

## RESEARCH ARTICLE

# The interaction between academic stress and self-control in predicting psychological well-being

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### ABSTRACT

This study was conducted to identify the influence of academic stress and self-control on the psychological well-being of university students in the Kota Kinabalu, Malaysia campus. Besides that, gender ethnicity and location (on-campus and off-campus) have been compared according to academic stress, self-control and psychological well-being. This study uses a quantitative method in which 320 university students were involved. The research questionnaire consists of the Perception of Academic Stress Scale (PAS), the Sense of Control Scale and the Psychological Wellbeing (PWB) Scale were used as instruments of this study. This study found that academic stress and self-control are direct predictors of the psychological well-being of university students during the COVID-19, with beta value, the study findings showed (Beta =  $-0.18$ ,  $R^2 = 0.056$ ,  $p < 0.05$ ) and self-control (Beta =  $0.17$ ,  $R^2 = 0.052$ ,  $p < 0.05$ ). Based on this indicates, academic stress contributed (5.6%) and self-control (5.2%) to the psychological well-being of university students during the COVID-19 pandemic. This is due to the academic stress from the aspect of workload that is given during the online teaching and learning sessions. Therefore, university student needs to give importance to self-control and other recreational activity for them to be psychologically happy during the COVID-19 pandemic. With high self-control, students can manage their academic stress and increase their psychological well-being.

**Keywords:** academic stress; self-control; psychological well-being; COVID-19

## 1. Introduction

According to Zivin et al.<sup>[1]</sup>, the issue of psychological well-being among students is increasing every year. The rate of increase in psychological well-being issues among university students during the COVID-19 pandemic is of great concern to all parties. Shanmugam et al.<sup>[2]</sup> have stated that the COVID-19 pandemic can increase anxiety disorders, stress and trauma problems, obsessive-compulsive disorders and social isolation that have a negative impact on the level of mental health in Malaysia.

The movement control orders implemented, the spread of fake news and lack of awareness can worsen the situation and put pressure not only on the community but also on university students, causing their psychological well-being to be affected. This is because university students are not only worried about this disease, but they are also worried about their academic performance due to the uncertainty of the online learning situation during the COVID-19 pandemic. This causes, university students may experience double

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anxiety so that they find it difficult to control themselves well and indirectly affects their psychological well-being.

In the study of Halimatus and Tasneem<sup>[3]</sup> and Lee and Syaid<sup>[4]</sup>, it was found that the psychological well-being of students in higher education institutions before COVID-19 hit Malaysia was high. This shows that the level of psychological well-being of university students will likely experience a decline during the COVID-19 pandemic. Therefore, a study to identify the level of psychological well-being of university students in Malaysia during the COVID-19 pandemic should be carried out. Psychological well-being is composed of our capability to deal with stress in day-to-day life through positive attitudes and purpose of life. It has been proved by research that psychological well-being has a connection to success and health.

Nevertheless, a study carried out by Cao et al.<sup>[5]</sup> in China found that the psychological well-being of students of higher education institutions in China was affected at different levels during the COVID-19 pandemic. This is because the difference in where students live during the spread of the COVID-19 epidemic in China affects their level of psychological well-being.

The public university has been chosen because student reported academic stress among them are higher compared to other private intuition. This study tries to focus on academic pressure and student self-control that may affect the level of psychological well-being of university students. Previous studies have focused more on the relationship between stress and academic achievement<sup>[6]</sup> and between emotional intelligence, basic psychological needs<sup>[7]</sup> and social support with personal or psychological well-being. Academic pressure and control during the COVID-19 pandemic are still understudied due to the new situation of the COVID-19 pandemic.

Self-control can be defined as the ability to change one's internal reactions and avoid negative behavioral tendencies<sup>[8,9]</sup>. Self-control can be associated with positive and desirable values. These include good academic achievement, less stress and good mental health. This directly improves a person's subjective well-being.

Another link to self-control is that it can increase better mental health, especially in controlling anxiety and depression. Individuals with high self-control can control stress and worry less even when they are under stress. This can help individuals to make good decisions. Studies have shown that self-control is negatively correlated with depression and anxiety.

Tangney et al.<sup>[8]</sup> further showed that the nature of self-control is negatively correlated with stress and anxiety. The role of self-control herein is to overcome these difficulties, thereby helping someone to achieve their goals. Therefore, the higher a person's self-control, the more likely they are to achieve their goals, and the more likely they are then to experience a higher degree of subjective well-being.

Further, high levels of self-control are positively correlated with internalizing problems, such as depression and anxiety, whereas high levels of under-control have a positive correlation with externalizing problems, such as substance use disorder.

Therefore, a study that knows the relationship between academic stress, self-control, and the psychological well-being of university students during the COVID-19 pandemic needs to be carried out to contribute to further enriching knowledge in the academic field in addition to being a reference and basis for any intervention measures or strategies that can take by the authorities, especially the university, to ensure that the psychological well-being of students is given due attention.

