A PRELIMINARY STUDY OF STUDENTS' KNOWLEDGE AND AWARENESS OF COVID-19

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Abstract: COVID-19 outbreaks are widespread globally and became pandemic. This phenomenon erupted in China and became a global health crisis with no sign of stopping. This is not the only time tragedy as in 2003 and 2014, the global panic attacks of SARS-CoV and MERS-CoV have affected the world, respectively. COVID-19 poses serious problem in humans and is fatal. Excessive activity causes many people infected with the virus transmitted. Efforts to plan the best strategy are beneficial if the awareness and attitude towards health and self-control in society is high. Therefore, this study is important to assess students' knowledge and awareness of COVID-19 in Asia country. A total of 265 participants between the ages of 19 and 24 participated in the survey through systematic random sampling techniques. The findings revealed majority of the students interviewed had good knowledge about the issue. The outcome of this research would be in form of a guideline for both scholars and policymakers to plan for further strategies with regards to the precaution of diseases specially COVID-19. Furthermore, this study contributes to theory by providing empirical evidence of the knowledge and awareness of young educated people dealing with health global issue of COVID-19.

Keywords: Knowledge, Awareness, COVID-19, Corona virus, Young educated, Malaysia.

Introduction

The world is facing threat from a new virus called corona virus disease 2019 (COVID-19) which known as second Severe Acute Respiratory Symptoms Corona Virus (SARS-CoV). This disease spreads of infections globally and has been categorised as pandemic by the World Health Organisation (WHO) on 11th March 2020. The virus was first detected in Wuhan, China in December 2019 and by third week of March 2020, the infection had caused nearly 9 per cent fatality rate of death and almost 350 thousand cases worldwide. Meanwhile the fatality rate of COVID-19 in China and Malaysia is approximately 4.02 per cent and 0.95 per cent respectively despite lower than SARS in 2003 as 9.5 per cent (Zhong et. al., 2020; Jason and Carl, 2020).

As of March 2020, the outbreak of COVID-19 happens in more than 167 countries with high spread of the disease include China, Italy, Iran and Spain which have recorded more than 10 thousand cases. Zu et. al. (2020) discovered that the virus contained in bats while Gurwitz (2020) argued the source of infection is from human to human transmission. The WHO reported that the transmission of virus from one to another to people happens through the channel of respiratory droplets produced by sneezing and coughing. In addition, the time of incubation of the virus takes about two to fourteen days with the average of five days (Velavan and Meyer, 2020). Wang (2020) narrated that the mild symptoms of this corona virus include fever, cough and shortness of breath while Hui et al. (2020) found that in the severe cases, it causes pneumonia and multi-organ failures.

One of the measures to reduce the rate of new infection is by flattening the epidemic curve aims at decreasing the epidemic peak (Brueck, 2020). Preventive strategies to combat the widespread of COVID-19 infection are similar to those recommended for other corona viruses. Both the WHO and the Centre for Disease Control and Prevention (CDC) developed measures as the guidelines for

policymakers and the public to take actions in the outbreak of disease location. Measures are aimed at the ways to handling the suspected or current infected person, the social control actions and the public responsibilities on taking action to prevent the widespread of the infection such as advised those who are suspected to use masks, minimise contact with other person, wash hands with water and soap frequently and avoid from sharing personal items (Wiles, 2020).

The increase trends of COVID-19 cases are highly associated with poor COVID-19 knowledge and awareness about the danger, the symptom as well as the preventive action, despite has been reminded from time to time by the authorities. Given the essence in combating and terminating the chain of COVID-19, research on public knowledge and awareness of COVID-19 is crucial, particularly among the university's students. Despite students categorised as educated group, Almutairi (2016) reported that university's students are less likely knowledgeable in the aspect of protection from disease, symptom and the fatality rate. Most students sought knowledge from the traditional media and social media settings rather than from their institutions programmes (Al-Hazmi et al., 2016).

