



Knowledge, Attitude on Health Practices of University Students and Staffs During the COVID-19 Pandemic in Malaysia

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Abstract

A novel coronavirus; COVID-19 is posing a great threat to mankind worldwide. The World Health Organization (WHO) has declared the deadly pathogen as a pandemic in view of its alarming spread. Literature affirms that universities have a higher potential to be centres of a pandemic outbreak. The infectious disease could easily transmit from one person to many others within a university vicinity, thus creating a cluster if not properly contained. The Malaysian government has imposed the movement control order (MCO) to flatten the curve of infection. All economic sectors were closed during the MCO period. This study was conducted to explore the knowledge, attitude and health practices towards COVID-19 among internal stakeholders of a public university in Malaysia. An online survey was carried out on the first week of MCO. A total of 340 respondents comprised of students and staffs took part in the survey. The regression analysis found knowledge and attitude were significant predictors for adopting appropriate health practices among the internal stakeholders during the new coronavirus outbreak. This present study extends the existing literature on health crisis focusing on internal stakeholders of an institute of higher learning particularly during an early phase of MCO in Malaysia.

Keywords: covid-19, pandemic, higher learning, movement

Paper type: Research paper

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INTRODUCTION

The world is struggling to combat a life-threatening disease that has claimed thousands of lives. A novel coronavirus that was officially named COVID-19 has placed many countries on lockdown, thus suspending all human activities. The scarcity of information about its spread, symptoms, how the human body reacts to the virus and the absence of a vaccine for the disease have made preventive measures more challenging and problematic. This new strain of coronavirus causes an acute respiratory disease leading to fatality. The first few novel coronavirus cases were traced at the end of December 2019, when the World Health Organization (WHO) China Country Office was informed of pneumonia cases in Wuhan City of Hubei province (World Health Organization 2020). Similar cases have been detected outside China since then. By the end of January 2020, WHO had declared the outbreak a Public Health Emergency of International Concern (PHEIC) (World Health Organization 2020). In the sixth month, the virus has affected more than 7 million people in 187 countries and the death toll has exceeded 400,000 lives (CPRC, 14 June 2020).

Malaysia has not been spared from this health calamity. The first wave of the pandemic in Malaysia began in January 2020 until 26 February 2020 with 22 confirmed positive cases of COVID-19 (Anon 2020). The country braced for the second wave when the number of infected cases increased exponentially. In less than three months, Malaysia has become the hardest-hit nation in Southeast Asia with the highest number of infected cases. The total number of confirmed cases in the country as of March 15, 2020, was 428. This number has surpassed Singapore (226 cases) and the Philippines (140 cases) (Ong 2020). COVID-19 disease imposes a lethal threat to anyone and that includes the internal stakeholders in a university (Fauzi, Harianto, and Affandi 2020). Literature affirms that universities have great potential to become explosive outbreak centres due to their large number of populations, high level of social contact and permeable boundaries (Van et al. 2010). Students and staffs are sharing basic facilities and amenities on campus. Besides, most public university students live in the university's accommodation on campus. In addition, academic and co-curricular activities normally involved close social contacts that could increase the likelihood of the COVID-19 transmission (Fauzi, Diarti, and Rohmawati 2019).

In this study, the internal stakeholders refer to the students and staffs of the institute of higher learning in Malaysia. Both students and staffs are the primary stakeholders of a university. Drawing from Freeman (1984) stakeholders are individuals whose actions affected the organization and vice versa (Rawlins 2006). During of the pandemic outbreak, universities have been entrusted to ensure the safety and wellbeing of their students and staffs. In the absence of proper preventive measures, students and staff are susceptible to infection. Therefore, universities ought to take maximum pre-emptive actions to curb the spread of the pandemic as guided by the authorities such as the Ministry of Health (MoH). Since the beginning of the outbreak, the MoH has released specific guidelines on how to prevent infection through multiple media platforms. The ultimate purpose of sharing these guidelines is to empower public at large to take responsible actions to protect themselves and others from the pandemic. The guidelines include several health practices to maintain good personal hygiene (such as frequently washing hands with water and soap or using sanitizer), practise good cough etiquette, observe physical distance when communicating with others and seek treatment if showing symptoms, among others. The public are advised to be mindful of their their health and care for others by not going out to public places if unwell. Previous studies on influenza A (H1N1) outbreak in Malaysia affirmed that the public's knowledge and attitude towards a pandemic have profound effects on health behaviour and subsequently, help to control the spread of the disease (Wong and Sam 2011). This study primarily aims to explore the knowledge, attitude and the adoption of health practices among internal stakeholders of a university during the outbreak of a new coronavirus; COVID-19 in Malaysia. An online survey was carried out among students and staffs of the International Islamic University Malaysia (IIUM) in the first week of MCO. The online survey was appropriate since most students have rushed back to their hometown on the night prior to the MCO and due to the limited social movement allowed during that period.

