PSYCHOLOGICAL STATUS AND WELL BEING AMONG EMERGENCY MEDICAL OFFICERS IN HOSPITALS IN MALAYSIA

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LIST OF ABBREVIATIONS

ED   Emergency Department

USM   Universiti Sains Malaysia

DASS-21   Depression, Anxiety, Stress Scale-21

ABSTRAK

Latar belakang: Jabatan Kecemasan merupakan satu jabatan yang mempunyai persekitaran yang cenderung dalam menyebabkan masalah mental di kalangan pekerjanya. Beberapa kajian menunjukkan bahawa bekerja lebih daripada masa yang ditetapkan dan syif malam merupakan salah satu daripada faktor-faktor yang menyumbang kepada permasalahan ini. Sehingga kini, tiada kajian meluas yang pernah dilakukan untuk melihat kadar permasalahan mental di kalangan pegawai perubatan yang bekerja di jabatan ini di Malaysia. Oleh kerana itu, kajian ini adalah untuk menentukan kadar permasalahan mental dan faktor-faktor yang menyumbang kemurungan, kebimbangan dan stres di kalangan pegawai perubatan yang berkhidmat di Jabatan Kecemasan di hospital-hospital di Malaysia.

Kaedah: Satu kajian telah dijalankan kepada 140 pegawai perubatan yang berkhidmat di jabatan kecemasan hospital kerajaan dari tujuh zon kawasan di Malaysia. Mereka dipilih secara rawak dan tahap kemurungan, kebimbangan serta stress diukur menggunakan borang kaji selidik 21-Item Depression, Anxiety, Stress Scale(DASS-21).

Keputusan: Majoriti adalah wanita (60.0%), berkahwin (50.7%) dan Melayu (56.0%). Kelaziman yang tertinggi adalah melibatkan kebimbangan (28.6%), diikuti oleh kemurungan (10.7%) dan stres (7.9%). Kelaziman di antara kemurungan, kebimbangan di antara hospital tidak mempunyai perbezaan yang ketara ($p>0.05$). Pegawai perubatan lelaki mengalami tahap kebimbangan yang lebih ketara berbanding pegawai perubatan wanita ($p=0.0022$). Sebaliknya, tahap kemurungan dan stres di antara pegawai perubatan wanita dan lelaki tidak mempunyai perbezaaan yang ketara ($p>0.05$). Kelaziman kemurungan, kebimbangan dan stres tidak berkaitan dengan faktor umur, pengalaman bekerja, bangsa, status perkahwinan, bilangan syif dan jenis sistem yang digunapakai di hospital ($p>0.05$)

Kesimpulan: Tahap kelaziman bagi kebimbangan adalah tinggi, manakala bagi kemurungan dan stres adalah rendah. Jantina mempunyai kaitan yang ketara dengan tahap kebimbangan, tetapi tidak memainkan peranan bagi tahap kemurungan dan stres. Umur, pengalaman bekerja, bangsa, status perkahwinan, bilangan syif dan jenis sistem yang digunapakai di hospital tidak mempengaruhi tahap kemurungan, kebimbangan dan stres di kalangan pegawai perubatan kecemasan. Tahap kemampuan untuk menangani kemurungan, kembimbangan dan stres berkemungkinan memainkan peranan yang penting di dalam isu ini dan haruslah dikaji dengan lebih teliti pada masa akan datang.

Kata kunci: pegawai perubatan, jabatan kecemasan, kemurungan, kebimbangan, stres

1.0 INTRODUCTION

Health is defined is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity (Callahan, 1973). As applied to any occupation, an ideal job is likely to be the one which can promote career satisfaction, and at the same time has appropriate pressures on the employee's abilities and resources. Giving autonomy, providing training in communication and management skills also are found to be important in maintaining satisfaction and enhancement of career (Ramirez *et al.*, 1996).

