Psychological Wellbeing among International Students in Universiti Putra Malaysia during the Pandemic

Hasfalina Che Man[1,3], Zainal Abidin Talib[2*], Abdul Hadi Sulaiman[5], Suhaimi Abdul Rahman[1,4], Haslinda Abdullah[5], Mohd Rafee Baharudin[6] & Izzah Farhana Ab Aziz[3]

[1] PUTRA International Center (i-PUTRA), Universiti Putra Malaysia,
43400 UPM Serdang, Selangor, Malaysia
[2] Department of Physics, College of Natural Sciences, Jeonbuk National University 567,
Baekje-daero, Deokjin-gu, Jeonju-si, Jeollabuk-do, 54896 Republic of Korea
[3] Faculty of Engineering, Universiti Putra Malaysia,
43400 UPM Serdang, Selangor, Malaysia
[4] School of Business and Economics, Universiti Putra Malaysia,
43400 UPM Serdang, Selangor, Malaysia
[5] Institute for Social Sciences, Universiti Putra Malaysia,
43400 UPM Serdang, Selangor, Malaysia
[6] Occupational Safety and Health Management Office, Universiti Putra Malaysia,
43400 UPM Serdang, Selangor, Malaysia
zainalat@jbnu.ac.kr
*corresponding author

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Abstract: This study aimed to investigate the prevalence of physiological well-being among Universiti Putra Malaysia (UPM) international students due to the lockdown during the COVID-19 pandemic and identify the determinants of depression and anxiety. A total of 411 international university students at UPM participated in this online-based survey. A standardized e-questionnaire was generated using Google Forms, and the link was shared through social media, e.g., WhatsApp, and thru students' e-mails. The information was statistically analyzed by SPSS. Students experienced moderate depression and anxiety. The university is expected to consider to fixing factors in reducing depression and anxiety among international university students.

Keywords: anxiety, COVID-19, depression, international students, pandemic

Introduction

The COVID-19 pandemic, caused by the SARS-CoV-2 virus, poses a significant threat to global health and has extensive socio-economic ramifications for nearly all countries worldwide. In response to the pandemic, Malaysia implemented the first movement control order (MCO) on March 18, 2020, as reported by Rampal and Liew (2020). Since then, a series of lockdowns have been reinforced throughout 2020. From this perspective, the global restrictions profoundly impacted the academic context. Large-scale closure of colleges and universities, as reported by the United Nations Educational, Scientific and Cultural Organization (2020), postponed all scheduled activities and events, including the evacuation of campuses and student accommodations. These circumstances brought a significant shift in formal and informal modes of teaching and learning, with a transition to online platforms (Sarmin & Saad, 2021). Consequently, students' lives underwent substantial changes. Several research studies have delved into the factors linked to the COVID-19 pandemic's impact on university students, unveiling increased anxiety levels and apprehension regarding academic disruptions. The disruption in students' daily routines and interpersonal relationships has been well-documented by researchers, including Cao et al. (2020), Chen et al. (2020), Lee (2020b), and Sahu

(2020). The quarantine and subsequent lockdowns prevented students from fully experiencing university life, impacting their academic pursuits (Lee, 2020b; Sahu, 2020).

A few survey studies were conducted to observe the level of depression for university students following obligatory lockdown during the Covid-19 pandemic. According to a study conducted in Bangladesh, university students exhibited elevated levels of depression and anxiety. Around 15% of the students encountered moderate to severe levels of depression, whereas 18.1% were significantly impacted by anxiety. (Islam et al., 2020). In Malaysia, previous studies by Sundaresan et al. (2020) (n = 983) reported that 20.4%, 6.6%, and 2.8% of university students experienced minimal to moderate, marked to severe, and most extreme anxiety levels, respectively.

Prominent sources of stress encompass financial limitations, the challenges associated with remote online teaching, and the prevailing uncertainty regarding academic pursuits and career prospects (Bin et al., 2021). Currently, there is a lack of specialized tools to fully understand, identify, and assess the specific stressors associated with university students' experiences during the COVID-19 pandemic. Developing such tools could facilitate the early recognition of students at high risk of developing significant psychological issues due to the lockdown measures. Consequently, timely and personalized interventions could be provided to promote the wellbeing of these students (Zurlo et al., 2020).

