Psychological and Physical Impact on Students of Management and Science University (Malaysia) during the Movement Control Order Covid-19 Pandemic.

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Abstract

Background: The 2019 Coronavirus disease (Covid-19) epidemic was a health emergency of international concern. Movement Control Order (MCO) that was implemented in Malaysia to cope with Covid-19 spreading, had caused unbearable physical and psychological pressure and affected the educational status of the students. Therefore, **the aim** of this research is to study the impact of MCO during the Covid-19 on the university students physically and psychologically. **Methodology:** This research was implemented as a cross sectional study among university students. The online survey collected information regarding the students' demographic characteristics, physical symptoms in the past 2 months, psychological impact (using the Impact of Event Scale-Revised "IES-R"). **The results** showed that the students experienced mild, moderate and severe psychological impact (11.34%, 5.67% and 32.47% respectively). Linear regression showed there was no correlation between demographic characteristics and psychological impacts of MCO. The majority of the students (46.4%) rated their general health as good while 38.1% often keep an eye of their health and 25.8% of the students had seen medical practitioner for the past two months and 25% of them had seen the doctor for 1-2 times. The common frequent physical complaints experienced by the students were headache, insomnia, concentration difficulties, and neck and shoulder pain.

Conclusion: These findings could help in developing evidence-driven strategies to reduce the adverse impact of MCO on university students during pandemics.

Keywords:
MSU, MCO, students, IES-R, psychological, Covid-19

Introduction

During pandemics, isolations strategies and social distancing is painfully affecting human even more than the scare of the deadly pandemic. People seems to become highly agitated and restive in spite of social media connectivity. Being isolated from the family, colleagues and friends is traumatic for most people which result in physical health problem and short or even long-term psychological effect (Tze et al., 2020). The psychological effect of social distancing led to increase level of aggression, anxiety, depression and forgetfulness (Powar, 2020). This impact involves all levels of people not only the front liners, worker, public and the students can be also affected. Psychologists and other mental health professionals believed that the psychological impact of this outbreak was more threatening and dangerous than the physiological aspect of it. The psychological impact can be variable among individuals and cultural difference, perceptual style including underlying mental health condition, cognitive distortion and influence of the media (Bibin et al., 2020). Covid-19 pandemic resulted in closure of the schools and university which affected over 1.2 billion of the students from all over the world. As a result, education system had changed dramatically and teaching was undertaken remotely and on digital platform (Li, & Lalani, 2020) that may add more stress to students due to variable acceptance to remote learning (Attalla et al., 2020). There is a need to have a concrete basis for tailoring and implementing relevant mental health and physical intervention policies that could be provided in order to cope with the challenge during COVID-19 effectively and efficiently (Jianyin et al., 2020). The present research has aimed to do this by studying the acute effects of MCO from the psychological and physical aspects among university students within the first two months of the Covid-19 outbreak, hopefully, the provided data can be utilized to help universities to assist students to strive through the difficult times with minimal post-event psychological and/or physical effects.

Materials and Methods

Cross-sectional survey design was used to assess effect of Movement Control Order (MCO) on the students of Management and Science University by using an anonymous online questionnaire. As the Malaysian Government recommended the public to minimize face-to-face interaction and isolate themselves at home, potential respondents were electronically invited by existing study respondents. They completed the questionnaires through an online platform (Google Docs). Finally, 194 respondents that completed the questionnaires were included in the final analysis.

The study instrument comprised of a structured questionnaire set that covered several areas included demographic characteristics, general health, physical symptoms experienced by the student for the past 2 months of MCO. Demographic characteristics were collected for gender, age, race, religion, education level, family monthly household income, place of residence and either the student was living with family or not. Physical symptoms included stomach trouble, back pain, rapid heartbeat, headaches, insomnia, concentration difficulties, neck and shoulder pain, muscle pain, persistent fever for at least one day, breathing difficulty and sore throat.

The psychological impact of Covid-19 was measured by using the Impact of Event Scale-Revised (IES-R). The IES-R is a self administered questionnaire that has been validated for determining the extend of psychological impact after exposure to a public health crisis within one week of exposure. This IES-R consists of 22 items. IES-R score was divided into 0-23 (normal), 24-32 (mild psychological impact), 33-36 (moderate psychological impact), and >37 (severe psychological impact).