LITERATURE REVIEW

The Scenario of COVID-19 pandemic in Malaysia

The arrival of the year 2020 has been tainted with the outbreak of a novel coronavirus; a new strain of the virus that has never before been identified in humans (Lim 2020). WHO has given an official name to the new deadly virus; COVID-19 or coronavirus disease. Number 19 stands for the year of the outbreak (the outbreak was first identified on December 31, 2019) (Thuburn 2020). COVID-19 causes an acute respiratory disease that could lead to fatality. The outbreak was first discovered in Wuhan; a capital city of 11 million people located in Hubei province, China (Bloomberg 2020). The government of China declared a lockdown in Wuhan since January 23, 2020 (Levenson 2020) as a preventive measure to contain the spread of the disease elsewhere. Subsequent to this development, The Malaysian government had decided to restrict the arrival of tourists from Hubei province and Wuhan city effective January 27, 2020 (Koya 2020) to mitigate the spread of the pandemic. Since then, COVID-19 has affected thousands of people outside China thus, pushing the WHO to declare a Public Health Emergency of International Concern (PHEIC) on January 31, 2020. This means the disease has the potential to impose public health risks that require a coordinated international response to contain its rapid transmission. In view of its alarming global spread, the WHO has declared Covid-19 a pandemic (World Health Organization 2020). A pandemic is a disease that concurrently spreads rapidly between people in multiple countries around the world.

The Malaysian government, particularly the team from the Ministry of Health (MoH), has been working around the clock in ensuring all preventive measures are undertaken to contain the virus from spreading. Multiple media platforms have been used to educate the public about the pandemic. Press conferences are broadcasted on traditional media and uploaded in social media to provide updates on coronavirus cases. Besides dealing with the virus attack, the government also has to compete with the abundance of unverified information related to the disease that has gone viral online. The WHO dubs such phenomenon as 'infodemic' as it has created unnecessary panic and chaos worldwide.

Early cases of COVID-19 in Malaysia were reported on the last week of January 2020, involving three Chinese citizens who entered the country from Singapore. In the first wave of the pandemic attack, Malaysia had recorded only

22 confirmed COVID-19 patients (Ministry of Health, 13 March 2020) that mostly involved tourists from China and other imported cases. However, the number of cases increased exponentially in the second wave (from 27 February 2020 onwards). By mid-March, the number of COVID-19 cases jumped to triple digits and Malaysia became the worst-hit nation of the pandemic in Southeast Asia. The surge in the number of cases was associated with a cluster of religious gathering at Sri Petaling mosque that was claimed to have been attended by more than 16,000 people (Ong 2020).

On March 16, the Prime Minister announced a partial lockdown or known as a control movement order (MCO) that was enforced under the Prevention and Control of Infectious Diseases Act 1988 and the Police Act 1967. The ultimate goal of the MCO was to break the chain of infection and subsequently, flatten the infection curve. Flattening the curve is instrumental in ensuring hospitals assigned to treat COVID-19 patients across the country are not overwhelmed. Ability to cope with the influx of patients is important to sustain quality treatment. The MCO had enforced limited movements and largely demanded the public to stay at home thus, minimising the risk of infection. All businesses and organizations including educational institutions (nurseries, kindergartens, schools, colleges and universities) were instructed to be closed. The National Security Council (NSC) has been entrusted to coordinate the effort to curb COVID-19 during the MCO period. The government thus far has enforced four phases of MCOs to break the chain of infection:

Tabel 1
Phases of MCOs

| Phase | Periode |
|---------------------|---------------------------|
| First phase | 18 March to 31 March 2020 |
| Second phase | 1 April to 14 April 2020 |
| Third phase | 15 April to 28 April 2020 |
| Fourth phase | 29 April to 12 May 2020 |

(Source: (Anon 2020e))

The pandemic could affect anyone who has been exposed to the virus and this includes the students and staffs at the institute of higher learning in the country.