Moreover, Zhong et al. (2020) stated that the knowledge score was associated with a lower likelihood of preventive practices towards COVID-19. This, better level of knowledge and awareness of disease could encourage disease preventive measures. Haushofer and Metcalf (2020) found that the contagion processes can be used to maximise the spread of protective information and behaviour meanwhile Lim (2003) suggest the intensive effort to generate awareness about SARS transmission. Therefore, it is essential to perform a study pertaining to COVID-19 knowledge and awareness among students in the university. This study focuses on the general knowledge of COVID-19 such as the sources and medium of transmission of infection, the protection and preventive measure and the consequence and treatment of such disease. This will influence the dedication and change in behaviour which aims at preventing and protecting oneself from the disease.

Therefore, findings of this study is vital for the government, especially the Ministry of Education and the Ministry of Health to enhance public preventive attitude to further mitigate the spread of COVID-19. More specifically, this study might help future plans for the spread of information for prevention and management of such a contagious disease through information broadcasting. Furthermore, the spread of COVID-19 and the number of fatality might have increased public interest in understanding how to maintain proper precautionary measures and benefit universities and authorities in supporting the government healthcare strategic planning for future generation.

The balance of this paper is organised as follows. The review of past studies and some stylised facts are presented in the next section. Section 3 presents the methodology and data. The results of this study are presented in Section 4. Section 5 conclude the study with some policy recommendations.

Literature Review

Theoretical Foundation

Modern systems theory was developed to describe a condition of being aware of oneself called self-awareness. The theory offers understandings of how complex living systems work through the understanding of self-awareness. According to Gregory Bateson, the mind is an organisational dynamic and self-awareness is essential to this process. Modern systems theory holds that humans, as a living system are aware of their surroundings and are aware of themselves primarily in their ability to be logical and curious. Consciousness provides the materials from which one develops subjective ideas about their experiences, it is said that one is aware of one's own state of consciousness. Organisational awareness of the internal experience itself plays an important role in self-regulation. In this research, knowledge and awareness are used to explain how well students' knowledge and awareness towards global issue of COVID-19.

Some Stylised Facts on COVID-19 in Asian Countries

To eradicate transmission of COVID-19, most of Asian countries have been closing entry into countries and blocking traveling out of the countries. Some Asian countries have started to implement lockdown and home isolation to citizens as measure to minimise the infections. Some of them also denied entry of tourists if they possess any China or high rate of infection countries visa history in their passport and also cancelling any events that will attract crowds and closing education institutions and tourism places.

In Brunei, citizen and foreign residents are forbidden from leaving the nation as the number of COVID-19 cases has risen to 50 cases. Cambodia has ordered closure of schools in the capital Phnom Penh and some tourist destination. Other than that, the country also bans entry of foreigners from Italy, Germany, Spain, France and the United States for 30 days. In Indonesia, number of cases has risen to 172 cases caused the country to suspend visa exemption policy for all countries for one month. Any foreign visitor to Indonesia must provide health certificate issued by relevant authorities from their respective countries.

In addition, Laos has closed international and private schools and sealed off the Golden Triangle road border with China and Myanmar and suspended flights to China. Myanmar has suspended visa on arrival for all travellers from China and increased health checks along the border with China. In Malaysia, the government had announced seven weeks' home isolation and movement control order of the country and mobilised army to help enforced curbs on the citizen movements. The cumulative total cases are 1,306 as at third week of March 2020.

The corona cases in the Philippines has increased to 230 cases when the President Rodrigo Duterte placed island of Luzon under quarantine until 12 April 2020. Singapore has high cases of 385 mainly infections comes from the United Kingdom. The country block entry or transit for visitors with travel history to high infection countries for 14 days and immediately cease ports calls for all cruise vessels. Thailand has spike in cases to 212 cases which 30 cases are linked to a boxing ring. The country stops issuing visas especially for visitors from South Korea, Italy and Hong Kong. Lastly, Vietnam suspend visa for citizens of Japan, Belarus and Russia and suspend all international flights until 30 April. There are 61 infection cases in the country. The mandatory quarantine for all visitors from the United States, Europe and ASEAN countries.