Effect of MCO toward physical health of the students was measured based on physical symptoms experienced by the students. Each item was administered via 5-point frequency scale (1-never, 2-rarely, 3-sometimes, 4-often, 5-very often). Frequency of each point was calculated to see the percentage of the students experiencing each symptom.

Descriptive statistics were calculated for demographic characteristics and physical symptoms. Percentage of response were calculated according to the number of respondents per response with respect to the number of total responses of a question. The scores of the IES-R were expressed as mean, and physical symptoms and student's perception on online learning were expressed as percentages. Linear regression was used to calculate the association between demographic data and psychological impact due to MCO. Statistical analysis was performed using SPSS statistic 21.0.

Results

The online survey of effect of the MCO toward Management and Science students was conducted within a 1 month period from April 1st to May 1st , 2020 when Malaysia was going through a phase of rapid increased in the number of newly Covid-19 cases and death. In total, 200 responses were received through Google form application, however 6 respondents failed to complete the questionnaires.

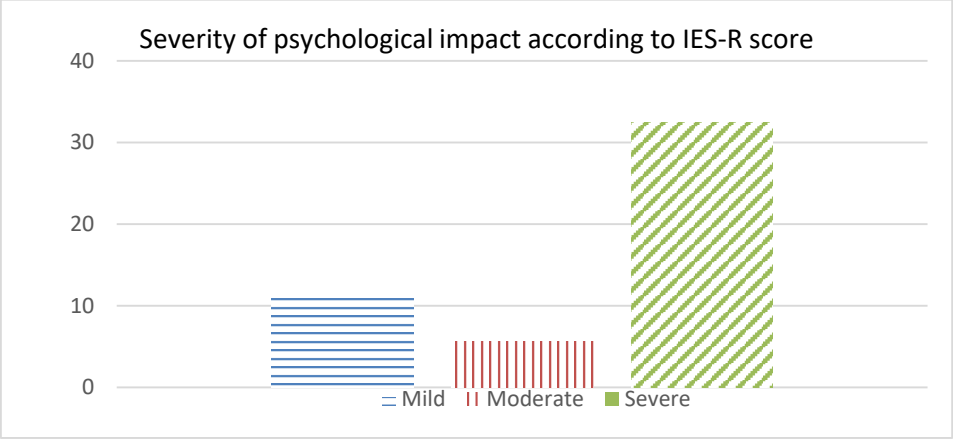
Table (1) summarizes the demographic characteristics of the respondents. Of all the respondents, 153 (78.9%) were female, 111 (57.2%) were aged between 22-25 years old. Majority of the respondents 151 (77.8%) were Malay and the respondents comprised of students studying bachelor degree (73.2%), diploma (24.7%) and master degree (2.1%). Most of the respondents 148 (76.3) were staying in urban area, 150 (77.3%) were staying with the family and 93 (47.9%) of the students reported to have monthly household income less than RM 2000.

Table 1: The demographic characteristics for the study participants

Demographic characteristic	N	%
Gender		
Male	41	21.1
Female	153	78.9
Age		
18-21	73	37.6
22-25	111	57.2
26-29	10	5.2
Racial		
Malay	151	77.8
Chinese	7	3.6
Indian	23	11.9
Others	13	6.7
Religion		
Muslim	164	84.5
Buddha	3	1.5
Hindu	24	12.4
Christian	3	1.5
Education Level		
Diploma	48	24.7
Bachelor	142	73.2
Master	4	2.1
Place of residence		
Rural	46	23.7
Urban	148	76.3
Monthly household income		
<2000	93	47.9
2000-5000	48	24.7
5001-10000	34	17.5
>10000	19	9.8
Staying with the family		
Yes	150	77.3
No	44	22.7

Psychological impact according to IES-R score is summarized in figure (1) showing that 22 (11.34%) of the students were reported to have a mild psychological impact (score <24), 11 (5.67%) were rated moderate psychological impact (scores 24-32), and 63 (32.47%) were reported to have severe psychological impact (scores >33).

