PREVALENCE OF BURNOUT AMONG MEDICAL STUDENTS IN UNIVERSITI SULTAN ZAINAL ABIDIN AND ITS RELATIONSHIP WITH EMOTIONAL INTELLIGENCE

by

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“The roots of education are bitter, but the fruits are sweet”

~Aristotle~

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LIST OF ABBREVIATIONS

95% CI	95% Confidence Interval
CBI	Copenhagen Burnout Inventory
CBI-M	Malay Translation of Copenhagen Burnout Inventory
CFI	Comparative Fit Index
CFA	Confirmatory Factor Analysis
CGPA	Cumulative Grade Point Average
DP	Depersonalisation
EE	Emotional Exhaustion
EI	Emotional Intelligence
GHQ	General Health Questionnaire
ICC	Intra-class Correlation
MBI	Maslach Burnout Inventory
MDD	Major Depressive Disorder
MoH	Ministry of Health
MSCEIT	Mayer, Salovey & Caruso Emotional Intelligence Test
OLBI	Oldenberg Burnout Inventory
OR	Odd Ratio
PA	Personal Accomplishment
RMSEA	Root Mean Square Error of Approximation
SD	Standard Deviation
TLI	Tucker–Lewis Fit Index
UK	United Kingdom
UniSZA	Universiti Sultan Zainal Abidin
US	United States
USM	Universiti Sains Malaysia
USMEQ-i	USM Emotional Quotient Inventory

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PREVALEN LESU UPAYA DALAM KALANGAN PELAJAR PERUBATAN DI UNIVERSITI SULTAN ZAINAL ABIDIN DAN KAITANNYA DENGAN KECERDASAN EMOSI

ABSTRAK

Prevalen lesu upaya dalam kalangan pelajar perubatan adalah tinggi di kebanyakan negara. Lesu upaya dikaitkan dengan tekanan dan isu kesihatan mental dalam kalangan pelajar perubatan. Ada banyak faktor yang dikaitkan dengan lesu upaya dalam kalangan pelajar perubatan. Kajian sebelum ini menunjukkan kecerdasan emosi adalah faktor pelindung kepada berlakunya masalah lesu upaya. Tujuan kajian ini adalah untuk menentukan prevalen lesu upaya dalam kalangan pelajar perubatan di Universiti Sultan Zainal Abidin (UniSZA) dan kaitannya dengan kecerdasan emosi dan faktor-faktor demografik dan akademik yang lain. Dalam kajian ini, seramai 200 orang pelajar perubatan dari Fakulti Perubatan UniSZA dijemput untuk menyertai kajian ini. Pelajar-pelajar adalah daripada pelajar tahun satu hingga tahun lima dan mereka dipilih menggunakan kaedah pemilihan strata rawak. Kajiselidik atas talian yang mengandungi Inventori Lesu Upaya Copenhagen-Terjemahan Bahasa Melayu (*Copenhagen Burnout Inventory-Malay*), Inventori Kecerdasan Emosi USM (*USM Emotional Intelligent Inventory*) dan data demografik dalam bentuk Google Forms diedarkan kepada pelajar secara atas talian menggunakan applikasi WhatsApp. Data demografik yang diambil adalah jantina, bangsa, tahun pengajian, dan nilai CGPA semasa kemasukan ke program perubatan. Hasil kajian adalah dalam bentuk lesu upaya yang dikategorikan kepada lesu upaya signifikan dan lesu upaya tidak signifikan. Setiap faktor dianalisa menggunakan ujian Chi-Square untuk menentukan perkaitan dengan lesu upaya. Faktor CGPA semasa kemasukan dan kecerdasan emosi dianalisa menggunakan ujian independent t. Seramai 182 orang pelajar perubatan memberi maklumbalas terhadap kaji selidik ini.

Peratus maklumbalas adalah 91.0%. Taburan pelajar perubatan yang memberi maklumbalas adalah mengikut perkadaran jantina, bangsa dan tahun pengajian pelajar semasa. Peratusan pelajar yang mempunyai lesu upaya signifikan adalah 36.8% (95% CI 29.8; 44.3). Min (SD) bagi kecerdasan emosi adalah 2.85 (0.52). Dapatan menunjukkan kecerdasan emosi adalah berkait secara negatif dengan lesu upaya (r=-0.395) dan secara statistik, ia adalah signifikan (P < 0.001). Dapatan kajian juga menunjukkan kecerdasan emosi mempunyai kaitan dengan lesu upaya tetapi jantina, bangsa, tahun pengajian dan CGPA semasa kemasukan tidak mempunyai kaitan dengan lesu upaya. Sebagai kesimpulan, prevalen lesu upaya dalam kalangan pelajar perubatan di UniSZA adalah pada tahap sederhana berbanding dengan prevalen di negara-negara lain. Kecerdasan emosi merupakan faktor pelindung kepada lesu upaya. Langkah-langkah perlu diambil untuk membendung lesu upaya dalam kalangan pelajar perubatan dan ia mungkin boleh dimasukkan dalam kurikulum perubatan. Kecerdasan emosi boleh dipertimbangkan sebagai salah satu kemahiran yang perlu dididik untuk mengurangkan lesu upaya.

