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The Level of Knowledge, Awareness and Attitude of Tertiary Students toward COVID-19

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ABSTRACT

As the increasing cases of Coronavirus Disease in 2019 (COVID-19), it is important to ensure that university students have adequate information about the disease. This is not only essential for a student to know how to protect themselves, but also educate their family members, relatives or friends to understand the real situation and right track to protect them. This study aimed to examine the level of knowledge, awareness and attitude toward COVID-19 transmission among tertiary students in Malaysia. A random sampled data was conducted among 453 tertiary university students in Malaysia. Data were collected using a questionnaire. A total of 56.7% participants are female students and 43.3% are male students are collected in this study. Results show that all the level of knowledge, awareness and attitude of students from tertiary institutions on COVID-19 transmission are in high level. Consequently, most of the students know how the virus has evolved to spread and having a positive attitude toward it.

Keywords
COVID-19; Knowledge; Awareness; Attitude

Introduction

Coronavirus Disease 2019 (COVID-19) pandemic shocking the worlds with more than 1.5 million deaths and more than 65 million are infected (data retrieved until December 4, 2020) (Worldometer, 2020). More than 197 countries are suffering with medical and economic downturn. Certain countries like USA, India, Brazil and Italy crumble due to overwhelmed by COVID-19 crisis. Recently, a medical doctor said in a television channel that Italy government asked to save ventilators for under 60 years old due to the shortage of medical equipments (Allen, 2020). COVID-19 is a new virus that outbreak at December 2019. This virus is proved that able to influence our lungs and airways. The infection case is expected to increase significantly due to better testing since there are many confirmed cases never show the symptoms of COVID-19 before they suspected.

The first announcement of COVID-19 case in Malaysia is on January 25, 2020. The first wave of cases rose to 22 at February 16 and the second wave began on February 27. The second wave of cases recorded that there are more than 1,000 cases. At December 2020, there are 69 thousand cases of COVID-19 infections and 376 death cases have been reported in Malaysia. The effect from it caused government promulgated several restrictions include Movement Control Order (MCO), Enhanced Movement Control Order (EMCO), Semi Enhanced Movement Control Order (SEMCO), Conditional Movement Control Order (CMCO) and Recovery Movement Control Order (RMCO) due to the severity in those area, states or city (Tang, 2020). The lockdown and prohibition of mass movements was extended to all industries and it will lead to business failures and layoffs. The impact of the pandemic caused Malaysia's economy drastically decline. The

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unemployment rate and inflation rate are expected to be increased in Malaysia as well as in the world (Aun and Abdul Ghani, 2020; Rahman et al., 2020).

Countries around the world started implementing lockdown to confine their citizens to their home to slow down the spread of COVID-19. Amid all these drastic and frightening turn of events, it is expected that many educational institutions suspend campus learning in order to curb the spread of the virus (Zayapragassarazan, 2020). In Malaysia, all the education institutions and universities are instructed to be temporary closed and suggested using online learning for teaching and learning activities. In Malaysia, the students are suggested to stay at their own college under Movement Control Order to avoid the outbreak of COVID-19. Under this situation, students may experiencing emotional dilemma such as lockdown stress, loneliness and anxiety about the environment in university due to death cases, panic-buying and news that they obtained.

The issue arising is why the COVID-19 is spread in an exponential way? Many academician and medical experts claimed that the society still not aware or lack of the knowledge on this pandemic virus (Phoong et al., 2021; Zhong, Luo, Li et al., 2020; Abdulrahim, Alasasfeh, Khader et al., 2019; Brorsson and Herlitz, 1988). This motivates us to investigate the level of knowledge, awareness and attitude of the university students. This study is expected as the blueprint for the government and society to understand the levels of knowledge on the transmission of COVID-19; the levels of awareness including the risk of COVID-19 epidemic; and the level of students' attitude during the country lock down period.

The objective of this study is to investigate the level of knowledge, awareness and attitude of the Malaysian tertiary students on the COVID-19 pandemic. Another objective is to identify the correlation between level of knowledge, awareness and attitude of the students.

Data and Variables

A survey was conducted to test the knowledge, awareness and attitude levels of higher education students when the COVID-19 pandemic has started in Malaysia. A three-point Likert scale questionnaire is used to examine the objectives of the study. The target respondents of this study are higher education students in Malaysia.

A random sampling is employed for the data collection and there are 453 respondents involved in the data collection. The questionnaire is adapted from Lim (2003), Chan, Cheng, Tam et al. (2015) and Korver, De Vries, De Jonga et al. (2009) and then divided it into four parts. Part A contained questions on personal information, Part B contained questions related to the students' knowledge on COVID-19, Part C related to their awareness, and Part D related to their attitude toward the illness. The findings and discussion for every item are summarizing in the following section.