Across the professions, healthcare workers has been identified to be one of the most striking profession contributing to the prevalence of job dissatisfaction and work related emotional disturbances. The modern medical workplace, such as emergency department is a complex environment and they response to it vary greatly. Overcrowding with resource scarcity (Rondeau *et al.*, 2005) leads to patient's dissatisfaction, constant exposure to noise pollutants(ringing phones, beeping monitors, slamming doors) leads to unknowingly accumulated stress among workers (Tijunelis *et al.*, 2005) and predisposed to violence from the patients or family members lead to feeling unsafe and job related stress (Gates *et al.*, 2006) despite the necessity of providing essential care for them. The demand of multitasking and continuous interruption due to dynamic changes of the treated patients are common and contribute to significant disturbances of concentration and mental exhaustion (Chisholm *et al.*, 2000).

Depression is term as a mood disorder characterized by sadness, lack of interest in daily activities, inability to concentrate, disturbances in appetite and sleeping patterns (Ingram, 2012). The prevalence of depression in Malaysia is estimated from 6.3% to 13.9% (Mukhtar and PS Oei, 2011), whereas it was reported as 10.3% by Maideen *et al.* (2015). As for the medical students in Malaysia, the prevalence of depression reported was 37.2%

by Shamsuddin *et al.* (2013). In a study conducted in Sheffield, the prevalence of depression among house officers were reported as 28% (Firth-Cozens, 1987), whereas in Kota Kinabalu, Malaysia it was reported as 42.9% (Shahruddin *et al.*, 2016). As for the emergency residents, it was reported as 12.1% by Katz *et al.* (2006), whereas the mean score for emergency residents were found to be higher in terms of depersonalization due to depression (Michels *et al.*, 2003). Contradicting to this, a study among Canadian family medicine residents reported that the prevalence of depression was 20% (Earle and Kelly, 2005), which is higher as compared to the emergency residents.

Anxiety is an emotional based on the appraisal of threat, appraisal which entails symbolic, anticipatory an uncertain elements (Spielberger, 2013). It may be accompanied by behavioral and physiological manifestations such as sweating, trembling or irritability and concentration difficulties (Lader, 2015). In a study conducted in Selangor, an urban state of Malaysia, the prevalence of anxiety reported was 8.2% (Maideen *et al.*, 2015). The prevalence among medical students as reported by Shamsuddin *et al.* (2013) was 63%, whereas for the house officers it was reported as 63.7% by Shahruddin *et al.* (2016). In a different study conducted in Denizli, Turkey among emergency medical officers, the prevalence of anxiety was 14.6% (Erdur *et al.*, 2006), in comparison with family medicine residents in which the prevalence was reported as 12% (Earle and Kelly, 2005).

Stress is defined as a state of threatened balance, equilibrium or harmony of the mind, which triggers the adaptive response of the body to adapt with the disturbances caused by the stressors (Chrousos *et al.*, 2013). It was reported by Maizura *et al.* (2010) in a study conducted among multinational company staffs in Malaysia that 21% associated with high level. Among the medical students, the prevalence of stress was 23.7% (Shamsuddin *et al.*, 2013). The prevalence in Saudi Arabia house officers were

reported as high as 53.7% by a al Zunitan and a al Dehaim (2014), whereas in Malaysia the prevalence was 57.1% (Shahruddin *et al.*, 2016). As for the emergency residents, it was reported that the prevalence was 33.3 % whereas for the other specialties such as surgery and family medicine was 25% and 56.1% respectively (Monsef *et al.*, 2010).

There were few common causes identified strongly correlating with these emotional disturbances. It can be divided into social related factor and work related factor. As for the social related factor, being a woman and unmarried (Wang *et al.*, 2011),(a al Zunitan and a al Dehaim, 2014), having financial constraint and existence of children (Saini *et al.*, 2010) are the few factors contributing to depression, anxiety and stress. Having neurocitism personality trait is often associated with higher prevalence of anxiety (Newbury-Birch and Kamali, 2001) whereas taking 20 to 30 minutes to work place was reported to have association with higher stress level (Monsef *et al.*, 2010). Working experience plays a major role in the development of depression, anxiety and stress level as reported by Shahruddin *et al.* (2016). On the other hand, exposure to long working hours is among the most common cause of causing emotional disturbances (Cho *et al.*, 2008) ,(Monsef *et al.*, 2010),(Wang *et al.*, 2011),(Hurst *et al.*, 2013). Sleeping pattern disturbances with night shift rotations (Rosen *et al.*, 2006), (Erdur *et al.*, 2006)large patient load (Hurst *et al.*, 2013) and inadequate support from supervisors with lacking of opportunity to pursue in career (Schwartz *et al.*, 1987),(Hurst *et al.*, 2013) are the associated factors affecting the depression, anxiety and stress level of the health care providers. Along with this, type of specialties were also reported to be a contributive factor (a al Zunitan and a al Dehaim, 2014).