Kata kunci: Lesu upaya, pelajar perubatan, tekanan, kecerdasan emosi, kesihatan mental

PREVALENCE OF BURNOUT AMONG MEDICAL STUDENTS IN UNIVERSITI SULTAN ZAINAL ABIDIN AND ITS RELATIONSHIP WITH EMOTIONAL INTELLIGENCE

ABSTRACT

The prevalence of burnout among medical students is shown to be high across many countries. Burnout is associated with stress and mental health issues among medical students. Many factors are associated with burnout among medical students. Previous studies also showed that emotional intelligence was protective against burnout. The study aimed to determine the prevalence of burnout among medical students in Universiti Sultan Zainal Abidin (UniSZA) and its association with emotional intelligence and other demographic and academic factors. In total, there were 200 medical students at the Faculty of Medicine UniSZA invited to participate in the study. The students were from year one to year five selected using stratified random sampling. An online Google Form questionnaire consisting of demographic data, a Malay translation of the Copenhagen Burnout Inventory (CBI-M) and the USM Emotional intelligence inventory (USMEQ-i) was distributed using WhatsApp application. Demographic data included gender, race, year of study and self-reported entry CGPA. The outcome was in the form of burnout which was categorised into significant and non-significant burnout based on the CBI-M score. Each factor was analysed using a Chi-Square test to determine its association with burnout. Entry CGPA and EI were analysed using an independent t-test. 182 medical students responded. The response was 91.0%. The distribution of medical students responded was according to the current proportion by gender, race and year of study. The percentage of students categorised as having significant burnout was 36.8% (95% CI 29.8; 44.3). The mean (SD) for EI score was 2.85 (0.52). There was a negative correlation between EI and burnout (r=-0.395) and it was statistically significant (P<

0.001). EI was significantly associated with burnout while gender, race, year of study and entry CGPA were all not significantly associated with burnout. As a conclusion, the prevalence of burnout among medical students in UniSZA was at a moderate percentage compared to that of other countries. EI was found to be protective against burnout. Measures need to be taken to prevent burnout among medical students and may be incorporated into the medical curriculum. EI may be considered as one skill to be developed to reduce burnout.

Keywords: Burnout, medical students, stress, emotional intelligence, mental health

CHAPTER 1

INTRODUCTION

This chapter discusses the medical programme in general and explains why the topic is relevant for this research. It defines burnout based on the World Health Organisation 11th International Classification of disease and defines emotional intelligence based on the definition made by Salovey and Mayer, (1990). The prevalence of burnout and the relationship between emotional intelligence and burnout are also summarised. This chapter also includes the issues that lead to this research, problem statement, gaps in this topic, research question, research objectives, research hypothesis, the significance of the study, justification of the study and scope of the study.

1.1 Background

The medical programme is known to be stressful because of its heavy academic workload and of longer duration than other programmes. The daily academic activities in the medical programme usually occupy the whole day from morning to evening. Besides, during clinical years students are also expected to do on-calls. The programme demands full commitment, dedication and perseverance. Therefore, medical students should prepare themselves academically, psychologically and physically.

Due to the programme expectations, many medical students face problems and difficulties in coping with the programme. Stress, burnout and mental health issues such as anxiety and depression are not uncommon among medical students.

Prevalence of burnout among Malaysia students was shown to be higher among medical students compared to non-medical students (Wing et al., 2018).

1.1.1 Definition of Burnout

According to the 11th edition of the International Classification of Disease (World Health Organization, 2019) burnout is defined as follows:

"Burnout is a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed. It is characterized by three dimensions:

1. feelings of energy depletion or exhaustion;
2. increased mental distance from one's job, or feelings of negativism or cynicism related to one's job; and
3. reduced professional efficacy."

1.1.2 Definition of emotional intelligence

According to Salovey and Mayer, (1990) emotional intelligence (EI) is defined as the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions. Mayer and Salovey, (1997) proposed EI as a cognitive ability that can vary from individual to individual. This cognitive ability is further subdivided into four specific branches, which are organized hierarchically:

1. Perception of emotions – the ability to recognize and identify emotions in the self and others.

2. Use of emotions – the ability to use emotions to facilitate thoughts and solve problems.

3. Understanding of emotions – the ability to understand and interpret blends of emotions.

4. Regulation of emotion – the ability to regulate emotions in self and others.

1.1.3 Prevalence of burnout

Burnout has been increasingly recognised as among the major issues in medical students. Studies on burnout among medical students started to emerge in early 2000 and becoming more frequently studied in the past 10 years. Previous literature showed that the prevalence of burnout was high between 7.4 % to 99.2% (Erchens et al., 2019; Frajerman et al., 2019; Azimi et al., 2019; Farrel et al., 2019; El Masry et al., 2012; Chin et al., 2016; Dyrbye et al., 2008; Imo, 2017; Prins et al., 2007).