Research Methodology

This study uses several statistical methods to test the reliability of the data, sampling adequacy and examine relationship between the variables. Firstly, the reliability of the items in the questionnaire is tested by using Cronbach's Alpha. The reliability test for the variables include knowledge, awareness and attitude are 0.911, 0.772 and 0.613 respectively. The Cronbach's Alpha for all the variables are greater than 0.6. This illustrated that all the variables are

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considered reliable (Ursachi, Horodnic and Zait, 2015). Then, factor analysis is used to reduce the large number of variables into fewer numbers of factors. For factor analysis, the Kaiser-Meyer-Olkin (KMO) and Bartlett's test are applied to estimate the sampling adequacy of data.

Table 1. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.851
Bartlett's Test of Sphericity	Approx. Chi-Square	8271.602
	df	378
	Sig.	.000

Findings obtained from Table 1 depicts that the data is useful because the value for KMO is 0.851 which is close to 1.0. Meanwhile, the significance value for Bartlett's test of sphericity is 0.000 (less than 0.05) which indicates that a factor analysis is useful with the data.

Next, a descriptive statistics is used to describe the basic information of the respondents and the results will be discussed in the following section. Lastly, a correlation analysis is used to investigate the relationship between the level of knowledge, awareness and attitude of tertiary students towards COVID-19 pandemic.

Results and Discussions

Profiling the Respondents

A total of 453 completed surveys were collected and there are 56.7% or 257 are female students and 43.3% or 196 male. The number of the respondents based on the gender is summarized as in Figure 1.

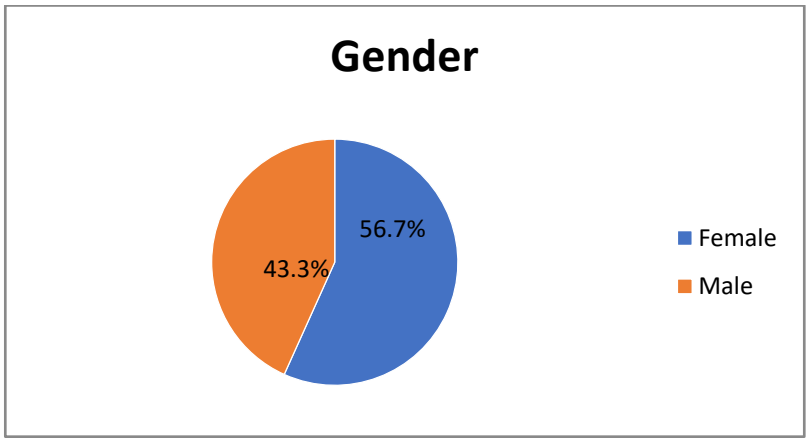

Figure 1. Gender

Figure 2 shows that majority of the respondents are from the age group 18 until 24 years old which are 60.5% or 274. For the 25 – 34 years old tertiary students are 32.9% or 149 students, 5.7% are from the age group of 35 – 44 years old, 0.9% are 45 – 54 years old and no respondent from 55 years old and above.

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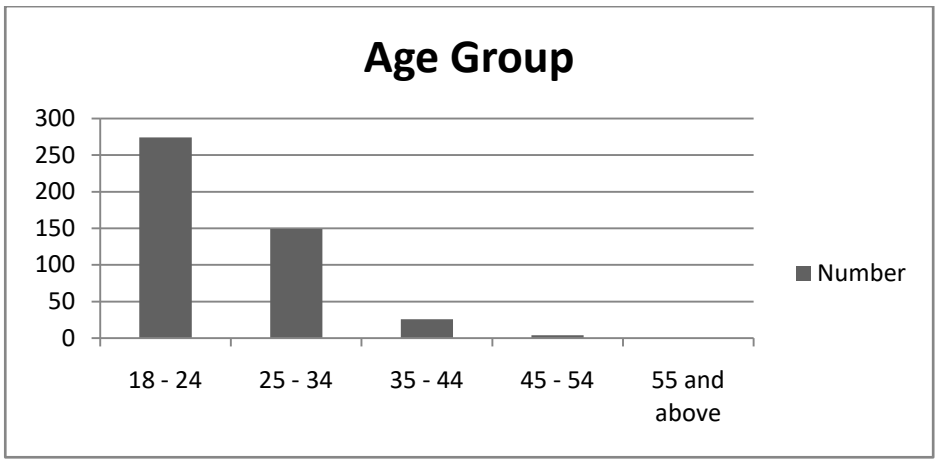

Figure 2. Age Group

In addition, the respondents are from different levels of education which includes 31.5% or 143 of the Diploma students, 43.5% or 197 Bachelor's degrees, 21.9% Master's degree and 3.1% PhD students.

