Malaysian Journal of Chinese Studies, 2021, *10*(2): 49–67

Psychological Well-Being and Depression among Undergraduates during COVID-19 in Malaysia: A Case Study

Kunjiapu Shamuni*, Kunasegaran Mageswari and Song-Peng Goh, Frankie*****

To cite this article: Kunjiapu Shamuni, Kunasegaran Mageswari and Song-Peng Goh, Frankie (2021). Psychological Well-Being and Depression among Undergraduates during COVID-19 in Malaysia: A Case Study. *Malaysian Journal of Chinese Studies 10*(2): 49–67. http://doi.org/10.6993/MJCS.202112_10(2).0004
To link to this article: http://doi.org/10.6993/MJCS.202112_10(2).0004

Abstract

The onset of Covid-19 pandemic in 2020 crippled all activities around the globe. Drastic measures such as complete lockdown and movement controls were introduced to contain the spread of the virus. The mandatory requirement for educational institutions to continue teaching-learning activities remotely during this period were reported to have induced stress, anxiety and depression among students of all age groups. The purpose of this study is to ascertain undergraduates' psychological well-being and depression levels during the pandemic. A descriptive quantitative cross-sectional design was adopted with a sample size of 132 respondents. During the movement control period (September 2020–February 2021), data were collected via online questionnaires, emails and phone-calls and analysed using SPSS V23. The results indicated that majority of the undergraduates experienced suboptimal level of psychological well-being and suffered from severe depression. This established the presence of a strong association between psychological well-being and depression among the undergraduates. Further investigation revealed that undergraduates from the lower middle income (lower M40) group experienced the highest level of depression. Rethinking university's teaching and learning strategies, providing support services as well as developing preventive programmes would assist in the management of psychological well-being and depression levels among undergraduates.

Keywords: Psychological well-being, depression, PERMA model, Covid-19 pandemic, undergraduates

Introduction

The Covid-19 outbreak brought profound consequences to economic, health care and educational systems around the world. This pandemic impacted the livelihood of the world's population with many being confined to their homes due to lockdowns and mandatory quarantines. The Malaysian government introduced "Movement Control Order" or MCO on March 18, 2020 to contain the outbreak. People have been forced to live in isolation as a result of this unprecedented rule. Boredom, post-traumatic stress symptoms, confusion, and frustration have all resulted from this way of life over long periods of time. These difficulties were exacerbated by shortages of daily necessities and financial distress as a result of lost jobs (Centre for Disease Control and Prevention Covid-19 Response Team, 2020; Daniel, 2020; Nicola et al., 2020; Brooks et al., 2020).

Although children and teenagers are often assumed to be depression free, the Malaysian Ministry of Health (2019) in its National Health and Morbidity Survey reported that 7.9% of Malaysian children aged 7-15 were found to have suffered from mental health related issues. Studies conducted in Spain and Italy, the two European counties that were most seriously affected by the pandemic, reported worsening of negative emotional conditions such as boredom, irritability and loneliness among children (Orgiles et al., 2020). Negative emotions such as depression do not only impact physical well-being but also lead to suicidal thoughts and behaviours (Islam et al., 2018). Harizah Kamel (2020) reported that Befrienders Malaysia received about 4,142 calls between March 18 and May 16 of 2020 during the MCO period, where over a third of the calls on Covid-19 were suicidal in nature.

Undergraduates are potential skilled human capital and future leaders of the country therefore it is important to detect and treat mental health problems among them. Various past studies in Malaysia have examined depression and/or psychological well-being among undergraduates from the perspectives of medical, dental, and pharmaceutical sciences (Yusof et al., 2020; Wahab et al., 2013; Fata Nahas et al., 2019; Yusoff et al., 2013; Yusoff et al., 2010) or psychiatry, psychology, and education (Shamsudin et al., 2012; Kunjiapu & Kunasegaran, 2021). This study attempts to contribute to the body of knowledge by examining the psychological well-being and depression prevalence among Malaysian undergraduates studying social sciences during the pandemic period.

The objective of this study is to ascertain the psychological well-being and depression levels of undergraduates at a private higher learning institution in Malaysia during the Covid-19 pandemic since early 2020 and to determine the relationship between them.

The following hypotheses were then posed:

H1: There is a high level of psychological well-being among the undergraduates during the Covid-19 pandemic period.

H2: There is a low level of depression among the undergraduates during the Covid-19 pandemic period.

H3: There is a significant relationship between the psychological well-being and the level of depression among the undergraduates.

Psychological Health among Undergraduates

Depression

Depression is a mood disorder which is also a common mental condition that causes individuals to persistently feel dejected and lose interest in their daily activities. The America Psychiatry Association (2021) cites symptoms such as loss of appetite, insomnia, chronic fatigue, feeling guilty or unworthy as well as suicidal thoughts, among others, that may last for at least two weeks before the occurrence of depression is confirmed. The 2019 National Morbidity Survey of Malaysia reported that the prevalence of depression among adults is about 2.3% or approximately half a million people. In view of the importance of mental well-being among its population, it is now included as a variable in the Sustainable Development Goal of Malaysia (Economic Planning Unit, 2021).

The connection between poor mental health and financial difficulties has long been confirmed. Up to three times as many people in low-income groups suffer from depression and anxiety as those in higher-income groups. The unemployed are much less resilient emotionally and physically than the employed, and the impact of unemployment has a greater impact on the mental health in nations where income disparities are significant and where few unemployment benefits are available (Rooney, 2021).

In the Malaysian context, a study by Govindamah et al., (2020) reported that in comparison to the B40 population, the M40 and T20 income groups enjoyed a better quality of life in the physical, psychological, social, and environmental sense.[1] Many of the B40 population live in rural areas where the lack of infrastructure and development restrict employment opportunities outside the agricultural sector. This group is likely to be more susceptible to mental illness as they struggle to make ends meet. In another study on socio-economic standing and mental health it was found that young people, notably students, females, and people with low incomes, were more sensitive to mental health symptoms (Wong et al., 2021).