## **2. Literature review**

A study by Zainal<sup>[10]</sup> which aimed to identify the level of psychological well-being and self-control among

university students during the Movement Control Order (PKP) found that the level of psychological well-being of students was declining at a moderate level. The results of the discussion stated that the deterioration in the level of psychological well-being of these students was due to the dumping of assignments and the lack of appropriate moral support.

A study by Sundarasan et al.<sup>[11]</sup> found that out of 983 respondents, 20.4%, 6.6%, and 2.8% experienced minimal to moderate, severe levels of anxiety to severe and worst during the COVID-19 pandemic. This indicates that the transmission of the COVID-19 epidemic affects the psychological well-being of students as they have to face various challenges to continue their studies.

A study by Kalok et al.<sup>[12]</sup> found that the prevalence of psychological stress was 52% with about 60% of respondents reporting disruption to their daily lives during Movement Control Order (PKP). The results of this study provide evidence of a high prevalence of psychological stress among clinical students during the COVID-19 pandemic. This suggests that psychological well-being among clinical students is impaired due to the transmission of the COVID-19 epidemic.

Based on previous studies related to the psychological well-being of students during the spread of COVID-19 in Malaysia and abroad, it can be seen that the daily lives of students are affected which causes their psychological well-being to decline. However, studies on the level of psychological well-being during the COVID-19 pandemic of students in Malaysia are still lacking. Therefore, this study should be further multiplied to delve into the issue of the psychological well-being of students during the COVID-19 pandemic.

The transactional theory put forward by Lazarus and Folkman<sup>[13]</sup> states that stress is generated by transactions between a student and his environment. This is because according to this theory, stress is the result of transactions between an individual and his environment. The theory also states that stress is a relationship between an individual and his environment that a person evaluates as an inability to cope with situations that endanger or threaten one's health. Students will experience stress when faced with situations that interfere with their thoughts and activities. Stress also refers to the emergence of something that has a psychological impact on a person as a result of a real problem or due to strong factors from the environment<sup>[14]</sup>.

In the context of academic stress, Thawabieh and Qaisy<sup>[15]</sup> explained that students face academic stress as a result of exams, assignments and other requirements at the university that may exceed their goals. Extreme academic stress can also be associated with an individual's self-control. If an individual is able to take control of his life to face the stress, he faces then psychological well-being is not affected. Thus, the relevance of this theory to the study is to find out how academic stress and self-control can influence the level of psychological well-being of students during the COVID-19 pandemic in the face of changes in the Teaching and Learning system.

## **Hypothesis development**

Previous studies on the comparison of psychological well-being between genders are diverse.

A research by Akhter<sup>[16]</sup> shows that a huge contrast in mental well-being among male and female understudies. In the interim, Hasan<sup>[17]</sup> found that mental prosperity among people doesn't have a massive distinction. This demonstrates the way that the degree of mental prosperity can be affected by many factors like gender. Thus, the investigation of variables that influence mental prosperity ought to be expanded.

H1: There is no significant difference between the academic stress, self-control, and psychological well-being of university students by gender during the COVID-19 pandemic.

Previous studies on the comparison of psychological well-being, academic stress and self-control between ethnicities are diverse.

A study by Akhter<sup>[16]</sup> indicates a massive distinction in mental well-being between ethnicities. Meanwhile, Hasan<sup>[17]</sup> found that mental prosperity between identities doesn't have a tremendous contrast. This demonstrates the way that the degree of mental prosperity can be affected by many factors like ethnicity. Consequently, the investigation of variables that influence mental prosperity ought to be expanded.

H2: There was no significant difference between academic stress, self-control, and psychological well-being of university students by ethnicity during the COVID-19 pandemic.

The aftereffects of the conversation expressed that the weakening in the degree of mental prosperity of these understudies was because of the unloading of tasks and the absence of suitable moral help.

Research by Sundarasan et al.<sup>[11]</sup> found that out of 983 respondents, 20.4%, 6.6%, and 2.8% experienced negligible to direct, serious degrees of stress to extreme and most obviously terrible during the Coronavirus pandemic. This demonstrates that the transmission of the Coronavirus pandemic influences the stress and self-control they need to confront different difficulties to proceed with their examinations.

A cross-sectional review observed that the pervasiveness of mental pressure was 52% with around 60% of respondents revealing interruption to their regular routines during Movement Control Order (PKP). The consequences of this study give proof of a high pervasiveness of mental pressure among clinical understudies during the Coronavirus pandemic. This proposes that mental prosperity among clinical understudies is disabled because of the transmission of the Coronavirus scourge.

H3: Academic stress and self-control are predictors of psychological well-being of university students during the COVID-19 Pandemic.

The area of understudies concentrated on in this study is separated into two, to be specific on campus and off-campus. The consequences of this investigation discovered that the area of understudies during web-based educating and learning meetings didn't influence the degree of pressure and mental prosperity. As far as pressure, understudies living on, or off-campus face similar pressure.

