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A Cross Sectional Study To Compare Stress Levels Among Students Between Two Universities In Cyberjaya

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ABSTRACT

Introduction: Stress is known to be a neurological and physiological reaction of the body to adapt to a new condition. Since early in the year 2020, social life has changed for many people around the world. Government restrictions and new social norms led to a reduction in mobility. An effort to understand stress in isolated or quarantined individuals during the COVID-19 pandemic is important. The impact of the Covid 19 pandemic on university students has caused an increase in their perceived stress due to reasons such as isolation, online classes, network problems and peer and parental pressure. Our study aims to determine the prevalence of stress among university students in Cyberjaya, to compare the stress levels among students between the University of Cyberjaya and Multimedia University, and to determine the relationship between stress levels and academic performance among university students.

Method: A cross sectional study which was conducted among university students from the University of Cyberjaya and Multimedia University. The participants were chosen to take part in this study through convenient sampling. The chosen participants were then required to fill out a self-administered questionnaire that was distributed online.

Results: There were a total of 161 respondents to our questionnaire, with a mean age of 21.46 ± 1.63 years. The majority of the respondents for our study were females (61.5%). The prevalence of low, moderate and high perceived stress was 15.1%, 66.7% and 18.3%, respectively among students in University of Cyberjaya whereas the prevalence of low, moderate and high perceived stress in Multimedia University students was 11.8 %, 67.6% and 20.6 %, respectively. There was no significant difference between the stress levels of University of Cyberjaya students and Multimedia University students ($p > 0.005$). In both universities, there was no relationship between stress levels and academic performance.

Conclusion: This study revealed that most of the students from University of Cyberjaya and Multimedia University appeared to be moderately stressed. There were no differences between the stress level among the students from University of Cyberjaya compared to the students from Multimedia University ($p > 0.005$). There was no relationship between the stress levels and academic performance among the university students from both universities ($p>0.005$).

Keywords: Stress, academic achievements, university students, factors of stress

INTRODUCTION

Stress is known to be a neurological and physiological reaction of the body to adapt to a new condition [1]. Since early in the year 2020, social life has changed for many people around the world as a result of the pandemic, with government restrictions and new social norms leading to a reduction in mobility [2]. The impact of the Covid 19 pandemic on university students has caused an increase in their perceived stress due to reasons such as isolation, online classes, network problems and peer and parental pressure [3].

Challenges that are commonly associated with the transition to adulthood and frequent economic and material difficulties in university students have caused an impact on them during the Covid-19 lockdown [4]. The lockdown and closure of universities has caused stress, depression, and anxiety due to the adaptation needed to undergo alternative teaching methods [5] [6]. Social life were also not spared, where friendships, group studies and emotional support have been affected as well [7]. Negative mental health trajectories are related with several factors such as Covid-19 specific worries, isolation from social network, lack of interaction and emotional support as well physical isolation [7]. Another contributing factor to stress was the students' lack of preparedness to adapt to online distance learning, with many struggling to cope especially where courses required hands-on exposure. [8].

Past research has shown that there are significant levels of stress among undergraduate students. [9]. A group of students that are more likely to be exposed to stress are first-year university students [10] [11]; they are also the ones who experience the highest levels of stress [12]. The higher levels of stress have been attributed to the life transition that takes place in the early years of university life [10].

Events that cause stress are known as stressors. A decrease in academic performance and an increase of psychological distress occurs when the students fail to cope with stressors faced during the transition period [13]. There are several causes of stress for a student such as failure in academic or sports, financial problems, health problems or loss of a family member or close friends [14]. In a cross sectional study conducted among medical students in International Islamic University, Malaysia, fear of failing, examination and grades, and feeling of incompetence were the three sources of stress which were significantly associated with stress [15]. Another study conducted by Jia et al., 2018 revealed that the common sources of stress were interpersonal sources, followed by environmental sources and academic sources [16].

The objective for our research is to determine the prevalence of stress among university students, to compare the stress level between different universities and to study the relationship between stress levels and academic achievements of the students.

MATERIALS AND METHODS

This cross-sectional study was conducted in two universities located in Cyberjaya, Selangor, Malaysia. The target group was undergraduate students.

The respondents of the study were students pursuing bachelor's degree from the age of 18 to 28, Malaysian and international students. This study excluded students who were married. Marriage have been shown to be a confounding factor in studies observing stress, where unmarried individuals score higher on measures of stress [17].

The sample size was calculated using the two proportions formula [18]. Based on Eliza et al. [19], the prevalence of stress among university

students was 54%, alpha level was 5% while power was 80%. The sample size calculated was 210. The participants from each university were then selected using nonprobability sampling.