The prevalence of depression among university students in Malaysia is relatively high and almost alarming as shown by past studies (Gan et al., 2011; Shamsudin et al., 2013; Lei et al., 2020; Suleiman et al.,2017; Islam et al., 2018; Kotera & Ting, 2021; Yap et al,2020; Kunjiapu & Kunasegaran, 2021). Undergraduates living independently away from their family experience many challenges that often predispose them to depression as they try to cope with academic stress and anxious over career prospects (Uehara et al., 2010; Shamsudin et al, 2013). Yap et al. (2020) in a pilot study found that the depression rate was 33.8% among public and private university students in the Klang valley where the Federal capital is located. This represents

an increase of 3.8% in just two years. As for the severity of depression, Islam et al. (2018) reported that 30% of Malaysian undergraduates experienced depression, and 4.4% severely so. Similar findings were reported by Kunjiapu & Kunasegaran (2021) in their study of depression among private higher learning institution students. Students between the ages of 18 and 24 years were found to suffer depression caused by the heavy pressure of work such as meeting assignment deadlines, leading on to anxieties with their studies and over financial problems (Kotera &Ting, 2021).

Depression among university students is caused by many factors. These include socio-economic status (Piko & Fitzpatrick, 2007; Zhai et al., 2016), place of study (Ibrahim et al., 2013), financial constraints (Deb et al., 2016), issues concerning personal relationships (Shamsudin et al., 2013), excessive pressure from assignments and lectures (Abdel Whaed & Hassan, 2017; Hunt & Gable, 2017), and lack of leisure time (Shamsudin et al., 2013). These were made worse by the need to engage in remote online learning, poor internet connectivity, the imposition of alternative forms of assignments in place of the more normal moods of assessments, and the absence of social interaction during the Covid-19 pandemic.

Stress and anxiety may influence the decision of students to engage in unhealthy behaviours such as smoking, substance misuse, and binge eating. Depression has been linked to illnesses such as diabetes, heart disease, rheumatoid arthritis, and even mortality. By determining the prevalence of depression and its triggers in an educational setting, the university's administration can intervene to help reduce or alleviate the condition.

Psychological Well-Being

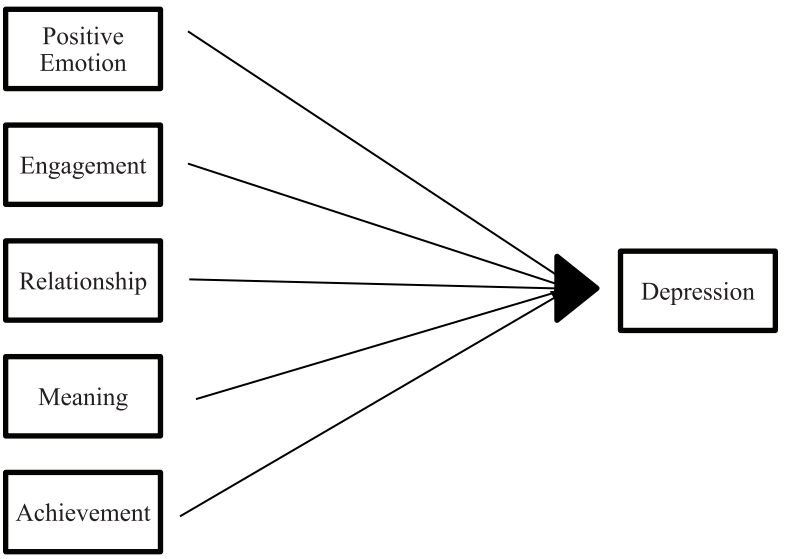
Psychological well-being refers to an individual's emotional health and overall functioning and the absence of distress. The concept is commonly defined as a combination of pleasant affective states such as happiness (the hedonic perspective) and good individual and societal functioning (Deci & Ryan, 2008). Huppert (2009) summarised it as the quality of one's life and the sense of feeling good and being able to operate efficiently. Persons with high psychological well-being would feel joyful, capable, well-supported, and generally satisfied with life (Huppert, 2009).

Burns (2016) describes this at the inter- and intra-individual levels of positive functioning that can include one's relatedness with others and self-referent attitudes that include one's sense of mastery and personal growth. According to well-being theory introduced by Seligman (2011), well-being is a multi-item construct with five indicators of positive emotions (P), engagement (E), relationships (R), meaning (M) and accomplishment (A) which are collectively referred to as "PERMA." These elements measure an individual's overall well-being level and the extent to which he or she is living a life that is relatively free of anxiety, stress, burnout and depression (Seligman, 2011).