There are past examinations that have investigated the hardships faced by college understudies in managing web-based learning. Among them is a concentration by Abdul-Aziz<sup>[18]</sup> where 28 understudies from 12 private and state funded colleges in Malaysia were disappointed with web-based learning strategies during the pandemic time frame. The element that causes understudy disappointment is the trouble in associating with teachers during web-based learning brought about by web access. During the Coronavirus pandemic season, web access has turned into a consideration the pressure of understudies as this has turned into a need for understudies in their studies.

College understudies who live on campus and off campus each face web access that is not generally excellent. Although the college gives WIFI offices to all understudies living nearby, in any case, web access issues happen because of specialized issues. Understudies who live off-campus likewise frequently face web access issues because of electrical blackouts, etc. This will make understudies pressure while going to addresses on the web. Assuming that saw inside and out at any area understudies, each face the test of unfortunate web access. In this way, it very well may be presumed that the area of understudies now and again grounds doesn't influence their pressure.

The location of students studied in this study is divided into two only, namely on-campus and off-campus. The results of this study found that the location of students during online teaching and learning sessions did not affect the level of academic stress, self-control, and psychological well-being. In terms of academic stress, students living on, and off campus face the same academic stress. There are past studies that have explored the difficulties faced by university students in dealing with online learning. Among them is a study by Abdul-

Aziz<sup>[18]</sup> where 28 students from 12 private and public universities in Malaysia were dissatisfied with online learning methods during the pandemic period. The factor that causes student dissatisfaction is the difficulty in interacting with lecturers during online learning caused by internet access.

H4: Location and faculty are not factors in the academic stress, self-control, and psychological well-being of university students during the COVID-19 pandemic.

### **3. Methodology**

#### **3.1. Location**

This study was conducted in Kota Kinabalu, Malaysia. The researcher decided to conduct the study at the Kota Kinabalu campus only because he wanted to know the interaction between academic stress and self-control in predicting psychological well-being among university students during the COVID-19 pandemic. Apart from that, the Tightened Movement Control Order has also been implemented on the Kota Kinabalu campus which may have affected the psychological well-being of students stranded on campus.

#### **3.2. Sample and population**

The population in this study consisted of students from the first year and the second year from five faculties at the Kota Kinabalu campus. The student population at the Kota Kinabalu campus is 1203.

Abdul-Aziz<sup>[18]</sup> stated that there is no specific concept for determining the minimum sample size in social research. This is because the actual sample size is dependent on population conditions and research needs. Based on the student population, the sample size should be 297 respondents. However, in this study, the researcher managed to collect a total of 320 respondents. In this study, the researcher has referred to the sampling technique by Krejcie and Morgan<sup>[19]</sup> in which the population of this study is 10,000 respondents and the study sample involved is 297 respondents. However, the researcher has added 10% to the total sample which makes the sample of this study is 320 respondents. With the inclusion criteria, there are about 10,000 students in the study population. To calculate the minimum sample size needed to achieve statistical power, we used the G\*Power software<sup>[20]</sup>. Two predictors were included in the model of this study. With an effect size of 0.15, alpha of 0.05, and power of 0.95, G\*Power determined the minimum number of samples needed to be 107. Consequently, we can assert with confidence that our study with a sample size of 320 has a power greater than 0.95 and is sufficiently large, and that the findings may be relied upon with confidence. The demographic data was used to gather respondents' demographic information such as gender, age, year of study, campuses and faculties. The age of respondents that participated in this study ranged from 19 to 26 years old with an average age of 22.36 years old.

All the questionnaires have been translated back-to-back translation. Back translation is used to check the overall quality of a once completed translation to spot potential differences in the meaning between the source and target text. This has been done by a professional to check the quality of the questionnaire. After checking the questionnaire remind is good to use and no changes in meaning.

#### **3.3. Research instruments**

The research instrument used by the researcher to conduct this study is in the form of a questionnaire. According to White<sup>[21]</sup>, a questionnaire-shaped instrument is a very effective way to obtain information from respondents. The instrument in the form of a questionnaire is also suitable for use in the current situation of the COVID-19 pandemic. This allows the researcher not to have to meet face-to-face with the study respondents to distribute the questionnaire. In addition, by using the questionnaire, respondents do not need to

write their names, and this allows them to answer honestly. The questionnaire in this study is divided into 4 parts.

### **3.3.1. Part A: Questionnaire on demography**

This section contains items related to the demographics of the respondents such as gender, age, ethnicity, faculty, and residence status while conducting online learning. Respondents only needed to mark their answers for items of gender, ethnicity, religion, faculty and residence status while conducting online learning. For items of age and state of origin, respondents were asked to write their answers in the spaces provided.

