

Prevalence of Problematic Internet Use and its Association with Psychological Distress and Coping Strategies among Universiti Teknologi Mara Students during the COVID-19 Pandemic

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ABSTRACT

INTRODUCTION: The COVID-19 pandemic has greatly affected the day-to-day life of Malaysians and brought serious impact on mental health. Due to the practice of physical distancing, the Internet technology was used to accommodate the daily interactions. In view of the increasing dependency towards the use of this technology, its impact on the mental health well-being is indeterminate. This study aimed to examine the association between problematic Internet use, psychological distress, and the type of coping strategies used by Universiti Teknologi MARA (UiTM) undergraduate and postgraduate students during this pandemic. **MATERIALS AND METHODS:** A cross-sectional online survey using Internet Addiction Test, Kessler Psychological Distress Scale, and Brief COPE Inventory was conducted. **RESULTS:** Of the 444 respondents, 32.2% were noted to have problematic Internet use with 61.3% reporting psychological distress. Problematic Internet use was associated with higher levels of psychological distress (OR = 1.04, 95% CI: 1.01 – 1.08), and the coping strategies of self-distraction (OR = 1.24, 95% CI: 1.04 – 1.47) and behavioural disengagement (OR=1.29, 95% CI: 1.07–1.55). **CONCLUSION:** A high prevalence of psychological distress and its association with problematic Internet use and maladaptive coping among UiTM students during this pandemic was evident in this study. Hence, our findings can help to provide insight on the state of the psychological well-being of students in higher education institutions as well as to assist the stakeholders of UTM in taking measures to help the students dealing with the pandemic.

Keywords

COVID-19; problematic Internet use; psychological distress; coping strategies; university students

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INTRODUCTION

The world was and continues to be plagued with a highly infectious disease known as coronavirus disease or COVID-19 which caused by the spread of the novel coronavirus SARS-CoV-2.¹ It was declared as a global pandemic by the World Health Organization (WHO) on 11 March 2020 following the rapid upsurge of cases across the world.² To date, it has recorded more than a hundred million of cases with more than two million deaths and the numbers are still increasing.³ Malaysia recorded its first case in January 2020, with the numbers of people infected rapidly increasing in March 2020, forcing the Malaysian

government to implementing the Movement Control Order (MCO) to contain the spread of this virus. Hence, most of the places, including educational institutions were ordered to cease operation. Following this order, the country had shown a significant result in flattening the curve before another wave of outbreak hit the country at the beginning of October 2020, causing a prolonged MCO period.

As the COVID-19 pandemic continued to pose health risks globally, its impact on the psychological well-being is

detrimental, especially on the frontline healthcare workers, individuals with medical comorbidities, and those with pre-existing mental health problems.⁴ The fear of contracting the virus, having to be in isolation, and financial insecurity contributed to the mounting psychological distress and anxiety within the society.^{4,5} University students were equally affected by this situation. A high prevalence of mental health problems such as anxiety and depression was reported among students at tertiary levels even prior to the COVID-19 pandemic.⁶ University life is challenging for students as major life transitions among students occur during this period. Other than the struggles to adapt to these changes, the emergence of this pandemic has caused growing uncertainties on the academic progress and future career prospects of students. Additionally, the prolonged MCO had put a halt to the continuity of physical learning, and university students were compelled to continue adapting to the new norms, where most of the educational processes were being carried online. This situation made university students particularly vulnerable to psychological distress during the COVID-19 pandemic.⁷

Besides adapting to the new normal, the restriction imposed from physical distancing has made individuals rely on Internet technology to sustain productivity. For students, other than using the Internet for educational purposes, social media and messaging applications were utilised to communicate with their separated family members, friends, and loved ones as well as to assist with essential chores such as food delivery and online transaction. This was reflected in the national Internet Users Survey which showed an increase in Internet use from 87.4% in 2018 to 88.7% in 2020.⁸

Nonetheless, despite its convenience, excessive Internet use can precipitate pathological effects. Using Internet to escape from emotional difficulties may lead to reinforcing behaviours, including problematic online gaming, excessive use of social media, or watching pornography.^{9,10} This, in turn, may become an ingrained habit, which consequently could result in behavioural addiction and psychological problem such as depression and anxiety.¹⁰