1.1.4 Relationship between EI and burnout

Research has consistently shown that emotional intelligence is one of the protective factors against stress and burnout (Görgens-Ekermans and Brand, 2012; Kanellakis et al., 2018; Singh, AP, No date; Swami et al., 2013). This finding is consistent in many countries, in different student population and different types of jobs.

1.2 Research issues

Many factors contribute to burnout in medical students. Among them were stress (Popa Velea et al., 2017), poor learning environment (Dyrbye et al., 2009; Billings et al., 2011; Meriläinen and Kuittinen, 2014; van Vendeloo et al., 2018; Chew

et al., 2019), high academic workload (Yusof et al., 2010, Rahman et al., 2015), poor social support (Boudreau et al., 2004) and mental health (Chunming et al., 2017).

1.3 Problem statement

The main concern of burnout in medical students is its association with negative consequences. It is associated with physical health complaints, mental health issues such as depression (which include suicidal ideation) and anxiety (Dyrbye et al., 2008), substance abuse such as alcohol and drugs (Balch et al., 2009) and poor academic performance (Lyndon et al, 2017). Emotional intelligence, on the other hand, was shown to be protective against burnout (Görgens-Ekermans and Brand, 2012; Kanellakis et al., 2018; Singh, AP, No date; Swami et al., 2013).

1.4 Gaps in the area of research

To date, there were not many published studies looking at the prevalence of burnout in Malaysian medical schools. Based on Google Scholar search, only one published and accessible study was done locally among medical students in Universiti Sains Malaysia (Chin et al., 2016). Therefore, this study will provide another evidence on the prevalence of burnout among Malaysian medical students.

Despite the evidence on the relationship between EI and burnout, many studies focused on healthcare staff and employees in other sectors. Not many studies have been carried out to support the evidence that the relationship also occurs in medical students. Hence, this study also intended to look at the relationship between emotional intelligence and burnout in medical students.

1.5 Research questions

The study aimed to address the following research questions:

1. What is the prevalence of burnout among medical students in UniSZA?
2. What is the level of emotional intelligence among medical students in UniSZA?
3. What is the relationship between burnout and emotional intelligence among medical students in UniSZA?
4. What factors are associated with burnout among medical students in UniSZA?

1.6 Research objectives

1.6.1 General objective

The general objectives of this study were to determine the prevalence of burnout among medical students in Universiti Sultan Zainal Abidin (UniSZA) and its relationship with emotional intelligence.

1.6.2 Specific objectives

The specific objectives were:

1. To determine the prevalence of burnout among medical students in UniSZA.
2. To determine the level of emotional intelligence among medical students in UniSZA.
3. To determine the relationship between burnout and emotional intelligence among medical students in UniSZA.
4. To determine the association between burnout and demographic factors (sex, race), academic factors (year of study, entry CGPA) and emotional intelligence among medical students in UniSZA.

1.7 Research hypotheses

The hypotheses tested in this study were (alternative hypothesis):

1. There is a negative correlation between the level of burnout and the level of emotional intelligence among medical students in UniSZA.

2. There is an association between sex, race, year of study, entry CGPA and emotional intelligence and burnout.

1.8 Significance of the study

The findings of the study will benefit both medical students and the institution training medical students. It will increase the awareness on burnout in medical students. The study will also provide information to the faculty on the prevalence of burnout in its institution. It will also provide information on which students have a higher tendency to develop burnout. The hypothesised negative relationship between emotional intelligence and burnout will help the student selection process. The results will also help the faculty arrange any intervention to prevent burnout in its students. It will also help in the curriculum improvement where training on improving emotional intelligence skills may be considered as part of the curriculum.

1.9 Justification of the study

Previous study has shown that the prevalence of burnout was higher in medical students that that of other university students (Wing et al., 2018). Campbell et al., (2010) showed that burnout might persist for many years from medical students to being medical officers. Since the prevalence of burnout was high among medical students, it is important to prevent burnout and emotional intelligence was found to be protective against burnout. This study will provide and support the evidence that

emotional intelligence is a protective factor against burnout. It is hoped that medical school would consider developing emotional intelligence as part of their training to prevent burnout in its students.

1.10 Scope of the study

This study will only include medical students in the Faculty of Medicine, UniSZA as its subjects. The intention was to do a study within this population and the results will reflect the population. Therefore, the results may not be suitable to be inferred to other population i.e. medical students in other institutions.