### **3.3.2. Part B: Questionnaire on perceptions of academic stress**

This section has items that will measure the perceptions of academic stress faced by respondents. The items in this section are based on the Perception of Academic Stress Scale (PAS) by Bedewy and Gabriel<sup>[22]</sup>. This scale has 18 items that measure academic stress and is divided into 4 subscales, namely 1) performance stress, 2) workload and exam perception, 3) academic self-perception, and 4) time constraints. The subscale for performance stress has 5 items, the workload and exam perception subscale have 4 items, the self-perception subscale has 4 items, and the time constraint subscale has 5 items. The measurement for this scale is using five Likert scales from 1 (strongly disagree) to 5 (strongly agree). An example of this item is “Competition with friends for grades is quite intense”.

### **3.3.3. Part C: Questionnaire on self-control**

This section has items used to measure students’ self-control. This measurement scale uses the Sense of Control Scale introduced by Lachman and Weaver<sup>[23]</sup>. This scale has 12 items that measure the respondent’s sense of control over himself and his life. This scale was measured through five Likert scales ranging from 1 (strongly disagree) to 5 (strongly agree). There is a negative item in this scale which is “There is not much I can do to change many important things in my life”. An example of this item is “There is not much I can do to change many important things in my life” and “I can do anything I put my mind to”.

### **3.3.4. Part D: Questionnaire on psychological well-being**

This section has items that will measure the level of psychological well-being of the respondents. The items in this section are based on the Psychological Wellbeing (PWB) Scale introduced by Ryff<sup>[24]</sup>. The scale has 18 items to measure six aspects of well-being namely well-being and happiness: autonomy, environmental mastery, personal growth, positive relationships with others, life purpose, and self-acceptance<sup>[24]</sup>. This Psychological Well-Being Scale has a version of 42 items but in this study, the researcher used a questionnaire version of 18 items. This scale was measured using five Likert scales ranging from 1 (strongly disagree) to 5 (strongly agree). There are negative items on this scale such as “I gave up trying to make improvements or changes in life at some point in the past” and “I like most of my personality”.

## **3.4. Data analysis**

The data obtained will be analyzed using SPSS based on the objectives and hypotheses of the study. Descriptive analysis was used to identify the levels of academic stress, self-control, and psychological well-being of university students during the COVID-19 pandemic. *T*-test statistics, analysis of variance (ANOVA), multiple regression analysis and MANOVA were used to test the hypotheses of this study.

## **3.5. Instrument reliability and validity**

In this study, the researcher tested the validity of the instrument used in this study through data collected from 30 respondents. This validity was made by the researcher whether the academic stress perception scale and the self-control scale were positively correlated with the psychological well-being scale. The Pearson

correlation value for the academic stress scale was positive at 0.698 and the self-control scale was also positive with a Pearson correlation value of 0.646.

**Table 1.** Cronbach’s alpha coefficient values.

<b>Instrument</b>	<b>Cronbach’s alpha</b>
Academic stress perception scale	0.70
Self-control scale	0.83
Psychological well-being scale	0.74

**Table 1** shows the values of Cronbach’s alpha coefficients, and instrument reliability based on previous studies. Previous studies that have tested the reliability value for the Perception of Academic Scale by Bedewy and Gabriel<sup>[22]</sup> is at a good level of 0.70. For the Psychological Wellbeing (PWB) Scale introduced by Ryff<sup>[24]</sup>, the reliability value is high at 0.74. For the Sense of Control Scale introduced by Lachman and Weaver<sup>[23]</sup>, the reliability value is also high at 0.70. Based on the value of Cronbach’s alpha coefficient done by the previous researcher, indirectly the researcher accepted this previous study because all validity values are accepted, the researcher has re-performed this validity test to ensure that the instrument used is true and accurate.

To conduct a pilot study, researchers have collected data from 30 respondents to test the value of reliability. For the academic stress scale, the value of Cronbach’s alpha coefficient is 0.87. For the self-control scale, the value of Cronbach’s alpha coefficient is 0.72 while the value of Cronbach’s alpha coefficient for the psychological well-being scale is 0.78. All instruments used showed high and acceptable values of Cronbach’s alpha coefficient.

## 4. Discussion

### 4.1. Respondent’s background description

The respondents in this study were a total of 320 university students on the Kota Kinabalu campus. The background of these respondents involves aspects of gender, ethnicity, faculty, and location while conducting online learning.

**Table 2.** Distribution of number and percentage of respondents by gender and faculty.

	<b>Male</b>		<b>Female</b>		<b>Total</b>	
	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>
Faculty						
Faculty of Engineering	16	5.0	16	5.0	32	10.0
Faculty of Psychology and Education	38	11.9	65	20.3	103	32.2
Faculty of Art Academy	53	16.6	27	8.4	80	25.0
Faculty of Science and Natural Resource	16	5.0	37	11.6	53	16.6
Faculty of Business, Economy and Accounting	34	10.6	18	5.6	52	16.3
Total	157	49.2	163	50.8		

**Table 2** above shows the distribution of the number and percentage of respondents by gender and faculties.

Based on the table, a total of 320 respondents which consist of 157 respondents (49.2%) were male students and a total of 163 respondents (50.8%) were female students. Eight faculties in the Kota Kinabalu campus were involved in this study. Based on the table, most students are from the Faculty of Psychology and Education which is a total of 103 respondents (32.2%) followed by students from the Faculty of Art Academy which is a total of 80 respondents (25.0%). Students from the Faculty of Business, Economy and Accounting and the Faculty of Science and Natural Resources each recorded a total of 52 respondents (16.3%), respectively. Then, the students from the Faculty of Engineering are a total of 53 respondents (16.6%).

