A Study on Depression and Anxiety Among University Students During ODL

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Abstract — The majority of universities implemented remote learning, also known as open and distance learning (ODL), amid the Malaysian government's movement control orders (MCO) during the coronavirus disease (COVID-19) pandemic. There are various challenges and issues that lecturers and students have to deal with, in order to ensure the success of ODL or remote learning. Issues of depression and anxiety of university students have also been reported and the rate is alarming especially during the lockdown. Thus, this study focuses on understanding the underlying problems that occur during the MCO. A quantitative approach was applied, with 191 questionnaires collected through Google-form application. The depression and anxiety of university students were measured using a tool called Psychosomatic Symptoms Questionnaire-5 (PSQ-5), which was adopted using the COVID-19's e-Learning Digital Tools questionnaire (CeLDT) and the Patient Health Questionnaire-4 (PHQ-4). The findings revealed that respondents were classified as having "severe" depression and anxiety during the COVID-19 pandemic.

Keywords — Depression, anxiety, Psychosomatic Symptoms Questionnaire, open distance learning, movement control orders

I. INTRODUCTION

The ODL method has been introduced and practiced by Universiti Teknologi MARA (UiTM) since 1993, though it did not apply to all courses. However, as a result of the COVID-19 pandemic, it is inevitable that all educational institutions including UiTM had to completely adopt the ODL or remote learning as the only way to go forward. There are no doubts that various obstacles and challenges have to be faced by lecturers and students to ensure that this method is successful and efficiently delivered. Many cases have been reported on the dropouts of university students due to stress and depression as a result of coping with this remote learning method (Ekornes, 2021; Thomas et al., 2021).

Numerous studies have recently been carried out on ODL. The studies revealed that the ODL has caused a strong psychological impact on lecturers and students especially during the pandemic (Lischer et al., 2021; Meda et al., 2021; Kecojevic et al., 2020; Li & Leung, 2020; Muhammad Irfan et al., 2020; Son et al., 2020; Wan Noor Hayatie et al., 2020). The COVID-19 pandemic and "home-quarantine" are also predicted to have an impact on university students' physical and mental health (Shaher et al., 2021; Al-Rabiaah et al., 2020). Aspects on quality assurance such as students' readiness, trust, cheating and plagiarism in e-assessment have also been discussed by Nor Hanim, et. al. (2021).

Prior to the pandemic, various approaches for assessing the psychological distress or scientifically called 'Psychiatry neuroses' such as depression, anxiety, and stress have been investigated, focusing only on means and percentages. Such an assessment by Khadijah et al. (2013) showed that Malaysian university students were facing depression with 27.5% categorized as moderate and 9.7% having severe or extremely severe depression. For anxiety, 34% had moderate, and 29% had severe or

extremely severe anxiety; while for stress, 18.6% had moderate and 5.1% had severe. These studies were done before the COVID-19 pandemic. To date, no prominent factors have been found as affecting the occurrence of this disease among university students. Education, familial, social, and other concerns are just a few of the factors that cause many university students to be anxious all the time (Che Haslina et al., 2013). Furthermore, a study done by Vasugi and Norlizah (2019) revealed that the majority of the respondents were rated as having a 'moderate level' of depression, anxiety and stress. Meanwhile, Erni et al. (2020) concluded that prevalence of depression, anxiety and stress among newly established remote campus students in Indonesia were 25.0%, 51.1%, and 38.9%, respectively. Both outcomes from the Malaysian and Indonesian studies, no doubt show that even before the pandemics students have been facing depression, anxiety and stress.

The cases reported related to the increased levels of psychological distress, such as anxiety, depression, post-traumatic stress, and stress, show alarming concerns that have been linked to the emergence of the COVID-19 pandemic (Xiong et al., 2020). Not only has the psychological impact arisen as a result of this pandemic, it also has abruptly increased the public health burden (Grubic et al., 2020) and further studies on the matters will surely help policymakers to overcome the problems (Sheela et al., 2020).

Due to all these concerns, this study was designed to look into the matters more deeply and to comprehend the causes that have led university students into depression and anxiety especially during the COVID-19 lockdowns. This study also aims to understand how ODL has affected the mental state of the students and also to overcome it before the problems worsen. Universities and colleges must also be better prepared for unexpected emergencies such as financial losses, scheduling changes, and continuous classes, all of which contribute to the stress that staff and students have already suffered (Nor Hanim, 2020). Furthermore, the lack of precautions and social engagement can lead to isolation and loneliness, thus resulting in depression, stress and anxiety (Noor'Aina et al., 2021). If only depression and anxiety issues can be addressed early on, students can be better prepared for their studies.

