Impact of Lockdown Due to Covid-19 on Mental Health among Students in Private University at Selangor

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Abstract: The outbreak of coronavirus disease 2019 (COVID-19) has created a global health crisis that has had a deep impact on the way we perceive our world and our everyday lives. COVID-19 also called severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was first identified in Wuhan, China in December 2019. It was pronounced as a worldwide pandemic by the World Health Organization on 12th March 2020, In Malaysia, a lockdown was announced on 16th March to control the spread of COVID-19. As many universities declared a suspension of classroom teaching and switched to e-learning during this lockdown, the lives of students have changed. Being under a lot of pressure to perform academically, students are prone to develop mental health problems. Therefore, the research was conducted to study the impact of lockdown on mental health among students in a private university at Selangor and their relations to the sociodemographic factors. A cross-sectional study using a convenient sampling method was conducted among 619 private university students at Selangor using a self-administered online questionnaire consisting of socio-demographic questions for section A, depression, anxiety, and stress level questions for section B. A validated scoring system by DASS 21 was used. A total of 619 students completed the survey questionnaire. About 65%, 67.21%, and 59.29% of the students reported having depressive, anxiety, and stress symptoms respectively. There was a significant association between the stress and the age, gender, family income, and the quality of internet connectivity used by students with a p-value of less than 0.05. Besides, the level of anxiety of the students showed significant association with their family income, residential region, and quality of internet connection while depression was related significantly only with the quality of internet connection. The findings of this study showed that most of the students' mental health was greatly impacted by the lockdown due to COVID-19. The higher impact of lockdown was obvious to those students with less family income, those who were living in a rural area, and those who used poor internet connection for their online classes..

Keywords: Depression, Anxiety, Stress, Lockdown, COVID 19, Management and Science University (MSU)

1. INTRODUCTION:

A novel strain of coronavirus which is officially called a severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) since 11th of February 2020, was first detected in Wuhan, China in December 2019 (World Health Organisation, 2020). It is the causative agent of a respiratory disease known as the Coronavirus disease 2019 (truncated as "COVID-19")

(Centers for Disease Control and Prevention, 2020). The risk factors, course of the disease and mortality of COVID-19 are variables (Abdalqader et al., 2020).

In response to the WHO's declaration of a pandemic, a lockdown was then announced where governments had to take drastic measures that affect how people interact with each other. Those measures include curfews, quarantines, and closing of non-essential stores, schools, and universities. In many countries around the world, individuals are required to reduce physical contact with others outside one's household (Anderson et al., 2020)

Globally, the epidemic curve varies in each country. Malaysia lies in the middle of the exponential uncontrolled outbreak where 25 COVID-19 confirmed cases were reported up till the end of February 2020 while the second cluster of positive COVID-19 cases was found in early March which was surging up to more than 2000 cases (WHO,2020).

In response to the increasing COVI-19 positive cases and in an attempt to prevent the exponential rise of the cases in the country, the Malaysian government was announced the Movement Controlled Order (MCO) in mid of March 2020. The MCO involved the closing of international borders, a shutdown of all universities, schools, religious places, and non-essential sectors, the prohibition of traveling, and public gathering (Prime Minister's Office of Malaysia, 2020).

Besides that, the Malaysian government is taking prompt public health actions to prevent an exponential rise of cases by continuous screen and test high-risk individuals, isolate patients, and trace and quarantine the contacts to prevent secondary spread. (Ministry of Health Malaysia, 2020). This stringent action is not without a cost to society. It has major social and economic disruptions and if these measures were in place for too long, the social, economic, and psychological effects will be massive (McKibbin et al., 2020). The separation from a loved one, loss of freedom, uncertainty over disease status, financial problem, and boredom can cause dramatic effects in which individuals become apprehensive and succumb to emotional challenges in dealing with the situation (Leung et al., 2003).

An increase in symptoms of depression and anxiety is already being reported in several countries during the COVID-19 pandemic (WHO 2020). In China, for instance, severe mental health impact was reported in COVID-19 affected regions (Dong,2020).

In addition, and up to date, these nationwide closures are impacting almost 70% of the world's student population. (UNESCO 2020). As many universities declared a suspension of classroom teaching and switched to e-learning during this lockdown, the lives of students have changed. Being under a lot of pressure to perform academically, students are also prone to develop mental health problems as their social isolation increased (Mikolajczyk et al., 2008).