**Table 3** shows the distribution of student locations while conducting online learning during the COVID-19 pandemic season. A total of 150 respondents (46.7%) who conducted online learning sessions on the Kota Kinabalu campus. Meanwhile, a total of 170 respondents (53.3%) underwent online learning sessions outside the Kota Kinabalu campus during the COVID-19 pandemic.

**Table 3.** Distribution of number and percentage of respondents by location while conducting online learning.

	n	%
Location		
Campus	150	46.7
Out campus	170	53.3
Total	320	100.0

## 4.2. Analysis of findings based on hypothesis

### 4.2.1. The academic stress, self-control, and psychological well-being of university students by gender during the COVID-19 pandemic

An independent *t*-test was carried out as there were two different groups among the participants, that is male and female groups. A two-tailed *t*-test was carried out and considered to be more ideal as it was not clearly known whether the differences in academic stress, self-control, and psychological well-being would be directed towards males or females.

**Table 4.** *T*-test analysis of differences between academic stress, self-control, and psychological well-being by gender.

DV	Male		Female		<i>t</i> (318)	<i>p</i>
	M	SD	M	SD		
Academic stress	3.25	0.56	3.26	0.95	-0.038	0.25
Self-control	2.69	0.44	2.78	0.67	-0.934	0.29
Psychological well-being	2.84	0.43	3.88	0.49	-0.418	0.21

Note: Male (n = 157), Female (n = 163).

According to the *t*-test results in **Table 4**,  $t(318) = -0.038$ ,  $p > 0.05$ , two-tailed tailed, since the difference was not significant, we can say that academic stress has no significant differences in terms of gender, as  $p = 0.025$ , which was greater than the 5% significance level. Similarly to self-control where  $t(318) = -0.934$ ,  $p > 0.05$ ,  $p = 0.29$  and psychological well-being shows that  $t(318) = -0.418$ ,  $p > 0.05$  where  $p = 0.21$ . Hence, in other words, it can be concluded that the null hypothesis (H20) was therefore not rejected as there was no significant difference in academic stress, self-control, and psychological well-being in terms of gender among the participants.

### 4.2.2. The academic stress, self-control, and psychological well-being of university students by ethnicity during the COVID-19 pandemic

**Table 5.** Analysis of variance (ANOVA) between academic stress, self-control, and psychological well-being by ethnicity.

DV	Ethnicity	df	Mean square	F	<i>p</i>
Academic stress	Between groups	5	0.278	0.695	0.628
	Within groups	314	0.400		
Self-control	Between groups	5	0.272	1.136	0.345
	Within groups	314	0.239		
Psychological well-being	Between groups	5	0.251	0.861	0.510
	Within groups	314	0.291		

Based on **Table 5** above, there is no significant difference between academic stress, self-control and psychological well-being of university students according to ethnicity. For academic stress, the findings showed that the value of  $p = 0.628$  was greater than the significant value of  $\alpha = 0.05$ ,  $F(5, 314) = 0.695$ . Self-control also showed no significant difference with  $p = 0.345$  higher than  $\alpha = 0.05$ ,  $F(5, 314) = 1.136$ . Similarly,



psychological well-being where the value of  $p = 0.510$  is higher than  $\alpha = 0.05$ ,  $F(5314) = 0.861$ . Therefore, the null hypothesis is accepted and there are no significant differences between academic stress, self-control, and psychological well-being according to ethnicity.

#### 4.2.3. Academic stress and self-control are predictors of psychological well-being of university students during the COVID-19 pandemic

**Table 6.** Multiple regression analysis (Stepwise) between academic stress and self-control with psychological well-being.

Variable	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	SEE	$\beta$	Standard error b	Change statistic				
							R <sup>2</sup> change	F change	df1	df2	Sig. F change
Academic stress	0.237	0.056	0.048	0.47836	-0.18	0.070	0.056	7.052	1	318	0.009
Self-control	0.233	0.002	0.043	0.3444	-0.12	0.004	0.002	7.330	1	318	1.223

Based on **Table 6**, there is a significant variance between academic stress and psychological well-being of university students. Findings show that academic stress is a predictor factor to psychological well-being with  $\alpha$  value of  $F(1318) = 7.052$ ,  $\text{Sig.} = 0.009 < 0.05$ . Based on the Beta value, the study findings showed  $\text{Beta} = -0.18$ ,  $t = -2.65$ ,  $\text{Sig.} = 0.001$  and  $R^2 = 0.056$ . This indicates academic stress contributed 5.6% to the psychological well-being of university students during the COVID-19 pandemic. Thus, an alternative hypothesis for academic stress is accepted.