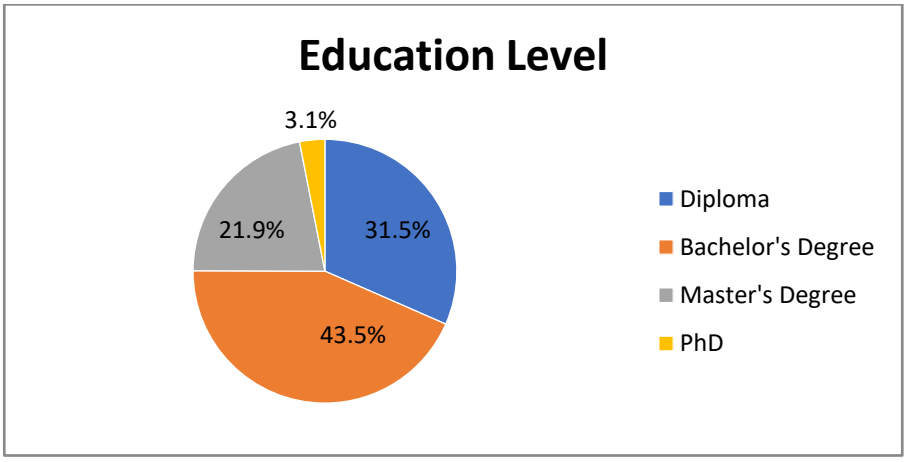

Figure 3. Education Level

Figure 1 until 3 are the information of respondents in this study. The target respondent of this study is tertiary students. Thus, a combination of undergraduate (Diploma and Bachelor's Degree) and postgraduate students (Master's Degree and PhD) are enrolled in this study.

Knowledge about COVID-19 Transmission

The level of knowledge, awareness and attitude of students toward COVID-19 transmission can be referred to the Table 2, 3 and 4. The percentage of each item are collected and summarized at the following.

Table 2. Knowledge about COVID-19 Transmission

	Items **COVID-19 can spread by:**	**True (%)**	**Don't Know (%)**	**False (%)**
1.	Being sneezed or coughed upon by a COVID-19 infected person	96.5	0.9	2.6

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2.	Sharing food with a COVID-19 infected person	90.9	2.9	6.2
3.	Sharing spoons, forks, plates, drinking glasses with a COVID-19 infected person	94.9	1.1	4.0
4.	Touching or being touched by a COVID-19 infected person	91.4	1.8	6.8
5.	Consuming food/drinks prepared by a COVID-19 infected person	85.0	6.8	8.2
6.	Consuming food/drinks handled by a COVID-19 infected person	83.9	7.7	8.4
7.	Shaking hands with a COVID-19 infected person	89.4	4.9	5.7
8.	Ordinary office contact	88.0	6.0	6.0
9.	Travelling in the same aircraft as a COVID-19 infected person	94.0	1.5	4.5
10.	Travelling in a taxi/Grab car with a COVID-19 infected person	83.9	6.6	9.5
11.	Travelling in public transportation (bus, MRT) with a COVID-19 infected person	90.5	2.2	7.3

Table 2 revealed that there are 96.5% of the respondents said that COVID-19 can be spread through sneezed or coughed upon by an infected person (Item 1), 0.9% don't know about the way of the virus spread out and 2.6% said that this statement is false. Majority of the students know that droplets from the coughs or sneezes may contain virus if the person has the disease (World Health Organization, 2020). However, still have a small amount of students do not know how the viruses evolve and spread.

Another noteworthy findings are 90.9% tertiary students agreed that the virus can be spread if a person sharing food with an infected person (Item 2); 94.9% said that the disease can be spread by sharing spoons, forks, plates and drinking glasses with an infected person (Item 3); and 91.4% agreed that COVID-19 can be transmitted via touched or being touched by the infected person (Item 4). This can be supported by referring to the Centers for Disease Control and Prevention (CDC) (2020) that the virus can be transmitted by touching your nose, mouth or eyes because hands touched the surfaces and can pick up viruses.

In the Item 5, findings revealed that 85.0% of respondents agreed with the transmission of Covid-19 can be spread by consuming the food or drinks that prepared by an infected person. Another 8.2% said the statement is false and others don't know about it. Meanwhile, Item 6 reported that there are 83.9% agreed that the transmission of disease can spread through consuming food or drinks handled by infected person. Another 8.4% said virus cannot be transmitted if they just handled the food and 7.7% indicated that they don't know the possibility of it.