II. METHODOLOGY

A. Data Collection

For this study, the online five-point Likert-scale questionnaire was created using Google Form and for the data collection process, the link was shared in WhatsApp and Telegram chat groups of instructors and students from various universities. Data was collected from 191 respondents between 1 October 2020 to 28 February 2021. SPSS software was utilized to analyze the data.

B. Adopted Questionnaire

The adopted psychosomatic impact of COVID-19's e-Learning Digital Tools (CeLDT) questionnaire was used in this research as described by Haider and Al-Salman (2020), shown in Table 1.

Table 1: Psychosomatic Impact COVID-19's e-Learning Digital Tools Questionnaire

RQ	Item
1	Continuous exposure to electronic screens in online learning is tiring and exhausting.
2	Prolonged use of e-learning tools often leads to boredom, nervousness, and tension.
3	The psychological element is a key factor in the success of the educational process.
4	I do not recommend continuing with the online learning model because it is socially and psychologically unhealthy.
5	The use of digital learning tools is responsible for my low academic performance.
6	Face-to-face interaction contributes significantly to boosting students' academic achievement.
7	Some students cannot afford to buy all necessary digital tools, which is embarrassing and frustrating.
8	Measures of lockdown, closures, and quarantine, brought by COVID-19 caused stress, frustration, and depression.
9	The volume of assignments via e-learning led to confusion, frustration and poor performance.
10	Taking quizzes and exams online from home was not comfortable and made me nervous.

In addition to the questionnaire in Table 1, the 4-item PHQ-4 developed by Kroenke et al. (2009) as shown in Table 2 was also used in this research.

Table 2: Patient Health Questionnaire-4 (PHQ-4)

Score	Item
1	Little interest or pleasure in doing things
2	Not being able to stop or control worrying
3	Feeling down, depressed or hopeless.
4	Feeling nervous, anxious or on edge

The psychosomatic impact of CeLDT and PHQ-4 questionnaires were integrated, in order to adapt to the current situation of COVID-19's MCO and to gain more effective measurements on respondents' health. As a result of the combinations, an instrument called the Psychosomatic Symptoms Questionnaire-5 (PSQ-5) was introduced for this study (refer Table 3). Each respondent's average score from RQ 1 to RQ 10 will be calculated.

Table 3: Psychosomatic Symptoms Questionnaire Score (PSQ-5)

Score	Item
1	Little interest or pleasure in doing things
2	Not being able to stop or control worrying
3	Undecided
4	Feeling down, depressed or hopeless.
5	Feeling nervous, anxious or on edge

Figure 1 shows the flowchart of the integration of CeLDT and PHQ-4 as well as the process of PSQ-5. Using PSQ-5, the mean of the average score was used to determine depression and anxiety. Any average score below 1.0 is classified as being "normal". Scores between 1.1 and 2.0, indicate a "mild" depression and anxiety level. Those scores between 2.1 and 3.0 indicate "moderate" while scores between 3.1 and 4.0 indicate a "moderately severe" depression and anxiety. Anyone scoring between 4.1 and 5.0 would be classified as having a "severe" anxiety and depression.
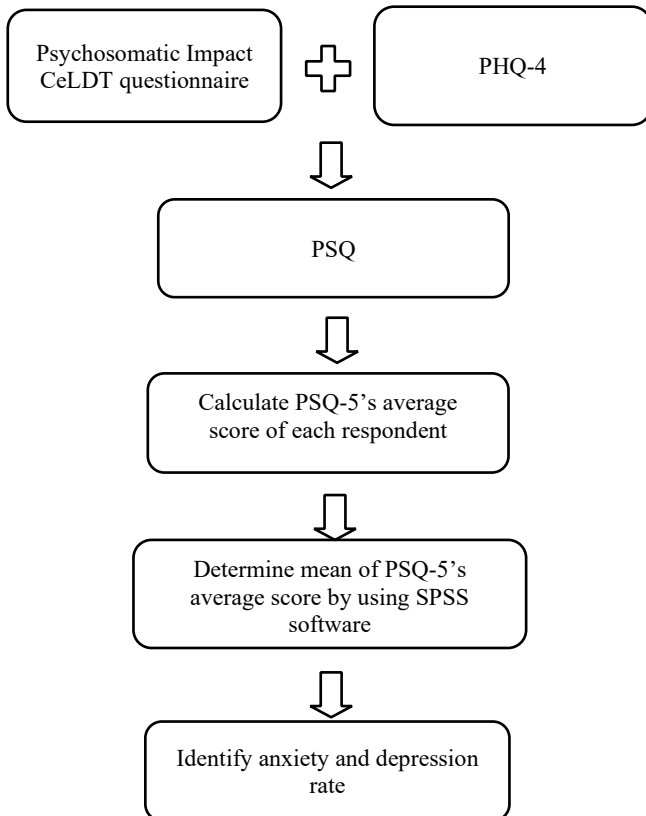