Moreover, Taiwan authorities had banned non-residents from entering the country after reported six new cases of the corona virus. Similar to Sri Lanka and Pakistan, both have suspended all visa on arrivals from China. The Chinese workers in Sri Lanka were being tested while Pakistan had quarantined a student returned from China. South Korea has shown the rise number of fatality and citizen are undergoing a quarantine while North Korea had had cancelled April marathon and impose a 30 days' quarantine for all foreign visitors. To conclude, most of the countries infected by the disease have implemented strict procedures and offer the best solution to combat the spread of the disease all over countries.

Review of Knowledge and Awareness of Other Diseases

Knowledge and awareness is important to show the strengths and weaknesses of one person that will allows people to develop strategies to improve the weaknesses. There are many studies related to epidemics or diseases have been discussed previously. In terms of SARS disease, a study done in Singapore examined the level of knowledge of SARS transmission and respondent health condition. From the findings, businesses and educational institutions play a significant role in generating employees' and young people's awareness about the disease. He also revealed that majority of them have good knowledge and plays a concrete role in preventing its spread. They found that the SARS not only affected health and medical but was affected economic, political and social, therefore they struggle to fight and solve the disease problem (Lim, 2003). In other case, knowledge and attitudes towards SARS disease are related to the level of panic emotion among people which might complicate the protection and prevention steps towards spreading of the disease (Person et al., 2004).

However, as learned from other diseases like HIV/AIDS, a study conducted by Joseph (2006) reported that misconception among population has risen when lack of knowledge of the disease increased. For instance, avoidance and discriminants behaviours related to infectious disease is still continuous for the recovered patients as learned. This would harm patients and disturb the government preventive measures (Lau et al., 2006). In other case, study done in Morocco found a community especially non-adherent patients have a poor knowledge on tuberculosis (TB). Less than half of the patients knew that TB is transmitted through air and were well informed about treatment duration. However, the findings showed that the respondents were poorly informed about consequence of stopping treatment (Tachfouti et al., 2012).

For MERS-CoV, Manal (2016) found majority of dental students were aware of spread of MERS-CoV and its protection control. They have satisfactory knowledge of the symptoms of disease which

shown relevant role play by media and the College in accordance to the disease information. However, further continuing education for improving public education about infection control are necessarily important. This is supported by Kharma et al. (2015) who found that dental students had good knowledge about MERS-CoV but the need for other information produced by MOH is required to be updated and well informed. In contrast, Alqahtani (2017) found the basic science knowledge among students was not satisfy but they were aware about health aspect. In addition, they need more training course related to the issue which had shown by their positive attitude towards the disease. While according to research done by Gaffar et al. (2019), he reported that dentists working in Saudi cities had a modest knowledge of MERS-CoV since they have insufficient history taking practices (practical of related field). Less than half of them adopted correct practices to manage patients suspected of Corona infection.

Furthermore, Ajilore et al. (2017) reported about Ebola disease in Nigeria. The study done to assess college students' knowledge and attitudes towards Ebola health and the information channel from public service announcements (PSAs). Findings indicate that majority of college students were aware that people infected with Ebola disease have very slight chance of surviving. They also knew that the Ebola can be contracted through the body fluids or close contact with a sick person. Besides that, the PSAs remains an important vehicle for conveying Ebola prevention education to college students. In China, a study done by Zhong et al. (2020) during the rapid rise period of the COVID-19 outbreak found that well-educated people, especially female and those who are high level of socioeconomic have good knowledge and attitude. They basically apply appropriate practices towards the corona disease. The study also suggested that education programmes is required to increase knowledge, attitude and practices of the residents. To conclude, although university students have good knowledge and positive attitude but the practices are still at the moderate level (Kadir et al. 2020).