The response of campus community towards COVID-19 pandemic

The first wave of the pandemic coincided with the resumption of the new semester in public universities in Malaysia. The Deputy Education Minister stated that public universities have the autonomy to make postponement of classes in view of the outbreak (Anon 2020). In response to the pandemic situation, several universities postponed registration for the semester while a few conducted online teaching to replace face-to-face lectures, i.e., UPM, UM, UUM. Among early pre-emptive measures implemented involved temperature screening and 14-day home surveillance for those who travelled to or from China. The implementation of these pre-emptive measures was not without criticism. One reputable public university had received a backlash for using student volunteers instead of trained medical personnel to do the health screening for students returning from China. The student union also protested over the issue of using one of the residential areas as isolation place for students returning from abroad during the outbreak (Chung 2020).

Similar to other public universities, the International Islamic University Malaysia (IIUM) had taken early intervention initiatives prior to the resumption of a new semester that fell on 10 February 2020. The IIUM Health and Wellness Centre took charge of health screening for new students and those who had recently travelled from China since 28 January 2020. Several locations had been identified for home isolation and a check-list for returning students from overseas had been issued as well. In order to maximize safety standards, teaching and learning activities were suspended for ten days (from 13 to 23 February 2020) starting on the third day of the new semester.

At the national level, the Prime Minister, Tan Sri Muhyidin Yassin announced several measures to contain the spread of the pandemic. Among drastic actions taken were suspension of all types of gathering; sports, cultural, religious events including school activities. Similarly, almost all public universities have continued with more stringent interventions measures to protect their campus community from the pandemic risks that include:

- a) Virtual learning instead of face-to-face lectures and tutorials
- b) Cancellation of mass gathering activities; seminars, workshops that include students' activities.
- c) Banning travelling including official visits to high risk countries to staff and students.
- d) Circulating information about pre-emptive measures to be undertaken to protect staffs and students from the pandemic.

On March 15, the number of confirmed COVID-19 cases soared to 190 in a day; the highest number of cases since the second wave began (Anon 2020). The Prime Minister issued a directive of a partial lockdown MCO to take place nationwide effective 18 March 2020 to break the chain of the pandemic. Aligned with the MCO directive and guideline from the Ministry of Higher Education, teaching and learning, including virtual classes at both public and private universities were put on hold. Students were given the option of either to stay on campus or to return home. However, on the eve of the implementation of MCO, thousands of students made the attempted to return to their hometowns. As a result, bus terminals such as the Southern Integrated Terminal (TBS), were crowded with students. Experts lamented that mass departure could lead to an increase in COVID-19 cases (Anon 2020). Following the MCO directive, students who have yet to return to their hometowns were not allowed to leave their university campus. At the same time, students and staff living outside the campus were not allowed to enter universities' premises (Anon 2020).

In his daily press statement, the Minister of Defence reported that approximately 80,000 students stayed on campus nationwide during the MCO period (Anon 2020). In order to ensure the welfare of the students was taken care of, the government allocated RM12 million in food aid for those stranded on campus. Students were expected to practise all preventive measures such as observing their social distance, improving personal hygiene and frequently washing their hands to mitigate infection. Thus, it was imperative for universities needed to ensure their stakeholders, especially the students and staff were adequately informed about what they were supposed to do in order to keep them safe from infection while staying on campus. During the third phase of MCO (15

April to 28 April 2020) the government had given the green light to students who were stranded on campus to go home in stages, effective 27 April 2020 onwards (CPRC, 12 May 2020). A standard operating procedure (SOP) was imposed and strictly monitored to minimize the risks of transmission in the process of sending them back to their hometowns. It has been estimated that 53,000 (85%) of the students had applied to go back home while another 15% decided to remain on campus (Muhamad 2020).