This study, focuses on respondents of international students, who have crossed an international or territorial border for the purpose of education and are now enrolled in institutions outside their origin country (UNESCO). In Malaysia, UPM has the highest international students' enrolment. In 2018 - 2019, more than 5,000 international students were studying at UPM, including postgraduate and undergraduate students. The stressful situations and loneliness are more intense among international students during the lockdown periods. In particular, the international students must consider various issues, such as visa and graduation status, options on whether to go home and defer their study due to border closings, and living far from the family and not having a strong support network and finances due to many having lost jobs. In some countries banking services cannot be accessed due to shutdowns, and thus the families/ sponsors could not send money.

The current study sought to evaluate the stressors associated with the COVID-19 pandemic lockdown specifically among international students enrolled at UPM. Moreover, the study intends to investigate the living challenges, identify the coping strategies used, and understand ways to strengthen the social connections of university students in response to COVID-19. Furthermore, the findings derived from this survey will play a crucial role in facilitating comprehensive endeavors, including implementing of coping mechanisms. This will enable diligent monitoring of the perceived levels of stress and psychological wellbeing among international students, ensuring their overall support and assistance.

Methodology

Online survey data were collected between 15th August and 15th October 2020 for international students in UPM. The participants were recruited through WhatsApp, and e-mails. Before their participation, all the respondents received comprehensive information regarding the study's objectives including the strict confidentiality measures to protect their data. They were assured that the collected information would be exclusively used for research purposes. A total of 411 international university students voluntarily participated in the survey study and completed online Google Forms. The questionnaire encompassed demographic items, such as age, gender, study status, and financial status of the students, including an assessment of their mental health using the Depression, Anxiety, and Stress Scale (DASS-21). Additionally, the questionnaire explored their coping mechanisms and satisfaction levels regarding the services provided by UPM (Table 2). The formulated questions were designed to evaluate the perceived stress levels among university students during the COVID-19 pandemic lockdown.

The study utilized the DASS-21 questionnaire to assess symptoms of depression, anxiety, and stress (Table 1). Data analysis involved the utilizing of SPSS version 16 software, employing descriptive and inferential statistics. Participants were requested to rate their experiences of each symptom over the past week using a severity scale ranging from 0 (not applicable to me) to 3 (applies

to me most or all the time). Subsequently, scores for each scale were aggregated and classified as normal, mild, moderate, severe, or extremely severe based on the guidelines outlined in the DASS-21 Manual (Lovibond, S. & Lovibond, P., 1995). The scale employed in this study comprises 21 items, evaluated on a four-point Likert scale ranging from "never" (0) to "always" (3). It effectively measures three distinct dimensions: depression (comprising seven items), anxiety (comprising seven items), and stress (comprising seven items). In this research, levels of depression, anxiety, and stress were categorized based on scores ranging from moderate to extremely severe. The DASS-21 is a widely recognized instrument that has demonstrated good to excellent psychometric properties when applied to non-clinical samples.

Findings and Discussion

Sociodemographic of Participants

Demographic of the total sample (N = 411) are shown in **Table 1**. The total sample comprises 189 female (46%) and 222 male (54%). The sample comprised students enrolled in Bachelor (n = 162, 39.4%), Master (n = 112, 27.3%), and PhD (n = 137, 33.3%) programs; the majority of them were bachelor/single (n = 286, 69.6%), married-stay together (n = 70, 17%), and married-stay alone (n = 55, 13.4%). Regarding the study's status, about 73% were enrolled in second semester and above, 21.7% in the first semester, and 4.4% registered and 1% deferred. Almost 70% of the respondents were pursuing postgraduate graduate studies (Master and PhD level).

Almost three-quarters of the respondents were sharing accommodation with others (67.9%), and about 32.1% stayed alone, with the majority of 79.8% at rental housing outside within UPM, 8.3% at university accommodation (college), and 11.9% staying with friends/house outside UPM area, e.g., at Kuala Lumpur. On 18th March 2020, about 66.2% of the students were at UPM and 21.4% were abroad, and 12.4% were at other states in Malaysia. Throughout this timeframe, nearly all universities implemented a virtual mode of instructional delivery. Most (76.6%) of the students in this study were self-sponsored and 15.8% were on scholarships and 7% were on other financial sources.