Figure 1: Severity of psychological impact of the students according to IES-R score: 11.34% of the students have a mild psychological impact (score <24), 5.67% have moderate psychological impact (scores 24-32), and 32.47% have severe psychological impact (scores >33).



Psychological impact according to IES-R score based on demographic characteristics was shown in table (2). Findings showed that the male students were having total mean score of 27.68 which indicate mild psychological impact and the female students were having total mean score of 28.18 which also indicated mild psychological impact. According to age, students aged 18-22 years old were having mild psychological impact with total mean score of 28.99, students aged 22-25 were reported to have total mean score of 26.21 which indicate mild psychological impact and students aged 26-29 reported to have severe psychological impact with total mean score of 40.12.

Malay students were reported to have total mean score of 27.74 which indicated mild psychological impact, Chinese students were reported to have mild psychological impact with mean score of 27.86 and Indian students showed the total mean score of (30.65) which indicated mild psychological impact. As for the Muslim students, the total mean score was 27.55 which indicate mild psychological impact, Buddha students were having total mean score of 11.33 which indicate normal psychological impact, Christian students were reported to have total mean score of 40.67 which indicated severe psychological impact. According to residence place, students that stayed in rural area were reported to have total mean score of 26.07 which indicated mild psychological impact students that stayed in urban area were having total mean score same as students stayed in rural area.

In term of monthly household income, students with household income less than RM2000 reported to have total mean score of 27.60 that indicate mild psychological impact, students with monthly household income of RM2000-RM5000 showed total mean score of 27.90 which indicate mild psychological, students with monthly household income of RM 5000-RM10000 showed the total mean score of 31.13 which indicated mild psychological impact and students with monthly household income more than RM10000 showed a total mean of score 23.43 which it indicated mild psychological impact. Regarding residence place, students that stayed with parents showed a total of mean score 28.85 students who were not stayed with parents showed total mean score of 26.11 which both of the score showed mild psychological impact.

Table 2: The revised "IES-R" score (impact of the event scale) according to the demographic characteristics of the study participants

Demographic data	IES-R score				Mean IES-R score for the participants
	Normal N (%)	Mild N (%)	Moderate N (%)	Severe N (%)	
Gender					
Male	22 (53.66%)	4 (9.76%)	2 (4.88%)	13 (31.71%)	27.68
Female	76 (49.67%)	20 (13.07%)	8 (5.23%)	49 (32.00%)	28.18
Age					
18-21	35 (47.95%)	12(16.44%)	2(2.74%)	24(32.88%)	28.99
22-25	61(54.95%)	11(9.91%)	6(5.41%)	33(29.73)	26.21
26-29	2(20.00%)	0 (0%)	2(20.00%)	6 (60.00%)	42.10
Racial					
Malay	76 (50.33%)	20(13.52%)	8(5.30%)	47(31.13%)	27.74
Chinese	4 (57.14%)	0 (0%)	0 (0%)	3 (42.86%)	27.86
Indian	11(47.83%)	1 (4.35%)	1(4.35%)	10 (43.48%)	30.65
Others	6 (46.15%)	5(38.46)	0(0%)	2(15.38)	29.33
Religion					
Muslim	82(50.00%)	22(13.41%)	10(6.10%)	50(30.49%)	27.55
Buddha	3(100.00%)	0(0%)	0(0%)	0(0%)	11.33
Hindu	11 ()45.83%	1(4.17%)	0(0%)	12(50.00%)	32.42
Christian	1(33.33%)	0(0%)	0(0%)	2(66.67%)	40.67
Education Level					
Diploma	23(47.92%)	7(14.58%)	0(0%)	18(37.5%)	31.15
Bachelor	75(52.82)	16(11.27%)	10(7.04%)	41(28.87%)	26.63
Master	0(0%)	0(0%)	0(0%)	4(100%)	42.50
Place of residence					
Rural	24(52.17%)	4(8.70%)	2(4.35%)	16(34.78)	28.07
Urban	74(50%)	19(12.84%)	8(5.41%)	47(31.76%)	28.07
Monthly household income					
<2000	45(48.91%)	14(15.22%)	6(6.52%)	27(29.35%)	27.60
2000-5000	26(53.06%)	4(8.16%)	1(2.04%)	18(36.73)	27.90
5001-10000	16(47.06%)	4(11.76%)	2(5.88%)	12(35.29%)	31.03
>10000	12(63.16%)	1(5.26%)	1(5.26%)	5(26.32%)	23.42
Staying with the family					
Yes	73(48.67%)	18(12.00%)	8(5.33%)	51(34.00%)	28.85
No	23(52.27%)	5(11.36%)	2(4.55%)	14(31.82%)	26.11