Data for this study was collected using an online questionnaire. Participation of students was voluntary. The questionnaire consists of four sections, which is section A; Participant's Contact Details, section B; Socio Demographic Information, section C; Perceived Stress Scale (PSS) - 10 items [15] and section D; Academic Information that inquired about the GPA of the participants. The Perceived Stress Scale (PSS-10) was originally developed by Cohen et al in 1983 to determine the perceived stress, sources of stress and the copying mechanism to stress in a particular population [20]. The internal (intra-observer) reliability of the PSS 10 is good with a Cronbach alpha which ranges from 0.78 to 0.91 and the range of test-retest reliability coefficients is from 0.55 to 0.85 [21].

The data collected was analyzed by using Jeffrey's Amazing Statistics Program (JASP). A descriptive statistic used to state the prevalence of low, moderate and high perceived stress from both universities. The Chi- square test was used to compare the stress levels between students in both universities. The Chi-square test was also used to determine the relationship between stress level and academic achievement among university students from both universities.

RESULTS

Table 1: Distribution of Sociodemographic Factors of Respondents

Sociodemographic Factors		Frequency (n)	Percentage (%)
Name of university	Multimedia University	68	42.2
	University Of Cyberjaya	93	57.8
Gender	Female	99	61.5
	Male	62	38.5
Age	18	7	4.3
	19	13	8.1
	20	24	14.9
	21	28	17.4
	22	51	31.7
	23	26	16.1
	24	10	6.2
	26	1	0.6
	28	1	0.6
Courses	**Multimedia University**		
	Allied Health Science	1	1.5
	Analytic economics	2	3.0
	Business and accounting	18	26.5
	Cinematic Arts	1	1.1
	Creative multimedia	14	20.6
	Engineering	5	7.4
	Finance	1	1.1
	Financial engineering	1	1.1

	Information technology and computer science	14	20.6
	Strategic communication	11	16.2
	University of Cyberjaya		
	Allied Health Science	5	5.4
	Bachelor of homeopathic medical science	1	1.1
	Biomedical engineering technology	1	1.1
	Engineering	1	1.1
	Bachelor of Medicine and Bachelor of Surgery	66	71.0
	Pharmacy	2	2.2
	Occupational safety and health	4	4.3
	Psychology	13	14
TOTAL		**161**	**100**

Overall, we received a total response of 161, of which 68 were from Multimedia University and 93 were from University of Cyberjaya. The mean and standard deviation of their age were 21.46 ± 1.63.

The majority of the respondents were females (61.5%). In terms of the course attended, the majority were from the Business and Accounting (26.5%) course for Multimedia University and Bachelor of Medicine and Bachelor of Surgery (71%) for University of Cyberjaya.

Table 2: The Prevalence of Stress among university students in Cyberjaya

Score	University of Cyberjaya		Multimedia University	
	Number of students (F)	Percentage (%)	Number of students (F)	Percentage (%)
Low perceived stress	14	15.1	8	11.8
Moderate Perceived stress	62	66.7	46	67.6
High Perceived stress	17	18.3	14	20.6
Total	93	100.0	68	100.0

For the University of Cyberjaya, the prevalence for low perceived stress was 15.1%, moderate perceive stress is 66.7% and high perceived stress was 18.3%. For Multimedia university, the prevalence of low perceived stress was 11.8 %, moderate perceive stress was 67.6% and high perceived stress was 20.6 %. Overall, this study revealed that most of the university students from

both universities, University of Cyberjaya (62%) and Multimedia University (66.7%) were perceived to be moderately stressed.

Table 3: Comparison of Stress Level Among University of Cyberjaya and Multimedia University Students. (Chi-Square)

Stress Level	Number of Students		Total N (%)	Chi Square	P Value
	University of Cyberjaya N (%)	Multimedia University N (%)			
Low Perceived Stress	14 (63.6)	8 (36.4)	22 (100)	0.425	0.808
Moderate Perceived Stress	62 (57.4)	46 (42.6)	108 (100)		
High Perceived Stress	17 (54.8)	14 (45.1)	31 (100)		
Total	93	68	161		

As detailed in Table 3, there was no significant difference in stress levels among students of the two universities (P>0.005).