Table 1. Sociodemographic of the respondents (N = 411)

Gender	**Frequency**	**Percent**
Male	222	54.0
Female	189	46.0
I am staying at		
UPM College	34	8.3
Rental outside UPM	328	79.8
Stay at Friends Room/House	49	11.9
I am staying with		
Alone	132	32.1
Sharing Room or House with Others	279	67.9
I am at the study stage of:		
Registration	18	4.4
1st Semester	89	21.7
Second Semester and Above	300	73.0
Deferment or Terminated	4	1.0
At the Faculty:		
Faculty of Agriculture	20	4.9
Faculty of Biotechnology and Biomolecular Sciences	8	1.9
Faculty of Computer Science and Information Technologies	10	2.4
Faculty of Design and Architecture	4	1.0

Faculty of Economics and Management	59	14.4
Faculty of Education Studies	16	3.9
Faculty of Engineering	109	26.5
Faculty of Food Science and Technology	4	1.0
Faculty of Forestry and Environment	3	.7
Faculty of Human Ecology	11	2.7
Faculty of Medicine and Health Sciences	30	7.3
Faculty of Modern Languages and Communication	63	15.3
Faculty of Science	11	2.7

DASS-21 (Depression, Anxiety and Stress Scale) Analysis

The DASS-21 is one of the most widely used scale for depression screening measures. The total score for each sub-scale was analyzed in Table 2. It was observed that the overall stress score, anxiety, and depression were at 75.7%, 62.5%, and 63.7%, respectively. The high response values indicate high levels of experiencing the condition measured.

Table 2. DASS-21 Analysis

DASS - Stress	Low 0	Moderate 1	High 2	Extreme 3
1. I found it hard to unwinding	53.0	27.0	15.8	4.1
6. I respond excessively to situations	57.4	27.7	11.4	3.4
8. I felt that I was exerting a lot of nervous energy	53.3	32.1	11.4	3.2
11. I found myself getting agitated	55.0	28.0	11.9	5.1
12. I found it hard to relax	46.5	32.4	14.6	6.6
14. I was intolerant of anything that kept me from getting on with what I was doing	56.9	26.5	10.7	5.8
18. I felt that I was rather touchy	59.9	24.8	10.7	4.6

Overall Stress Score	n	%
Normal (0 - 14)	311	75.7
Mild (15 - 18)	34	8.3
Moderate (19 - 25)	27	6.6
Severe (26 - 33)	29	7.1
Extremely severe (34 - 42)	10	2.4

DASS–Anxiety	0	1	2	3
2. I noticed that my mouth felt dry.	70.8	17.8	6.8	4.6
4. I encountered breathing difficulties, such as rapid breathing or feeling short of breath, even without physical exertion.	82.0	12.2	3.6	2.2
7. I encountered trembling (e.g., in my hands)	75.9	16.3	4.6	3.2
9. I felt concerned about situations that could trigger panic and potentially embarrass me.	51.6	27.5	15.8	5.1
15. I felt a sense of being on the verge of panic.	56.4	26.8	11.7	5.1

19. I noticed the activity of my heart, such as an increased heart rate or irregular beats, even without engaging in physical exertion.	69.1	19.0	8.0	3.9
20. I experienced feelings of fear or being scared without any apparent justification.	61.1	22.6	11.2	5.1

Overall Anxiety Score	n	%
Normal (0 - 7)	257	62.5
Mild (8 - 9)	38	9.2
Moderate (10 - 14)	50	12.2
Severe (15-19)	30	7.3
Extremely severe (20 - 42)	36	8.8

DASS–Depression	0	1	2	3
3. I struggled to experience any positive emotions whatsoever.	56.4	28.2	8.3	7.1
5. I encountered difficulty in summoning the motivation to initiate tasks or activities.	53.8	28.2	11.7	6.3
10. I had a sense of lacking anticipation or excitement for future events.	58.6	28.0	8.5	4.9
13. I felt down-hearted and blue	56.7	26.5	11.9	4.9
16. I was unable to become enthusiastic about anything	56.7	24.3	14.4	4.6
17. I felt I was not worth much as a person	65.0	20.0	10.5	4.6
21. I felt that life was meaningless	67.4	16.8	10.0	5.8