Positive emotions such as peace, gratitude, satisfaction, pleasure, inspiration, hope, curiosity, compassion, contentment, empathy, joy and love are the building blocks of well-being (Seligman, 2011; Webster, 2014). Engagement involves immense concentration and commitment in handling task at hand whether work related, personal interest or hobby. Ayse (2018) and D'raven & Pasha-Zaidi (2015) explained that engagement is a connection between an individual and their circumstances that gives meaning, increases performance, generate positive feelings and also has a positive effect on depression although for only a shorter period (Gander, Proyer & Ruch, 2016). Relationship is about building and maintaining positive relationships with others around us (Seligman, 2011). Social relationships are known to have positive effects on an individual's psychological well-being (Ayşe, 2018; D'raven & Pasha- Zaidi, 2015). Meaning provides a sense of purpose and reason for people to do what they do (D'raven & Pasha-Zaidi, 2015). Religion, charity and selfless services are often used by individuals to seek meaning. Ayşe (2018) and Kern & Khaw (2015) stated that individuals who seek meaning tend enjoy a higher life satisfaction, happiness and overall wellbeing. Bas & Koksal (2014) reported a negative correlation between meaning and depression; those who enjoy meaningful life often experience a lower depression. Achievement involves utilising one's talent and efforts towards a definite and fixed goal (Seligman, 2011) and increases well- being when individuals proclaim it (Kun & Krasz, 2017). Gander, Proyer & Ruch (2016) clarified that achievement increases subjective well-being and alleviated depression in individuals. PERMA has also an important place in educational settings. Kotera & Ting (2021) indicated that there is a strong correlation between positive psychology and mental well- being among Malaysian undergraduates. McFerran (2010) indicated that experiencing positive emotions on a regular basis improved learner's attention span, creativity, agreeableness (D'raven & Pasha-Zaidi, 2015) and also minimised depressive symptoms (Santos et al., 2013; Gander, Proyer & Ruch, 2016). Positive relationships help learners to experience acceptance, connectedness, higher attainments (Noble & McGrath, 2008) and reduces depression (Varma, 2017). Students are found to enjoy sense of meaning only when they engage in learning activities that bring positive impact on others (Noble & McGrath, 2008). Academic and similar achievements increase students' self-confidence and self-esteem in educational institutions (Noble & McGrath, 2008). Interestingly a cross-cultural study by Kern & Khaw (2015) indicated that Malaysians generally have a lower sense of well-being.

This study will assist institutions of higher learning rethink their teaching-learning methodologies and develop support structures that will aid in minimising student burnout, depression, and suicidal ideation.

Figure 1
Conceptual Framework



Methodology

A cross-sectional quantitative method was selected to assess the depression and psychological well-being levels among the undergraduates of a private university. This university was selected for its unique characteristics. It is a Chinese community-funded institution that is established not for profit making but to for providing opportunities for undergraduate and graduate studies at an affordable cost primarily to students from the B40 socio-economic group.

A purposive sampling by means of the Krejcie and Morgan (1970) tabulation was used to determine the sample size of 132 respondents. The survey questionnaires included well-established and validated instruments PERMA (Butler and Kern, 2016) to measure mental well-being and Patients Health Questionnaire (PHQ-9) (Kroenke et al., 2001) to measure depression. PHQ-9 was adopted to measure depression as it has equivalent validity to the Diagnostic and Statistical Manual of Mental Disorders (America Psychology Association, 2013) and showed high sensitivity of 88% and high specificity of 85% (Levis, 2019). The PHQ-9 is a short and straightforward self-administered questionnaire that can be used in clinical practice and research. It has the potential to be a dual-purpose tool that can establish depressive disorder diagnoses as well as score the severity of depression symptoms. It is a reliable and valid measure of depression severity, as well as offering criteria-based diagnoses

of depressive disorders, even in non-clinical research, as evidenced by a study of medical students in Korea by Yoon et al. (2014). Findings indicated that the PHQ-9 was reliable (Cronbach's $\alpha = 0.837$, test-retest reliability, $r = 0.650$) and valid ($r = 0.509$-0.807) when employed with medical students. Total scores on the PHQ-9 were significantly higher among low-perceived academic achievers than among high-perceived academic achievers ($p < 0.01$) proving satisfactory reliability and validity.

The questionnaires were distributed and collected from undergraduates utilising online mediums such as Google forms and emails during the period of Covid-19 pandemic and the Conditional Movement Control Orders (CMCO) from October 2020 to January 2021. The PERMA constructs were tested on 11 scale items from 0 to 10 (Butler and Kern, 2016). The PERMA-Profiler was measured by the five criteria of "very high functioning" for a score of 9 and above (0 to 1 for negative emotion); "high functioning" for 8 to 8.9 (1.1 to 3 for negative emotion); "normal functioning" for 6.5 to 7.9 (3 to 5 for negative emotion); "sub-optimal functioning" for 5 to 6.4 (5.1 to 6.5 for negative emotions); and "languishing" of lower than 5 (above 6.5 for negative emotion) (Butler & Kern, 2016). The depression construct PHQ-9 was tested using a scale based on 0 to 4 (none), 5-9 (mild), 10-14 (moderate), 15-19 (moderately severe), and 20 to 27 (severe) (Kroenke et al., 2001).

The Statistical Package for Social Sciences version 23 (SPSS V.23.0) was used to analyse the data. Descriptive and inferential analyses were conducted to address the research objectives. Frequencies and percentages were calculated to analyse the demographic variables while independent sample t-test and one-way analysis of variance (ANOVA) test were run to measure differences. Relationships between factors and depression were analysed using correlations. All variables with p-value less than 0.05 were entered into the multiple linear regression model by means of the step-wise method. All tests were two-tailed, and the significance level (α) was set at p-value of <0.05.

Findings and Discussion

Table 1 summarises the respondents' demographic characteristics. The sample comprised of 90 female and 42 male students between the ages of 18 and 24. Among them were 126 Chinese and six Indians, with the majority (62%) pursuing the Diploma and the remainder the Bachelor's degree. Their distribution by year 1 to year 3 of study was 38, 62, and 32 respectively. In terms of income status, 82 (62.1%) were from the B40 group, followed by 40 (30.3%) in M40 group and a minority of 10 (3.6%) from the relatively well-to-do T20 families. The majority of the respondents or 74 (56.1%) were from small families of up to 4 members and the rest from medium-sized families of 5 to 10 members. It may be noted that majority of the respondents did not engaged in physical activities (63.6%) or religious activities (60.6%).