Linear regression analysis presented in table 3 showed that there was no significant effect between the gender, age, racial, religion, place of residence, education level, and monthly household income toward psychological of the students (p>0.05).

Table 3: Regression analysis of the acute psychological effects of MCO according to IES-R score and the demographic characteristics of the study participants

Demographic data	IES-R score	
	Beta (95% confidence interval) B(95%Cl)	Regression analysis P
Gender		
Male	0.011	0.87
Female		
Age		
18-21		
22-25	0.037	0.61
26-29		
Racial		
Malay		
Chinese	0.055	0.45
Indian		
Others		
Religion		
Muslim		
Buddha	0.015	0.83
Hindu		
Christian		
Education Level		
Diploma		
Bachelor	-0.055	0.45
Master		
Place of residence		
Rural		0.10
Urban	0.000	
Monthly household income		
<2000		
2000-5000	-0.016	0.82
5001-10000		
>10000		
Staying with the family		
Yes	0.000	0.354
No		

The general health status of the students is presented in table 4. Of all the respondents, majority of the students (46.4%) rated their general health as good and 38.1% often keep an eye of their health. 25.8% of the students had seen medical practitioner for the past 2 months and 25% out of them had seen the doctor for 1-2 times.

Table 4: Acute Physical effects of MCO among the study participants

General health	N (%)	Total
How would you describe your general health?		
Excellent	45 (23.2)	
Very good	53(27.3)	**194 (100%)**
Good	90(46.4)	
Poor	6(3.1)	
To what extend you keep an eye of your health ?		
Not at all	5 (2.6)	
Sometimes	65(33.5)	**194 (100%)**
Often	74 (38.1)	
Very much	50(25.8)	
Have you seen medical practitioner in the past 3 months?		
Yes	74(38.1)	**194 (100%)**
No	120 (61.9)	
How many times have you seen the doctor for the past 2 months		
Not at all	120 (61.9)	
1-2	50 (25.8)	
3-4	19 (9.8)	**194 (100%)**
5-6	5(2.6)	

Table 5: Physical symptoms experienced by the study participants during the MCO

Physical symptoms	N(%)				
	Never	Rarely	Sometimes	often	Very often
Stomach trouble	42(21.6)	45(23.2)	78(40.2)	25(12.9)	4(2.1)
Back pain	41(21.1)	39(20.0)	64(33.0)	35(18.0)	15(7.7)
Rapid heart beat	72(37.1)	47(24.2)	45(23.2)	23(11.9)	7(3.6)
Headaches	20(10.3)	56(28.9)	61(31.4)	41(21.1)	16(8.2)
Insomnia	62(32.0)	32(16.5)	36(18.6)	42(21.6)	22(11.3)
Concentration difficulties	32(16.5)	44(22.7)	60(30.9)	41(21.1)	17(8.8)
Neck and shoulder pain	42(21.6)	38(19.6)	54(27.8)	39(20.1)	21(10.8)
Muscle pain	47(24.2)	55(28.4)	59(30.4)	21(10.8)	12(6.2)
Persistent fever for at least one day	83(42.8)	54(27.8)	40(20.6)	14(7.2)	3(1.5)
Breathing difficulty	104(53.6)	48(24.7)	29(14.9)	8(4.1)	5(2.6)
Sore throat	78(40.2)	50(25.8)	54(27.8)	9(4.6)	3(1.5)

Physical symptoms experienced by the students were summarized in table (5). From the study, results showed that most of the students experienced physical symptoms which included stomach trouble, headaches, insomnia, concentration difficulties, back pain, persistent fever and neck and shoulder pain at least a few times, breathing difficulty, and sore throat. Of all the physical symptoms, most of the students experienced stomach trouble (40.2%), back pain (33.0%), headaches (31.4%), concentration difficulties (30.9%), neck and shoulder pain (27.8%), and muscle pain (30.4%) for sometimes. As for other symptoms, the majority of the students had never experienced them the symptoms included rapid heartbeat (37.1%), insomnia (32.0%), persistent fever for at least one day (42.8%), breathing difficulty (53.6%), and sore throat (40.2%).