Table 4: Relationship Between Stress Level and Academic Achievement in University of Cyberjaya students. (Chi Square)

University of Cyberjaya						
GPA	Low Perceived Stress N (%)	Moderate Perceived Stress N (%)	High Perceived Stress N (%)	Total N (%)	Chi Square	P Value
3.50-4.00	4 (23.5)	10 (58.8)	3 (17.6)	17 (100.0)	7.924	0.244
3.00-3.49	10 (19.2)	31 (60.0)	11(21.0)	52 (100.0)		
2.50-2.99	0 (0)	20 (87.0)	3 (13.0)	23 (100.0)		
2.00-2.49	0 (0)	1 (100.0)	0 (0)	1 (100.0)		

0.00-1.99	0 (0)	0 (0)	0 (0)	0 (0)		

Table 5: Relationship Between Stress Level and Academic Achievement in Multimedia University Students. (Chi-square)

Multimedia University						
GPA	Low Perceived Stress N (%)	Moderate Perceived Stress N (%)	High Perceived Stress N (%)	Total N (%)	Chi Square	P Value
3.50-4.00	3 (8.8)	20 (59)	11 (32.4)	34 (100)	7.398	0.286
3.00-3.49	3 (14.3)	15 (71.4)	3 (14.3)	21 (100)		
2.50-2.99	1 (11.1)	8 (88.9)	0 (0)	9 (100)		
2.00-2.49	0 (0)	0 (0)	0 (0)	0 (0)		
0.00-1.99	1 (25)	3 (75)	0 (0.0)	4 (100)		

As detailed in Tables 4 and 5, there was no relationship between stress and academic achievement among both University of Cyberjaya and Multimedia University students ($P > 0.05$).

DISCUSSION

Our study aimed at determining the prevalence of perceived stress levels among university students in Cyberjaya. As observed from the study, the majority of the students from University of Cyberjaya (UoC) and Multimedia University (MMU) have moderate perceived stress with a prevalence of 66.7% and 67.6% respectively followed by high perceived stress (18.3% and 20.6%) and lastly low perceived stress (15.1% and 11.8%). In comparison with another study among 124 students from a private university in Malaysia, it was also noted that majority of the respondents fell under the moderate level (78.2%) of stress category followed by those in the high-level (12.9%) and only a small number of respondents were in the low-level (8.9%) category [22].

However, a study conducted among university students in Ethiopia showed a different pattern in the level of stress whereby the majority of the students had moderate stress score (61.1%) followed by mild stress score (32.6%) and finally severe stress score (2.3%) [23]. Another study among university students in southwestern Saudi

Arabia revealed that the high perceived stress score among health care colleges (13.6%) were more than the high perceived stress score of a non-health care colleges respectively (12.0%) [24] Our study showed a different pattern which is the high perceived stress score was higher in Multimedia University (20.6%), a university focused on multimedia, information and communication technology courses, compared to University of Cyberjaya which is a university focused on healthcare services-related courses (18.3%).

According to our study, there is no difference in stress levels between University of Cyberjaya and Multimedia University. The reason for stress could be that some students are unable to regulate themselves well when facing high levels of academic stress [25], with the major source of stress are mostly stemming from difficulty in concentrating due to the presence of excessive information, the pressure of heavy workload, and examinations that cause harmful effects on their health and performance [26]. Other than that, psychological distress was also one of the factors of perceived stress among French college students [27]. The stress that the students undergo could also be due to the type of course that students are doing due to the demands of the course [28].

With most of the respondents coming from medical students from UoC, some of the causes of stress include having examinations, large amounts of content to be learnt and not enough medical skill practice [29] while another study theorized that burnout, a measure of distress was common among residents and physicians in practice and originated which still studying in medical school [30]. Studies among undergraduate students have also found that medical students perceived more stress than non-medical students [31][32][33]. While some factors of non-medical students face stress due to their employment problem score is significantly higher than medical students, [34] however, medical students were at greater exposure to psychological stress compared to their age-matched peers [34].

Based on a study among undergraduates from Kenya, the relationship between stress and academic performance were statistically significant ($p<0.05$) [35]. This could be due to high amount of perceived stress are known to diminish the cognitive functioning of students [36] with the cause of stress varying such as having too much workload, busy schedule, language barrier or lack of interest being the main reason for affecting academic performance [37]. Students with low resourcefulness tend to have their academic performance impacted when facing stress [38]. However, our result showed there was no relationship between stress and academic achievement between University of Cyberjaya and Multimedia university and it was not statistically significant ($p>0.05$). Our findings are similar with a study among university students in Pakistan where perceived stress was found to have significant negative correlation with academic performance of students [39].

The limitation of the study is the sample size. We were not able to achieve as many respondents from Multimedia University compared to University of Cyberjaya. Other than that, there was a lack of variety among respondents between the courses, with most respondents coming from two courses only, thus potentially limiting the generalizability of our findings.

CONCLUSION

This study revealed that a majority of the students from University of Cyberjaya (66.7%) and Multimedia University (67.6%) appeared to be moderately stressed. There is also no difference between the stress level among the students from University of Cyberjaya with the students from Multimedia University ($p > 0.005$). There is no relationship between the stress level and

academic achievements among the university students from both universities ($p > 0.005$). In general, university life can be stressful, especially during COVID-19 crisis thus, students should adapt and learn techniques that can manage their stress. However, adequate and appropriate stress management is very important in improving the quality of life as a university student.

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