Overall Depression Score	n	%
Normal (0 - 9)	262	63.7
Mild (10 - 13)	28	6.8
Moderate (14 - 20)	70	17.0
Severe (21 - 27)	21	5.1
Extremely severe (28 - 42)	30	7.3

Table 3 (a) presents means, standard deviations, ranges, and regression (r) from the linear regression models for each mental health variable, such as depression, anxiety, and stress. The findings show that the students experienced moderate depression (r = 0.517), anxiety (r = 0.481), and stress levels (r = 0.511), respectively. The strength of the relationship was based on the r-values (**Table 3** (b)). The findings of this study align with previous research conducted by Sundaresan et al. (2020), Wang et al. (2020), and Bao et al. (2020). Sundaresan et al. (2020) reported that students residing alone exhibited higher anxiety levels than those living with family and friends. The experience of residing alone during this period could have amplified feelings of isolation and posed numerous challenges for these students, given their physical separation from loved ones and the abrupt threat to their safety and security amid the ongoing pandemic.

Table 3 (a). Correlation between Psychological wellbeing with selected variables

		Mean	Max	*r*	Sig.p-value	Result
	Psychological Wellbeing (Covid)	2.7034	4.00	-	-	
DASS21	stress	9.4063	21.00	.511	.000***	Moderate
	anxiety	7.0657	21.00	.481	.000***	Moderate
	depression	8.7397	21.00	.517	.000***	Moderate
BRIEF COPE avoidant Cope	Selfdistraction1_19	4.8856	8.00	.337	.000***	Low
	Denial3_8	3.3066	8.00	.353	.000***	Low
	Substances4_11	2.7226	8.00	.161	.000***	Slight
	Behavioraldisengagement6_16	3.4915	8.00	.400	.000***	Moderate
	Venting9_21	4.0341	8.00	.452	.000***	Moderate
	Selfblame13_26	3.5912	8.00	.337	.000***	Low
BRIEF COPE Approach Cope	Activecoping2_7	5.2068	8.00	.374	.000***	Low
	Emotional support5_15	4.4136	8.00	.328	.000***	Low
	Informational support10_23	4.4769	8.00	.346	.000***	Low
	Positivereframing12_17	4.9611	8.00	.298	.000***	Low
	Planning14_25	4.9586	8.00	.379	.000***	Low
	Acceptance20_24	5.4112	8.00	.339	.000***	Low
BRIEF COPE	Religion22_27	4.9294	8.00	.301	.000***	Low
BRIEF COPE	Humor18_28	3.6813	8.00	.200	.000***	Low
FINANCIAL STATUS	Finance	2.4294	4.00	.546	.000***	Moderate

Table 3 (b). R values as reference

R	Strength of relationship
< 0.2	Slight relationship
0.2 - 0.4	Low correlation, definite but small
0.4 - 0.7	Moderate correlation, substantial relationship
0.7 - 0.9	High correlation, marked relationship
> 0.9	Very high correlation, very dependable relationship

Source: Guildford Rule of Thumb (1973)

Coping Mechanism

Table 4 presents a descriptive overview of the coping strategies employed, indicating a moderate utilization of both approaches. Overall, the students practiced more acceptance strategies. Associations between the coping strategies and the physiological wellbeing of the students were tested using ANOVA procedures. In the analyses, the variances were similar. Coping is defined as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus & Folkman, 1984). Coping strategies are generally divided into two: adaptive (approach cope) and maladaptive (avoidant cope) strategies. Table 5 shows the scale of coping strategies by respondents. Adaptive coping strategies include actions and behaviors of active coping, emotional support (Carver et al., 1989), informational support, positive reframing, planning and acceptance to reduce stress. Adaptive coping creates action to reduce stress, promote psychological wellbeing, and improve general health (Penley et al., 2002). According to Main et al. (2003), adaptive coping refers to the perception of having control over a stressful situation by an individual.