From the literature review, many factors might contribute to burnout such as stress, learning environment, psychiatry morbidity and personality. However, this study will only look into factors which are sex, race, year of study, entry CGPA and emotional intelligence. Analysis of factors will only be done at univariate analysis. Regression analysis will not be done although regression will add strength to the association as it will consider the confounding factors. This is because univariate analysis was in line with the syllabus of the Research Project and Thesis course in Masters of Science (Medical Education).

1.11 Thesis structure

This thesis consists of six chapters which are Introduction, Literature Review, Methodology, Results, Discussion and Conclusion. It ends with references and relevant appendices.

CHAPTER 2

LITERATURE REVIEW

This chapter describes burnout and emotional intelligence in general. It reviews previous literature related to the prevalence of burnout, factors contributing to burnout and consequences of burnout in medical students. It also provides some evidence on the relationship between emotional intelligence and burnout and how emotional intelligence is protective against burnout. This chapter also includes different instruments to measure burnout and emotional intelligence.

2.1 Burnout

The description of burnout was first explained by Freudenberger, (1974). He described burnout from his own experience as well as from observation of the staff working at a voluntary clinic where he worked. He summarised that burnout is a state of exhaustion secondary to work with each experiencing burnout as different symptoms and different degrees of presentation. The presentation preceding burnout was a loss of charisma which affects the individual and later workplace performance. Physical signs include exhaustion, fatigue and frequent complaints of illness. Burnout also affects behaviour where the individual presents with anger, irritability, crying and sometimes screaming and yelling. Psychological symptoms such as depression and paranoia can be present. Further consequences include substance abuse. According to Freudenberger, those who are affected by burnout were dedicated and worked too much, too intense and too long. These were also individuals who felt a need to serve society but were being unrealistic and excessive.

Schaufeli and Greenglass, (2001) defined burnout as “a state of physical, emotional and mental exhaustion that results from long-term involvement in work situations that are emotionally demanding”. According to Maslach and Leiter, (2016) burnout is a response to chronic emotional and personal job stressors. They have extensively worked on burnout and suggested a need to develop a valid instrument to measure burnout.

2.2 Prevalence of burnout among medical students

A recent systematic review and meta-analysis of published literature between 2000 to 2017 showed that the prevalence of burnout among medical students was from 7.0% to 75.2%, depending on the country, instruments used and cut off-criteria (Erschens et al., 2019). Frajerman et al., (2019) also did a meta-analysis on burnout among pre-residency medical students. Their review was from published literature between 2010 and 2017. From 24 studies and 17,431 medical students, the overall prevalence was 44.2%.

In a study across 7 medical schools in the US, the prevalence of burnout was 49.6% (Dyrbye et al., 2008). In the UK, the prevalence of burnout among medical students was 26.7% (Cecil et al., 2014) while in a more recent study, the prevalence was 85% (Farrell et al., 2019). Chunming et al., (2017) did a literature review of studies that were published between 1989 and 2016, on the prevalence and factors of burnout among medical students in China. Their study found that the prevalence was between 25.8% and 71.1%. Studies on burnout among medical students in Saudi Arabia showed that the prevalence of burnout was 67.9% (Aboalshamat et al., 2017) and 76.8% (El-Masry et al., 2012). In contrast, the prevalence of burnout among medical students in Oman was low (7.4%) (Al-Alawi et al., 2019).

A local study among medical students in University Sains Malaysia (USM) showed the prevalence of burnout was 67.9% as measured by the Copenhagen Burnout Inventory (CBI) (Chin et al., 2016). Among the component, personal burnout was the highest (81.6%), followed by work-related burnout (73.7%) and client-related burnout (68.6%).

2.3 Factors associated with burnout among medical students

2.3.1 Gender

Chunming et al., (2017) in their literature review on burnout among Chinese medical students found that the prevalence of burnout was higher among males. Similarly, another study in one university in China showed that male students suffer more burn out than females as measured by the emotional exhaustion scale of MBI (Liu et al., 2018). To the contrary, a study by Popa-Velea et al., (2017) found that female was more vulnerable to burnout. Dahlin and Runeson (2007) however showed no significant difference in burnout risk between male and female students.

2.3.2 Personal and social factor

Some personal factors were shown to be associated with burnout among medical students. Dahlin and Runeson, (2007) showed that financial concern and workload were consistent predictors for burnout in the first-year medical students in Sweden. A literature review by Chunming et al., (2017) also concluded that social support and living environment were determinants of burnout. Dyrbye, et al., (2010) who did a large study on medical students in 5 institutions in the US found that good social support from family, faculty members and peers were protective against burnout.

2.3.3 Academic characteristics

Being in the final year was found to be associated with a higher score in the burnout scale (Cecil et al., 2014). Other studies also supported this finding (Aboalshamat et al., 2017; Boudreau et al., 2004; Chunming et al., 2017; Dahlin and Runeson, 2007; El-Masry et al., 2012). A study in Australia showed that the MBI score significantly increased over time from the final year of undergraduate to during their internship (Willcock et al., 2004). At baseline during student time, the scores were mainly lower than the comparable medical practitioners but later steadily increased after starting their internship. Liu et al., (2018) found that students with higher grade had a higher risk for burnout.