Research on past pandemic studies

This study argues that students and staffs' knowledge and attitude towards the pandemic would have a profound effect on their health practices. Health practices in this context, refers to adopting the guidelines as recommended by the public health experts that would protect them from COVID-19 infection. This includes to observe physical distance at least 1 meter with others, frequently washing hands with water and soap, wear a face mask in the public area, avoid social contact including shaking hands, observe cough etiquette and alike.

The extant of literature has generated mixed results of students' and staffs' knowledge, attitude and behaviour change during a pandemic situation. A previous study on the influenza AH1N1 pandemic at the University of New South Wales found that most students and staff had not adopted any behaviour change during the pandemic (Van et al. 2010). A cross-sectional study in Yeditepe University, Turkey found that students had sufficient knowledge about H1N1 pandemic but showed negative attitude towards the H1N1 vaccination (Akan et al. 2010). On the other hand, Seale, Mak, Razei and MacIntyre (2012) found that students' origin could be a factor that influences behaviour change during the H1N1 pandemic. Their study found that students of Asian origin were more likely to perceive high risk of a pandemic and adopt behavioural change. In contrast, a study on pandemic influenza AH1N1 in Malaysia found that people had overestimated the severity of the pandemic. However, the study also reported a high confidence in preventing the infection of AH1N1 and low perceived susceptibility of infection (Wong and Sam 2011). This may discourage Malaysians from practicing preventive measures during the pandemic. The present study is conducted to examine the knowledge, attitude and health practices among students and staff in the institute of higher education in Malaysia during the MCO.

METHOD

This study has adopted a quantitative approach. An online survey using a Google form survey had been distributed within the first week of the movement control order (MCO) that was from 18 to 24 March, 2020. A total of 340 respondents completed the questionnaires.

Instrument

The questionnaires were adapted from a previous study related to past pandemic (Almutairi et al. 2015). The survey was pilot tested a week before the actual survey with 30 respondents. The reliability analyses of the pilot study Cronbach’s alpha ranged between from 0.725 to 0.814. The actual study’s Cronbach’s alpha was also above 0.7 are further elaborated in Table 1.

Table 1
Reliability analysis

| Variables | Actual Study (N=340) | |
|-----------|----------------------|------------------|
| | No. of Items | Cronbach’s Alpha |
| Knowledge | 6 | .705 |
| Attitude | 7 | .724 |
| Practice | 8 | .799 |

RESULT AND DISCUSSION

The results of this study consist of the demographic and psychographic data of the respondents. They are followed by the explanation of the findings, continue with the correlation and regression analyses.

Demographic

More than half of the respondents’ age ranged between 18-25 years old (62%) followed by 26-40 years old (22%). Only 16% of the respondents were 40 years old and above. The majority of the respondents were females (72%) with only 28% of males. This is due to the campus community ratio in numbers where there are usually more females than males. In terms of education, slightly more

than half (55%) of the respondents' level of education were bachelor's degrees with 22% doing their master's and 10% with PhD.

Table 2
Demographic and Psychographic Data

| Characteristics | Frequency | Percentage |
|----------------------------------|------------|------------|
| Gender: | | |
| Male | 96 | 28 |
| Female | 244 | 72 |
| Total | 340 | 100 |
| Age Group: | | |
| 18-25 | 212 | 62 |
| 26-40 | 76 | 22 |
| 41-50 | 31 | 9 |
| 51-60 | 19 | 6 |
| 61 above | 2 | 1 |
| Total | 340 | 100 |
| Level of Education: | | |
| Certificate | 31 | 9 |
| Diploma | 12 | 4 |
| Bachelor's degree | 188 | 55 |
| Master's degree | 75 | 22 |
| PhD/Specialized | 34 | 10 |
| Total | 340 | 100 |
| Status: | | |
| Student | 278 | 82 |
| Staff (Administrator & Academic) | 27 | 8 |
| Contractor | 35 | 10 |
| Total | 340 | 100 |
| Nationality: | | |
| Malaysian | 230 | 68 |
| International | 110 | 32 |
| Total | 340 | 100 |

