

**STRESS AMONG ANAESTHETIC TRAINEES IN  
UNIVERSITI SAINS MALAYSIA**

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## **ABSTRAK**

**Latar Belakang:** Latihan anestesia adalah sangat mencabar dan memberi tekanan yang tinggi kepada pelatih. Tekanan boleh memberikan kesan buruk kepada pelatih. Objektif kajian ini adalah untuk mengkaji prevalensi tekanan dan faktor punca tekanan di kalangan pelatih anestesia di Universiti Sains Malaysia (USM).

**Metodologi:** Reka bentuk kajian keratan rentas dilakukan di kalangan pelatih anestesia di USM. Data dikumpulkan dengan menggunakan kertas atau soal selidik dalam talian yang diedarkan kepada semua pelatih anestesia di USM. Soal selidik ini terdiri daripada tiga bahagian, yang merangkumi ciri-ciri latihan sosiodemografi dan anestesia, Perceived Stress Scale-10 (PSS-10), dan Postgraduate Stressor Questionnaire (PSQ).

**Keputusan:** Sembilan puluh tujuh pelatih anestesia mengambil bahagian dalam kajian ini. Prevalensi tekanan tinggi di antara pelatih anestesia adalah 47.4% (95% CI = 35.1%, 54.8%). Faktor punca tekanan adalah peperiksaan, skop bidang ilmu yang perlu dipelajari, dan ketakutan untuk melakukan kesalahan yang mengakibatkan kepada masalah yang serius.

**Kesimpulan:** Bebanan akademik dan prestasi kerja adalah sumber tekanan utama bagi pelatih anestesia di USM. Pengiktirafan faktor risiko tekanan dan teknik penyesuaian adaptif adalah penting untuk kesihatan mental pelatih anestesia.

## **ABSTRACT**

**Background:** Anaesthesia training is stressful and challenging. Stress can lead to potential burnout. This study was designed to investigate the prevalence of high stress and factors causing stress among anaesthetic trainees in Universiti Sains Malaysia (USM).

**Methods:** A cross-sectional study design was conducted among anaesthetic trainees in USM. Data was collected by using paper or online questionnaire which was distributed to all anaesthetic trainees in USM. The survey consists of three parts, which includes sociodemographic and anaesthesia training characteristics, Perceived Stress Scale-10 (PSS-10), and Postgraduate Stressor Questionnaire (PSQ).

**Results:** Ninety-seven anaesthetic trainees participated in this study. Prevalence of high perceived stress was 47.4% (95% CI = 35.1%, 54.8%). Major stressors were exams, amount of knowledge to cover, and fear of making errors which could lead to serious consequences.

**Conclusion:** Academic burden and performance pressure are the primary sources of stress in anaesthetic trainees in USM. Recognition of risk factors for stress and adaptive coping techniques are essential to the health and wellbeing of trainees.

## LIST OF ABBREVIATIONS

PSS-10	Perceived Stress Scale-10
PSQ	Postgraduate Stressor Questionnaire
SPSS	Statistical analysis software package
USM	Universiti Sains Malaysia
HUSM	Hospital Universiti Sains Malaysia

## CHAPTER 1: INTRODUCTION

### *1.1 Background*

The World Health Organization (WHO) defines mental health as “a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community.”(1) According to Oxford’s dictionary, stress is defined as “mental pressure or worry caused by problems in someone’s life.” (2) Stress is a process whereby an individual is unable to cope with demands exerted on him or her. (3) Stress results in physiological, behavioural and psychological responses to external or internal demands. (4) Some levels of stress are vital to motivate and help an individual to function well in a demanding job. An excessive amount of stress may affect work performance and lead to undesirable health consequences. (3)

Anaesthesiology training in Malaysia is challenging as this speciality encompasses a wide range of subspecialties. It includes perioperative care, intensive care, trauma care, pain services, among others. Therefore, the knowledge that needs to be covered by anaesthesia trainees is pervasive.



Currently, there are two main pathways to training to become an Anaesthetist in Malaysia. The first pathway is by completing the Masters in Medicine (Anaesthesiology) pathway in one of the five universities offering this program. Candidates who go through this pathway may be government-sponsored or privately sponsored. Candidates training in the parallel pathway programme will sit for an external exam, Membership of the College of Anaesthesiologists of Ireland (MCAI) and do postings in approved hospitals according to the stipulated requirement.

Anaesthetic trainees training at Universiti Sains Malaysia can train via out campus or in campus. Out campus trainees will train for the first two years in accredited specialist hospital and work in Hospital Universiti Sains Malaysia for the last two years. In campus trainees, on the other hand, will train for four years at Hospital Universiti Sains Malaysia.

## *1.2 Problem Statement*

Work in the field of Anaesthesiology can be very fulfilling, leading to a high level of satisfaction. (4,5) Nevertheless, due to the broad field that it encompasses and the high- intensity work conditions, training in anaesthesia can be very challenging. (6) Stress is therefore ubiquitous in the field of Anaesthesiology, compounded with add on pressures felt by trainees. The major stressors experienced by anaesthetic trainees include stress related to training, work demands, interpersonal relationships, organisational, and work-home disruption. (5,7)

### *1.3 Literature Review*

An anonymous electronic survey which was carried out among anaesthetic trainees in South-West England and Wales showed that 37% of trainees experienced a high level of perceived stress. This led to the Royal College of Anaesthetist (RCOA) to publish a report making recommendations to improve the morale, welfare and experience of their trainees. (7)