Work related stress is has been discussed widely in many articles. Affected workers may experience diminished commitment and broken relationships as described

by Balch *et al.* (2009). Involvement in substance abuse has also reported to be common (Aach *et al.*, 1992),(Kumar and Basu, 2000)and the prevalence of committing suicide is higher compared to the general population (Lindeman *et al.*, 1996),(Hawton *et al.*, 2001). The association of mental illness with the development of physical diseases such as cardiovascular disease (Schnall *et al.*, 1994),(Kivimäki *et al.*, 2002),musculoskeletal diseases (Bongers *et al.*, 1993) and metabolic diseases (Chandola *et al.*, 2006) has also been well reported. On the other hand, breakdown of communication with colleague and clinical incompetency may lead to medication errors (West *et al.*, 2006),(Fahrenkopf *et al.*, 2008). Absenteeism and increase of turnover (Embriaco *et al.*, 2007), associated with poor job performance, negative attitude and low personal accomplishment were also common as part of the outcomes of having poor mental health (McCray *et al.*, 2008). Thus, early recognition of mental illness is important from emergency department point of view as they work as the front liners, and this will subsequently compromise patient's care and expose the healthcare workers towards malpractice issues.

2.0 OBJECTIVES

<u>General objectives</u>

1. To determine the psychological status and well being of ED Medical Officers in hospitals in Malaysia

<u>Specific Objectives</u>

1. To determine the mean level of depression, anxiety and stress condition of ED Medical Officers in Hospitals in Malaysia

2. To determine the associated factors to depression, anxiety and stress condition (e.g age, gender, race)

3.1 TITLE PAGE

Psychological Distress among Emergency Department Medical Officers in Malaysia Hospitals
A Cross Sectional Study

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3.2 ABSTRACT

Background: Emergency Department (ED) has been known to be an environment which is reported to have high association with mental health status among its workers. Many literature reviews has suggested that few factors such as overworking hours and night shifts has been part of it contributory causes. Up to date, there has been no study done extensively to investigate the prevalence among health care workers, particularly involving medical officers in Malaysia. Thus this study is to determine the prevalence and associated factors of depression, anxiety and stress among emergency department medical officers in Malaysia hospitals.

Methods: A cross sectional study was conducted on 140 emergency department medical officers working at general hospitals from seven Malaysia regions. They were randomly selected and their depression, anxiety and stress level were measured by the 21-item Depression, Anxiety, Stress Scale (DASS-21).

Results: Majority was female (60.0%), married (50.7%) and Malay (56.0%). The highest prevalence was anxiety (28.6%) followed by depression (10.7%) and stress (7.9%). The prevalence of depression, anxiety and stress between the hospitals were not significantly different ($p > 0.05$). Male medical officers significantly experienced more anxiety symptoms than female medical officers ($p = 0.0022$). Conversely the depression and stress symptoms between male and female medical officers were not significantly different ($p > 0.05$). Similarly, depression, anxiety and stress were not associated with age, working experience, ethnicity, marital status, number of shifts and type of system adopted in hospitals ($p > 0.05$).

Conclusion: The prevalence of anxiety was high, whereas for depression and stress was considerably low. Gender significantly associated with anxiety level, but did not associated with stress and depression levels. Age, working experience, ethnicity, marital status, number of shifts and type of system adopted in hospital did not associate with depression, anxiety and stress level. Different coping mechanism may have played an important factor in overcoming these issues however need to be investigated further.