The construct on the terminology of problematic use of the Internet and its clinical diagnosis as part of behavioural addiction is still disputable although in general, problematic Internet use refers to excessive or poorly controlled preoccupations, urges or behaviours regarding computer use and Internet access that lead to impairment or distress.¹¹ To date, there is no official diagnosis for this disorder in the DSM-5 and publications have been using different terms to describe the addictive nature of excessive Internet use such as Internet addiction, pathological Internet use, and compulsive Internet use apart from problematic Internet use.¹²⁻¹⁶ In this study, we use the term problematic Internet use as it illustrates the erroneous behaviours resulting from excessive Internet use in a broader way and carries a lower threshold for diagnosis and measure it using The Malay Internet Addiction Test (IAT).^{17,18} Despite having similarities in the phenomenology of substance use disorder (i.e., difficulties in resisting urges and repetitive engagement that leads to deterioration in functioning), the concept of Internet addiction is still debatable as the term addiction would be more distinctive to be used for specific online activity such as gaming, rather than being addicted to the medium itself.^{19,20}

With the prolonged MCO due to COVID-19 pandemic all over the world, it may have increased the risk of these addictive behaviours. This is reflected by a large-scale study done in China during this pandemic reported 46.8% increased dependence on Internet use among the respondents, and 16.6% of the respondents had longer hours of Internet use with the prevalence of severe Internet dependence rose up to 23% compared to pre-pandemic time.²¹

Although Internet use has become of major importance during this global crisis, the development of problematic Internet use associated with its increase in usage and associated psychological distress in Malaysia is uncertain. There has been growing individual studies on the impact of problematic Internet use as well as the psychological impact during this pandemic. However, studies to investigate the impact of COVID-19 pandemic and its consequent restrictions on the psychological distress,

coping strategies, and its relationship with problematic Internet use among university or college students are few. This study aimed to investigate the prevalence of problematic Internet use as well as its association with psychological distress and coping strategies among Malaysian university students during this pandemic and MCO. The outcomes of this study can serve as an important guide for mental health professionals as well as university stakeholders to employ strategies to improve the mental health of the students during this difficult situation.

MATERIALS AND METHODS

Study Population

This was a cross-sectional study involving undergraduate and postgraduate students at Universiti Teknologi MARA (UiTM) in Selangor, Malaysia. UiTM was chosen for this study as it serves as one of the largest universities in Malaysia with more than 30 satellite campuses all over the country. Ethical approval was obtained from the UiTM Research Ethics Committee [Approval code: REC/08/2020 (MR/209)].

We conducted an online survey between November and December 2020 during the MCO period. The sample size calculation was based on the study by Garcia-Priego et al., where a minimum sample of 393 students were needed according to 5% confidence limit, 95% confidence level, and 10% attrition rate.²²

A survey invitation explaining the nature of the study and a link to a Google Forms (which consist of consent form and translated questionnaires) was sent to the UiTM students in the Selangor campuses via email addresses obtained from the UiTM graduate office. Students who agreed to participate in the study provided their consent through the Google Forms and submitted their responses online. Only one submission was allowed per student. All responses were exported to the excel sheet for data cleaning before being exported to the SPSS software.

Study Instruments

The Google Forms consisted of 5 sections:

Section 1: Sociodemographic data including age, gender (male/female), level of study (undergraduate/postgraduate), faculty (science and technology/ business and management/ social science and humanity), amount of income/ allowance, place of stay during MCO (family residence/ university residence/ rented accommodation), past psychiatric contact

Section 2: Internet use profile including types of device used, mode of Internet access, duration of time spent online and types of online activities.