Respondents of this study belonged to the campus community of IIUM that includes both students, staff and contractors. More than three quarters of the respondents were students (82 percent) with 8 percent staff and 10 percent contractors. This corresponds with the ratio in community as there are more students than staffs on campus. In terms of nationality, more than half of the respondents were Malaysian (68 percent) while international respondents encompassed 32 percent of the population. Even though the majority of the respondents were Malaysian, the number of international respondents was

relatively big hence, the findings not only represent the knowledge, attitudes and health practices from the Malaysians' perspective, but also the international community's in IIUM.

Correlation Analysis

Correlation analysis was performed to measure the relationship between knowledge, attitude and health practices of the campus community during the COVID-19 pandemic. In general, all of the variables were significant but the strength of their relationship was moderate. However, the relationship between the variables still exist and valid.

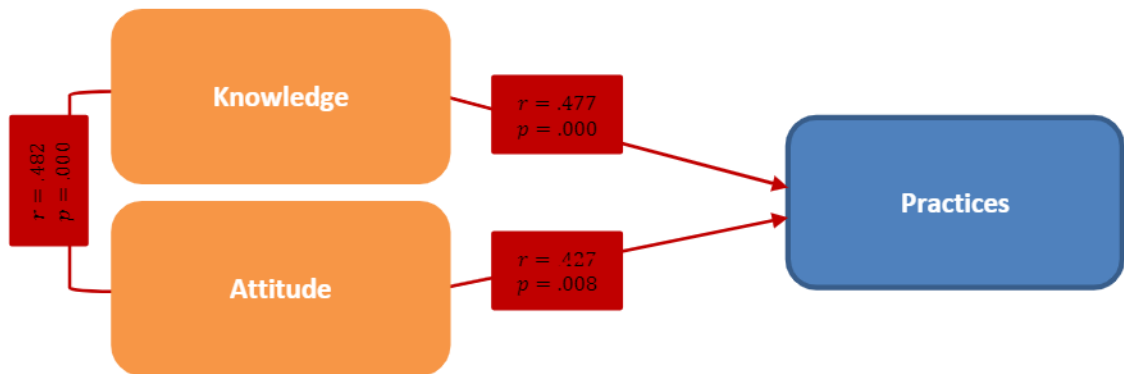
Table 3
Correlation analysis between knowledge, attitude and practice

| Variables | 1 | 2 |
|--------------|----------------|----------------|
| 1. Knowledge | 1 | |
| 2. Attitude | .482** .000 | 1 |
| 3. Practice | .477** .000 | .427** .000 |

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

Table 3 shows the relationship between attitude, knowledge and health practices. The result indicates a moderate and significant correlation between knowledge and attitude ($r=.482$; $p=.000$). Similarly, knowledge and practice also show a moderate and significant relationship ($r=.477$; $p=.000$). Hence, knowledge was found to have an association with practice and practice and attitude ($r=.427$; $p=.000$) is also found to have a positive correlation.

Figure 1
Summary of Correlation Analysis



Regression Analysis

Regression analysis was conducted to predict the health practices adopted by the respondents during a severe pandemic based on their knowledge and attitude (Table 4). A significant regression equation was found ($F(2,335) = 64.723$; $p = .000$), with an R^2 of .279. The respondents' practices were equal to $1.978 + .483(\text{attitude}) + .607(\text{knowledge})$, where attitude and knowledge were measured based on the level of agreement. Therefore, the overall model suggests 27.9% of the variance explain the practice of this campus community towards the COVID-19 pandemic in Malaysia.