Keyword: medical officers, emergency department, depression, anxiety, stress

3.3 BACKGROUND:

Emergency department (ED) is a complex environment. Overcrowding with resource scarcity (1), constant exposure to noise pollutants (ringing phones, beeping monitors, slamming doors), demand of multitasking and continuous interruption due to dynamic changes of the treated patients are common and contribute to significant disturbances of concentration and mental exhaustion of their workers (2). In 1997, 77.5% of 40 Malaysian house officers reported emotional distress (3) and 14 years later 31% of 42 house officers Universiti Sains Malaysia (USM) hospital reported psychological distress (4). Recently, two studies conducted on Malaysian house officers a high prevalence of depression (42.9%), anxiety (60.7-63.7%) and stress (57.1%) (5, 6). The reported percentages were high as compared to the findings from the Western countries in which the prevalence of psychological distress ranged from 7% to 29% (7). To the author's knowledge so far none of the study has been conducted at national level to explore the prevalence of psychological distress among medical officers in emergency department from different regions of Malaysia.

It is important to note that affected health care workers may experience diminished commitment and broken relationships (8) which may lead to involvement in substance abuse (9) and committing suicide (10). Furthermore, presence of mental illness is linked with the development of physical diseases such as cardiovascular disease (11, 12), musculoskeletal diseases (13) and metabolic diseases (14). Most importantly, this may lead to communication breakdown with colleague and clinical incompetency may lead to medication errors (15, 16). Absenteeism and increase of turnover (17), poor job performance, negative attitude and low personal accomplishment (18) are also part of the unsolved emotional distress. Thus early recognition of

psychological distress level is important to plan a structural approach strategically in preventing the outcomes before patient's care is compromised and at stake.

This study was designed to answer two important research questions: 1) what are the prevalence of depression, anxiety and stress among Malaysian emergency medical officers? 2) what are the factors that significantly associated with depression, anxiety and stress of the medical officers. We hypothesized the prevalence of depression, anxiety and stress among the medical officers would be high as they are not only working in a complex environment with numerous challenges, but are expected to preserve high level of proficiency in medical practice as front line officers (19).

3.4 METHODS:

A cross-sectional study was carried out in ED in Malaysia involving 7 general hospitals from 7 different regions with emergency physicians. These hospitals representing the state tertiary center with the utmost number of medical officers. The hospitals involved were two hospitals from west Malaysia region (Hospital Kuching, Hospital Queen Elizabeth), one hospitals from the northern region (Hospital Sultanah Bahiyah), two hospitals from the central regions (Hospital Raja Permaisuri Bainun, Hospital Kuala Lumpur), one hospital from the southern region (Hospital Sultanah Aminah) and one hospital from the east coast region (Hospital Sultanah Zahirah). Only two hospitals are fully computerized whereas the rest are using manual system for patient's clerking entry. Prior to the study the ethical approval was obtained from the Human Research Ethics Committee (HREC) USM and from Institutional Review Board (IRB)/Medical Research Ethic Committee (MREC) of National Medical Research Register (NMRR).

The reference population was all ED medical officers at the respective hospital at the point of data collection. The estimated sample size was calculated based on the sample size table by Krejcie and Morgan (20). The sample size was 140, simple random sampling was performed to recruit study subjects and they were invited to participate this study voluntarily. The inclusion criteria was any medical officers working at ED for more than 6 months. This time frame was chosen as we wanted to exclude the junior medical officers especially those who has just completed their housemanship training. The exclusion criteria was any medical officers working at ED for less than 6 months, those who has underlying pre-existing psychiatric illness and those who refuse to participate.

DASS-21 were used in this study. DASS-21 were administered to participants through face to face self-administered method from April until November 2015. The eligible medical officers were requested to fill up the questionnaire and to return the questionnaire immediately after completion. The investigators were present at all time during data collection. It took approximately 20 minutes for the participants to answer the questions. Data cleaning was used to detect any missing values, coding error or any illogical data value.

