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Factors Contributing towards Malaysian Technical University (MTU) Students' Mental Health

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ABSTRACT

Mental health is related to depression, anxiety and stress, all of which affect the individual. Without good mental health, developing one's potential is difficult. Therefore, identifying the main factors affecting mental health is important to ensure the individual is capable of handling pressure and stress to accomplish given tasks well. Even though much research has been done to determine the factors that contribute to mental health, findings on the cause-effect relationship between the factors and mental health specific to engineering students is limited. Thus, this paper addresses the factors that are directly related to the mental health of students in technical universities in Malaysia. The survey research design was used in this study. The sample consisted of 379 students from three Malaysian technical universities (MTU), namely Universiti Tun Hussein Onn Malaysia (UTHM), University Technical Malaysia Melaka (UTeM) and Universiti Malaysia Perlis (UniMAP). The Depression, Anxiety and Stress Scale 21 (DASS-21) inventory and a questionnaire developed by the researchers were used to measure the students' mental health based on three elements (depression, anxiety and stress) and the factors affecting mental health (self-evaluation, living style, health, learning environment, parents, peers, lecturers, academic factors, financial factors and the lost). The data collected were analysed using frequency, percentage, mean and multiple linear regression. Based on the analysed data, a regression equation for the relationship between the various factors that contribute to mental health level was formulated. Counsellors and lecturers may use the developed formula as a reference when dealing with mental health issues affecting engineering and non-engineering students.

Keywords: Anxiety, depression, Anxiety and Stress Scale 21 (DASS-21), factors, mental health, stress

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INTRODUCTION

Mental health is a circumstance of well-being in which the individual realises his or her own ability, can cope with the normal stresses of life, can work productively and is able to make a contribution to the community (World Health Organisation (WHO), 2012). Mental health is a very significant aspect of each phase of human life and is as important as physical health (Lee & Ahmad, 2016) but many tend to overlook this aspect of their well-being. In fact, mental health is directly related to daily life activity performance of not only children and youth, but adults and the elderly. Based on the definition of mental health, each individual must be aware of his or her capability and ensure that he/she can handle pressure well, work productively and be able to contribute to society (WHO, 2012). Mental health deficiencies can lead to common social problems that often occur in Malaysia, such as nervousness or feeling afraid for no reason, inability to sleep, poor achievement in learning and the desire to be alone. Statistics show that 1% of the total Malaysian population of 28.3 million persons struggle with mental illness and 20% are faced with mental health problems, and the most common mental problems are depression, stress and anxiety (Bernama, 2013).

This finding is in line with research findings on the mental health of engineering students, which indicated that about 1% of them tended to have a specific intervention in depression, about 18% tended to have a specific intervention in anxiety, and 1.5% tended to have a specific intervention in stress (Lee & Ahmad, 2016). This outcome seems to be due to the current education system in Malaysia, which requires students to work hard and put in more effort to achieve the high demands of the system (Ferlis, Rathakrishan, & Ismail, 2009). As a result, students feel pressured. In addition, the changing urban society has directly impacted on students' mental health. Thus, the Malaysian government needs to look into mental health issues seriously, following the release of suicide case figures by the Health Ministry recently (Lee & Ahmad, 2016).

Stress is commonly experienced by university students. Mental health problems among students are increasing, and this is worrying. Action is needed as university students are the future leaders of the country (Lee & Ahmad, 2016). The key cause is pressure exerted by academic and environmental factors that can result in depression, anxiety, insomnia and attempted suicide. Consequently, the development and productivity of the students are affected. Students' mental health needs to be addressed seriously to avoid unwanted situations from happening. According to WHO (2012), the issue of mental health problems is expected to increase by 15% by 2020. Zivin, Eisenberg, Gollust and Golberstein (2009) proved that mental health problems among students are increasing every year. Students studying in institutions of higher education tend to experience serious mental health problems at a greater rate than their peers who are not students (Hamdan-Mansour, Halabi, & Dawani, 2009). This was also reported by

Chen et al., (2011), who stated that second-year students in institutions of higher learning experience high stress levels.

