical work	Managing critically ill patients[6] Adverse events[12] Medicolegal issues[6] Complaints[18]
Others	Dissatisfaction with salary[9] Age <30 years[5] Financial debts[15]

Conclusion

Burnout prevalence ranges from 11.3% to 65.1%. Identification of at-risk residents limited by heterogeneity of burnout tools and lack of standardised criteria. Further research needed to develop more standardised screening instruments.

References

1. Maslach C, Schaufeli WB, Leiter MP. Job Burnout [Internet]. Annual Review of Psychology. 2001. p. 397–422 Available from: http://dx.doi.org/10.1146/annurev.psych.52.1.397

2. Almeida M, DeCavalcante G. Burnout and the mental health impact of COVID-19 in anesthesiologists: A call to action. *J Clin Anesth* Elsevier; 2021; **68**: 110084

3. Shanafelt TD, Hasan O, Dyrbye LN, et al. Changes in Burnout and Satisfaction With Work-Life Balance in Physicians and the General US Working Population Between 2011 and 2014. *Mayo Clin Proc* 2015; **90**: 1600–13

4. Rodrigues H, Cobucci R, Oliveira A, et al. Burnout syndrome among medical residents: A systematic review and meta-analysis. *PLoS One* 2018; **13**: e0206840

5. Nyssen AS, Hansez I, Baele P, Lamy M, De Keyser V. Occupational stress and burnout in anaesthesia. *Br J Anaesth* 2003; **90**: 333–7

6. Chia ACL, Irwin MG, Lee PWH, Lee THW, Man SE. Comparison of stress in anaesthetic trainees between Hong Kong and Victoria, Australia. *Anaesth Intensive Care* 2008; **36**: 855–62

7. de Oliveira GS Jr, Chang R, Fitzgerald PC, et al. The prevalence of burnout and depression and their association with adherence to safety and practice standards: a survey of United States anesthesiology trainees. *Anesth Analg* 2013; **117**: 182–93

8. Lim WY, Ong J, Ong S, et al. The Abbreviated Maslach Burnout Inventory Can Overestimate Burnout: A Study of Anesthesiology Residents. *J Clin Med Res* [Internet] 2019; **9** Available from: http://dx.doi.org/10.3390/jcm9010061

9. Geng H, Tan F, Deng Y, et al. High rate of burnout among residents under standardized residency training in a tertiary teaching hospital of middle China: Results from a cross-sectional survey. *Medicine* 2020; **99**: e20901

10. Shah A, Wyatt M, Gourneau B, Shih G, De Ruyter M. Emotional exhaustion among anesthesia providers at a tertiary care center assessed using the MBI burnout survey [Internet]. Psychology, Health & Medicine. 2019. p. 620–4 Available from: http://dx.doi.org/10.1080/13548506.2018.1546019

11. Govêia CS, da Cruz TTM, de Miranda DB, et al. Association between burnout syndrome and anxiety in residents and anesthesiologists of the Federal District [Internet]. Brazilian Journal of Anesthesiology (English Edition). 2018. p. 442–6 Available from: http://dx.doi.org/10.1016/j.bjane.2018.02.006

12. Castanelli DJ, Wickramaarachchi SA, Wallis S. Burnout and the learning environment of anaesthetic trainees. *Anaesth Intensive Care* 2017; **45**: 744–51

13. Rui M, Ting C, Pengqian F, Xinqiao F. Burnout among anaesthetists in Chinese hospitals: a multicentre, cross-sectional survey in 6 provinces. *J Eval Clin Pract* 2016; **22**: 387–94

14. van der Wal RAB, Bucx MJL, Hendriks JCM, Scheffer G-J, Prins JB. Psychological distress, burnout and personality traits in Dutch anaesthesiologists: A survey. *Eur J Anaesthesiol* 2016; **33**: 179–86

15. Sun H, Warner DO, Macario A, Zhou Y, Culley DJ, Keegan MT. Repeated Cross-sectional Surveys of Burnout, Distress, and Depression among Anesthesiology Residents and First-year Graduates. *Anesthesiology* 2019; **131**: 668–77

16. Looseley A, Wainwright E, Cook TM, et al. Stress, burnout, depression and work satisfaction among UK anaesthetic trainees; a quantitative analysis of the Satisfaction and Wellbeing in Anaesthetic Training study. *Anaesthesia* 2019; **74**: 1231–9

17. Gandhi K, Sahni N, Padhy SK, Mathew PJ. Comparison of stress and burnout among anesthesia and surgical residents in a tertiary care teaching hospital in North India. *J Postgrad Med* 2018; **64**: 145–9

18. Mcdonnell NJ, Kaye RM, Hood S, Shrivaslava P, Khursandi DCS. Mental Health and Welfare in Australian Anaesthetists [Internet]. Anaesthesia and Intensive Care. 2013. p. 641–7 Available from: http://dx.doi.org/10.1177/0310057x1304100510