Section 3: Problematic Internet use questionnaire

Section 4: Psychological distress questionnaire

Section 5: Coping strategies questionnaire

Problematic Internet Use

The Malay Internet Addiction Test (IAT) is a self-report scale that measures the extent of problematic Internet use or Internet addiction based on criteria for substance dependence and pathological gambling.²³ This scale has 20 items which utilises 5 points Likert scale ranging from 1 (Rare) to 5 (Always). The cut off score for the IAT is as follows: score <50 (average Internet user), 50–79 (problematic Internet use) and score >80 (significant vital problems arising from the use of the Internet). It demonstrated good psychometric properties (Cronbach's alpha = 0.91 and intraclass correlation = 0.88) and appeared to be a valid instrument to assess problematic Internet use among Malaysian university students.²³

Psychological Distress

The Malay Kessler Psychological Distress scale (K10) is a self-report or interviewer administered questionnaire used to screen for psychological distress. It consists of 10 items, with each item score ranging from 1 (none of the time) to 5 (all of the time). This instrument was found to be a valid and reliable tool for screening patients with non-specific psychological distress in a Malaysian population (Cronbach's alpha = 0.89), with following interpretation

of score: 10–19 (likely to be well), 20–24 (mild distress), 25–29 (moderate distress), and 30–50 (severe distress).²⁴

Coping Strategies

The Malay Brief Coping Orientation of Problem Experienced (COPE) Inventory is a revised self-reporting inventory to assess coping strategies. It consists of 28 items, and each item is rated on a 4-point Likert scale ranging from 1 (I have not been doing this at all) to 4 (I have been doing this a lot).²⁵ The items are scored to produce 14 dimensions, each reflecting the use of a coping strategy: active coping, planning, acceptance, denial, self-distraction, use of substance, use of emotional support, use of instrumental support, behavioural disengagement, venting, positive reframing, humour, religion, and self-blame. This instrument showed comparable reliability to the original Brief COPE with Cronbach's alpha value of 0.83.²⁵

Data Analysis

Data from the Google Forms received from respondents were extracted and transferred to an excel sheet for data cleaning processes before being imported to the SPSS software. All data were analysed using the IBM Statistical Package for Social Science Version 26.0 (SPSS version 26.0). Factors associated with problematic Internet use were determined using Chi-square and logistic regression. Correlation analysis was done to evaluate the strength of relationship between variables. All the significant variables in the chi-square tests were tested in multiple logistic regression analysis to find the association between problematic Internet use and psychological distress and coping strategies used. The p-value of <0.05 was taken as significant at a 95% confidence interval.

RESULTS

After data cleaning, 444 responses out of 449 responses were included in this study. Non-inclusion was due to incomplete responses. The demographic characteristics of the respondents are shown in **Table I**.

Table I. Descriptive analysis of each variable and association with problematic Internet use

Variables	Total N = n (%)	Non- PIU	PIU (%)	χ^2	p
Gender					
Male	111 (25.0)	67 (22.3)	44	3.74	0.05
Female	333 (75.0)	234	99		
Age					
Mean (SD)		28.19	24.48	5.61	<0.
18 – 34 (Young adult)	370 (83.3)	238	132	12.2	<0.
35 – 59 (Middle age)	74 (16.7)	63 (20.9)	11		
Entry Level					
Undergraduate	150 (33.8)	86 (28.6)	64	11.3	<0.
Postgraduate	294 (66.2)	215	79		
Faculty					
Science and technology	266 (59.9)	177	89	10.7	0.00
Business and management	89 (20.0)	72 (23.9)	17		
Social science and humanities	89 (20.0)	52 (17.3)	37		
Income (RM)					
Less than 4,850 (B40)	380 (85.6)	249	131	3.96	0.04
4,850 – 10, 959 (M40)	56 (12.6)	45 (15.0)	11		
More than 10, 959 (T20)	8 (1.8)	7 (2.3)	1 (0.7)		
Source of income#					
Family	216 (35.0)	132	84	32.6	<0.
Scholarship/ Study allowance/ Grant	78 (12.6)	60 (19.9)	18 (12.6)		
Study loan	110 (17.8)	60 (19.9)	50		
Salary	184 (29.8)	139	45		
Other (EPF contribution)	29 (4.7)	19 (6.3)	10		
Place of stay during MCO					
Family residence	347 (78.2)	238	109	5.73	0.12
Rented accommodation	56 (12.6)	32 (10.6)	24		
University residence	17 (3.8)	11 (3.7)	6 (4.2)		
Other	24 (5.4)	20 (6.6)	4 (2.8)		
Past psychiatric contact					
Yes	26 (5.9)	14 (4.7)	12	2.46	0.11
No	418 (94.1)	287	131		
Device used#					
Smartphone	431 (97.1)	289	142	10.9	0.05
Tablet	59 (13.3)	47 (10.6)	12		
Laptop	307 (69.1)	214	93		
Personal computer	61 (13.7)	45 (10.1)	16		
Other, e.g., smart TV, smartwatch	16 (3.6)	11 (2.5)	5 (1.1)		
Medium of Internet access#					
Mobile network	358 (80.6)	243	115	2.56	0.63
Home Wi-Fi	270 (60.8)	189	81		
University library	34 (7.7)	24 (5.4)	10		
Other e.g., commercial café	19 (4.3)	11 (2.5)	8 (1.8)		
Duration of Internet use					
Mild use (< 5 hours)	82 (18.5)	66 (21.9)	16	7.52	0.02
Regular use (5 – 12 hours)	305 (68.7)	199	106		
Heavy use (> 12 hours)	57 (12.8)	36 (12.0)	21		
Duration of Internet use					
Mild use (< 5 hours)	86 (19.4)	72 (23.9)	14	13.8	0.00
Regular use (5 – 12 hours)	284 (64.0)	186	98		
Heavy use (> 12 hours)	74 (16.7)	43 (14.3)	31		