It was reported that the university students usually have a high incidence of emotional disorders (Auerbach et al., 2016; Bruffaerts et al., 2018; Hunt and Eisenberg, 2010) which might be increased during the lockdown period while the attribute, dogmatism, and personal adjustment were variable among students of different faculties (F. M. Katz & J. Fleming, 1971). The data on mental health among private university students in relation with lockdown is still lacking.

Hence, we explored the impact of lockdown due to COVID-19 on mental health among Health science and non-health science students of a private University and the consequences of using e-learning on their mental health. Besides that, the study also evaluated the association between the social demographic factors of the respondents and their mental health during the lockdown.

2. METHODOLOGY

This cross-sectional study was conducted in Shah Alam among Management and Science University students by using a non-probability convenient sampling method. Evaluating the

mental heath of students at lockdown time made the cross-sectional study method is the suitable approach while the convenient sampling provides quick and accessible data collection at this junction. University students who volunteer to participate in this study and have internet access were included. Self-administered online questionnaire was used as study tool which consists of part A and part B. Part A includes the sociodemographic characteristics of respondents that include age, gender, race, faculty, family income, current state, residential region, history of Covid-19 infection, close family contact(Covid-19) and internet quality during online classes while part B includes DASS 21 questions which assess the level of depression, anxiety and stress.

The sample size of this study was calculated based on the specific objectives and the prevalence value the reported as P1= 0.056 and P2= 0.127 (Katie Honney 2017). Hence, the sample size derived from double population proportion formula was 509 respondents however the total size was 611 including 20% of possible attrition rate.

$$n = \frac{(Z\,\alpha/_2 \ + \ Z\beta)^2\,[\,P1\,(1-P1) + \ P2\,(1-P2)]}{(P1-P2)^2}$$

$$n = \frac{(1.96x0.84)^2[(0.056\,(1-0.056)+0.127\,(1-0.127)]}{(0.056-0.127)^2}$$

$n = 254.65$

$n = 254.65 \times 2$

$n = 509$

Ethical approval was obtained from the MSU ethic committee and consent form was taken from each participant before answering the questionnaire. The data obtained during the research study was normally distributed and free from outliers. The data were entered, sorted out and analyzed by JASP Statistics software.

3. RESULTS

The survey was completed by all participants in this study. All the students were university students who were taking health and non-health sciences courses with the majority of them of age group between 23-24 years. Most of the students were of female gender and about 78% of them were living in an urban area. Other sociodemographic characteristics showed in table 1.

The prevalence of depression, anxiety, and stress in students who participated in this study was 64.94%, 67.21%, and 59.29% respectively (Table 2).

Table 1: Sociodemographic characteristics of the students (total students = 619)

Sociodemographic Characteristic		Number (%)
Age	< 20 Years	83 (13.41%)
	20 – 22 Year	160 (25.85%)
	23 – 24 Year	285 (46.04%)
	>24 years	91 (14.70%)
Gender	Female	174 (28.11%)
	Male	445 (71.89%)
Ethnicity	Malay	306 (49.43%)
	Chinese	63 (10.18%)
	Indian	228 (36.83%)
	Others	22 (3.55%)
Family income	< RM 2000	110 (17.77%)

	RM 2000-4000	157 (25.36%)
	RM 4000-6000	143 (23.10%)
	>RM 6000	209 (33.76%)
Course of study	Health science	289 (46.69%)
	Non-health science	330 (53.31%)
Internet connection	Good	80 (12.92%)
	Moderate	358 (57.84%)
	Poor	181 (29.24%)
Residential region	Urban	485 (78.35%)
	Rural	134 (21.65%)

Table 2: Depression, anxiety and stress among study population (N= 619)

	Frequency	Normal
Depression	402 (64.94%)	217 (35.06%)
Anxiety	416 (67.21%)	203 (32.79%)
Stress	367 (59.29%)	252 (40.71%)

A Chi-square test was used to test the association between the sociodemographic characteristics and mental health of the respondents. There was a significant association between the stress and the age, gender, family income, and the quality of internet connectivity used by students as compared to other sociodemographic characteristics. The ($X2$ – p. value) for the age, gender family income and internet connection were (9.261 – 0.026), (3.890 - 0.049), (9.280 - 0.026) and (25.622 - 0.001) respectively (table 3).