2.3.4 Learning environment

In general, good interpersonal relationship and social support were negatively correlated with burnout (Chunming et al., 2017). To support this finding, Boudreau et al., (2004) showed that low support from friends was associated with burnout while good learning environment was found to be protective against burnout (Dyrbye et al., 2010).

2.4 Consequences of burnout

Many studies have shown that burnout had a detrimental effect on the well-being of healthcare workers as well as medical students. Stress, depression and burnout are inter-related. Dyrbye et al., (2008) did a study on 2248 medical students from a few medical schools in the US. They found that 46.5% had depressive symptoms. The study also showed, the higher the degree of burnout, the higher the risk of suicidal ideation. The prediction of suicidal ideation in students with burnout

was dose-related. An increase of 1-point of emotional exhaustion score of MBI will increase the suicidal ideation risk by 5%. A decrease of 1-point of personal accomplishment score will increase the suicidal ideation risk by 6%. Another study also showed that students who had burnout were also more likely to have alcohol abuse/dependence (Jackson et al., 2016).

Similar to that of medical students, multiple studies have shown that burnout was significantly associated with increased risk of mental and physical health among healthcare and non-healthcare staff (Kadkhodaei and Asgari, 2015; Ahola et al., 2005). A study on 3276 employees across all socioeconomic status in Finland found that burnout significantly correlated to major depressive disorder (MDD) and the relationship was higher with more severe burnout (Ahola et al., 2005). The risk of developing MDD was 3.3 fold in those with mild burnout and 15.0 fold in those with severe burnout compared to people with no burnout.

Burnout was also correlated with self-reported poor health as shown in a study among Dutch dentists (Gorter et al., 2000). Dentists who had a high score on MBI tend to have a higher proportion of negative judgment on their health. Among the common health complaints among the high score group were headache and back pain. The high score group also perceived that their professionalism had diminished, had poor concentration and their work was affected by poor personal circumstances. Among surgeons with burnout, depression, suicide, alcohol and substance abuse and marital problems such as divorce were not uncommon (Balch et al., 2009). Their burnout also affected patient safety, quality of care and increased risk of medical errors. Long term effects include reduced productivity leading them to finally quit the job.

Burnout was also associated with a reduced interest in medical career (Grace, 2018), reduced professional efficacy (Puranitee et al., 2019), as well as physical health and psychological well-being (Pagnin and de Queiroz, 2015). Dyrbye et al., (2010) also showed that students who had burnout were more likely to report unprofessional conduct than those without burnout (35.0% vs 21.9%; odds ratio (OR), 1.89). Students with burnout were also found to be less altruistic with regards to the responsibility to society.

The evidence presented in this section suggests that burnout leads to negative effects on students' and healthcare workers' well-being. Students may themselves not aware that they have burnout. It is only apparent when it affects their academic performance or may have unprofessional conduct that may be seen as disciplinary or attitude issues.

2.5 Instruments to measure burnout

Many instruments have been used to measure burnout. Among the commonly used are the Maslach Burnout Inventory (MBI), Copenhagen Burnout Inventory (CBI) and Oldenberg Burnout Inventory (OLBI). MBI is the most widely used inventory as it is among the earliest instrument developed.

2.5.1 Maslach burnout Inventory

Maslach Burnout Inventory (MBI) was developed in 1981 by Maslach and Jackson (Maslach and Jackson, 1981). Following their previous research, they developed an instrument and tested on subjects from various occupations. The inventory initially contained 47 items and was later reduced to 25 items. Final factor analysis arrived at three dimensions of burnout which were Emotional Exhaustion

(EE, 9 items), Depersonalisation (DP, 5 items) and Personal Accomplishment (PA, 8 items). EE items describe the feelings of being emotionally overextended and exhausted. DP items describe an impersonal and loss of feeling towards clients/people that the person is dealing with. PA items describe the feelings of competence and achievement of a person's work with people. Loading of items in EE and DP shows moderate correlation which means these two subscales are related but separate. PA is an independent subscale from EE and DP. High EE and high DP scores correspond to a higher degree of burnout while the reverse is true for PA. MBI has become the most widely used instrument to measure burnout in many studies. However, MBI is a paid instrument and not free to be used for research purposes.

