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Poor Employment Conditions Adversely Affect Mental Health Outcomes Among Surgical Trainees

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BACKGROUND: Poor mental health in junior clinicians is prevalent and may lead to poor productivity and significant medical errors. We aimed to provide contemporary data on the mental health of surgical trainees and identify risk factors relating to poorer mental health outcomes.

METHODS: A detailed questionnaire was developed comprising questions based on the 36-item short-form health survey (SF-36) and Physical Activity Questionnaire. Each of the questionnaires has proven validity and reliability in the clinical context. Ethics approval was obtained from the Royal Australasian College of Surgeons. The questionnaire was aimed at surgical registrars. We used Physical Activity Questionnaire, SF-36 scores and linear regression to evaluate the effect of putative predictors on mental health.

RESULT: A total of 83 responses were collected during the study period, of which 49 (59%) were from men and 34 (41%) were from women. The mean Mental Component Summary (MCS) score for both sexes was significantly lower than the population mean at ages 25-34 ($p < 0.001$). Poor satisfaction with one's work culture and a feeling of a lack of support at work were extremely strong predictors of a lower MCS score ($p < 0.001$). Hours of overtime worked, particularly unpaid overtime, were also strong predictors of a poorer score.

CONCLUSIONS: Australian surgical trainees reported lower MCS scores from the SF-36 questionnaire compared to the general population. Increasing working hours, unpaid overtime, poor job security, and job satisfaction were associated with poorer scores among trainees. Interventions providing improved working conditions need to be considered by professional training bodies and employers. (J Surg Ed ■:■■■-■■■. © 2017 Association of Program Directors in Surgery Published by Elsevier Inc. All rights reserved.)

KEY WORDS: mental health, depression, surgical trainee, surgical training, quality of life

COMPETENCIES: Professionalism, Interpersonal Skills and Communication, Patient Care

INTRODUCTION

Mental health–related morbidity and mortality is increasing globally.[1] This increase not only affects the general population but also the medical community. Numerous studies have shown high burnout rates and suicidal thoughts among specialists.[2,3] Indeed, a study of physicians indicated that those dissatisfied with working conditions are 2 to 3 times more likely to leave medicine than those that are satisfied.[4] Those in the surgical specialities tend to experience this more acutely owing to the long hours, strenuous on-calls, and high-pressured environments. Other studies have also identified a lack of control over the working environment and lifestyle choices, as well as poor social support as predictors of poor mental health.[2,4,5] Recent literature

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suggests poor mental health in surgeons can lead to poor productivity and significant medical errors and may lead to sleep disturbances, depression, and bodily dysfunction.[6]

Surgical education and training is considered challenging owing to high levels of job uncertainty coupled with increased responsibility and expectations that can lead to significant stress among trainees. Over the past decade awareness of doctor fatigue has increased, notably improvement of working hours of surgical residents.[7] However, some of these challenges include managing a complex working environment, uncertainty about career progression, and trying to achieve a work-life balance. Additionally, poorly resourced administrative tasks and disorganized rostering can have a negative effect on a trainees' well-being.[3] This has a major effect on doctors in surgical training that may potentially lead to self-harm, adverse outcomes, and reduce the financial growth of the organization. Therefore, it is important that the mental health of surgical trainees is proactively addressed and its potential detrimental consequences prevented.

Few studies, however, have reported on the mental health and well-being of surgical registrars. We aimed to provide contemporary data on the mental health of surgical trainees and identify risk factors relating to poor mental health outcomes.

METHODS

Participants

Ethical approval from the Royal Australasian College of Surgeons (RACS) was sought and obtained. An invitation to participate in a survey to assess attitudes to occupation, health advocacy and their effects on physical and mental well-being was sent to RACS surgical trainees and unaccredited surgical registrars. Unaccredited registrar is defined as a registered medical officer who has not commenced in a recognized training program and is employed as a registered medical officer in the second or subsequent years of relevant experience following graduation (Registrar Year 1 through 7 [equates to Pay Level 5-11]) (https://www.fairwork.gov.au/ArticleDocuments/872/medical-practitioners-award-ma000031-pay-guide.docx.aspx). Accordingly, accredited registrar is defined as a RACS registered medical practitioner employed as a Registrar by a hospital institution. There were 1163 active, accredited surgical trainees in 2016. The precise number of unaccredited trainees is not known as these positions are created by individual hospitals and not the national surgical body. However, we estimate these to be about 75% of the number of accredited trainees based on the proportions at our institutions. All respondents were working in a surgical job, whether accredited (part of a specialty program) or likely working towards an accredited surgical training program. This survey was promoted through the RACS research website (http://www.surgeons.org/connections/research-at-racs/) with data collection planned to last for 3 months. Four fitness devices were offered as a prize to random participants as an incentive for participation.

Questionnaire

A detailed, web-based questionnaire was developed comprising of a number of questions addressing the primary aims of this study. The questionnaire was set up using SurveyMonkey platform (SurveyMonkey, Palo Alto, CA). Demographic information such as age, sex, and relationship status were sought as was occupation related information like whether the participant was in specialist training and their level of training. Incorporated in the questionnaire were the validated Medical Outcomes Study 36-item short-form health survey (SF-36 version 1)[8] and the International Physical Activity Questionnaire (IPAQ) short-form questionnaire.[9] Additionally, we devised questions relating to number of working hours and job satisfaction with responses on an ordinal or Likert scale.

SF-36 and IPAQ Description and Scoring

The SF-36 is an internationally validated questionnaire[10] that uses 36 questions to assess physical and mental well-being across 8 subscales: physical functioning, role physical (i.e., to what extent do physical issues effect on functioning), bodily pain, general health, vitality, social functioning, role emotional physical (i.e., to what extent do emotional issues effect on functioning and mental health). Responses to the questions are transformed into a 0 to 100 point score for each subscale.[11] A higher score indicates a better state of health or well-being. Further, population norms are used to derive 2 summary scores from the subscales; the Physical Component Summary and the Mental Component Summary (MCS) scores. These are weighted scores of each subscale, which are then standardised with reference to the Australian population and have a mean of 50 and standard deviation of 10.[12] For the MCS score, the subscales of mental health, role emotional, social functioning, and vitality are weighted positive (>0.2 factor coefficient) whereas physical functioning is negatively weighted (<-0.2 factor coefficient). The IPAQ short-form questionnaire asks for numerical answers to frequency and duration of vigorous and moderate intensity physical activities and walking within the past 7 days. These are converted to a continuous measure metabolic equivalent of task (MET)-minutes, with a MET being a multiple of the resting metabolic rate,[13] where 1 MET is equivalent to the tissue oxygen uptake of 3.5 mL/kg/h. This value was then converted to a categorical measure by dividing at the median value.

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