Methodology

An online survey is conducted to obtain cross-sectional dataset of 265 respondents among the diploma, undergraduate and internship students in Universiti Teknologi MARA (UiTM) Segamat Campus, in Johor, Malaysia, aged between 19 and 24 years. Stratified random sampling was used to select participants to assess the knowledge and awareness of the students about COVID-19 spreading worldwide. The online questionnaire was distributed randomly to the students from 15th to 19th March 2020 to ensure that the information of the students is not extremely hikes during their free time under the movement control order implemented by the government to curb the spread of COVID-19 in Malaysia. These criteria are important as we control the information obtain by students up to second day of the order. Trend of suspected infected person increase drastically within two weeks therefore the disease seems to be very tragic. In total, 2 uncompleted responses are deleted and 265 completed and useable responses were collected via google form and the respondents' profile is summarised in **Table 1.**

The questionnaire for this study contains of 14 questions with a single item scale following Kharma et al. (2015) and Almutairi (2016). Some modifications on the question's structured made to adapt with the current situation. The questionnaire consisted of questions based on the information provided by the Malaysian Ministry of Health (MOH) and the WHO on the basis of COVID-19. There are six sections to be answered and the respondents are evaluated regarding their knowledge and awareness i.e. definition, symptoms, source of infection, infection control, protection, and treatment of COVID-19. Some of the specific medical terms such as the period of incubation, fatality rate and way of spreading are explained clearly after the stated question to make the respondents understand before they answer the question. These type of the questions are to help us to explore the knowledge of the respondents. The data was coded and analysed using the IBM SPSS Statistical Software and were analysed using descriptive statistics i.e. frequencies and percentages to describe the quantitative and categorical variables.

Findings and Results

Demographic Characteristics of the Respondents

The results presented in **Table 1** indicate the characteristics of the respondents in the study. There are 265 respondents comprised 56 males (21.1 per cent) and 209 females (78.9 per cent) which reflect the gender gap issues in higher learning education in Malaysia and Asian Countries. Majority of them are studying degree (77.7 per cent) and the rest are Diploma students who both are from business and accounting programmes.

Table 1: Summary of Sample and Distribution

Characteristics	Frequency (n=265)	Percentage (%)
Gender:		
Male	56	21.1
Female	209	78.9
Education:		
Diploma	59	22.3
Bachelor Degree	206	77.7
Academic Programme:		
Bac. in Accounting	41	15.5
Bac. in Marketing	21	7.9
Bac. in Finance	65	24.5
Bac. in Investment	77	29.1
Dip. in Accounting	39	16.1
Dip. in Business	7	2.6
Dip. in Investment	5	1.9
Dip. in Banking	28	10.6

Awareness of the Respondents

The level of awareness of the students about COVID-19 are described in **Table 2**. There are two categories of questions; general information and infection symptoms of Corona disease.

Participants' general information regarding COVID-19: Majority of the students (93.2 per cent) aware the definition of COVID-19 as the Corona Virus Disease 2019 while only 6.8 per cent of students had no idea. The greatest percentage of respondents reported that they obtained information about the spread of disease from the media and the Ministry of Health (98.9 per cent). In addition, only a small amount of students reported that they obtained information from the community they lived (0.8 per cent) and from the college (0.3 per cent).

Table 2: Awareness about Covid-19

Questions	Frequency (n=265)	Percentage (%)
General Information about Covid-19		
Are you aware of the definition of COVID-19?		
Yes	248	93.2
No	0	0
Not sure	18	6.8
From where did you hear about COVID-19?		
Our college	1	0.3
Media and Ministry of Health	262	98.9
Community	2	0.8
Not heard	0	0
Awareness of Infection and Symptoms of Covid-19		
Is COVID-19 contagious?		
Yes	258	97.4
No	2	0.8
Not sure	5	1.9

What are symptoms of COVID-19?		
Acute respiratory illness	155	58.5
Fever, Cough, Shortness of breath	46	17.3
Gastrointestinal symptoms	2	0.8
All the above	60	22.6
Do not know	2	0.8