Table 1
Demographic Profile of Respondents

Demographic Variables	Classification	Frequency	Percentage
Gender	Female	90	68.2
	Male	42	31.8
Age	18- 24 years	132	100.0
Ethnic Group	Chinese	126	95.5
	Indian	6	4.5
Nationality	Malaysian	132	100.0
Level of Study	Diploma	82	62.2
	Degree	50	37.8
Year of Study	Year 1	38	28.8
	Year 2	62	47.0
	Year 3	32	24.2
Family Income Group	B40	82	62.1
	M40	40	30.3
	T20	10	7.6
Family Size	Medium	58	43.9
	Small	74	56.1
Engagement in Physical Activities	Yes	48	36.4
	No	84	63.6
Engagement in Religious Activities	Yes	52	39.4
	No	80	60.6
Psychological well-Being level	Languishing	50	37.9
	Normal	16	12.1
	Sub-optimal	66	50.0

Reliability test was conducted for all constructs and the outcome is shown in Table 2 below. The test scores range from 0.679 to 0.887, with the majority of scores exceeding 0.8 which indicates good internal consistency for this study. Common Method Variance (CMV) was used to measure the biasness of dataset and construct validity of the questionnaire. The results indicated CMV value was 65% or slightly higher than the cut-off value of 50% and lower.

Table 2
Reliability Test

No	Constructs	Items	Cronbach Alpha
1	Depression	Q34-Q42	0.788
2	Positive emotions	Q3,Q14,Q22	0.859

No	Constructs	Items	Cronbach Alpha
3	Engagement	Q2,Q11,Q18	0.679
4	Relationship	Q9,Q19,Q21	0.877
5	Meaning	Q8,Q10,Q20	0.872
6	Achievement	Q1,Q5,Q16	0.882

The mean scores of the PERMA elements are shown in Table 3. "Relationship" has the highest mean value (M=8.956), conforming the findings of Kern & Khaw (2015) that Malaysia is a society that places a high value on relationships. This is followed by "Positive Emotions (M=8.784)" and "Engagement." (M=8.526). Both "Meaning" and "Achievement" elements scored the lowest, (M= 8.400). The low mean score for "meaning" indicates that the students fail to perceive their learning activities as something valuable that helps to contribute positively to others around them. The low score for "achievement" indicates dissatisfactory grades received by undergraduates during the pandemic period. This could be due to excessive assessments and coursework to replace the face-to-face contact as well as poor comprehension of subject materials due to the challenges of remote online learning.

Table 3
Mean Score of PERMA Elements

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Positive Emotions	132	2.29	12.25	8.7841	2.02885
Engagement	132	4.29	11.17	8.5265	1.39264
Relationship	132	3.29	11.79	8.9558	1.84081
Meaning	132	1.63	12.13	8.4003	2.06009
Achievement	132	3.29	11.25	8.4003	1.66185
Valid N (listwise)	132				

The Level of Psychological Well-Being among Undergraduates

Psychological well-being is obtained by totalling the PERMA elements (Table 4). Half the respondents were found to be functioning at sub-optimal level (50%) followed by the languishing level (37.9%) during the Covid-19 pandemic period. This indicates that the students were experiencing a low level of well-being (languishing) with the majority struggling (sub-optimal) in their daily life. As such the alternative hypothesis is not supported. Only a low 12.1% of the respondents were functioning at a normal level. This finding corroborates with the past studies of Kunjiapu & Kunasegaran (2021), Kotera & Ting (2021) and Kern & Khaw (2015). The undergraduates could be feeling "empty" as they experienced a low level of meaningfulness and sense of achievement in their daily life during the pandemic period.

The lack of purpose or direction among the students due to isolation and low social interaction during the lockdown, together with the low engagement due to remote online lessons, could possibly contributed to this. Further exploration between demographic factors such as gender, ethnic group, programme level, year of study, family income and size and the psychological well-being yielded no significant differences although female respondents had higher mean score of well-being (M=5.292) than male respondents (M=5.051) during this Covid-19 period.

Table 4
Level of Psychological Well-Being

Variable	Classification	Scoring	Percentage
Psychological Well-Being level	Languishing	<5	37.9
	Normal	6.5 to 7.9	12.1
	Sub-optimal	5.1-6.5	50.0

Note: adapted from Butler and Kern (2016)

The Level of Depression among Undergraduates

The depression level experienced by the respondents is shown in Table 5. The majority (45.5%) of the respondents reported having severe depression, with a PHQ-9 score of 20 to 27. They were followed by those with moderately severe depression for which the PHQ-9 score was between 15 and 19 (33.3%), moderate depression and a PHQ-9 score between 5 and 9 (16.7%), and mild depression with a PHQ-9 score between 0 and 4 (4.5%). This seems alarming because all respondents reported of having experienced depression, with mild depression accounting for the smallest percentage. With the vast majority of respondents suffering from severe depression, the alternative hypothesis is unsupported. This finding is similar to the findings by Yusof et al. (2020); Fata Nahas et al. (2019); Islam et. al. (2018); and Shamsudin et. al. (2017) that reported a high degree of depression among Malaysian undergraduates, but the prevalence of severe depression was not as high as 46% during the pandemic period. The high incidence of depression was almost certainly due to prolonged confinement to their home or hostel and to attend online lectures for to the exclusion of face-to-face learning. The need to face their digital devices for long hours inevitably produced mental and physical strain accompanied by boredom, fatigue, and disinterest. These problems were compounded by the absence of social interactions with peers and teachers to seek advice or assistance.

Table 5
Depression Level

Variable	Classification	PHQ-9 Score	Percentage
Depression level	Mild	0-4	4.5
	Moderate	5-9	16.7

Variable	Classification	PHQ-9 Score	Percentage
	Moderately Severe	15-19	33.3
	Severe	20-27	45.5

Note: PHQ-9 scale scoring from Kroenke et al. (2001)

Table 6 shows the findings of cross tabulations on the relationship between gender, levels of depression among students, and family income revealed that female respondents and families in the B40 income bracket were prone to suffer from severe depression. That the B40 category respondents suffered the worst consequences of the pandemic is consistent with a recent study by Govindamah et al. (2020). No significant difference was found between the gender of respondents although females had higher mean level (M=18.956) than the males (M=18.523). However, it is noted that undergraduates who were physically active or who were engaged in religious activities during the Covid-19 period reported a lower level of depression compared to their counterparts.