Another recent survey among anaesthetic trainees under the Australian and New Zealand College of Anaesthetist (ANZCA) training scheme investigated the level of stress, anxiety or depression and also factors causing or relieving stress. 28% of respondents had high distress level. It also showed that many trainees under the ANZCA training scheme had psychological impairment which was detrimental to their healthcare. (5)

Another study compared stress faced by anaesthetic trainees in Hong Kong and Australia. This study showed that differences in training, demographic profile, social and cultural differences lead to differences in the level of stress, burnout and job satisfaction among trainees. (6)

The Perceived Stress Scale (PSS-10) is a well-validated stress assessment tool which is used to measure perception of stress. (8–10) It comprises of 10 questions which ask about feelings and thoughts of the respondents within the last month. Grading is based on Likert's scale. A score of 20 or more indicates high perceived stress. (7) Scores are reversed for questions 4, 5, 7 and 8. The scores are added up across the

scale to get a total score from 0 to 40. Validity and reliability of PSS-10 have been studied. It has an internal reliability consistency (Cronbach alpha coefficient > 0.7).

(11)

Postgraduate Stressor Questionnaire (PSQ) is a modified stressor questionnaire which was developed to measure the postgraduate stressors. It consists of 7 domains with 28 items in the PSQ; namely academic, performance pressure, work-family conflicts, bureaucratic constraints, poor relationship with superior, poor relationship with colleagues and poor job prospect. Each of the domains consists of 4 items. The items in PSG are rated into five categories of responses indicating intensity of stress caused by them – no stress at all, mild stress, moderate stress, high stress, severe stress. (12,13)

#### *1.4 Study Rationale*

A study done locally in 2010 investigated the prevalence and source of stress among postgraduate medical trainees. The sample size was small, 38 and encompassed students from different specialities. (13)

There are differences in socio-demographic characteristics, lifestyle characteristics, training and work-life between postgraduate trainees in different fields and also between overseas and local trainees.

This study aims to provide a snapshot of the prevalence of stress and factors causing stress among anaesthetic trainees in USM.

### *1.5 Research Objective*

#### **Objective 1**

To measure the prevalence of perceived stress among anaesthetic trainees in Universiti Sains Malaysia using the Perceived Stress Scale (PSS-10).

#### **Objective 2**

To measure the relationship between factors causing stress and stress level among anaesthetic trainees in Universiti Sains Malaysia.

## CHAPTER 2: BODY OF MANUSCRIPT

### STRESS AMONG ANAESTHETIC TRAINEES IN UNIVERSITI SAINS MALAYSIA

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#### *2.1 Abstract*

**Background:** Anaesthesia training is stressful and challenging. Stress can lead to potential burnout. This study was designed to investigate the prevalence of high stress and factors causing stress among anaesthetic trainees in Universiti Sains Malaysia (USM).

**Methods:** A cross-sectional study design was conducted among anaesthetic trainees in USM. Data was collected by using paper or online questionnaire which was distributed to all anaesthetic trainees in USM. The survey consists of three parts, which includes sociodemographic and anaesthesia training characteristics, Perceived Stress Scale-10 (PSS-10), and Postgraduate Stressor Questionnaire (PSQ).

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**Conclusion:** Academic burden and performance pressure are the primary sources of stress in anaesthetic trainees in USM. Recognition of risk factors for stress and adaptive coping techniques are essential to the health and wellbeing of trainees.



## *2.2 Introduction*

### **2.2.1 Background**

The World Health Organization (WHO) defines mental health as “a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community.”(1) According to Oxford’s dictionary, stress is defined as “mental pressure or worry caused by problems in someone’s life”. (2) Stress is a process whereby an individual is unable to cope with demands exerted on him or her. (3) Stress results in physiological, behavioural and psychological responses to external or internal demands. (4) Some levels of stress are vital to motivate and help an individual to function well in a demanding job. An excessive amount of stress may affect work performance and lead to undesirable health consequences. (3)

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### 2.2.3 Literature review

An anonymous electronic survey which was carried out among anaesthetic trainees in South-West England and Wales showed that 37% of trainees experienced a high level of perceived stress. This led to the Royal College of Anaesthetist (RCOA) to publish a report making recommendations to improve the morale, welfare and experience of their trainees. (7)

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across the scale to get a total score from 0 to 40. Validity and reliability of the PSS-10 have been studied. It has an internal reliability consistency (Cronbach alpha coefficient > 0.7). (11)

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#### **2.2.4 Study rationale**

A study done locally in 2010 investigated the prevalence and source of stress among postgraduate medical trainees. The sample size was small, 38 and encompassed students from different specialities. (13)

There are differences in socio-demographic characteristics, lifestyle characteristics, training and work-life between postgraduate trainees in different fields and also between overseas and local trainees.

This study aims to provide a snapshot of the prevalence of stress and factors causing stress among anaesthetic trainees in USM.

## **2.2.5 Research objectives**

### 2.2.5.1 Objective 1

To measure the prevalence of perceived stress among anaesthetic trainees in Universiti Sains Malaysia (USM) using the Perceived Stress Scale (PSS-10).

### 2.2.5.2 Objective 2

To measure the relationship between factors causing stress and stress level among anaesthetic trainees in USM.

## 2.3 *Materials and Methods*

### **2.3.1 Study design**

Cross-sectional study design

### **2.3.2 Population and sample**

#### 2.3.2.1 Source of sampling population

Anaesthetic trainees under the Anaesthesiology (Masters of Medicine) program in Universiti Sains Malaysia (USM)

#### 2.3.2.2 Study period

The span of the study was from February 2020 to May 2020.

#### 2.3.3.3 Sampling frame (inclusion and exclusion criteria)

Inclusion criteria

- Anaesthetic trainees under the (Masters of Medicine) Anaesthesiology program in USM