Engineering and non-engineering students suffer from different mental problems. Al-Qaisy (2011) stated that students pursuing the humanities (science, education, literature, administration and finance) having high depression compared to students in scientific fields (science and engineering). In addition, Ali et al. (2014) stated that the number of engineering students who suffered from depression was higher compared with that of medical students. Regardless of programme, the mental health of students in institutions of higher learning should be taken seriously and help given to those affected in order to enhance their academic achievement. This study was conducted to identify the dominant factors affecting the mental health of engineering students. The findings of this research allowed a model showing the relationship between the various factors that contribute to mental health level to be constructed.

METHODOLOGY

The research design for this study was the survey method using the quantitative approach. The advantage of conducting a survey is that the data can be collected directly from respondents and the results can be generalised to the population. The samples consisted of undergraduates from three Malaysian technical universities (MTU), namely Universiti Tun Hussein Onn Malaysia (UTHM), Universiti Malaysia Perlis (UniMAP) and the Technical University of Malaysia Melaka (UTeM). A total of 379 students from engineering and non-engineering faculties were selected randomly as respondents. The instrument used for data gathering comprised the 21-item DASS inventory (Lovibond & Lovibond, 1995) and a questionnaire developed by the researchers.

The Malay version DASS inventory was used to measure mental health by investigating the presence of three mental health states namely, depression, anxiety and stress. The DASS inventory consisted of 21 items that were translated and tested to fit the characteristics of Malaysian students (Psychology Foundation of Australia, PSY, 2013). The DASS inventory has been widely used to measure psychological parameters in many studies among clinical and non-clinical populations. Also, it has been broadly used as a research tool in measuring psychological aspects similar to those of this study (PSY, 2013). A set of cut-off scores developed by Lovibond and Lovibond (1995) was used to describe the level of mental health.

Also used was a questionnaire developed by the researchers consisting of 57 items to measure 10 factors commonly found to affect mental health namely, self-evaluation, living style, health, learning environment, parents, peers, lecturers, academic factors, financial factors and the lost. These factors were identified through a systematic literature review followed by a pilot test

using the Cronbach's Alpha value as the reliability indicator. The overall Cronbach's Alpha value for this questionnaire was 0.79, which indicated that the internal consistency was quite favourable. The questionnaire was also validated by four experts comprising a psychologist, counselor, doctor and Malay language practitioner.

The data collected were analyzed using frequency, percentage, mean, the Mann Whitney U Test and multiple linear regression. Descriptive statistics were used to determine and describe students' mental health level and the dominant factors affecting mental health. The Mann Whitney U Test was used to identify the difference in mental health scores between engineering and non-engineering students, while multiple linear regression was used to construct an equation for describing the relationship between the various factors that were found to contribute to mental health level.

RESULTS AND DISCUSSION

To determine the students' mental health, the data collected were analysed based on three mental health states, depression, anxiety and stress. The level of mental health was measured as five levels: normal, mild, moderate, severe and extremely severe. Those indicating normal, mild and moderate levels would need general intervention, but those indicating severe and extremely severe levels would need specific intervention for their mental health problem.

Table 1 shows the mental health levels of the students surveyed. The findings indicated that the majority of the students enjoyed normal mental health in the three different mental health states. However, about 11.3% of the students tended to need specific intervention for depression, about 22.9% for anxiety and about 4.8% for stress. The Mann Whitney U test was used to analys the differences in mental health levels between engineering and non-engineering students (see Table 2). The findings showed no significant difference between engineering and non-engineering student in the three states of mental health. The readings were as follows: stress ($Z=-0.488$, $p=0.626$), anxiety ($Z=-0.171$, $p=0.864$) and depression ($Z=-0.679$, $p=0.497$). These findings were supported by Lee and Ahmad (2016), who reported that the level of mental health among engineering students and engineering students in universities were was about the same i.e. normal. However, the findings of the study by Shamsuddin et al. (2013) and Bayram and Bilgel (2008) showed that the mental health among students to be only moderate. Even though the findings indicated that the level of mental health among the students tended to be normal, specific monitoring and intervention should be taken for those indicating severe and extremely severe levels. Such alarming levels may be due to a heavy workload, worrying about exams, financial problems, social factors and pressing circumstances of life.