Table 6
Cross Tabulation between Gender, Depression Level and Family Income

Gender	Depression	Family Income			Total
		B40	M40	T20	
Female	Mild	4	0	0	4
	Moderate	8	8	0	16
	Moderately	18	6	2	26
	Severe	28	14	2	44
	Total	58	28	4	90
Male	Mild	0	2	0	2
	Moderate	4	2	0	6
	Moderately	10	4	4	18
	Severe	10	4	2	16
	Total	24	12	6	42

There was a statistically significant difference between family income groups as determined by one-way ANOVA ($F(5,126) = 5.976$, $p = .000$) as shown in Table 7. A Tukey post hoc test revealed that the depression level was significantly different between the B40 and M40 income groups ($p=0.001$) and but no statistically significant difference between the B40 and T20 and also M40 and T20 groups. Since the eta squared value is found to be 0.190, it can be said that the family's income level has great influence on the depression level of undergraduates. Results

indicate that undergraduates from the lower middle income (lower M40) group experience the highest level of depression (M=23.000). The finding of this study is similar to that of Shamsudin et al. (2013) that reported no significant difference between the gender was found, but students from middle to low-income category experienced higher levels of stress levels. Lower middle-income families are families which are beginning to improve their living condition. According to the Malaysian Department of Statistics, since the Movement Control Order was implemented on March 18. By November 27, about than 99,700 Malaysians had lost their jobs, and many were from the lower income groups. Reduction or loss of household income tend to bring about family conflicts which could in turn expose their children to traumatic events and violence that might trigger the onset of depression.

Table 7
ANOVA: Family Income Groups and Depression Level

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	593.390	5	118.678	5.976	.000
Within Groups	2502.247	126	19.859		
Total	3095.636	131			

In investigating if there are any mean differences in the year of study with the severity of depression, no significant differences were found. However, cross tabulation showed 46% of the undergraduates in the second year of study experienced severe depression. This confirms the findings of Fata et al. (2019) that second year students had the highest mean score in the severity of depression. This could be because they face more complex curriculum in their second year of study and were abruptly transitioned to remote online learning from the regular physical class was a source of stress. New students, on the other hand, were introduced to online lessons at the beginning of the academic year and did not undergo a dramatic change in the mode of learning.

The Relationship between Psychological Well-Being and Depression

Table 8 shows the relationship between the well-being constructs and depression level among undergraduates. Pearson's Correlation was run to test the association between the elements and the results indicated the presence of a significant association between the PERMA elements and the level of depression experienced by undergraduates during the pandemic period.

Table 8
Correlations Among Constructs of Wellbeing and Depression

Variables	Correlations	1	2	3	4	5	6
1. Positive Emotions	Pearson Correlation Sig (2-tailed) N						
2. Engagement	Pearson Correlation Sig (2-tailed) N	.726** 0.000 132					
3. Relationship	Pearson Correlation Sig (2-tailed) N	.814** .000 132	704** 0.000 132				
4. Meaning	Pearson Correlation Sig (2-tailed) N	850** .000 132	.721** 0.000 132	.800** 0.000 132			
5. Achievement	Pearson Correlation Sig (2-tailed) N	.670** .000 132	.698** 0.000 132	.642** 0.000 132	.766** 0.000 132		
6. Depression	Pearson Correlation Sig (2-tailed) N	.338** .000 132	.368** .000 132	.343** .000 132	.279** .000 132	.267* .000 132	
Mean		8.7841	8.5285	8.9558	8.4003	8.4003	18.8182
Standard Deviation		2.02885	1.39264	1.84081	2.06009	1.66185	4.86115

P<0.001***

Regression analysis was run to predict the strongest elements that impact the total depression among the undergraduates during the pandemic period. Table 9 shows the linear regression analysis between the PERMA elements and total depression among undergraduates, (coefficients and 95% confidence intervals for the unstandardized coefficient values). The model summary shows a R value of 61.2% indicating a high degree of correlation between the PERMA elements supporting the alternative hypothesis, while R^2 of 37.5% explains that the PERMA elements accounts for 38% of variation in the total depression. This indicates the presence of other factors impacting the depression level among undergraduates during the Covid-19 period.

Table 9
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.612[a]	.375	.345	3.93442

a. Predictors: (Constant), Relationship, Engagement, Achievement, Meaning, Positive Emotion

When the total depression was predicted it was found that PERMA elements such as Engagement (β = 0.468, p =0.00), Relationship (β =-0.220, p < .05), and Achievement (β = -.622, p=0.00) were significant predictors. Positive emotions (β=-.173, n.s.) and Meaning (β=.069, n.s.) were not significant predictors as shown in Table 10. The overall model fit was R^2= 0.38. This supports the finding of Kotera & Ting (2021) that engagement, motivation, self- compassion, and well-being were associated with, and predicted large variance in mental health among students.

In summary, a comparison between the significant PERMA elements, Achievement stood out as the strongest predictor of total depression among undergraduates, followed by Engagement and Relationship. This is because achievements increase the undergraduate's self- esteem and give them hope to be persistent apart from happiness of receiving good grades that removes them from depression. On the other-hand, if students are encountering a low sense of achievement, they would experience poor self-esteem, lose direction and interest, and soon slip into a state of depression.