Participants' awareness regarding COVID-19 infection and symptoms: We find that 97.4 per cent of the participants considered Corona as contagious, while merely 0.8 per cent of them reported they do not know and 1.9 per cent had no idea. Besides, our findings suggest that only 17.3 per cent realised that fever, cough and shortness of breath are the typical symptoms of the COVID-19 while more than half (58.5 per cent) choose acute respiratory illness as a related symptoms of the COVID-19 infection. Furthermore, 22.6 per cent of the participants chose the infection come from all the categories of the symptoms as mentioned in **Table 1.**

Knowledge of Respondents

Table 3 reports the level of knowledge of the students. There are three categories of questions, namely the knowledge about period incubation, the knowledge about spreading and protection, and the knowledge about treatment of the disease.

Participants' knowledge on the period of incubation and source of infection: Our findings show that approximately three quarters of the students (75.8 per cent) were correctly identify that the period of incubation for COVID-19 is 14 days and the rest indicated for only 7 days (21.5 per cent); and similarly 83 per cent of them were aware that the primary source of corona was exotic foods, 8.3 per cent and 0.8 per cent gave the answer as other domestic animal and household pets respectively, while 7.9 per cent had no idea.

Participants' knowledge on the spread and protection: Regarding items assessing their knowledge of transmission and prevention of Corona, almost all of the respondents (97.7 per cent) were aware about the mode of transmission is close contact with confirmed positive COVID-19 person and droplets produced by them spreads the infection to others. The same proportion of respondents (97.7 per cent) were applied good ways of protection to protect spread of corona virus such as washing hands with alcohol-based sanitizers, covering nose and mouth when coughing or sneezing, and avoid personal contact i.e. shaking hand and sharing utensils.

Table 3: Knowledge about Period of Incubation, Protection and Treatment for Covid-19

Question	Frequency (n=265)	Percentage (%)
Knowledge about period of incubation and source of infection for Covid-19		
How long is the incubation period for COVID-19?		
7 days		
14 days	57	21.5
Three weeks	201	75.8
One month	4	1.5
	3	1.2
Primary source of infection for COVID-19?		
Exotic foods	220	83.0
Household pets	2	0.8
Other domestic animals	22	8.3
Do not know	21	7.9
Knowledge about Spread and Protection of Covid-19 in Human		
How does COVID-19 spread?		
Between people who are in close contact and through respiratory droplets produced by infected person		
Contact with domestic animals	259	97.7
By eating exotic foods	0	0
Do not know	4	1.5

	2	0.8
How the infection from COVID-19 can be protected?		
Washing hands with alcohol-based sanitizers		
Covering nose and mouth with tissue paper when coughing or sneezing	3	1.2
Avoid personal contact (hand shake, sharing utensils etc.)	1	0.3
All the above	2	0.8
	259	97.7
Knowledge about Treatment of Covid-19		
Is COVID-19 the same with e-Coli and H1N1 virus?		
Yes		
No	70	26.4
	195	73.6
Do you know fatality rate with COVID-19?		
About 50 percent	42	15.8
About 30 percent	60	22.6
About 15 percent	30	11.3
About 3 percent	21	7.9
Do not know	112	42.4
How does treatment for COVID-19 been implemented?		
Supportive treatment	94	35.5
Vaccination	64	24.1
No treatment	63	23.7
Do not know	44	16.7

Participants' knowledge about treatment: For this category, we notice that a vast group of respondents (73.6 per cent) knew that e-Coli and H1N1 viruses were not identical to COVID-19. Unfortunately, almost half of business and accounting students (42.4 per cent) do not have the knowledge that the fatality rate of corona cases and approximately 36 per cent realised with the supportive treatment undergoing with the patients.