Of 444 respondents, 75% were female, and 83.3% were within the young adult category. Postgraduate students accounted for 66.2% of the respondents and most of them were from the Faculty of Science and Technology. Only 29.8% were employed, with about 85% being under

Con't						
Variables	Total N = 444 Non-PIU (%)	Total N = 444 n (%)	Non- PIU	PIU (%)		
Daily use of online activities						
a. Emailing						
No		178 (40.1)	121	57	0.00	0.94
Yes		266 (59.9)	180	86		
b. Text messaging						
No		37 (8.3)	27 (9.0)	10	0.49	0.48
Yes		407 (91.7)	274	133		
c. Social media						
No		74 (16.7)	49	25	0.10	0.75
Yes		370 (83.3)	252	118		
d. Information or news						
No		82 (18.5)	55	27	0.02	0.87
Yes		362 (81.5)	246	116		
e. Watching/ download-						
No		196 (44.1)	147	49	8.34	0.00
Yes		248 (55.9)	154	94		
f. Online learning						
No		114 (25.7)	89	25	7.42	0.00
Yes		330 (74.3)	212	118		
g. Online job						
No		212 (47.7)	134	78	3.90	0.04
Yes		232 (52.3)	167	65		
h. Online banking						
No		302 (68.0)	198	104	2.15	0.14
Yes		142 (32.0)	103	39		
i. Online shopping						
No		371 (83.6)	252	119	0.01	0.89
Yes		73 (16.4)	49	24		
j. Music streaming						
No		250 (56.3)	183	67	7.66	0.00
Yes		194 (43.7)	118	76		
k. Online gaming						
No		346 (77.9)	251	95	16.2	<0.
Yes		98 (22.1)	50	48		
l. Aimless browsing						
No		252 (56.8)	195	57	24.5	<0.
Yes		192 (43.2)	106	86		
Level of psychological						
Mean (SD)			21.67	29.38	-	<0.
No distress		172 (38.7)	143	29	58.0	<0.
Mild distress		71 (16.0)	55	16		
Moderate distress		71 (16.0)	47	24		
Severe distress		130 (29.3)	56	74		
Internet Addiction Test						
Normal Internet use (IAT		301 (67.8)				
Problematic Internet use (IAT ≥ 50)		143 (32.2)				

Abbreviations: PIU, Problematic Internet use; χ^2 , Chi-square test of independence
Income category is based on the Household Income and Basic Amenities by the
Department of Statistics Malaysia
^aIndependent t-test
[#]multiple answers
^{*}Fisher exact test

the B40 (low income) category. With regard to living conditions, 78% of the students stayed with their families during this pandemic and only about 6% had prior contact with psychiatric services. Majority of the students used smartphones as a to-go device to access the Internet, with most of them having regular access to the Internet. Students who spent more than five hours (regular to

heavy use) on the Internet during the weekend were significantly associated with problematic Internet use.