#### 4.2.4. Location and faculty are not factors to the academic stress, self-control, and psychological well-being of university students during the COVID-19 pandemic

**Table 7.** Box's test of equality of covariance matrices.

Box's M	187.4
F	3.24
df1	54
df2	13,380
$p$	0.221

Note. Design: Intercept + Location + Faculty + Location \* Faculty.

**Table 7** shows that the matrix covariance is similar between groups. The Box M (187.4) showed that the homogeneity of matrix covariance across groups was assumed with  $(F(54, 13,380) = 3.24, p = 0.221)$ . Given that the value of  $p = 0.221$ , this indicates that the data are the same between the groups and are in a good position.

## 5. Discussion

The results of the study found that there was no significant difference between the levels of academic stress, self-control, and psychological well-being of public university students according to gender. This is because, based on the  $t$ -test it was found that the  $p$  value for these three variables is greater than the significant value of 0.05. The  $p$  value for academic stress is  $p = 0.25$  where  $p > 0.05$ . For self-control, the value of  $p = 0.29$  is  $p > 0.05$ . Similarly with psychological well-being the value of  $p = 0.21$  which is  $p > 0.05$ . This indicates that there are no significant differences by gender in terms of the level of academic stress, self-control, and psychological well-being.

In general, the study found that male and female students at public university had no difference in terms of academic stress. These findings are supported by the study of Calaguas<sup>[25]</sup> who found that there was no significant difference between male and female college students in terms of academic stress. This is because each student has their commitment to their studies regardless of male or female. A study by Fernández-Abascal and Martín-Díaz<sup>[26]</sup> also found that there were no significant differences in academic perceptions by gender during the COVID-19 pandemic. This is because during the COVID-19 pandemic, all students were affected

regardless of gender, and each faced the same challenges of academic stress. All students face challenges in increasing academic stress during the implementation of online teaching and learning sessions faced by all students such as many assignments, online exams, time constraints and others. Nevertheless, a study by Idowu et al.<sup>[27]</sup> stated that the stress of female students is higher than that of males when viewed in terms of exam stress. This is because female students have a higher level of anxiety about exams than males. From another aspect of stress, male and female students each face the same thing.

In terms of self-control, this study also found that there was no significant difference between the levels of self-control according to gender. Self-control is an individual's ability to control and shape their own life. During the COVID-19 pandemic, every student needs to have self-control abilities. Based on the findings of the study, self-control between female and male students has no difference. This shows that every student, regardless of male and female, has their own steps or methods to continue their studies such as making adaptations and getting social support. This process of adaptation and social support will help each student to increase their motivation and self-control. A previous study by Son et al.<sup>[28]</sup> stated that an individual's sense of control plays an important role in motivating other individuals. This shows that students regardless of male and female each get support from other individuals to increase their motivation and self-control.

In terms of psychological well-being, the results of the study also found that there was no significant difference between the levels of psychological well-being according to gender. The findings of this study are consistent with the study by Johari and Ahmad<sup>[29]</sup> who stated that there is no significant difference in personal well-being between male and female students. A study by Zainal<sup>[10]</sup> on the psychological well-being of students during COVID-19 also stated that there was no difference between male and female students in terms of the level of psychological well-being. This is because all students do not consider gender affected in their daily routine as students which negatively impacts their psychological well-being. Every student faces increasing challenges when online teaching and learning sessions are implemented such as an uncondusive environment, financial problems, family problems and others. These challenges can cause students to be depressed and subsequently experience a decline in psychological well-being. Idowu et al.<sup>[27]</sup> noted that 55% of respondents experienced a decline in psychological well-being while conducting online learning sessions during lockdown. This suggests that male and female students were respectively affected in terms of psychological well-being during the COVID-19 pandemic. This finding is further evidenced by the study of Islam et al.<sup>[30]</sup> who found that all students experienced mild to severe depression of 82.4% during the COVID-19 pandemic. In general, the COVID-19 pandemic has affected the lives of everyone, including students.

Based on the results of the analysis of variance that has been conducted, the study found that there is no significant difference between the levels of academic stress, self-control, and psychological well-being of university students according to ethnicity. For academic stress, the findings showed that the  $p$  value = 0.628 was greater than the significant value of 0.05. Self-control also showed no significant difference with  $p$  value = 0.345 higher than the significant value of 0.05. Similarly with psychological well-being, the value of  $p$  = 0.510 is higher than the significant value of 0.05. This indicates that the levels of academic stress, self-control, and psychological well-being of university students do not differ according to ethnicity.