The level of anxiety of the respondents showed a significant association with their family income, residential region, and quality of internet connection as compared to other sociodemographic characteristics. The ($X2$ – p. value) for the residential region, family income, and internet connection were (5.177-0.023), (13.877-0.003), and (20.067-0.001) respectively (table 4).

Besides that, depression was related significantly only to the quality of the internet connection of the students as compared to other sociodemographic characteristics. The chi-square result of this sociodemographic factor was 8.506 while the p.value was 0.014 (table 5). Interestingly, about 65% of students who were having poor internet connection found to have depression.

Table 3: Association between stress and sociodemographic factors

Sociodemographic Characteristic		Stress	Normal
Age	< 20	49(59.04%)	34(40,96%)
	20 - 22	100(62.50%)	60(37.50%)
	23 – 24	177(62.11%)	108(37.89%)
	>24	41(45.05%)	50(54.95%)
Gender	Female	253(65.52%)	192(34.48%)
	Male	114(56.85%)	60(43.15%)
Family income	< RM 2000	72(65.45%)	38(34.55%)
	2000-4000	91(57.96%)	66(42.04%)
	4000-6000	95(66.43%)	48(33.57%)
	>RM 6000	109(52.15%)	100(47.85%)
Internet connection	Good	83(45.86%)	98(54.14%)
	Moderate	222(62.01%)	136(37.99)
	Poor	62(77.50%)	18(22.50%)

Sociodemographic Characteristic		X^2	p
Age	< 20	9.261	0.026
	20 - 22		
	23 – 24		
	>24		
Gender	Female	3.890	0.049
	Male		
Family income	< RM 2000	9.280	0.026
	2000-4000		
	4000-6000		
	>RM 6000		
Internet connection	Good	25.62	< 0.001
	Moderate		
	Poor		

Table 4: Association between anxiety and sociodemographic factors

Sociodemographic Characteristic		Anxiety	Normal
Residential region	Rural	101(75.37%)	33(24.63%)
	Urban	315(64.95%)	170(35.05%)
Family income	<RM 2000	81(73.64%)	29(26.36%)
	2000-4000	112(71.34%)	45(28.66%)
	4000-6000	103(72.03)	40(27.97%)
	>RM 6000	120(57.42%)	89(42.58%)
Internet connection	Good	101(55.80%)	80(44.20%)
	Moderate	249(69.55%)	109(30.45%)
	Poor	66(82.50%)	14(17.50%)

Sociodemographic Characteristic		X^2	p
Residential region	Rural	5.17	0.023
	Urban		
Family income	< RM 2000	13.87	0.003
	2000-4000		
	4000-6000		
	>RM 6000		
Internet connection	Good	20.06	0.001
	Moderate		
	Poor		

Table 5: Association between depression and sociodemographic factors

Sociodemographic Characteristic		Depression	Normal
Internet connection	Good	102(56.35%)	79(43.65%)
	Moderate	247(68.99%)	111(31.01%)
	Poor	402(64.94%)	217(35.06%)
Sociodemographic Characteristic		X^2	p
Internet connection	Good	8.506	0.014
	Moderate		
	Poor		

4. DISCUSSION

A total of 619 private university students participated in this study. About 65 % of the respondents reported having depressive symptoms and 67.21% reported to have anxiety symptoms while 59.29% of them reported having stress. These findings are contrary to an earlier study that was conducted in a university in Spain which included 3707 participants. In that study, depressive symptoms reported in 34.19% of participants and anxiety symptoms in 21.34% of them while stress symptoms reported in 28.14% of the participants (Odriozola-González, et al.,2020). Another recent study conducted in China covered 7143 college students, showed that 75.1% of the participants had no symptoms of anxiety, whereas the proportions of students with mild, moderate, and severe anxiety were 21.3%, 2.7%, and 0.9%, respectively (Wenjun et.al, 2020). The higher incidence of depression, anxiety, and stress in students that participated in this study as compared with previous studies would be explained by the study conducting time concerning lockdown. The studies in Spain and China were conducted right after lockdown started when its effects and impacts still minimum as compared to this study which was conducted after 3 months of the lockdown when the impacts and effects are overt.