Table 4. Statistical analysis of factors affecting physiological wellbeing

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	119.151	18	6.619	22.008	.000[b]
	Residual	117.904	392	.301		
	Total	237.055	410			

Variable	*B*	SE(B)	β	*t*	*p*
(Constant)	1.153	.119		9.658	.000
stress	.010	.007	.128	1.454	.147
anxiety	.011	.007	.125	1.563	.119
depression	.005	.006	.062	.743	.458
Selfdistraction1_19	.014	.025	.031	.564	.573
Activecoping2_7	.055	.026	.125	2.130	.034
Denial3_8	.027	.026	.060	1.031	.303
Substances4_11	-.121	.028	-.242	-4.354	.000
emotionalsupport5_15	.032	.027	.076	1.189	.235
instrumentalsupport10_23	-.014	.026	-.034	-.525	.600
Behavioraldisengagement6_16	.069	.030	.149	2.298	.022
Venting9_21	.107	.027	.232	3.969	.000
Positivereframing12_17	-.022	.025	-.054	-.863	.389
Planning14_25	-.024	.027	-.057	-.881	.379
Humor18_28	.011	.019	.027	.572	.568
Acceptance20_24	.006	.025	.016	.260	.795
Religion22_27	-.011	.018	-.032	-.624	.533
Selfblame13_26	-.047	.028	-.106	-1.696	.091
finance	.349	.041	.367	8.489	.000

$R = .709$ $R^2 = .503$

Table 5. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.709[a]	.503	.480	.54843

Table 6. ANOVA table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	119.151	18	6.619	22.008	.000[b]
	Residual	117.904	392	.301		
	Total	237.055	410			

The maladaptive coping strategies, prevailing among young adults (Mahmood et al., 2015; Blanchard-Fields et al., 2007) include denial, self-blaming, substance use, behavioral disengagement, venting, and self-distraction. These strategies are considered ineffective as they involve avoiding the stressor and its source due to a perceived lack of control in dealing with the stressor (Folkman, 2012). Despite temporarily relieving stress, maladaptive coping through avoidance is not a sustainable solution (Tein et al., 2000). Research has demonstrated that maladaptive coping strategies are associated with elevated levels of psychological distress and symptoms of depression (Main et al., 2003), including

reduced life satisfaction and increased negative thinking (Beck et al., 1997). Moreover, studies have noted that females are more prone to utilizing maladaptive coping strategies to modify their emotional responses to stressors (Deasy et al., 2014; Kelly et al., 2008).

In this study, acceptance coping strategies were associated with religion and humor (Table 7). Religion and humor offer potential avenues for exploring alternative cognitive responses to stressful situations, potentially mitigating the negative emotional impact of perceived threats. This cognitive-affective shift aligns with the transactional stress model developed by Lazarus (1984) and his colleagues. According to this model, the experience of stress is contingent upon an individual's cognitive appraisal of events and circumstances, including their coping abilities, resulting in an interactive process with the environment (Lazarus & Folkman, 1984). For many individuals, spirituality manifests in religious practices, prayer, meditation, or a belief in a higher power. Others may find spirituality in nature, music, art, or secular communities. Interestingly, individuals who expressed trust in news media demonstrated a lower likelihood of experiencing somatic issues (Kecojevic et al., 2020).

Table 7. Coping Strategies Score

1 (I have not been doing this at all)
2 (I have been doing this a little bit)
3 (I have been doing a medium amount)
4 (I have been doing this a lot)

Domain Avoidant Coping	Statement	1	2	3	4
Self-Distraction	I have been using work or other activities as a distraction from current issues.	23.8	29.4	28.2	18.5
	19. I have been engaging in activities like watching movies, TV shows, reading, daydreaming, sleeping, or shopping to reduce my focus on the matter.	20.4	30.2	31.1	18.2
Denial	3. I have been repeating the phrase "this is not real" to myself.	56.9	20.9	14.4	7.8
	8. I have been in a state of denial refusing to believe that it has happened.	66.2	15.6	12.7	5.6
Substances Use	4. I have been relying on alcohol or other substances to cope and seek temporary relief.	79.3	7.5	9.7	3.4
	11. I have been resorting to alcohol or other drugs as a means of getting through this challenging period.	80.0	8.0	8.8	3.2
Behavioral Disengagement	6. I have been giving up trying to make efforts to cope with the situation.	54.3	22.4	15.6	7.8
	16. I have ceased my efforts to cope with the situation.	55.0	24.1	14.6	6.3
Venting	9. I have been expressing my unpleasant feelings by vocalizing them aloud.	39.9	25.5	25.5	9.0
	21. I have been openly expressing my negative emotions.	38.4	30.2	24.6	6.8
Self-blame	13. I have been engaging in self-criticism.	46.5	26.8	18.5	8.3
	26. I have been holding myself responsible and attributing blame for the events that occurred.	57.4	21.7	13.9	7.1
Domain Approach Coping	Statement	1	2	3	4
Active coping	2. I have been channeling my efforts into taking action regarding the current situation I find myself in.	15.3	29.7	38.4	16.5
	7. I have been actively taking steps to improve the situation.	16.5	25.1	35.8	22.6