Data analysis was carried out using IBM SPSS (Statistical Package for the Social Sciences) software version 22.0. Data cleaning was used to detect any missing values, coding error or any illogical data value. To determine the mean level of depression, anxiety and stress level among the medical officers, One Way-ANOVA was used. Descriptive analysis was performed on variables such as age, ethnicity, marital status, duration of working, number of total shifts per month, number of night shifts per month and type of system adopted by the hospitals. Independent–t and ANOVA test were

performed to test the mean difference between numerical outcome (i.e depression, anxiety and stress level) and factor variables (e.g gender, ethnic group etc). All statistical test were set at 95% confidence interval whereby p value less than 0.05 were considered as significant difference.

3.5 RESULTS:

A total of 140 medical officers who participated in this study and each hospital was equally presented by them. The response rate was 100% however some incomplete data were identified for number of total shifts and number of night shifts. Majority of them were female (60%), married (50.7%) and Malay (56%). Mean age was 30 years old (SD= 4.31), and mean experience of working duration was 36 months (SD=30.81). The details of the demographic characteristics were summarized in Table 1.

Table 1. Demographic characteristics of Emergency Department Medical Officers (n=140)

Characteristics	Descriptive statistics
States	
Terengganu	16(11.4)
Sabah	24(17.1)
Wilayah Persekutuan	20(14.3)
Perak	20(14.3)
Johor	19(13.6)
Sarawak	20(14.3)
Kedah	21(15.0)
Age (years)	
20-29	62(44.3)
30-39	73(52.2)
$\geq$40	5(3.5)
Gender	
Male	56(40.0)
Female	84(60.0)

Marital status	
Single	68(48.9)
Married	71(51.1)
Others	1(*)
Ethnics	
Malay	79(56.4)
Chinese	32(22.9)
Indian	22(15.7)
Others	7(5.0)
Experience of working(months)	
6-12	40(28.6)
13-36	56(39.9)
≥ 37	44(31.3)
Number of shifts (per month)	
Night shifts(n=86)	6.3(3.2)
Total of shifts (n=91)	17.9(8.3)

*for analysis purposes, percentage is not included

#Categorical data presented as frequency (%)

#Numerical data presented as mean (SD) for normally distributed and median (IQR) if skewed

The mean depression, anxiety and stress scores of the ED medical officers were not associated with the hospital of different regions. Nevertheless, the medical officers of the central region hospital (Hospital Kuala Lumpur) relatively had higher mean depression and stress scores as compared to the rest hospitals. The results were summarized in Table 2.

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Table 2. Mean scores for depression, anxiety and stress among Medical Officers in Emergency Department in Malaysia

States	Mean (SD)	F statistic (df)	p value
Depression			
Terengganu	6.50 (8.72)		
Sabah	5.08 (4.75)		
Wilayah Persekutuan	8.90 (9.55)		
Perak	7.40 (5.39)	0.896	0.500
Johor	5.68 (4.07)	(6,133)	
Sarawak	5.00 (5.75)		
Kedah	6.10 (7.06)		
Anxiety			
Terengganu	5.75 (3.86)		
Sabah	5.75 (5.12)		
Wilayah Persekutuan	8.80 (6.98)		
Perak	7.40 (5.73)	1.361	0.367
Johor	7.37 (4.86)	(6,133)	
Sarawak	4.60 (4.59)		
Kedah	6.00 (1.24)		
Stress			
Terengganu	11.19 (7.44)		
Sabah	9.83 (6.66)		
Wilayah Persekutuan	12.2 (8.31)		
Perak	9.50 (5.84)	1.097	0.367
Johor	9.16 (6.23)	(6,133)	
Sarawak	7.20 (4.70)		
Kedah	9.52 (7.10)		

*One Way-ANOVA, significant level at 0.05

Gender was not associated with the prevalence of depression and stress. However, the prevalence of anxiety was associated with gender, whereby male experienced anxiety than female (p=0.022) (Table 4). Multivariate analysis performed with 5 factors inclusion showed consistent result with OR=2.95 with 95% CI (1.27,6.85)[p=0.012].

The prevalence of depression, anxiety and stress among the emergency medical officers were not associated with marital status, age, working experience, ethnic group and patient care system used by the hospitals as summarized in Table 3, 4 and 5.