In this study, the highest prevalence of depression and stress was found in the age group of 20-22 years old, and that was 70% and 62.50% respectively. Moreover, the highest level of anxiety (73.49%) was found in the age group of < 20 years old. In contrast, the lowest level of depression, anxiety, and stress were found in the age group of more than 24 years old, and that were 56.95%, 57.14%, and 45.04% respectively.

Statistically, there was a significant association between the age of the respondents and the stress level, and this probably because of the different challenges and issues that faced different age groups of students. Similarly, it was reported that students' age was correlated with their stress experience. The stress in younger school-leaver students was related to transitioning to the university environment and adjusting to living away from home. Whereas in the older students, the stress was related to the reduction of the working hours or even giving up the work to support their study and juggling multiple demands (Bennett et al., 2007; Giancola et al., 2009; Robotham, 2008).

Contrary to Ahmed et al (2015) report, there was no statistically significant association with the race of the students in this study and their mental health. Although there was a high prevalence of depression in "other" race (72.73%), a high prevalence of anxiety in Chinese (71.43%), and a high prevalence of stress in Indian students (60.53%), it was not of significant statistical difference. Interestingly, Malay students found to have less prevalence of mental health as compared to other races however not statistically significant. Consistently, Ahmed et al (2015) reported the lowest mental health prevalence among Chinese in 1996, 2006, and 2011. The reasons behind mental health prevalence differences among different ethnic groups are multifactorial. Longer quarantine duration, fears of infections, frustration, boredom, inadequate supplies, inadequate information, financial loss are a possible explanation.

Based on family income, students who have family income between RM4001-RM6000 were having depression (70.63%) and stress (66.43%). However, students with a family income of less than RM2000 tend to have a high level of anxiety (73.64%). Our findings on the association between family income and students' mental health level (anxiety and stress) during MCO showed a significant association. Similarly, Abdalqader and Ghazi et al. (2020) reported that the more negative impact of MCO was obviously affecting those with low family income. In contrast, a previous study conducted by Zhang (2020) concluded an insignificant association between students' mental health and their family income. (Zhang et al., 2020).

Also, there was a significant association between mental health (anxiety) and the residential area of the students. The students who live in the rural area were having depression (67.16 %), anxiety (75.37%), and stress (65.67%). Concordantly, Wenjun et al (2020) reported that students who lived in rural areas had a high level of anxiety and stress despite that 95.4% of them were living with their parents however, 52.86% of the parents of students did not have a steady income (Wenjun et.al, 2020).

Surprisingly, the mental health of students in this study was not influenced by their different courses. The level of stress, depression, and anxiety of students was not significantly associated with health science and non-health science students' courses. Differently, Odriozola-Gonzales et.al (2020) reported higher stress scores, depression, and anxiety levels among different courses. For instance, Arts & Humanities course students were having a high-stress score as compared to other courses (Odriozola-Gonzales et.al, 2020). The impact of lockdown on the mental health of students, who participated in this study regardless of the course taken, could be one of the factors that explained these findings.

Furthermore, the level of depression, anxiety, and stress among students in this study was significantly affected by the quality of internet connection that was used for online classes. The level of anxiety, depression, and stress was higher in students with a poor internet connection as compared to those with a good internet connection. Among the mental health of students, anxiety was found to be highest (82.5%) in those with poor internet connection followed by stress (77.50%) then depression (64.94%). From the same view, La Padula and colleagues reported that among the students who studying online, more than half of them expressed the need to consult a psychologist for mental health issues like depression, anxiety, and stress. Although the quality of the internet connection was not specified in that report, the poor internet connection had obvious impacts on the mental health of students using online classes in this study.

5. CONCLUSION

In conclusion, MCO has affected the mental health of university students in this study. The negative impact of MCO was highly affecting those with less family income, those who were living in a rural area, and those who used poor internet connection for their online classes. Since the implementation of MCO might be continued, as COVID-19 is still considered as a global pandemic and has yet to resolve, it is important to point out the factors that could minimize the contribution to mental health deterioration of university students to furtherly enhance their learning experience.

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