Positive Reframing	12. I have been attempting to reframe the situation in a more positive perspective.	24.3	27.5	30.7	17.5
	17. I have been actively seeking the positive aspects within the current circumstances.	19.7	26.3	33.6	20.4
Planning	14. I have been engaging in strategic thinking to develop a plan of action.	21.7	25.1	35.5	17.8
	25. I have been diligently contemplating the necessary steps to take.	22.9	25.5	33.8	17.8
Acceptance	20. I have come to terms with the reality of the situation and accepted that it has occurred.	17.3	21.2	34.3	27.3
	24. I have been adapting and adjusting to the situation, learning to live with it.	15.3	21.4	41.6	21.7
Seek Informational Support	10. I have been seeking assistance and guidance from others, relying on their help and advice.	31.6	29.2	26.5	12.7
	23. I have been actively seeking advice and assistance from others regarding the appropriate course of action.	28.7	30.2	26.0	15.1
	5. I have been receiving emotional support from others.	35.8	24.8	27.0	12.4
Seek Emotional Support	15. I have been getting comfort and understanding from someone.	28.7	29.7	29.2	12.4
Domain	Statement	1	2	3	4
Religion	22. I have been seeking solace and comfort in my religious or spiritual beliefs.	29.9	20.4	22.9	26.8
	27. I have been praying or meditating.	28.2	23.6	21.7	26.5
Humor	18. I have been using humor as a way to cope with the situation.	48.7	23.8	18.5	9.0
	28. I have been making fun of the situation.	53.3	21.7	16.5	8.5

**Humor and Religion are neither Approach or Avoidance coping*

The moderate levels of COVID-19-related stress can be indicated by r-value below or slightly above 0.5. Based to the r-value, we can affirm that international students used more acceptance strategies than avoidant strategies. Our findings are consistent with Kamaludin et al. (2020). Their study examined university students coping strategies during the Covid-19 pandemic and restrictions on movement in Malaysia. Based on their results, university students in Malaysia practiced more acceptance strategies and less seeking social support strategies. However, their study did not differentiate between local and international students. Table 8 shows the detailed score of student's psychological wellbeing.

Table 8. Psychological Wellbeing Score

1 (strongly disagree) 2 (disagree) 3 (agree) 4 (strongly agree)

Statement	1	2	3	4
1. This Covid-19 worries me.	7.8	13.6	47.9	30.7
2. This Covid-19 is affecting my life.	7.5	16.3	45.7	30.4
3. This Covid-19 anxious me.	11.2	22.4	44.0	22.4
4. This Covid-19 is affecting my mood.	12.2	23.8	41.1	22.9
5. This Covid-19 is annoying me.	11.4	22.9	43.6	22.1
6. This Covid-19 made me stressed.	11.7	28.5	35.8	24.1
7. This Covid-19 caused my spirit to decline.	15.1	34.1	31.4	19.5
8. This Covid-19 has given me the status quo and current issues.	11.9	33.3	34.1	20.7
9. This Covid-19 made me depressed.	16.5	34.5	30.2	18.7
10. This covid-19 made me scared to go to the hospital.	19.0	31.4	33.1	16.5
11. This Covid-19 made me scared to meet people.	14.1	32.1	38.2	15.6

Our analyses indicated that financial status (ß = 0.367) was the most significant predictor of physiological wellbeing among respondents, followed by mental health ((ß = 0.296), coping mechanisms ((ß = 0.190) and quality services (ß = 0.098) (Table 4 for test statistics). Regarding financial matters, the students expressed worries about their capacity to handle their educational financial responsibilities because of their families experiencing a decrease in revenue and loss of opportunities to work and support their studies independently (Table 9).