Table 3. Association of socio demographic factors with depression

Associated factors	Outcome, n (%)		X^2 (df)	p value
	Depressed	Normal		
Gender			1.244	0.265[a]
Male	8 (14.3)	48 (85.7)	(1.00)	
Female	7 (8.3)	77 (91.7)		
Status				
Single	7 (10.3)	61 (89.7)	0.024	0.876[a]
Married	8 (11.1)	64 (88.9)	(1.00)	
Age (years)				
20-29	4 (26.7)	58 (46.4)		
30-39	11 (73.3)	62 (49.6)	-	0.274[b]
≥40	0 (0.0)	5 (4.0)		
Working experience (months)				
6-12	2 (4.9)	39 (95.1)		
13-36	7 (12.5	49 (87.5)	2.118	0.347[a]
≥37	6 (14.0)	37 (86.0)	(2.00)	
Ethnic group	9 (11.4)	70 (88.6)	0.087	0.768[a]
Malay	6 (9.8)	55 (90.2)	(1.00)	
Non Malay				
System used				
Manual	11(73.3)	92(73.6)	0.00	0.982[a]
Fully computerized	4(26.7)	33(26.4)	(1.00)	

a: Pearson Chi Square test, significant level at 0.05

b: Fisher Exact test, significant level at 0.05

Table 4. Association of socio demographic factors with anxiety

Associated factors	Outcome, n (%)		X^2 (df)	p value
	Anxiety	Normal		
Gender			5.250	0.022[a]
Male	22 (39.3)	34 (60.7)	(1.00)	
Female	18 (21.4)	66 (78.6)		
Status				0.593[a]
Single	18 (26.5)	50 (73.5)	0.286	
Married	22 (30.6)	50 (69.4)	(1.00)	
Age (years)				
20-29	13 (32.5)	49 (49.0)	-	
30-39	27 (67.5)	46 (46.0)		0.054[b]
≥40	0 (0.0)	5 (5.0)		
Duration				
6-12	8 (19.5)	33 (80.5)	2.494	
13-36	19 (33.9)	37 (66.1)	(2.00)	0.287[a]
≥37	13 (30.2)	30 (69.8)		
Ethnic group				
Malay	24 (30.4)	55 (69.6)	0.291	0.590[a]
Non Malay	16 (26.2)	45 (73.8)	(1.00)	
System used				
Manual	33(82.5)	70(70.0)	2.300	0.130[a]
Fully computerized	7(17.5)	30(30.0)	(1.00)	

a: Pearson Chi Square test, significant level at 0.05

b: Fisher Exact test, significant level at 0.05

Table 5. Association of socio demographic factors with stress

Associated factors	Outcome, n (%)		X^2 (df)	p value
	Stress	Normal		
Gender			-	
Male	5 (8.9)	51 (91.1)		0.755[b]
Female	6 (7.1)	78 (92.9)		
Status			0.046	0.829[a]
Single	5 (7.4)	63 (92.6)	(1.00)	
Married	6 (8.3)	66 (91.7)		
Age (years)			-	0.146[b]
20-29	2 (18.2)	60 (46.5)		
30-39	9 (81.8)	64 (49.8)		
≥40	0 (0.0)	5 (3.9)		
Duration			0.180	0.914[a]
6-12	3 (7.3)	38 (92.7)	(2.00)	
13-36	4 (7.1)	52 (92.9)		
≥37	4 (9.3)	39 (90.7)		
Ethnic group			-	0.348[b]
Malay	8 (10.1)	71 (89.9)		
Non Malay	3 (4.9)	58 (95.1)		
System used			0.04	0.947[a]
Manual	8(72.7)	95(73.6)	(1.00)	
Fully computerized	3(27.3)	34(26.4)		

a: Pearson Chi Square test, significant level at 0.05

b: Fisher Exact test, significant level at 0.05

Though statistically insignificant, based on author's observation, several important notes to be highlighted:1) The married medical officers seem to experience more anxiety than the single medical officers; 2) Medical officers who are at age of 30-39 year-old seem to experience depression, anxiety and stress more than the other range

of age ; 3) Medical officers who had working experience between 1 and 3 years at emergency department seem to experience depression, anxiety and stress more than other duration of working experience; 4) Non malay medical officers seem to experience depression, anxiety and stress more than Malay groups; and 5) Medical officers in the hospitals that use manual patient care system seem to experience depression, anxiety and stress more than the hospital that use computerized patient care system.