In total, 143 (32.2%) students were identified to have problematic Internet use. Among students with severe distress, the prevalence was higher in which 56.9% were noted to have problematic Internet use. It was noted that there were significant associations between problematic Internet use and age, levels of study, faculties, and income. From the bivariate analysis in Table I, problematic Internet use was significantly associated with the duration of hours spent on the Internet (weekdays, $\chi^2=7.520$, $p=0.009$; weekend, $\chi^2=13.860$, $p=0.001$) as well as online activities of video streaming ($\chi^2=8.348$, $p=0.004$), online learning ($\chi^2=7.42$, $p=0.006$), online job ($\chi^2=3.907$, $p=0.048$), music streaming ($\chi^2=7.662$, $p=0.006$), online gaming ($\chi^2=16.203$, $p<0.001$), and aimless browsing ($\chi^2=24.537$, $p<0.001$).

As shown in Table II, moderate correlations were found between Internet Addiction Test score and higher level of psychological distress ($r=0.456$, $p<0.01$), coping strategies of behavioural disengagement ($r=0.426$, $p<0.01$), and self-blame ($r=0.420$, $p<0.01$).

From the multivariate logistic regression in Table III, students with higher levels of psychological distress had an increased odd of having problematic Internet use with an adjusted OR of 1.042 (CI 1.009-1.076). Students who used Internet for aimless browsing and students with regular to heavy Internet usage over the weekends were noted to have 2.2- and 3-times increased odds of having problematic Internet use, respectively (adjusted OR = 2.227, CI 1.348-3.677 and 2.993 (CI 1.233-6.977). For coping strategies, students who utilised self-distraction and behavioural disengagement approaches were found to have problematic Internet use with adjusted OR of 1.269 (CI 1.050–1.534), 1.290 and (CI 1.062–1.565), respectively.

DISCUSSION

This study examined the prevalence of problematic Internet use and its association with psychological distress, coping strategies, and sociodemographic factors among

Table II. Correlation Matrix of Key Variables

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. IAT	-																	
2. Psychological distress	.456**	-																
3. Active coping	-0.065	-.129**	-															
4. Planning	-0.052	-.220**	.557**	-														
5. Positive reframing	-0.072	-.209**	.449**	.676**	-													
6. Acceptance	0.047	0.024	.357**	.442**	.433**	-												
7. Humour	.241**	.200**	0.058	0.067	.135**	.284**	-											
8. Religion	-.131**	-.141**	.363**	.537**	.549**	.408**	-0.002	-										
9. Emotional support	0.041	-0.018	.229**	.242**	.258**	.213**	0.070	.255**	-									
10. Instrumental support	-0.039	-.096*	.252**	.338**	.344**	.223**	0.081	.323**	.776**	-								
11. Self-distraction	.209**	.130**	.329**	.345**	.325**	.235**	.166**	.312**	.211**	.235**	-							
12. Denial	.261**	.316**	.105*	0.034	0.032	-0.025	.225**	0.000	0.080	0.029	.227**	-						
13. Venting	.293**	.328**	.156**	.195**	.233**	.291**	.224**	.128**	.353**	.308**	.337**	.186**	-					
14. Substance abuse	.164**	.187**	-0.081	-0.077	-.151**	-.099*	0.035	-.156**	-0.043	-0.041	-0.043	.135**	0.007	-				
15. Behavioural disengagement	.426**	.577**	-.125**	-.242**	-.177**	0.036	.252**	-.195**	0.009	-0.067	0.072	.255**	.308**	.197**	-			
16. Self-blame	.420**	.579**	-.103*	-.131**	-.110*	.115*	.217**	-0.048	-0.001	-0.072	.106*	.181**	.293**	.137**	.485**	-		
17. Age	-.292**	-.249**	.104*	0.091	-0.013	0.001	-0.053	.125**	-0.076	-0.073	-0.067	0.024	-.252**	-0.024	-.251**	-.284**	-	
18. Gender	-0.045	.094*	-0.033	0.005	-.111*	.094*	0.024	.148**	0.083	.113*	.099*	-0.036	.120*	-0.074	0.078	.094*	-.132**	-
Mean	44.35	24.15	5.45	5.81	5.98	5.83	3.98	6.46	4.85	5.02	5.83	3.04	4.58	2.09	3.13	4.18	26.995	1.75
SD	15.500	9.648	1.531	1.656	1.612	1.549	1.935	1.652	1.838	1.735	1.498	1.441	1.701	0.529	1.489	1.948	7.2821	0.434