Table 4
Regression Analysis Between Practice With Knowledge And Attitude

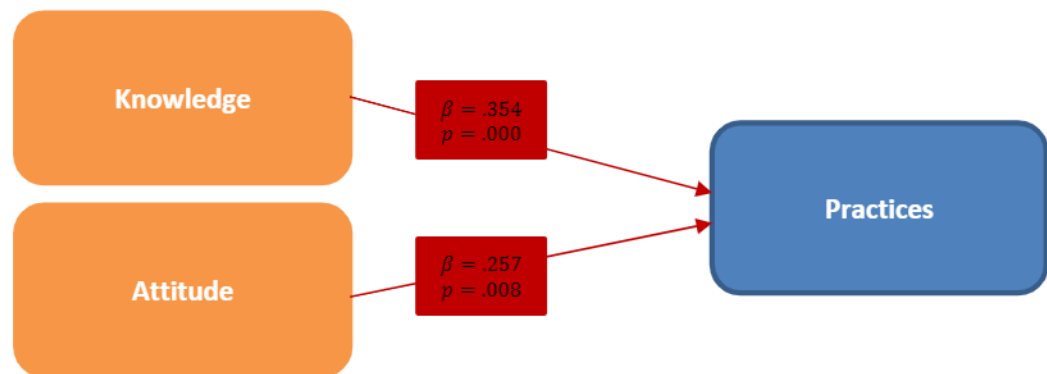
| Variables | Unstandardized | | Standardize | <i>t</i> | <i>p</i> |
|--------------|----------------|------------|---------------------------|----------|----------|
| | Coefficients | Std. Error | d Coefficients Beta | | |
| (Constant) | 1.978 | 2.573 | | .769 | .443 |
| 1. Knowledge | .607 | .091 | .354 | 6.682 | .000 |
| 2. Attitude | .483 | .100 | .257 | 4.843 | .000 |

$F=64.723$; $p=.000$; $R^2=.279$; $R^2 \text{ Adj.}=.274$

The results indicate that the respondents adoption of health practices increased when they have more knowledge about how to protect themselves from the COVID-19 virus. Moreover, the analysis also found that health practices increased when the respondents' attitude was positive towards shielding

themselves from the COVID-19 virus. Hence, both knowledge ($\beta=.354$; $t=6.682$; $p=.000$) and attitude ($\beta=.257$; $t=4.843$; $p=.000$) were found to be significant with knowledge as the strongest predictor for adopting appropriate health practices.

Figure 2
Summary Of Regression Analysis



The movement control order (MCO) or a partial lockdown was implemented for the first time in Malaysia to break the chain of COVID-19 infection. This serves as a clear indication of the devastating effects of the pandemic. The Ministry of Health has provided guidelines on how to protect oneself from the virus. These include observing physical distance (at least one metre away from another person), frequently washing hands with water and soap, avoiding physical contact, getting immediate medical treatment, self-isolating if not feeling well, etc. In this context, every individual is required to practise the given guidelines in order to contain the spread of infection.

The MCO took effect as Malaysia entered the late phase of containment in managing the pandemic. The Director general of health cautioned that this could be Malaysians last chance to fight the virus or suffered the third wave of COVID-19 infection that could reach ‘tsunami-like’ proportion (Director 2020; Ong 2020). The Ministry of Health has repeatedly urged the public to stay at home and adhere to the SOP provided. Staying at home is a responsible action that deemed instrumental to lessen the disease infection. In a pandemic situation, everyone must be empowered to mitigate risks by protecting themselves and others from harm. Every individual needs to be wary of their health conditions

and care about others too. The Health Director General, Datuk Dr Noor Hisham Abdullah has underscored the importance of social responsibility besides social discipline in fighting the pandemic.

The battle to fight COVID-19 requires every member in society to embrace the new norm. Changing norms may require time and constant education to the target groups. In this context, students need to be informed that the deadly pathogen could be transmitted from human to human via droplets that could occur through close personal contacts such as shaking hands. Several other gestures have been proposed to substitute handshakes such as joining hands together or by looking into another person's eyes would suffice a greeting. In this context, the public need to understand that embracing a new normal may not be an option but a strategy to continue with life.

The movement control order (MCO) requires everyone to stay at home and to limit their movements to within 10 km radius (if necessary). The ultimate goal of the partial lockdown is mainly to ensure people are not exposed to others who could have been infected by the virus. This would help to flatten the curve of infection. In the first week of MCO, the number of confirmed COVID-19 cases had reached triple digits daily. Flattening the curve is important to ensure hospitals would be able to cope with the influx of patients and able to provide quality treatment.