The prevalence of depression, anxiety and stress among the emergency medical officers were not associated with the total and night shift number per month (Table 6).

Table 6. Association of work shifts with depression, anxiety and stress

Associated factors	n	Number of shifts Median(IQR)	p value
Total of shifts			
Depression			0.180
Normal	78	16.0(10)	
Depressed	8	15.5(8)	
Anxiety			0.755
Normal	61	16.0(9)	
Anxiety	25	17.0(16)	
Stress			0.944
Normal	81	16.0(9)	
Stress	5	17.0(13)	
Night shifts			
Depression			0.151
Normal	83	5.5(4)	
Depressed	8	4.5(4)	
Anxiety			0.374
Normal	66	5.0(4)	
Anxiety	25	6.0(4)	
Stress			
Normal	86	5.0(4)	0.751
Stress	5	6.0(6)	

*Mann-Whitney test, significant level at 0.05

3.6 DISCUSSIONS:

In general, the highest occurrence of psychological distress among the ED medical officers in Malaysia hospital was anxiety (28.6%), and followed by depression (10.7%) and stress (7.9%). The prevalence of anxiety is higher when compared to the normal population (8.2%) (23). Despite that, this is consistent with another study in Johor involving doctors and nurses whom reported the anxiety prevalence is to be as 17.9% -25.4% (24). This figure is lower compared with the prevalence of anxiety among house officers (63.7%) (6) and students in Malaysian universities (63%)(25). Comparing with other foreign countries, similar finding was found in Delizli, Turkey where there was higher level of anxiety of 14.6% as compared to depression or stress among the ED doctors (26). Despite having differences in its percentage, the prevalence of anxiety is still the highest compared to depression or stress. The possible explanation is there might be underlying existence of neuroticism trait among those who studied medicine in Malaysia, even though this study did not look into either international or local degree qualification. While doctors are reported to have some degree of obsessive, conscientious and committed personalities which may have exacerbated when placed in a stressful environments (27),this attitude might have been carried forward until they started their career pathway as a medical officer.

On the other hand, these figures are contradicting with the findings conducted in a multinational study completed in United Kingdom(UK), United States(US) and Australasia, in which the doctors from UK showed a higher work-related stress and depression level (28). There were also other studies which were conducted in South East Nigeria among emergency residents (29) and in St Barnabas Hospital emergency staffs which showed a high prevalence of depression (30). However, the differences in

outcomes are probably contributed by the geographical differences between the east and west countries have different cultures and working environment.

Age has been suggested as a significant contributor for decreased score for depression whereby increase of age is correlated with increased scores for personal accomplishment and job satisfaction (31). However, our study result showed that age has no association with depression, anxiety and stress level amongst the medical officers. In line with our result, when workload and emotional stress are being correlated with age, there was no correlation to the decision of changing the career pathway due to job satisfaction among the ED resident (32). Similar result was obtained from a different study conducted among psychosocial workers in German (33). In contrast to this, a study conducted in Baghdad among primary health care provider showed that there was a statistical significance result when age is correlated with the prevalence of depression (34).Yet, this may be questionable as one of the exclusion criteria did not state those with underlying psychiatric illness. Additionally, the term of "healthcare workers" were not being addressed specifically either they are doctors, nurses, paramedics or physicians.