Table 10
Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	4.460	2.339		1.906	.059	-.170	9.089
Positive Emotions	-.415	.469	-.173	-.885	.378	-1.344	.514
Engagement	1.635	.388	.468	4.212	.000	.867	2.403
Meaning	.162	.342	.069	.474	.637	-.515	.838
Relationship	-.514	.226	-.220	-2.273	.025	-.961	-.066
Achievement	-1.625	.303	-.622	-5.354	.000	-2.225	-1.024

a. Dependent Variable: Total_ Depression

Conclusion

This study that is based on date derived from a sample survey has obvious limitations. These include the fact that the sample is confined to one private university, the respondents were drawn principally from one ethnic group, and that the levels of psychological well-being and depression were measured during the height of the CMCO period when the entire population was feeling tense and uneasy. However, some broad conclusions may be drawn from the empirical evidence presented by the study.

Low levels of psychological well-being and high levels of depression seem to be common among the undergraduates during the Covid-19 pandemic period. The study shows that high levels of depression were factors in the low sense of achievement, engagement and relationship. These findings highlight the need for universities to engage in vigorous outreach efforts to educate undergraduates and their families about psychological wellbeing, depression, available support services as well as to rethink some of its teaching-learning strategies.

Universities could do a similar psychological well-being and depression survey to continuously monitor the mental health of its undergraduates. In-campus social support must be made available to students around the clock. Collaboration with the university's counselors and external psychologists or psychiatrists would be beneficial in providing the needed support. Such services must be accessible to students without the need for referrals for the interest of protecting privacy. It is essential that students be aware of the availability of such support services as well as the importance of seeking help so as to remove the stigma among the undergraduates of the association with depression. Universities should also assess and improve the efficacy of relevant existing support programmes in the campus. They could also incorporate courses that teach study skills, stress and time management, meditation and mindfulness as electives in academic programmes. Apart from that, the design and delivery of the curriculum along with the assessment strategy could be adjusted to adapt to changing needs of the student body. The contents of subjects and the assessments must be such that undergraduates can relate to. To make courses more relevant for students, educators must add projects, activities, or events that may benefit them, the community, and the environment as a whole. Instead of the over-emphasis of written assignments, other forms of assessments such as demonstrations, presentations, and related activities may be adopted to provide undergraduates with a greater sense of accomplishment in their pursuit of knowledge. To facilitate learning during the pandemic and movement control period, electronic textbooks could be made available as well as the loaning of relevant devices where possible for students from the lower income group. Activities and projects that would enable undergraduates to be part of the "gig economy"[2] while generating income should be included to provide financial support. The usage of various social media platforms and university-specific platforms should be encouraged in order to allow interaction between undergraduates and their teachers, as research

shows that individuals require supportive, good relationships and social belonging in order to maintain psychological well-being.

The pandemic has disrupted normal life and, among other things, brought fundamental changes in the conduct of work and study by all members of society. Interruptions in the life of students and the impact of the protracted pandemic has taken a toll on their psychological well-being. It is important that universities and education managers be aware of these impacts and to formulate effective means to safeguard the interests of students. In view of the uncertainties concerning the prospects of ending the pandemic, it is advisable that further studies be undertaken to understand and detect the incidence of early symptoms of depression among students and to identify effective means of support and preventive measures.

* Dr. Kunjiapu Shamuni is an Assistant Professor of Faculty of Accountancy, Management and Economics, New Era University College, Malaysia. Email: shamuni.k@newera.edu.my

** Dr. Kunasegaran Mageswari is a part-time lecturer of Faculty of Accountancy, Management and Economics, New Era University College, Malaysia. Email: mag8515@yahoo.com

*** Song-Peng Goh, Frankie (吴颂平) is the Head of Department of Faculty of Accountancy, Management and Economics, New Era University College, Malaysia. Email: frankie.goh@newera.edu.my

References

Abdel Wahed, W.Y & Hassan, S.K. (2017). Prevalence and associated factors of stress, anxiety and depression among medical Fayoum University students. Alexandria *Journal of Medicine*, 53(1), 77–84. https://doi.org/10.1016/j.ajme.2016.01.005

America Psychology Association (2013). *Diagnostic and statistical manual of mental disorders (DSM-5)*, Arlington: American Psychiatric Pub.

Aquino, J. P. De, Londono, A., & Carvalho, A. F. 2018. An update on the epidemiology of major depressive disorder across cultures". In Kim Y. K. (Eds), *Understanding Depression* (pp.305–315). Springer.

Ayşe. B. E. (2018). Adaptation of the PERMA well-being scale into Turkish: validity and reliability studies. *Academic Journals*. 13(4), 129–135. https://doi.org /10.5897/ERR2017.3435.

Bas, V., Hamarta, E., & Koksal, O. (2014). The correlations between the meaning of life, depression, stress and anxiety among university students. *Agora Psycho- Pragmatica*.8(2): 36–50. https://www.uav.ro/jour/index.php/app/article/view/413

Brooks, S. K., Webster, R.K., Smith, L.E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *The Lancet*, 395, 912–920. https://www.thelancet.com/action/showPdf?pii=S0140-6736%2820%2930460-8

Burns R. (2016). Psychosocial well-being. In Pachana N. (Eds)., *Encyclopedia of Geropsychology* (pp. 1–8). Springer. https://doi.org/10.1007/978-981-287-080-3_251-1

Butler, J., & Kern, M. L. (2016). The PERMA-Profiler: A brief multidimensional measure of flourishing. *International Journal of Wellbeing*, 6(3): 1–48. https://doi.org /10.5502/ijw.v6i3.526

Centre for Disease Control and Prevention COVID-19 Response Team. (2020). Severe outcomes among patients with coronavirus disease 2019 (COVID-19)–United States, February 12-March 16, 2020. *Morbidity and Mortality Weekly Report*, 69(12), 343–346. https://doi.org/10.15585/mmwr. mm6912e2

D'raven. L.L., & Pasha-Zaidi. N. (2015). Using the PERMA model in the United Arab Emirates. *Social Indicators Research*, 1(25), 905–933.