2.5.2 Copenhagen Burnout Inventory

Copenhagen Burnout Inventory (CBI) was developed by Kristensen and colleagues following a PUMA (Project on Burnout, Motivation and Job Satisfaction) study in Denmark and was published in 2005 (Kristensen et al., 2005). CBI was developed as an alternative to MBI because of a few weaknesses that the researchers found in the latter. In MBI, each subscale measures a different dimension of burnout which could not cumulatively measure the burnout construct. When interpreting the MBI, the three dimensions need to be interpreted separately. Although EE and DP were shown to be related in by statistical analysis, the third subscale, PA is a different dimension. Since each subscale is measuring a different dimension of burnout, interpretation cannot be made as a whole and need to be interpreted within its meaning. Some questions in the MBI were found to be not suitable for the sociocultural background of Danish people. The items used in MBI were only suitable to be applied to those working in the paid-work sector which involve human beings.

Because of the stated reasons, Kristensen and colleagues developed another tool suitable for any individual working in any work sector as well as being representative of burnout in which the domains are measuring the same construct (burnout). The final domains in the CBI are personal burnout, work-related burnout and client-related burnout.

Personal burnout is defined as ‘‘The degree of physical and psychological fatigue and exhaustion experienced by the person’’. In general, the items under this domain enquire about the personal experience of tiredness, worn out, exhaustion, both physical and emotion and the implication of these symptoms related to susceptibility to illness and feeling of inability to cope. Work-related burnout is defined as ‘‘The degree of physical and psychological fatigue and exhaustion that is perceived by the person as related to his/her work’’. Items under this domain are focusing on the implication of work on his/her worn out, exhaustion, tiredness, lack of energy for social relationship, burnt-out and frustration. Client-related burnout is defined as “The degree of physical and psychological fatigue and exhaustion that is perceived by the person as related to his/her work with clients’’. This domain is looking at the implication of working with client on his/her tiredness, draining of energy and frustration. The original items and scoring for the CBI are shown in Appendix A.

2.5.3 Oldenburg Burnout Inventory

The Oldenburg Burnout Inventory (OLBI) was developed by Demerouti and Bakker (Demerouti, 2008) and it is used as an alternative to MBI. There are two dimensions measured in OLBI which are exhaustion and disengagement. The exhaustion sub-scale is a generic scale which contains eight items. They include tired for work, a longer time for rest, manageable task, emotionally drained, fit for leisure activities, worn out, tolerable workload and energized. Disengagement sub-scale also

comprises eight items. They are interesting aspect, devaluation of work, mechanical execution, challenging, inner relationship, sick about work task, no other occupation and more engaged. In both dimensions, they are an equal number of positive and negative wording system. The response is from 1 = strongly disagree to 4 = strongly agree. OLBI has been translated into several languages including Malay (Mahadi et al., 2018).

2.6 Emotional intelligence

Another researcher on EI, Goleman, (2001) defined emotional intelligence as the ability to recognize and regulate emotions in ourselves and others. He divided EI into four major domains which are: Self-Awareness, Self-Management, Social Awareness, and Relationship Management. Another important figure in the area of EI, Bar-On, describes EI as an array of interrelated emotional and social competencies and skills that determine how effectively individuals understand and express themselves, able to understand others and relate with themselves and able to cope with daily pressures, challenges and demands (Bar-On, 2010).

According to Mayer et al., (2011) the EI abilities involve four domains.

1. Perception and expression of emotion

First, one should be able to perceive his/her own emotion and express the emotion. For example, one should be able to know/identify his emotion that he/she is happy and coherently express the emotion by smiling or laughing. If one is feeling sad or distress, he/she might express it by crying.

2. Assimilating emotion in thought

After one can identify the emotion, then he/she will use the emotional experience to promote thinking productively and weighing the emotion against other sensations. For example, if one knows that he/she is angry, he/she should think about the anger and how to use that angry emotion to be managed in a productive/positive way.

3. Understanding and analysing emotion

Thinking and analysing emotion involves the ability to recognize emotion, know how the emotion occurs and the reason why it occurs. For example, one would feel angry because he felt injustice or one would feel scared because he/she feels threatened.

4. Reflective regulation of emotion

Now after one can recognize, think, understand and analyse his/her emotion, he should be able to regulate his emotion. Meaning, how to react to his/her emotion (or can be other's emotion). For example, one can identify that he is angry and knows how and why the anger occurs, now he/she has to know how to react to his/her anger. For example, calm himself down or go to some places that may relieve his anger.

Goleman elaborated this model in his book and described the concept into five domains (Goleman, 2006).

1. Knowing one's emotions.

This is self-awareness of one's emotion and being able to recognize one's feelings that will give insight to self-understanding.

2. Managing emotions

Being able to handle one's feelings is an important skill in EI. This skill is needed to counteract negative emotions and to quickly get back to normal acceptable emotions.

3. Motivating oneself

Mastering in managing emotions is important to develop a focus on one's goals and motivate oneself to be more productive and effective in work.

4. Recognizing emotions in others

This domain describes the concept of empathy which is an important skill of social awareness. Being sensitive to the feelings of others is crucial for the development of altruism towards others and awareness of other people's needs.