In terms of academic stress, every student regardless of ethnicity was affected in terms of their learning during the COVID-19 pandemic. In general, all students were shocked by the COVID-19 pandemic in which all face-to-face teaching and learning activities were replaced with online teaching and learning sessions. According to Chaturvedi et al.<sup>[31]</sup>, the COVID-19 pandemic has had a negative impact on student lives. The researcher stated that all students spent time engaging in online classes, changed sleep habits, and changed fitness routines which in turn had a negative impact on students' weight, social life and mental health. During the COVID-19 outbreak, the Kota Kinabalu campus also had to stop activities involving meetings with students

to curb the spread of the virus. However, in line with the recommendations submitted by the Ministry of Higher Education, the university began to take certain initiatives and strategies to ensure that learning sessions run as usual, namely through online learning and also face to face but in compliance with strict SOPs. This situation indicates that all university students face the same challenges in continuing their studies during COVID-19.

In terms of self-control, each student has their own way of organizing and shaping their lives as students during the COVID-19 pandemic. The spread of this epidemic has caused many students to undergo teaching and learning sessions in their own homes. However, the university has provided an opportunity for students who face internet network problems to return to campus to continue their studies. Each student has a social environment that serves as social support and this will affect their ability to form self-control. According to Zhou and Yao<sup>[32]</sup>, self-control has an indirect relationship with social support. Individuals in the student's social environment such as these friends and family will serve as social support for each student regardless of their background. During the outbreak of COVID-19, the most readily available social support is from immediate family and friends<sup>[33]</sup>. This shows that each student of different backgrounds has their own social support to face the challenges during the pandemic such as friends for students on campus and family for students off campus.

Finally, psychological well-being also had no differences according to the ethnicity of students at the university during the COVID-19 pandemic. This is because all students are affected in terms of daily routines which in turn affects their mental health or psychological well-being in the COVID-19 epidemic season. Aziz<sup>[33]</sup> stated that the widespread COVID-19 epidemic has disturbed the emotions of students and on average, they experience feelings of sadness, anxiety, restlessness, anger and boredom. Undoubtedly, students are among the most affected because they have to switch from conventional learning practices that are face-to-face to online to ensure the existing learning process is not disrupted, especially when the country has to face the impact of the COVID-19 epidemic<sup>[34]</sup>. This shift in daily routine is felt by all students studying at university as well as in primary, secondary and college. This shows that the multiracial students at university each face challenges that can affect their psychological well-being.

The results of multiple regression analysis showed that only academic stress was a direct predictor of the psychological well-being of students on the Kota Kinabalu campus during the COVID-19 pandemic. The results of the study found that the significant value for academic stress was  $\text{Sig} = 0.009 < 0.05$ . Beta values also showed ( $\text{Beta} = -0.18$ ,  $t = -2.65$ ,  $\text{Sig} = 0.001$  and  $R^2 = 0.056$ ). Thus, the findings of the study found that academic stress contributed 5.6% to the psychological well-being of university students during the COVID-19 pandemic. This indicates that academic stress can affect the level of psychological well-being of university students in the COVID-19 era.

The transmission of the COVID-19 virus has indeed affected the teaching and learning sessions of university students. The increase in academic stress faced by university students has been very significant since online teaching and learning sessions were implemented. This is because university students have to complete many assignments given by the university to meet the assessment criteria to pass each subject. The academic stress faced by students affects their level of psychological well-being.

The results of this study are consistent with a study by Abouserie<sup>[35]</sup> who found that there is a significant relationship between academic stress with student well-being, psychological disorders and student problems. Selian et al.<sup>[36]</sup> also found that academic stress had a significant influence on the psychological well-being of students. This shows academics have a very strong influence on the psychological well-being of students, especially in the COVID-19 pandemic season. Students reported that uncertainty about the academic future had a significant relationship with the level of stress and difficulty in coping with problems caused by COVID-

19<sup>[37]</sup>. There is no doubt that academic stress is one of the problems often faced by university students since the beginning, but a significant increase can be seen during the online teaching and learning sessions implemented during the COVID-19 season.

Johari and Ahmad<sup>[29]</sup> also stated that the academic demands that need to be met by university students cause anxiety in academic achievement and it affects the level of well-being of students. This researcher also found that the perception of workload and exams is a direct predictor of the well-being of university students. When the level of psychological well-being or Self decreases, individuals will experience depression or depression and indirectly mental health will be affected. The results of this study are also supported by the study of Yang et al.<sup>[38]</sup> who stated that academic stress such as academic workload had a negative impact on the mental health of college students during the COVID-19 pandemic. Workloads that are beyond their ability cause students to feel stressed and affect their level of psychological well-being. Therefore, it can be concluded that the academic stress faced by students in the Kota Kinabalu campus during the COVID-19 pandemic affecting their level of psychological well-being is moderate.

In this study, the null hypothesis for location was accepted.

In terms of self-control, it also shows that the location outside and inside the campus does not affect the students' sense of self-control. This is because all students have a social environment as their social support in shaping life as students during a pandemic. Hong et al.<sup>[39]</sup> have stated a sense of self-control related to good behavior, high psychological well-being, and improved relationships with social such as friends and family. This finding is further evidenced by the results of the Mosanya<sup>[40]</sup> study which found that parents (37%) and friends (32%) were most often identified by students as support during the COVID-19 pandemic with minimal support reported from universities (2.5%). This indicates that the location outside and inside the campus does not affect it because all students have their own social support that affects their sense of control.