Discussions and Conclusion

This study provides insight about global pandemic of COVID-19 knowledge and awareness among students in an Asia country, Malaysia. The samples were chosen from the Universiti Teknologi MARA Segamat Campus which are below 24 years of age and are pursuing studies in many different courses. This study concluded that the knowledge and awareness were found to play a very important role in explaining students' attention to outbreak of the disease recently confronted by people around the world. We discover that students have a high level of awareness of the corona virus disease with vast majority of them learn the definition of COVID-19 from media and MOH. This may be explained by higher rate of smart phone usage among the young generation are more likely to keep alert regarding the news in the country. The result suggests that the role of media and MOH announcements are very important to expose the information to the public. Therefore, news and announcements from MOH and the social media becomes the crucial channels to educate the public on disease prevention and protections knowledge.

The results of this study also showed that the university student interested to learn about a disease that will help them to know the symptoms and the spread of diseases. It is also reported that the respondents realised the cases are contagious but they are not really clear of the symptoms shown by the people before diagnosed as positive infected. The young business and accounting participants have good knowledge of this pandemic. The knowledge about the period of incubation exhibited a higher rate of the exact knowledge will help them aware of the period before the symptoms onset. The knowledge about the medium of infection and the ways to protect oneself from the infection showed that the students are truly take interest in the ways to protect themselves from the disease. This will help them to practice the correct diseases prevention strategy.

Moreover, our results show that the students also have sufficient knowledge of the disease transmission through close contact with the infected person and by respiratory droplets produced by infected person. Considering this, most of them aware of the prevention and the protection steps to avoid from infected diseases. However, some of the students were not aware of the differences among certain diseases that previously became an epidemic. This probably due to the fact that the other diseases occur before high usage of smart phones and social media that caused them not really aware of the differences between one diseases to another. Moreover, we deduce that the students are also lack of knowledge on the fatality rate or the percentage of corona lead to death. This showed that the student not giving attention to the danger and fatality of certain disease that may cause them to ignore the weightiness of the infections.

Besides, the method of treatments of infection reveals that the students have poor knowledge about the treatments that available to treat the disease. This showed that the students are less likely concern about the ways to treat the infection being applied to the infected person by the government. As a result, we can surmise that business and accounting students have better healthcare knowledge and awareness on healthcare issue. However, they only interested to know the information about the disease before it could infect a person but their knowledge about the treatment and fatality after being infected was not given much attention. This may cause some of the students are not ready to change their behaviour to comply and practices the prevention and protection from virus.

Therefore, the public knowledge is very crucial to help reducing and ultimately eliminating the COVID-19 infections from being spread. The infection rate should be reduced in order to avoid the risk of health services being overwhelmed. So that the current patient will be treated better and also to provide more time for a vaccine and treatment to be developed. The individual actions are required as support to policies and implementation by the government to combat the spread of pandemic. In Malaysia, people have prepared themselves to abide the order of the government. However, the knowledge about corona virus disease should also be installed in the citizen so that they understand the worst of the current health environment and will cooperate with any measures taken by the government.

The government should always keep people informed and up to date on the COVID-19 cases and situations. Apart from that, the government should also provide information regarding updates on new cases, their location and the location for COVID-19 healthcare services. With regards, the government should educate the citizens and come up with guidelines for mass public campaigns so that the citizen has accurate information about the disease and this will help them to make the change in behaviour to maintain healthy and to practice social distancing. The education campaign may also help to stop the spread of COVID-19 and change of people lifestyle. This could be done by coordinating community education and information sharing session through varieties of media.

Furthermore, the public should take action to counter any panic, stockpiling and misinformation sharing which people can self-prevent. Individual should make personal sacrifices, to change our lifestyle and exercise social responsibility. This is a preliminary analysis of knowledge and awareness among students in Malaysia. Therefore, future studies should aim to confirm such findings in other regions of Asian country as well as to explore other factors that might help to educated citizen about prevention and protection from certain disease. Additionally, factors associated to the COVID- 19 such as the role of socio-demographics should also be paid attention.

Acknowledgement

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