5. Handling relationship

As the first 3 domains are related to one's own emotions, domains 4 and 5 are the skills in recognizing the emotions of others and how to react to those emotions. Following an understanding of one's own emotion, then understanding other's emotion, the handling and reaction of both parties' emotion appear crucial in the development of interpersonal relationship and leadership.

2.7 The effect of emotional intelligence

Emotional intelligence (EI) is one of the predictors of success in career and life. It is in fact, a better predictor than cognitive intelligence (IQ) which is the ability to think and make decisions. In contrast to IQ which we are born with, EI can be improved by training. EI is not only an important skill for workers, it is also important

for students. EI has been associated with better attitude, behaviour and outcomes of employees in many sectors.

EI is not only associated with burnout, it also affects job performance and organizational commitment (Moon and Hur, 2011). Carmeli, (2003) did a study on 262 senior managers. He measured their attitude by looking at their career commitment, job involvement, affective commitment and continuance commitment and their altruistic behaviour. Job performance was measured as overall performance, ability to get along with others, completing tasks on time, quality of performance, achievement of work goals and intention to quit. Job satisfaction was also measured. His study found that, compared to senior managers with low EI, those with high EI were more satisfied with their jobs, had more commitment towards their organization and their career, were more likely to have effective control of work-family conflicts, displayed more altruistic behaviour, performed their job better and had less intention to quit.

Despite some evidence of EI on job performance, Cote and Miners, (2006) in their article argued the inconsistent results of EI on job performance as job performance may also be affected by personality trait and cognitive ability. However, they acknowledged the role of EI as one of the contributing factors in successful job performance.

As the quality of care, patient satisfaction and patient safety are getting more important in healthcare services, people are looking into these measures and how they relate to the physician's burnout. Panagioti et al., (2018) looked into this issue in their systematic review and meta-analysis. They found that burnout in physicians was associated with an increased risk of reduced patient satisfaction (OR, 2.28), poorer quality of care (OR, 2.31) and patient safety incidents (OR, 1.96). Fariselli et al.,

(2008) also showed a positive impact of EI on job performance of healthcare workers. EI also mitigated stress which leads to reduced effectiveness. EI was also associated with increased psychological well-being and reduced depression among resident doctors (Lin et al., 2016).

Kaur et al., (2013) studied the predictors of caring behaviour among nurses in Malaysia which included spiritual intelligence, emotional intelligence and burnout. They found that EI had a negative relationship with burnout and a positive relationship with caring behaviour. Burnout had a negative relationship with caring behaviour. Other than EI, spiritual intelligence played a role in EI and caring behaviour (positive relationship). This study provides evidence that EI, spiritual intelligence and burnout play some role in the caring attitude of healthcare workers.

Despite all the positive relationships between EI and better outcomes in workers, Zeidner et al., (2004) argued that the conclusion should be made with caution. EI screening may be useful in jobs where emotions are much involved and where interpersonal and social communication are crucial. Despite that, a better measurement that is more tailored to the job description is recommended. Considering this argument, there may be some role of IE in the medical field where interpersonal and social communication is important is the individual's day to day life. Understanding emotions are very important when dealing with patients, relatives and other medical staff. However, there should be a better tool to measure this EI requirement so that it can be more predictive for those working in the medical field.

For students in general, the relationship between EI and academic success showed conflicting results. Although EI was a poor predictor for overall academic success, when academic success was viewed from the angle of intrapersonal communication, adaptability and stress management abilities, EI seemed to play a

role (Parker et al., 2004). A study by Pope et al., (2012) on psychology students in the UK also showed similar results. EI was not a predictor of the overall mark. However, there was positive weak relationships with adaptability, empathy, organisational awareness and building bonds. A study among medical students showed that EI did not predict examination performance (Austin et al., 2005). Austin et al., (2007) found that EI was not associated with the overall academic performance but associated with better class functioning in problem-based learning class where it required high interaction between students. Medical students with higher EI showed also showed a higher score in optimism subscale of the Schutte Self-Report Emotional Intelligence (SSREI) instrument (Naeem et al., 2014). In terms of examinations results, a local study among medical students in Universiti Putra Malaysia showed that EI score was associated with better continuous assessment and final examination performance although the association was minimal (OR 1.01 and 1.07 respectively) (Chew et al., 2013). Ranasinghe et al., (2017) also found that more students with higher EI passed the final year clinical examinations.

Does EI have a role in medicine? A review of controlled trials looking at the role of EI in medicine was done on published literature between 1980 and 2009 (Arora et al., 2010). Higher EI was positively related to a better doctor-patient relationship, increased empathy, improved teamwork and communication skills, better stress management, better leadership and commitment to the organisation. Recently, EI has been considered to be one of the values in student selection for medical school admission. Although EI does not predict intellectual academic performance, it predicts interpersonal academic performance such as 'bedside manners' in medical students (Libbrecht et al., 2014).