Despite lack of significance, we found that age range between 30-39 years old has showed a higher level of depression, anxiety and stress compared to the other groups. This cannot be explained from other literatures which suggested that younger age is associated with lack of experience and training which may contribute to higher levels of depression state (35, 36). Possible explanation is the enthusiasm and commitment of working which might still be high initially after completing house officer training tend to reduce gradually over time as reported by Uncu, Bayram (37). Furthermore, in Malaysian setting, the tendency of the medical officers to enroll

themselves in post graduate programs is during 30 years and above due to their familiarity and seniority at work and task. Therefore, this could have been a contributor as they have increase of commitment. As for those with the age of 40 years and above, most of the medical officers are normally involve in administrative work compared to clinical work or which may contribute to the lesser incidence of depression, anxiety and stress.

Working experience also has no association with depression, anxiety and stress prevalence. In regard to this finding, there were also several other studies which states that working experience has no impact on healthcare providers psychosocial wellbeing. In a study conducted in the emergency rooms among the physicians resulted no correlation between depression and working experience (38-40). In a different study conducted in Paris on woman's healthcare workers in which 32% were nurses found that working experience has no relation to mental health indicators (41). This is comparable to other profession, which showed working experience has no correlation to the development of mental health disturbance at workplace (42, 43).

In contrast to this, in a study done among house officers in West Malaysia, it was reported that increase of a month of working experience is associated with decrease of 7% of depression level, and this was thought to be due to increase of experience coping with the task and duties (6). This is consistent with another study conducted among house officers in Rhode Island, USA which showed prevalence of depressive symptoms fell with each successive years during the training process (44). This does not correlate with our findings, in which the prevalence of depression, anxiety and stress are more pronounced later and not during the early stage of working. A possible explanation is there might be "role conflict" issue in the working environment (45). As working for

approximately 1 year and above can be considered being "senior" in the emergency medicine field, the medical officers might have been given unreasonable job pressure or having incompatible request from their superiors, when being done systematically over a longer period of time, may create an unpleasant and hostile environment of working (46). Secondly, after the completion of house officer training in Malaysia, these doctors will be sent to serve in different hospitals including the districts. Since they are only allow to change their working place after few years in service, working duration ranging from 1 to 3 years is the point whereby the interchange will occur. Hence, movement and migration, a new environment and loss of familiar surroundings might be a contributor to this.

In pertaining to gender, the male gender showed significant association with anxiety prevalence, but not with depression and stress. In contrast to this, higher anxiety prevalence were reported in female compared to male counterpart among medical student (47, 48), and this is supported by a study conducted among house officers in Malaysia which showed concomitant result (5). The discrepancy of our result might be explained by the possibility of better social support received by the female medical officers from their surrounding as compared to the male as reported by Bergman, Ahmad (49). Secondly, this trends may be explained by over commitment or higher responsibilities and expectations to the male doctors as compared to the female counterpart (50, 51). Thirdly, "feminism in the medical world" (52) in which more females dominating in their working environment and perhaps this may cause hidden emotional rebel for the males as they might have to take order from the opposite gender who are more senior than they are.

Despite this, there were not much of differences observed between gender for depression and stress. It has been reported that despite the female having a higher prevalence of developing depression, mainly at young age, this tends to decrease over time but for male, the prevalence tends to increase with age (53). This could be a possible explanation of to the numbers of the male and female doctors were found to be almost equal for depression. As for stress, even though it was reported that female has more significant stress compared to male as reported in Alberta, Canada, the limitation of this study contributed by the changing of the weather which may influence the correspondent's mood swing (19).

Marital status was found to have no association to the prevalence of depression, anxiety or stress among the medical officers. Despite there were many articles reporting that working shift hours might reduce their quality time with family members and loved ones (54) the percentage of those who are married were more in this study. Study has suggested that marriage has become part of the protective factor against psychological stress (55). Similarly, this was also reported from a survey among emergency physician in Canada (31). A study among doctors after a year after their graduation in Norwegian emphasized in having a stable relationship as a strong predictor of not having suicidal thoughts and planning (56). It was suggested that having a single life is linked to subject oneself to be more vulnerable towards the occurrence of depression, anxiety and stress among the nurses in Hong Kong (57).

On the other hand, a study involving consultants in emergency medicine in United Kingdom has suggested that being married has no role as a protective factor from psychological stress (58). A study among Malaysian house officers also found that marital status has no correlation with anxiety prevalence (5). However, none of the