

# **THE EFFECTS OF ON-CALL DUTIES ON COGNITIVE FUNCTIONS IN ANAESTHESIA RESIDENTS HUSM**

*by*

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## **LIST OF ABBREVIATIONS**

<b>A.P</b>	<b>Associate Professor</b>
<b>ACGME</b>	<b>Accreditation Council for Graduate Medical Education</b>
<b>BS</b>	<b>Busy Score</b>
<b>CT</b>	<b>Concentration Test</b>
<b>GPs</b>	<b>General Practitioners</b>
<b>HSNZ</b>	<b>Hospital Sultanah Nur Zahirah</b>
<b>HUSM</b>	<b>Hospital Universiti Sains Malaysia</b>
<b>ICU</b>	<b>Intensive Care Unit</b>
<b>MMed</b>	<b>Master of Medicine</b>
<b>MMSE</b>	<b>Mini-mental State Examination</b>
<b>MO</b>	<b>Medical Officer</b>
<b>OT</b>	<b>Operation Theatre</b>
<b>PSY</b>	<b>Psychological Stress Score</b>
<b>RTT</b>	<b>Reaction Time Test</b>
<b>SCWT</b>	<b>Stroop Color-word Test</b>
<b>SD</b>	<b>Standard Deviation</b>
<b>SSS</b>	<b>Stanford Sleepiness Scale</b>
<b>UK</b>	<b>United Kingdom</b>

# **ABSTRAK**

## **KESAN BERTUGAS DI ATAS PANGGILAN KE ATAS FUNGSI KOGNITIF PARA DOKTOR ANESTHESIA DI HOSPITAL UNIVERSITI SAINS MALAYSIA**

### **PENGENALAN**

Fungsi kognitif doktor anaesthesia adalah sangat penting dalam menjalankan tugas-tugas harian dan terdapat pelbagai faktor yang mempengaruhi fungsi tersebut.

### **OBJEKTIF**

Objektif utama kajian ini adalah untuk mengkaji kesan fungsi kognitif ke atas doktor anaesthesia yang bertugas atas panggilan dan membezakan di antara pelbagai faktor demografi serta ciri-ciri tugas atas panggilan dengan fungsi kognitif.

### **METODOLOGI**

Kajian ini melibatkan semua doktor anaesthesia di Jabatan Anaesthesiologi, HUSM yang bertugas atas panggilan dan diberi kebenaran bertulis. Data yang dikumpul bermula selama dua bulan iaitu dari 1hb Januari 2010 sehingga 28hb Februari 2010.

Empat ujian kognitif digunakan di dalam kajian ini iaitu Mini Mental State Examination (MMSE), Stroop Color Word Test (SCWT), Concentration Test (CT) and Reaction Time

Test (RTT). Faktor-faktor lain yang mempengaruhi ketika bertugas atas panggilan seperti tahap mengantuk (Stanford Sleepiness scale), tahap kesibukan ( Busy scale) dan tahap stress (Psychological Stress score) juga direkodkan.