Abbreviation: IAT, Internet Addiction Test, Gender is coded as 1= Male, 2=Female

**Correlation is significant at the 0.01 level (2-tailed)

*Correlation is significant at the 0.05 level (2-tailed)

Table III. Multivariables Logistic Regression of Factors Associated with Problematic Internet Use Among University Students

Variables	Unadjusted OR	(95% CI)		p	Adjusted OR	(95% CI)		p
		Lower	Upper			Lower	Upper	
Age (Ref: Middle age)								
Young adult	3.176	1.618	6.238	0.001				
Level of Study (Ref: Undergraduate)								
Postgraduate	0.494	0.326	0.747	0.001				
Faculty (Ref: Social science and humanities)								
Science and technology	0.707	0.432	1.156	0.167				
Business and management	0.332	0.169	0.652	0.001				
Income (RM) (Ref: More than 10, 959 (I20))								
Less than 4,850 (B40)	3.683	0.448	30.253	0.225				
4,850 – 10, 959 (M40)	1.711	0.190	15.390	0.632				
Duration of Internet use on weekdays (Ref: (Mild use (less than 5 hours))								
Regular use (5 to 12 hours)	2.197	1.212	3.983	0.009				
Heavy use (more than 13 hours)	2.406	1.118	5.180	0.025				
Duration of Internet use on weekends (Ref: (Mild use (less than 5 hours))								
Regular use (5 to 12 hours)	2.710	1.454	5.050	0.002	2.144	1.037	4.436	0.040
Heavy use (more than 13 hours)	3.708	1.777	7.736	<0.001	2.933	1.233	6.977	0.015
Online activities (Ref: No daily use)								
Watching/ downloading video	1.831	1.212	2.767	0.004				
Online learning	1.982	1.205	3.259	0.007				
Online working	0.669	0.448	0.998	0.049				
Music streaming	1.759	1.177	2.629	0.006				
Online gaming	2.536	1.599	4.022	<0.001				
Aimless browsing	2.776	1.842	4.182	<0.001	2.227	1.348	3.677	0.002
Level of psychological distress	1.092	1.067	1.118	<0.001	1.042	1.009	1.076	0.013
Coping style								
Adaptive coping								
Humour	1.191	1.075	1.319	0.001				
Religion	0.882	0.783	0.994	0.039				
Maladaptive coping								
Self-distraction	1.320	1.147	1.518	<0.001	1.269	1.050	1.534	0.014
Denial	1.318	1.150	1.511	<0.001				
Venting	1.411	1.245	1.600	<0.001				
Behavioural disengagement	1.720	1.481	1.999	<0.001	1.290	1.062	1.565	0.010
Self-blame	1.423	1.277	1.586	<0.001				

UiTM students in Malaysia. The findings from our study showed that 45.3% of the students experienced moderate to severe level of psychological distress. The result was much higher in comparison to the prevalence of psychological distress reported in other studies prior to the pandemic (ranging from 32.6 to 37.7%).^{26,27} Our findings is almost similar with another study done among undergraduate students in Malaysia, where 52.8% of their respondents reported experiencing psychological distress during pandemic.²⁸ These findings suggest that this pandemic may cause negative effects on the psychological well-being of students.

We also found that students in the younger age groups demonstrated higher level of psychological distress, which was similar to the findings from a nationwide survey in China.²⁹ Possible explanation for this finding is that young people are more engaged in social media and can therefore be easily triggered by excessive social media content, which may lead them to experience symptoms of depression and anxiety.^{29,30}

This narrative is further supported by the findings in our study, which highlighted that students with higher level of psychological distress were more likely to have problematic internet use. The overall prevalence of problematic internet use reported in this study was 32.2%. This was slightly higher compared to the prevalence of problematic internet use or internet addiction reported among college and university students in Malaysia prior to the pandemic (7.8% to 31.8%).^{31,32} In comparison to other countries, the prevalence reported in this study was much higher compared to China (4.3%) and Indonesia (14.4%).^{21,33} Possible explanation for this discrepancy is due to the different control measures by the countries used between these studies as well as differences in population studied where both of the studies were done at a national level with larger sample size.