Dale, H., Brassington, L. & King, K. (2014). The impact of healthy lifestyle interventions on mental health and wellbeing: a systematic review. *Mental Health Review Journal*, 19(1): 1–26.

Daniel, S. (2020). Education and the COVID-19 pandemic. *Prospects*. Advance online publication.

Deb, S., Banu, P.R, Thomas, S., Vardhan, R.V., Rao, P.T., & Khawaja, N. (2016). Depression among Indian university students and its association with perceived university academic environment, living arrangements and personal issues. *Asian J. Psychiatry*, 23: 108–117.

Diener, E.D & Seligman, Martin E.P. (2004). Beyond money: toward an economy of well-being. *American Psychology Society*, 5(1): 1–31.

Economic Planning Unit. (2021). *Sustainable Development Goals*. https://www.epu.gov.my/en/sustainable-development-goals

Fata Nahas, A., Elkalmi, R. M., Al-Shami, A. M., & Elsayed, T. M. (2019). Prevalence of depression among health sciences students: findings from a public university in Malaysia. *Journal of Pharmacy & Bioallied Sciences*, 11(2): 170–175. https://doi.org/10.4103/jpbs.JPBS_263_18

Gan, W.Y., Nasir, M. T. M., Zalilah, M. S., & Hazizi, A. S. (2011). Disordered eating behaviors, depression, anxiety and stress among Malaysian university students. *College Student Journal*, 45(2): 296–309.

Gander, F., Proyer, R. T., & Ruch. W. R. (2016). Positive psychology interventions addressing pleasure, engagement, meaning, positive relationships, and accomplishment increase well-being and ameliorate depressive symptoms: a randomized, placebo- controlled online study. *Online Research Frontiers in Psychology*, 7(686): 1–12. http://doi.org/10.3389/fpsyg.2016.00686

Govindamal, T., Mas Ayu Said, Hazreen Abdul Majid, Reidpath, D. & Su, T.T. (2020), Income inequality in quality of life among rural communities in Malaysia: a case for immediate policy consideration, *International Journal of Environmental research and public health*, 17 (8731): 2–19

Harizah Kamel (2020, November 11). Suicide cases on the rise amid pandemic. *The Malaysian Reserve*. https://themalaysianreserve.com/2020/11/11/suicide-cases-on-the-rise-amid-pandemic

Hunt, K. & Gable, K.N. (2013). Prevalence of depressive symptoms and obsessive-compulsive personality traits among pharmacy students. *Curr Pharm Teach Learn*, 5(6): 541–545.

Huppert, F. (2009). Psychological well-being: evidence regarding its causes and consequences. *Applied Psychology: Health and Well- Being*, 1: 137–164. http://doi.org/10.1111/j.1758-0854.2009.01008.x

Ibrahim, A.K, Kelly, S. J, Adams, C.E. and Glazebrook, C. (2013). A systematic review of studies of depression prevalence in university students. *Journal of Psychiatric Research*, 47(3): 391–400.

Islam, M. A., Low, W. Y., Tong, W. T., Yuen, C. C., & Abdullah, A. (2018). Factors associated with depression among university students in Malaysia: a cross-sectional study. *KnE Life Sciences*, 4(4), 415–423. http://doi.org/10.18502/kls.v4i4.2302

Kaur, J., Cheong, S. M., Naidu, B. M., Kaur, G., Manickam, M. A., Noor, M. M. & Rosman, A. (2014). Prevalence and correlates of depression among adolescents in Malaysia, *Asia-Pacific Journal of Public Health*, 26(5): 1–10.

Kern, M., & Khaw, D. (2015). A cross-cultural comparison of the PERMA model of well- being. *Undergraduate Journal of Psychology at Berkeley, 8: 1–22*.

Kotera, Y., & Ting, S.H. (2021). Positive psychology of Malaysian university students: impacts of engagement, motivation, self-compassion, and well-being on mental health. *International Journal of Mental Health and Addiction*, 19: 227–239. https://doi.org/10.1007/s11469-019-00169-z

Krejcie, R.V., & Morgan, D.W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, *30*, 607–610.

Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: validity of a brief depression severity measure. *Journal Of General Internal Medicine*, 16(9): 606–613. https://doi.org/10.1046/j.1525-1497.2001.016009606.x

Kun, A., Balogh, P. & Krasz, K.G. (2017). Development of the work-related well-being questionnaire based on Seligman's PERMA model. *Periodica Polytechnica Social and Management Sciences*, Online (1): 1–8. http://doi.org/10.3311/PPso.9326

Kunjiapu, S. & Kunasegaran, M. (2021). Psychological wellbeing among undergraduates of higher learning institutions in Malaysia. *Psychology and Education*, 58(2): 9179–9187.

Lei, L., Huang, X., Zhang, S., Yang, J., Yang, L., & Xu, M. (2020). Comparison of prevalence and associated factors of anxiety and depression among people affected by versus people unaffected by quarantine during the COVID-19 epidemic in Southwestern China. *Medical Science Monitor: International Medical Journal of Experimental and Clinical Research*, 26, e924609-1.

Levis, B., Benedetti, A., Thombs, B. D. (2019). Accuracy of Patient Health Questionnaire-9 (PHQ-9) for screening to detect major depression: individual participant data meta- analysis. *British Medical Journal*, 365, Article l1476. https://doi.org/10.1136/bmj.l1476

McFerran, K. (2010). Music for wellbeing in *Australian Schools White Paper: Executive Summary*. The University of Melbourne.

Ministry of Health. (2019). *National health and morbidity survey (NHMS) 2019 factsheet*. http://www.iku.gov.my/nhms-2019

Nicola, M., Alsafi, Z., Sohrabi, C., Kerwan, A., Al-Jabir, A., Iosifidis, C., Agha, M., & Agha,R. (2020). The socioeconomic implications of the coronavirus pandemic (COVID-19): A review. *International Journal of Surgery*, 78: 185–193.