This study also found that location also did not affect the psychological well-being of university students. This finding is in line with Zainal's<sup>[10]</sup> study which stated that students living off-campus and on-campus had no difference in psychological well-being. This is because students living on and off campus have their own challenges where all students are affected by the COVID-19 pandemic. Although there are university students who are required to attend lectures in person, they also have to attend lectures online if a subject does not require lectures in person. This shows that all students are affected in terms of their daily routine as students no matter where their location is.

The null hypothesis for faculty is also accepted. In this study, the respondents involved were students from various faculties. This study found that faculty did not affect the academic stress, self-control, and psychological well-being of university students.

In terms of academic stress, faculty did not have a significant impact on the level of academic stress of university students during the COVID-19 pandemic. It is common knowledge that all students were affected in terms of their learning during this COVID-19 pandemic outbreak. Worldwide, the COVID-19 pandemic has affected the education sector where school closures in over 150 countries have affected the learning of nearly 1 billion students<sup>[41]</sup>. This explains that all students have to face various challenges related to academic stress during online teaching and learning sessions.

In terms of self-control, the faculty also does not have a significant effect on the level of self-control of students. This indicates that faculty did not influence the sense of control of university students during the COVID-19 pandemic. Sense of self-control is the belief of an individual to control, control and shape his own life<sup>[42,43]</sup>. Sense of self-control is associated with good behavior, high psychological well-being and increased relationships with social such as friends and family<sup>[39]</sup>. This explains that the sense of self-control is influenced

by the social environment. It can be concluded that student-faculty did not affect the level of self-control of university students during the pandemic.

In terms of psychological well-being, this study found that the faculty did not have an impact or influence on the level of psychological well-being of university students during the pandemic. A study by Parasuraman et al.<sup>[44]</sup> and Bikar et al.<sup>[45]</sup> found that there was no significant difference in the self-well-being of respondents based on the faculty of science and social science. This is because each faculty has its own workload<sup>[46]</sup>. This fact explains that major is not a factor that affects the level of psychological well-being<sup>[47,48]</sup>.

### **5.1. Practical implication**

Based on the findings of the study on the level of academic stress, the perception of the burden of assignments and exams, that is students believe that the amount of work assignments is too much given during the COVID-19 pandemic. Therefore, lecturers and universities need to look at and re-evaluate the evaluation system used when implementing online teaching and learning sessions. This is a step to ensure the psychological well-being of university students during the COVID-19 pandemic.

In addition, parents and families also have an important role in providing moral support to their children who undergo online teaching and learning sessions at home. This is also a very appropriate step to ensure the psychological well-being of students is at a high or positive level.

### **5.2. Limitation**

This study was carried out at the Kota Kinabalu, Malaysia campus. The researcher only focused on respondents from the Kota Kinabalu campus. Therefore, the results of the study will focus on the studied population.

In the implementation of this study, the main constraint faced is the time constraint. This is because the implementation period of this study is very short for the researcher. In addition, the workload of other tasks affects the researcher's time to carry out this study.

### **5.3. Recommendations for future studies**

Further studies should be conducted on students from universities from various places with larger populations and samples. In addition, further research on students from various school levels because it is not only university students who are affected during the COVID-19 pandemic.

Therefore, the researchers suggest that there are researchers in the future to study other variables such as motivation, coping skills and others that may be predictors of students' psychological.

## **6. Conclusion**

This chapter has discussed the overall results of the study more clearly and in detail. The researcher found that there are study results that are consistent with the study findings from previous researchers. In addition, the researchers also found that there were study results that were contrary to the results of previous studies. In general, this study found that university students at the Kota Kinabalu campus faced academic stress that affected their psychological well-being levels during the COVID-19 pandemic. This is based on the results of a study that found that university students think that the number of assignments given is too much and there are students who have a low level of psychological well-being.

Researchers have also put forward some suggestions that are considered appropriate to the results of the study. In addition, the researcher has also suggested some suggestions as improvements to this study that can be used as a reference for researchers in the future. Finally, it is hoped that this study can help the relevant

parties in ensuring the psychological well-being of students is guaranteed especially in the COVID-19 pandemic season.

## Author contributions

Conceptualization, BR and AY; methodology, BR and AY; formal analysis, BR and AY; investigation, BR and AY; resources, BR and MIBBB; data curation, BR; writing—original draft preparation, IM and NHM; writing—review and editing, SSBS; visualization, AY; supervision, BR; project administration, BR and PVSK; funding acquisition, MDAM. All authors have read and agreed to the published version of the manuscript.

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## Institutional review board statement

The study was conducted according to the guidelines of the Declaration of Ethical Body of Universiti Malaysia Sabah (ref: 6KEtika 6/20(11)).

## Informed consent statement

Informed consent was obtained from all subjects involved in the study.

## Data availability statement

Not applicable.

## Conflict of interest

The authors declare no conflict of interest.

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