Table 1
Students' mental health levels

Level of Mental Health	States of Mental Health					
	Depression		Anxiety		Stress	
	f	%	f	%	f	%
Normal	235	62.0	151	39.8	224	59.1
Mild	56	14.8	82	21.6	62	16.4
Moderate	45	11.9	59	15.6	75	19.8
Severe	35	9.2	52	13.7	17	4.5
Extremely Severe	8	2.1	35	9.2	1	0.3
Total	379	100	379	100	379	100

Table 2
Mental health level between rngineering and non-engineering students

	States of Mental Health		
	Depression	Anxiety	Stress
Mann-Whitney U	15985	16505	16180
Wilcoxon W	44905	45425	45100
Z	-0.679	-0.171	-0.488
Asymp. Sig. (Two-tailed)	0.497	0.864	0.626

To examine the dominant factors affecting mental health, the mean and standard deviation were applied as shown in Table 3. The findings indicated that the top five dominant factors in descending order were personal health condition, peers, the lost, parents and self-evaluation. Personal health condition in this study refers to bad health habits, for example, smoking and alcohol addiction. The findings also indicated that most of the respondents felt depressed when a learning environment was uncomfortable or they were having relationship problems with parents, friends and lecturers. In line with this finding, Hoo (2008) also found that conflict with peers, parents, faculty and lecturers and a variety of social activities also affected the mental health of students. However, Ooi (2002) found that environmental factors were the contributor to stress among students rather than academic factors, while Mahfar, Zaini and Nordin (2007) identified career issues as the major cause of stress among students, followed by academic factors and environmental factors.

Table 3
Dominant factors affecting mental health

Factors	Mean	Standard Deviation	Ranking
Self-Evaluation	0.79	0.23	5
Living Style	0.51	0.28	8
Health	0.90	0.23	1
Learning Environment	0.53	0.30	9
Parents	0.80	0.22	4
Peers	0.85	0.24	2
Lecturers	0.65	0.33	6
Academic factors	0.59	0.25	7
Financial factors	0.49	0.24	10
The Lost	0.85	0.24	2

To formulate a model to portray the relationship between the various factors that contribute to mental health among the students, multiple linear regression analysis was applied for the three states of mental health. Correlation analysis was conducted to examine the relationship between the factors and the mental health states. The Pearson correlation analyses showed that the factors were positively correlated and statistically significant to the three mental health states.

Multiple regression analysis was run to predict the occurrence of depression among the students based on these factors: self-evaluation, living style, health, learning environment, parents, peers, lecturers, academic factors, financial factors and the lost. These variables were statistically significant in predicting depression among the students, $F(10,368)=14.059$, $p<0.05$, $R=0.526$. However, only three variables were statistically significant with the prediction, $p<0.05$, namely self-evaluation, peers and lecturers. After correcting the model, the regression equation to predict depression was:

Depression = 14.24 – 6.56
Self-evaluation - 3.59
Peers -1.66 Lecturers

Multiple regression analysis was also run to predict anxiety among the students based on the same factors. These variables were statistically significant in predicting depression among the students, $F(10,368)=6.916$, $p<0.05$, $R=0.398$. However, only one variable was statistically significant with the prediction, $p<0.05$, which was self-evaluation. After correcting the model, the regression equation to predict anxiety was:

Anxiety = 12.95 – 4.87
Self-evaluation – 2.60 Peers

Multiple regression analysis was run again to predict stress among students based on the same factors. These variables were

statistically significant in predicting stress among the students, $F(10,368)=5.557$, $p<0.05$, $R=0.362$. However, only two variables were statistically significant with the prediction, $p<0.05$, which were self-evaluation and peers. After correcting the model, the regression equation to predict stress was:

Stress = 10.11 – 5.44 Self-evaluation

CONCLUSION

Overall, the level of mental health among students from three universities of MTU was that of normal. However, there were also students who indicated severe and extremely severe mental states. This occurrence must be prevented by all parties by seriously addressing mental health issues among students in institutions of higher learning. In addition, each student must also address the factors that affect mental health to ensure his or her well-being condition in order to face and successfully overcome the challenges ahead. Counsellors and lecturers may refer to the regression equation for depression, anxiety and stress provided here in order to manage mental health problems among their students. It should be noted that all students regardless of discipline can suffer from different levels of mental illness as the results showed that there was no significant difference between mental health problems suffered by engineering and non-engineering students.

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