One of the important factors associated with problematic internet use found in our study was spending more time on the internet during the weekends. This is probably due to the movement restriction order, which deters the students from engaging in leisure or physical outdoor activities during the weekends, hence forcing them to

engage in online activities to entertain or occupy themselves. Although spending time on the internet seemed to be a harmless leisure activity, it may lead to reduced engagement in usual social interactions and other activities in some individuals.³⁴ Consequently, these circumstances may exacerbate psychological distress. A study on behavioural pattern and and psychological effect among students during the COVID-19 pandemic found that students with reduced physical inactivity and increased Internet usage were likely to be more anxious and depressed.³⁵

For online activities, we found that students who engaged in aimless internet browsing showed a significant association with problematic Internet use. This can be explained by a cognitive behavioural model proposed by Davis, where specific form of internet addiction (i.e., addiction to gaming or pornography) is distinguishable from generalised form of problematic Internet use (i.e., hanging around on the Internet without specific purpose).¹⁵ It was found that the latter is strongly linked to addictive behaviour, poor decision making and willpower in a neuroimaging research.^{15, 36, 37}

Our findings observed a significant correlation between maladaptive coping strategies with both psychological distress and problematic Internet use. In the multiple regression analysis, self-distraction and behavioural disengagement (i.e., avoidant coping strategies) were found to have a significant association with problematic Internet use. This finding was similar to another study by McNicol et al., where avoidant coping was observed to be a mediator for the relationship between psychological distress and Internet addiction in adults.³⁸ A few researchers have found that avoidant coping might actually be helpful in averting distress, especially in an uncontrollable situation, as the stressors can be acknowledged and avoided.^{39,40} Perhaps, in order to cope, the internet becomes a medium for the students to escape from confronting the distressing reality and dealing with difficult thoughts and emotions caused by the pandemic. However, the reinforcement of these avoidant behaviours may increase the vulnerability to problematic Internet use as well as serious mental illness later in life.⁴¹

Given the gravity of this issue, mental health screening to identify high risk students and preventive measures should be taken to minimise the prevalence rate in the future. Most of the higher education institutions in Malaysia have made tele-counselling services available for the students. In addition to that, educators and university stakeholders may utilise the technology to promote good mental health by promoting the use of digital well-being apps for self-regulation and screen time monitoring as suggested by the global consensus guidance on the safe usage of Internet during the pandemic, as well as providing computerised self-help programme.¹⁰ Additional policies and standard operating procedures such as restriction of access to certain websites using university networks should be put in place to reduce the danger of excessive impractical internet use.

Several limitations of this study require acknowledgment. First, this study was conducted in an affirmative action institution which constitute the Malay and Bumiputera ethnicity, therefore, limiting generalisability to other populations. Second, a convenient sampling method used in this study may cause selection bias. However, considering the current pandemic situation and its restrictions, this is the most feasible and convenient approach in collecting data for the study. Third, the cross-sectional study design limits our understanding on the causal relationships between problematic internet use, coping strategies and psychological distress. Nonetheless, this study design allows us to get quick data to assess the burden of the pandemic on the population. This may help to accommodate future preventive planning and allocation of public health resources. Fourth, the study used a self-report measure which may subject to memory recall biases and social desirability.

CONCLUSION

The COVID-19 pandemic took a toll on the psychological well-being of university students. The restriction imposed such as physical distancing has made them becoming dependent to the internet technology to stay productive, but this comes with a cost. The findings from our study may assist mental health professionals and university stakeholders to be aware of the prevalence

of psychological distress and problematic internet use among the university students and to identify those students at risk and eventually help them to cope. Considering the implication of its excessive use, an in-depth study on this area is warranted. Moreover, as this pandemic is still very much prevalent globally, a longitudinal multi-center study is needed to allow better understanding on the long-term impact of this restriction to the mental health of the students as well as to look for effective mental health interventions.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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