Discussion

The findings of the current research studied the psychological effects of MCO among university students, a month after the implementation of MCO due to the Covid-19 pandemic. A total of 22 (11.34%) of the students rated the psychological impact as mild, 11 (5.67%) of the students reported to have moderate psychological symptoms and 63 (32.47%) of the students reported having severe psychological symptoms according to the IES-R. This finding was consistent with a study conducted among the Chinese where the young adults were having a higher prevalence of psychological impact (Yeen, & Zhao, 2020). This finding might be due to fear of study delay. Other research stated that lockdown also could create post-traumatic stress among the students, particularly in relation to stigma and financial losses (Wester, & Giesecke, 2019). In terms of gender, female show a higher prevalence of psychological symptoms (mean= 28.18). This result was similar to the research conducted among the Chinese community where it showed that the females suffered a greater psychological impact due to the Covid-19 pandemic outbreak, but this result can not be taken as a solid conclusion because the percentage of female participants on the study are more than males. However previous research explained this result on the background that women tend to do more domestic work such as house chores and subsequently more stress (Werber, 2020).

Postgraduate students suffered greater psychological impact (mean=42.50) compared to diploma students (mean=31.15) and bachelor degree students (mean=26.23). This finding was opposite to a previous study whereby the findings suggest that undergraduates students were reported to have a higher prevalence of psychological impact (Odriozola-González, 2020). Students' residential places either rural or urban had no effect on the psychological impacts of MCO in contrary to another research that concluded that the students staying in rural areas are experiencing greater psychological impact. Students with stable household income showed lesser psychological impact compared to students with low family household income. Increased economic pressure had contribute to the psychological impact among the students with unstable family income. This finding was similar to that observed in a similar study among the Chinese population (Tang B, et al., 2020).

Regression analysis showed demographic characteristics of the students had no significant effect on the MCO psychological impacts on the students. This finding was different from other previous study where the demographic characteristic such as place of residence, household income and whether living with parents showed significant effect toward psychological health of the students (Xiao, 2020). This finding might be due to gap in sample size for each demographic characteristic (Varshney, 2020). Also, it can be explained by the fact that this current study was implemented after one month period of MCO so that all participants are suffering psychological impacts of MCO regardless their demographic characteristics and these results may be changed if a similar study is implemented after a suitable period of time after removal of MCO.

This research showed that the majority of the students were experiencing physical symptoms related to stress and anxiety. This finding was similar to another research conducted among the college students in China where 25% of the college students were experiencing physical symptoms in consequences to Covid-19 pandemic outbreak and lockdown (Cao et al., 2020). The news of increasing in number of Covid-19 cases and Covid-19 death spread in media social cause excessive worry among the students which lead to the development of psycho-physical symptoms (Wang, 2020). According to a recent

study conducted in Wuhan, loneliness due to MCO caused the person to develop anxiety and showed physical symptoms included insomnia, rapid heartbeat along with other symptoms (Thomas, 2020).

Conclusion

Finding from the current study showed that MCO had caused physical and psychological impacts among the students. Most of the students had suffered these effects regardless of their demographic characteristics. Subsequently, they suffered some physical effects such as stomach trouble, back pain, headache, concentration difficulties, neck and shoulder pain, and muscle pain besides rapid heartbeats, insomnia, persistent fever for at least one day, breathing difficulty, and sore throat.

This current study was implemented after one month period of MCO so that all participants are suffering variable degrees of psychological and psychophysical impacts of MCO regardless of their demographic characteristics and these results may be changed if a similar study is implemented after a suitable period of time after the removal of MCO.

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