The notion of EI not only attracts interest in the field of employment, it is also getting more attention in the area of medical education. Since EI can be trained and

improved, there is a role of EI development in medical education. Training in the area of EI may help students cope with the highly socialised environment. However, the addition of EI training in the curriculum should be planned with clear objectives and outcomes, relevant to the context of medical education, full integration in the programme, development of staff in EI and appropriate evaluation (Johnson, 2015).

Considering its importance, the majority of medical schools including in Malaysia have included an interview as one of their methods in selecting medical students. Many have started multiple communication skills stations to assess many areas of personal and interpersonal skills. Despite that, assessment of EI is not taken as a sole criterion in student selection but is used as a complement to other selection criteria. Carr (2009) found that EI score did not correlate with medicine entrance examination score, probably because the entrance exam did not focus only on EI. Furthermore, studies on the relationship between EI and academic performance are also contradicting. EI test at admission to medical school also did not predict future academic performance (Humphrey-Murto et al., 2014). However, EI predicts those who can communicate effectively and show interpersonal sensitivity (Libberecht et al., 2014). Cherry et al., (2014) also agreed that it is difficult to measure EI especially for those applying to medical school because there is no suitable instrument as yet to measure these skills appropriate for medical students and future doctors. The result of inappropriate selection may lead to choosing the wrong persons in the field.

2.7.1 How emotional intelligence affects burnout

EI works best in occupations which require frequent interpersonal interaction where emotional regulation is very important (Joseph and Newman, 2010). In this type of occupation, EI will affect job performance. The way how EI can prevent burnout is by how one controls his/her emotions (Goren, 2018). This skill is very

important in a doctor and as a worker who involves managing human beings in general. EI can help an individual interpret and respond to a situation that might lead to a stress response in the brain (Dhanak, 2017). EI helps to control this stress response. EI also modifies how an individual responds to negative emotions such as anger, sadness, anxiety and scared (Szczygiel and Mikolajczak, 2018). Excessive negative response will lead to burnout. One of the main keys in EI is understanding the emotion of self. This includes the ability of an individual to interpret his/her feelings and know when to take action or help, for example, to prevent burnout (Hiles, 2017). This is one of the ways how EI can prevent burnout.

2.8 Relationship between stress, EI and burnout among medical students

Studies have proven the relationship between EI and stress as well as burnout among healthcare workers. What about in medical students? Similar to the study in healthcare workers, EI was also associated with lower levels of anxiety, stress, burnout and higher levels of satisfaction with life in undergraduate students (Cazan and Năstasă, 2015). Other studies also supported the negative relationship between emotional intelligence and perceived stress in students across many studies in many countries (Gupta et al., 2017; Mousa et al., 2017; Ranasinghe et al., 2017; Saddki et al., 2017; Hasan and Ansari, 2016; John and Al-Sawad, 2015; Forushani and Besharat, 2011; Por et al., 2011; Pau et al., 2004). Arora et al., (2011) tried to correlate, through clinical evidence of acute stress and EI. The acute stress was represented by students doing surgical tasks in surgical lab simulator. Heart rate was measured in the students. The heart rate was then compared with EI score. The study showed that higher IE was associated with a higher heart rate during the task but better after-task recovery.

Despite many studies on the relationship between EI and stress, studies on the relationship between EI and burnout among medical students is lacking. So far, published studies that showed the relationship between EI and burnout were among healthcare workers e.g. nurses (Gorgens-Ekermans & Brand, 2012) and doctors (Weng et al., 2011) and they showed a similar negative relationship. Among teachers, a study found that there was a significant relationship between emotional intelligence and burnout Syndrome (r = -0.627) (Saiiari et al., 2011). Among non-medical students, EI was consistently showed to have a negative relationship with burnout. A negative relationship was shown among architecture students in Iran (Erbil, 2016), student nurses in Korea (Ko, 2015) Iranian university students (Sadoughi et al., 2017) and student teachers in Iran (Roohani, 2016).

2.9 Instruments to measure emotional intelligence

A few instruments have been used to measure EI. Among them are the Emotional Intelligence Scale (EIS), Mayer, Salovey and Caruso Emotional Intelligence Test (MSCEIT), Bar-On Emotional Intelligence Inventory and the Malaysian developed USM Emotional Quotient Inventory (USMEQ-i). Only EIS, MSCEIT and USMEQ-I will be discussed in this section.

2.9.1 Emotional Intelligence Scale (EIS)

The Emotional Intelligence Scale (EIS) was developed by Schutte et al., (1998) based on the model proposed by Salovey & Mayer (1990). The initial 62-items scale was tested on 346 individuals from different backgrounds. Analysis of the results led to its 33 items which assessed the skills related to EI. It is a self-administered questionnaire and users responded to each item using a Likert scale, from 1 to 5, to rate the agreement with the items. Internal consistency, test-retest reliability,