Noble, T., & McGrath, H. (2008). The positive educational practices framework: a tool for facilitating the work of educational psychologists in promoting pupil wellbeing. *Educational and Child Psychology*, 25(2): 119–134.

Orgilés, M., Morales, A., Delvecchio, E., Mazzeschi, C., & Espada, J. P. (2020). Immediate psychological effects of the COVID-19 quarantine in youth from Italy and Spain. *Frontiers In Psychology*, 11, 2986.

Piko, B. F., & Fitzpatrick, K. M. (2007). Socioeconomic status, psychosocial health and health behaviours among Hungarian adolescents. *The European Journal of Public Health*, 17(4): 353–360.

Rooney, K. (2021) *This Is Why Mental Health Should Be a Political Priority*. World Economic Forum. https://www.weforum.org/agenda/2021/01/poverty-mental-health- covid-intervention/

Santos, V., Paes, F., Pereira, V., Arias-Carrión, O., Silva, A. C., Carta, M. G., Nardi, A.E., & Machado, S. (2013). The role of positive emotion and contributions of positive psychology in depression treatment: systematic review. *Clinical Practice and Epidemiology in Mental Health*. 9(1): 221–237. DOI: 10.2174/1745017901309010221

Seligman, M. E. P. (2011). *Flourish: A Visionary New Understanding of Happiness and Well- Being*. Free Press.

Shamsuddin, K., Fadzil, F., Ismail, W. S. W., Shah, S. A., Omar, K., Muhammad, N. A., Jaffar, A., Ismail, A., Mahadevan, R. (2013). Correlates of depression, anxiety and stress among Malaysian university students. *Asian Journal of Psychiatry*, 6(4): 318–323. https://doi.org/10.1016/j.ajp.2013.01.014

Suleiman, A. K., Ismadi, N. F. I., Choudhry, F. R., Munawar, K., & Hameed, M. A. (2017). Determinant factors of depression: a survey among university students. *Malaysian Journal of Public Health Medicine*, 17(3), 97–103.

Uehara, T., Takeuchi, K., Kubota, F., Oshima, K., & Ishikawa, O. (2010). Annual transition of major depressive episode in university students using a structured self‐rating questionnaire. *Asia‐Pacific Psychiatry*, 2(2), 99–104.

Varma, D. (2017). Relationship of positive and negative affect with depression in clinical and normal group. *Psychology and Behavioural Science International Journal*, *2*(1), 1–6. http://doi.org/10.19080/PBSIJ.2016.02.555579

Wahab, S., Rahman, F. N., Wan Hasan, W. M., Zamani, I. Z., Arbaiei, N. C., Khor, S. L., & Nawi, A. M. (2013). Stressors in secondary boarding school students: association with stress, anxiety and depressive symptoms. *Asia-Pacific Psychiatry: Official Journal of The Pacific Rim College of Psychiatrists*, 5 Suppl 1, 82–89. https://doi.org/10.1111/appy.12067

Webster, A. D. (2014). A flourishing future: Positive psychology and its lessons for education. *Independent School*, 74: 40–46.

Wong, L.P., Alias, H., Md Fuzi, A.A., Omar, I.S., Mohamad Nor, A. & Tan M. P. (2021). Escalating progression of mental health disorders during the COVID-19 pandemic: Evidence from a nationwide survey. *PLoS one*, 16(3), e0248916. https://doi.org/10.1371/journal.pone.0248916

World Health Organization. (2019). *Mapping Actions for Adolescent Mental Health*. http://whqlibdoc.who.int/publications/2012

Yoon, S., Lee, Y., Han, C., Pae, C. U., Yoon, H. K., Patkar, A. A., Steffens, D. C., & Kim, Y. K. (2014). Usefulness of the Patient Health Questionnaire-9 for Korean medical students. *Academic Psychiatry: the journal of the American Association of Directors of Psychiatric Residency Training and the Association for Academic Psychiatry*, 38(6): 661–667. https://doi.org/10.1007/s40596-014-0140-9

Yusof, N. S. M., Ghazali, L. N., Chee, C. S., Jamil, N., Hisham, S. A., Qader, A. M. A., & Zainal, Z. A. (2020). Prevalence of depression among undergraduate pharmacy students in Malaysia. *International Journal of Pharmaceutical Research*, 12(03): 2033–2042.

Yusoff, M. S., Abdul Rahim, A. F., Baba, A. A., Ismail, S. B., Mat Pa, M. N., & Esa, A. R. (2013). Prevalence and associated factors of stress, anxiety and depression among prospective medical students. *Asian Journal of Psychiatry*, 6(2): 128–133. https://doi.org/10.1016/j.ajp.2012.09.012

Yusoff, M. S. B., Rahim, A. F. A., & Yaacob, M. J. (2010). Prevalence and sources of stress among Universiti Sains Malaysia medical students. *The Malaysian Journal of Medical Sciences: MJMS,* 17(1), 30.

Zhai, H., Chen, L., Yang, Y., Sun, H., Pan, H. & He, J. (2016). Family and college environmental exposures mediate the relationship between parental education and depression among college students. *PLoS one*, 11(3), e0151759. https://doi.org/10.1371/journal.pone.0151759

Notes

1 B40, M40, and T20 refer to Malaysian family income groups. B40 refers to the 40% of households with a monthly income of less than RM4,851. M40 stands for the middle 40% of households earning between RM4,851 and RM10,970 per month, while T20 represents the top 20% of households earning in excess of RM10,971 per month.

2 The gig economy is an economic model based on freelancers or "giggers," whose services are based on skills, short-term contracts, and freelance or flexible employment via online platforms.