The regression analysis demonstrates that knowledge and attitude were found to be significant predictors for adopting health practices during the outbreak of the new coronavirus; COVID-19 in the country. Among all, knowledge was found as the strongest predictor for adopting preventive measures during the pandemic outbreak. Thus, this study found information about the pandemic that includes, its symptoms, modes of transmission, risks to oneself and others and preventive measures need to be communicated clearly and continuously to students and staffs in universities. In this context, the crisis management committee at the university level needs to put the effort in to crafting messages that are clear and easy to understand by its internal community. In addition, multiple media platforms should be used to ensure the message would spread widely. Adequate knowledge about the pandemic would most likely shape a positive attitude towards adopting preventive measures that would empower students and staffs to protect themselves and others from the virus. This study

suggests that the role of effective communication should not be taken for granted but to be seen as instrumental in managing a pandemic. In other words, strategic communication effort should be used to educate the internal public to do the right things to mitigate harm. Having sufficient knowledge would most likely influence staffs and students to adopt a positive attitude and behaviour to fight the pandemic. The public's ability to protect themselves and others from the pandemic will help the country to reduce the number of COVID-19 cases and subsequently flatten the curve.

Similar pattern was found in the parametric analysis. The study showed a positive relationship between respondents' knowledge, attitude and health practices. However, the strength of the relationships was moderate. In other words, the respondents' knowledge about the pandemic still unable to influence a strong attitude towards protecting themselves from the virus and subsequently to practice the guidelines as recommended by the authority.

This study provides insight into the area of crisis communication particularly during a severe pandemic threat such as COVID-19. Mitigating risks at the university is instrumental to keep the internal public and the community safe. The study among others justifies the importance of educating the internal public about the pandemic by adopting a strategic communication approach particularly during the MCO. An exemplary practice could be seen from how the Ministry of Health (MoH) educate the public about the pandemic. The MoH has constantly provided report, advise and guidelines in a form of infographic in all its social media platforms such as Instagram and Telegram to capture public's attention and easy comprehension.

CONCLUSION

The study, among others, emphasizes that changing attitude and behaviour may not be easy and requires time despite the severity of a situation. A few days before the implementation of MCO, the number of positive COVID-19 cases in the country had jumped to triple digits with two fatalities. The ultimate goal of the MCO was to reduce the number of COVID-19 cases by limiting the social movements of the public including students in the university. Controlling the

pandemic inside the university is critical. Having one infected case could create a cluster within a university campus. The university may not be able to prevent the novel coronavirus infection if students and staffs themselves are not practising the preventive measures and guidelines provided by the authority. Unlike other strains of coronavirus, COVID-19 has greater devastating effects in view of its rapid and intense widespread. In this case, the Ministry of Higher Education's decision to restrict the students' and staffs' movements on campus was commendable. As a preventive measure to curb the virus transmission on campus, students who stayed in hostels were not allowed to leave the university's premise. Similarly, students and staffs who stayed outside campus were not permitted to enter the university without prior permission during the MCO period. The findings of this study among others showed that the relationship between knowledge and attitude in influencing health practices among students and staffs were just moderate. It is worth noting that the study was carried out during the first week of the initial phase of MCO (approximately three months after the first case of COVID-19 was reported in the country). The total number of confirmed COVID-19 cases at the time the survey was carried out stood at 673 with two fatalities (Choong 2020). The number of cases and fatality were relatively low in comparison to a much higher number among most affected nations such as China, Italy and Iran (Anon 2020). By end of May, the number of COVID-19 cases in the country has increased to 7,417 cases with 115 deaths (Anon 2020). Thus, future research should consider examining attitude, knowledge and adoption of health practices among the internal campus community as the pandemic progresses or at the different phases of MCO. This could provide useful insight for the institutes of higher learning to understand to what extent knowledge, attitude, and adoption of health practices among students and staffs changed as the pandemic unfold. Such information would be useful prior to design an effective communication strategy or campaign on campus during a severe pandemic outbreak such as COVID-19.

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