Table 9. Financial Status Score

1 (strongly disagree) 2 (disagree) 3 (agree) 4 (strongly agree)

Statement	1	2	3	4
1. I feel stressed about my personal finances in general.	16.1	24.1	31.6	28.2
2. I worry about being able to pay monthly expenses.	17.8	28.0	32.8	21.4
3. I worry about having enough money to pay for school.	19.5	28.7	28.7	23.1
4. I really cannot manage my money well.	25.5	39.9	21.9	12.7
5. Always use savings for basic needs expenses.	17.5	29.0	37.2	16.3
6. Always worry about financial resources.	17.5	32.1	28.2	22.1
7. Have no savings for emergency time.	21.9	37.0	23.4	17.8
8. Always buy items using credit.	39.7	36.0	16.8	7.5

Utilizing a questionnaire that promptly identifies students who require psychological support is important. The perceived risk of contagion, coupled with the significant changes in daily life, has led to a potential loss of connection with formal and informal support systems among university students. Consequently, the risk of isolation increases among this population. Moreover, the survey findings can be a valuable resource for university administrations, as they can utilize the questionnaire as a monitoring and evaluation tool. This approach develops tailored, evidence-based counseling interventions and facilitates the assessment of intervention effectiveness by examining potential changes over time (Sundaresan et al., 2020).

Quality of the Services

According to the respondents, the following initiatives must be taken to ensure safeguarding and reducing the mental stress of the students during this pandemic. Moreover, these can also be considered during the pandemic management plan preparation mentioned earlier. The international students suggested waiving or reducing tuition fees, arranging regular psychological counseling to overcome mental stress, providing free internet facilities for students especially those outside UPM (those with low internet access), developing students' assistance fund, arranging life insurance by the university authority, providing financial aid for students in need of smartphone, and arranging low-interest bank loan to manage their house rent and other expenses.

Table 10. Service Quality of UPM's organization during COVID-19 Score

0. Not Related 1. Very Poor 2. Poor 3. Fair 4. Good 5. Excellent

Division	0	1	2	3	4	5
International Office	9.2	6.1	7.1	32.6	28.2	16.8
Faculty	30.2	5.1	3.9	23.6	21.4	15.8
School of Graduate Studies	48.4	2.9	3.9	17.5	16.5	10.7
Putra Business School	6.6	4.4	6.8	26.0	33.6	22.6
Bursar	26.3	4.1	6.3	23.8	23.8	15.6

College Residential Office	40.6	4.9	3.6	19.0	18.2	13.6
Administration Office	30.2	3.9	6.3	21.4	23.6	14.6
Library	24.8	6.1	5.4	22.1	27.5	14.1
Security Office	31.1	3.4	3.9	19.5	25.8	16.3

Table 10 shows the score of the quality provided by UPM for the students. Regarding the quality of services, most of the international students were satisfied. Universities must prioritize developing digital psychological interventions and address policy and regulatory matters to incorporate apps, online programs, text messages, chat lines, forums, and phone calls as additional services. Clear communication about the availability of such interventions is essential for the student population. Furthermore, universities must provide psychological services, either in-person or through remote channels, to address and alleviate the emotional and mental repercussions experienced by students. Establishing consistent communication with students is essential. Additionally, universities should comprehensively review their curricula, learning objectives, and assessment approaches for online courses and programs, considering the unique considerations and differences compared to traditional face-to-face teaching methods.

Conclusion

Higher education institutions have a crucial role in supporting students in managing their anxieties. Establishing new counseling guidelines is necessary to effectively assist students. Universities should implement structured programs, such as life skills training and mindfulness therapy, which have been proven effective in reducing anxiety levels. This study offers administrators a concise, implementable, and reliable measure to evaluate perceived stress among international university students. By utilizing such measures, efforts can be made to comprehend the impact of this unprecedented global crisis and develop customized interventions to promote the wellbeing of students at UPM.

Suggestions for Future Research

This study has certain limitations. First, the questionnaire administration was conducted online, which may have potentially excluded individuals without internet access from participating. However, considering the target population of international university students at UPM, who were engaged in distance learning during the COVID-19 pandemic, we believe this limitation had only a minor influence on our results. Nevertheless, to validate the findings of this study, further investigations should be conducted on larger and more representative samples, including participants from diverse nationalities. Therefore, it is crucial to apply this instrument in other universities to gather additional information about the sources of stress affecting students' psychological wellbeing across different countries worldwide.

Co-Author Contribution

The authors of this manuscript declare no conflict of interest with the work.

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