Fig. 1: The Process of Identifying Anxiety and Depression Using PSQ-5

III. RESULTS AND DISCUSSIONS

A. Percentage of Psychosomatic Impact

Table 4 shows the percentage of psychosomatic impact or score using CeLDT versus PHQ-4. RQ1 reveals that the majority of respondents (81.7% or n=155) believe that continuous exposure to electronic screens in online learning is tiring and exhausting, making them "Feeling down, depressed or hopeless" and "Feeling nervous, anxious or on edge". RQ2 reveals that 75.4% (n=143) supported that prolonged use of e-learning tools often leads to boredom, nervousness, and tension. While RQ3, which is on the ability to stop or control worrying, at least 57.1% of the respondents believe that the psychological element plays a key role in the success of the educational process. Gutiérrez et al. (2018) also presented that satisfying basic psychological needs is important for academic success.

Table 4: The Percentage of Psychosomatic Impact by Using PSQ-5

		5-point Likert-Scale				
		Score %				
		1	2	3	4	5
CeLDT	RQ1	5.0	2.1	15.7	23.6	58.1
	RQ2	1.6	3.7	19.4	30.4	44.7
	RQ3	0.0	1.0	17.8	31.9	49.2
	RQ4	5.2	6.8	30.9	26.7	30.4
	RQ5	2.6	5.2	16.8	28.8	46.6
	RQ6	5.0	1.0	20.9	37.7	39.8
	RQ7	3.7	3.1	19.9	34.0	39.3
	RQ8	2.6	5.2	16.8	28.8	46.6
	RQ9	1.0	6.3	22.5	31.4	38.7
	RQ10	6.3	10.5	31.4	23.0	28.8

Based on RQ4, RQ5 and RQ6, more that 88% do not recommend continuing with ODL because it is believed to be socially and psychologically unhealthy and indirectly responsible for their low academic performance. They prefered face-to-face interaction, which contributes significantly in boosting students' academic achievement. These results support Meera's and Aleena's (2018) study which revealed that the main reasons for the choice of face-to-face interaction were due to the classroom interaction with peers, faculty, and course content.

RQ7 reveals that more than half of the respondents felt down, depressed or hopeless. Data collected revealed that 73.3% (n=139) of the respondents claimed it was unaffordable for them to buy all necessary digital tools, which made them embarrassed and frustrated. Meanwhile, RQ8 shows that 75.4% cited COVID-19 as one of the key factors for their stress, frustration, and depression. In RQ9, 70.1% claimed that the volume of assignments given to them via e-learning led to confusion, frustration and thus, poor performance. Finally, RQ10 revealed that 51.6% (n=98) of the respondents considered taking quizzes and exams online from home as uncomfortable and made them nervous. According to Khan and Khan (2019), students were dissatisfied with online assessments. Concerns were raised about students' and lecturers' technological

incompetence, as well as distrust in the technological infrastructure. Students believed that online assessments were too challenging for science courses, resulting in lower grades.

Score of Anxiety and Depression

Table 5: Respondents' Personal and Demographic data with PSQ-5 Score

No	Item	Total Sample		PSQ-5 Score	
		N	%	M	SD
1.	Gender:				
	Male	87	45.5	3.9	0.7
	Female	104	54.5	**4.0**	0.7
2.	Age:				
	Below 22 years	130	68.1	4.0	0.7
	23 – 30 years	51	26.7	4.0	0.7
	31 – 40 years	5	2.6	3.9	0.3
	41 – 50 years	5	2.6	**4.1**	1.1
3.	Levels of Study:				
	Pre-diploma	7	3.7	**4.1**	0.5
	Undergraduate	144	75.4	4.0	0.7
	Postgraduate	40	20.9	4.0	0.8
4.	Residential Area:				
	Urban	89	46.6	4.0	0.7
	Suburban	58	30.4	4.0	0.7
	Rural	44	23.0	3.9	0.8

Table 5 indicates the four items in the Personal and Demographic sections of the questionnaire. Based on Table 5, ODL during the COVID-19's MCO caused 'moderately severe' or 'severe' anxiety and depression in all of the respondents. It also shows that the PSQ-5 score was affected by gender, age, level of study and geographical location. Not only that, it also showed that the female respondents had a higher PSQ-5 score compared to the male respondents. These results align with Wenjuan et al. 's (2020) outcomes which revealed that the first and second year female students scored significantly higher in anxiety than the male students.