## KEPUTUSAN

Sejumlah 45 orang responden yang telah terlibat di dalam kajian ini dan majoriti adalah doktor lelaki (62.6%), kaum Melayu (77.8%) dan telah berkahwin (77.8%). Kebanyakan daripada doktor anaesthesia (82.2%) adalah dlm pertengahan umur (30-39 tahun) dan sebahagian besarnya (66.7%) berpengalaman di dalam anaesthesia selama 5-10 tahun. Majoriti doktor anaesthesia yang bertugas atas panggilan adalah di ICU (46.7%) manakala majoriti yang bertugas atas panggilan adalah pegawai perubatan (75.6%). Ketika bertugas atas panggilan, 11.1% orang doktor anaesthesia tidak dapat tidur langsung dan sebahagian besar hanya dapat tidur selama kurang 4 jam (75.6%). Kebanyakan mereka (60.0%) memberi markah sederhana dalam SSS (3-4) dan PSY (4-6) manakala untuk BS, sejumlah 62.2% juga memberi markah sederhana (4-6). Tiada perbezaan yang signifikan di antara tiga kumpulan skor (SSS, PSY dan BS) tersebut dengan data demografi dan ciri-ciri bertugas atas panggilan ( $p>0.05$ ). Terdapat penurunan dalam keputusan ujian-ujian kognitif dan secara analisisnya, hanya dua ujian yang menunjukkan perbezaan yang signifikan iaitu ujian SCWT ( $p=0.011$ ) dan CT ( $p=0.001$ ). Namun tiada perbezaan yang signifikan ( $p>0.05$ ) di antara penurunan fungsi kognitif dengan data demografi, ciri-ciri tugas atas panggilan dan tiga kumpulan skor (SSS, PSY and BS). Tiada juga kaitan yang signifikan di

antara tiga kumpulan skor tersebut dengan data demografi dan ciri-ciri tugas atas panggilan ( $p>0.05$ ). Terdapat hubungkait di antara kumpulan SSS dengan PSY ( $p=0.001$ ), SSS dengan BS ( $p=0.011$ ) dan PSY dengan BS ( $p=0.001$ ).

## KESIMPULAN

Kesimpulannya, fungsi kognitif doktor anaesthesia terutamanya dalam SCWT dan CT berubah secara signifikansi selepas bertugas di atas panggilan.

# **ABSTRACT**

## **THE EFFECTS OF ON-CALL DUTIES ON COGNITIVE FUNCTIONS IN ANAESTHESIA RESIDENTS HUSM**

### **INTRODUCTION**

Cognitive functions play a vital role in safe anaesthetic practice and there are various factors that affect the cognitive functions.

### **OBJECTIVES**

The aim of this study is to determine the effects on cognitive functions in anaesthesia residents doing on-call duty in HUSM and to compare between demographic factors and on-call features with cognitive functions.

### **METHODOLOGY**

This study includes all the anaesthesia residents in the Department of Anaesthesiology, HUSM after written informed consent was obtained. The data was collected from 1<sup>st</sup> January until 28<sup>th</sup> February 2010. Four cognitive tests were used in this study which were Mini Mental State Examination (MMSE), Stroop Color Word Test (SCWT), Concentration Test (CT) and Reaction Time Test (RTT). Other associated factors affected by on-call such as Stanford Sleepiness Scale (SSS), Busy Score (BS) and psychological Stress Score (PSY) were also recorded.

## RESULTS

There was 45 respondents contributing in this study and majority were males (62.6%), Malays (77.8%) and married (77.8%). Most of the anaesthetist residents (82.2%) were in the middle age group (30-39 year-old) and they had working experiences in anaesthesia between 5-10 years (66.7%). The major type of on-call duty was ICU call (46.7%) and most of the on-call duties were as a medical officer (75.6%). There were 11.1% of the residents had no sleep at all during on-call and majority sleep less than 4 hours (75.6%). Most of the anaesthesia residents (60.0%) scored moderate in SSS (3-4) and PSY (4-6). Majority of them (62.2%) also scored BS as moderate (4-6). The relationship between the three groups score (SSS, PSY and BS) with various demographic data and on-call features were not significant ( $p>0.05$ ). There were decreased in cognitive test post-call and was significantly difference in SCWT ( $p=0.011$ ) and CT ( $p=0.001$ ). However, there was no significant difference between various demographic data, on-call features and all three score groups (SSS, PSY and BS) with cognitive functions ( $p>0.05$ ). There was a significant correlation between SSS with PSY group ( $p=0.001$ ), SSS with BS group ( $p=0.011$ ) and PSY with BS group ( $p=0.001$ ).

## CONCLUSION

We conclude that the cognitive functions of anaesthesia residents particularly in SCWT and CT were significantly altered after on-call duties.