According to Ramachandiran and Dhanapal (2018), potential stress can occur in the period of transition from school to university or college life. Table 5 also supports their findings. When compared to other age groups, respondents aged 41 to 50 had the highest PSQ-5 score. In contrast to undergraduate and postgraduate students, pre-diploma students had the highest PSQ-5 score. These findings could indicate that, as compared to older graduates, younger graduates are unable to handle stress.

Surprisingly, the respondents who live in a rural area with minimal facilities have the lowest PSQ-5 score of 3.9. This might be due to their rural lifestyle which has

moulded them to embrace challenges which resulted in better handling of their emotions and stress. Moreover, urbanicity has long been associated with stress, anxiety, and mental disorders (Jessica et al., 2020).

Table 6: Information on Internet and ODL with PSQ-5 Score

No	Item	Total Sample		PSQ-5 Score	
		N	%	M	SD
1.	Data Plan Limits:				
	Unlimited data	104	54.4	4.0	0.7
	Limited data	84	44.0	4.0	0.7
	No data	3	1.6	**4.5**	0.3
2.	Internet Speed:				
	Fast	40	20.9	4.0	0.7
	Medium	127	66.5	4.0	0.7
	Slow	23	12.0	4.0	0.7
	No Internet available	1	0.6	4.0	-
3.	Learning Style Preferable:				
	Face-to-face classes	61	31.9	**4.2**	0.6
	Open-distance learning	28	14.7	4.0	0.7
	Blended-learning	102	53.4	4.0	0.7
4.	Satisfaction of ODL:				
	Very Poor	5	2.6	4.2	0.7
	Poor	13	6.8	**4.4**	0.7
	Fair	62	32.5	4.0	0.7
	Good	78	40.8	4.0	0.7
	Excellent	33	17.3	3.7	0.7

Table 6 displays four items related to the Internet and ODL, which include data plan limits, internet speed, preferred learning style, and ODL-satisfaction. For all indicators, the internet speed has the same PSQ-5 score of 4.0, which indicates 'severe' anxiety and depression. ODL during the COVID-19's MCO clearly shows that respondents with unlimited and limited data are most likely to experience a 4.0 PSQ-5 score which indicates 'severe' anxiety and depression. While respondents with little or no data experienced the highest PSQ-5 score of 4.5 which is considered as 'severe' anxiety and depression. As expected, students from the lower-income families are often those without laptops or

desktop computers, thus have limited internet access. They fall under the category of higher levels of disease-related COVID-19 anxiety (Cleofas & Rocha, 2021).

When it comes to Learning Style Preference, it shows that students who prefer face-to-face have a higher risk of anxiety and depression (score 4.2) than those who prefer ODL or the mixed learning methods (score 4.0). The severe anxiety and depression might be due to the struggle to adapt and understand the materials learnt remotely. The sudden transition to entirely digitized communication channels was difficult. The technical requirements did not go down well with all students. Some students thought that configuring the various information technological tools were difficult (Lischer et al., 2021).

Finally, the outcome for the ODL satisfaction was as expected. It has a negative association with the PSQ-5 scores, where it indicates that the higher the satisfactory level, the lower the PSQ-5 score (3.9) would be. On the other hand, poor ODL satisfaction is associated with the highest score (4.4).

IV. CONCLUSIONS

It is undeniable that from the outcomes of this study, lockdown seems to have a significant impact on negative emotional symptoms, happiness, and work-life balance among university students (Wan Mohd Azam, 2020). Even though the results might not represent the true population due to the small number of samples, it is still an important indication for the Ministry of Education to look into this mental health issues such as depression and anxiety among students in university and schools, more seriously. Emphasis should be given more onto the university students, due to the fact that most of them are self-sufficient during their studies, which revealed a higher prevalence of 'severe' depression, anxiety and stress among them during the COVID-19 pandemic (Aylie et al., 2020). Some are reluctant to share their feelings and problems with their parents or lecturers until it is too late and has affected their academic performance. Thus, it makes them a greater target on mental illness related cases. Hence, it is also important to conduct a progressive review of their mental health or psychological state in order to prevent the issue from worsening. Parents, lecturers and policymakers should work together to develop appropriate guidelines to ensure the safety of university students, not only physically but also mentally.

V. ACKNOWLEDGEMENT

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