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Additionally, 89.4% believed that the virus can be spread by shaking hand with the disease infected person and 5.7% disagreed with it. Another 4.9% do not really know whether the disease can be transmitted in this manner (Item 7). The findings can be explained by referring to Park (2020) that handshake is not the major source of transmission because even experts also aren't sure how long the virus can survive on hand's surface. A person might not get infected if they didn't touch their nose, mouth or eyes after handshakes.

Another 88% agreed that having a case of Covid-19 infected person in an ordinary office also can get infected (Item 8). In addition, there are 94% believed that the probability to get infected is high if travelling in the same aircraft (Item 9) with infected person; 83.9% said travelling in the same taxi or grab car (Item 10); and 90.5% agreed if travelling in the same public transport with infected person also will being infected (Item 11).

All items about level of knowledge are at high level. This can be explained by referring to the target respondents that applied in this study which is tertiary education students. They might obtained the information via the message or information share by the university or government.

Awareness of Student toward COVID-19

Table 3 displays the percentage of students' awareness on the disease. Majority of the respondents always check the number of infected cases which are 95.2% or 431 person (Item 1) and 90.8% always check the infected area (Item 2) from the social media. This shows that most of the students aware with the confirmed cases and where is it happened. Meanwhile, the level of awareness on the COVID-19 information such as the hospital that provided COVID-19 testing and hotline to get accurate information from the government are in moderate level. There are 74.6% aware with the hospital information (Item 3) and 74.4% aware with the hotline number (Item 4).

Table 3. Awareness of Student towards COVID-19

No.	Items	Disagree (%)	Neutral (%)	Agree (%)
1	I always check the number of infected cases.	0.4	4.4	95.2
2	I always check the infected area.	2.6	6.6	90.8
3	I am aware the hospital which can provide COVID-19 testing.	3.5	21.9	74.6
4	I am aware the hotline provided by government to obtain the COVID-19 information.	4.6	21.0	74.4
5	I know the ways to protect myself from the virus.	0.0	6.6	93.4
6	I always read the news or information from the social media.	0.7	2.6	96.7

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7	I keep on update the latest news about COVD-19.	0.7	3.1	96.2
8	I aware the risk of going to a crowded area likes shopping mall/market.	0.2	2.0	97.8
9	I will verify the news that share in social media before share to others.	1.3	6.0	92.7
10	I always keep a social distance with other person that suggested by the government.	0.4	3.8	95.8

Additionally, 93.4% indicated that they know the prevention against the COVID-19 virus (Item 5); 96.7% always read the news or information about the COVID-19 from the social media (Item 6); 96.2% revealed that they will always referred to the latest news about the disease (Item 7); and 97.8% said they know the risk to visit a crowded place since there is high change being infected (Item 8). All these statements showed that most of the tertiary students know the strategies to prevent the disease.

Findings also displayed that 92.7% of the respondents will check the validity of the news before they share in social media (Item 9). Another 6.0% are neutral and 1.3% will directly share the information they obtained to his/her social media. Students should pay attention on this matter since the Malaysia government have strict the rule and fined or jailed the person who share the fake news which can cause panic-buying and create panic in the community.

For the Item 10, there are 95.8% of the respondents will practice social distancing to reduce the risk being infected. Social distancing during a pandemic is important especially for COVID-19 since there is no effective treatment or vaccine to date. Furthermore, there is difficult to detect the infected cases due to no or mild symptoms. This can be referred to the Mainichi Japan (200) that there is 31% Japanese evacuees from Wuhan were tested positive but never showed the symptoms. This can be concluded that most of the tertiary students are at highly aware with pandemic disease.

Attitude toward COVID-19

In this section, the students' level of attitude on COVID-19 is displayed in the Table 4. There are 98.5% of the respondents will follows the Movement Control Order (MCO) that imposed to curb the spread of COVID-19 (Item 1); 98.0% follows the prevention guidelines suggested by Malaysian government (Item 2); 99.3% avoided to visit crowded place like shopping mall or market (Item 3); 87.0% practice social distancing (Item 4); and 98.9% avoid joining gathering or event (Item 5). All this statement indicated that most of the tertiary students can regulate and alter their behavior to slower the spread of the disease. Furthermore, the Malaysian government started a pandemic action plan and advised all the residents to wash hands frequently, stay at home, work from home, and practice social distancing to reduce outbreak of COVID-19.

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Table 4. Attitude toward COVID-19

No.	Items	Disagree (%)	Neutral (%)	Agree (%)
1	I follow the movement control order (MCO) suggested by the government.	0.2	1.3	98.5
2	I follow the prevention guidelines suggested by the government.	0.2	1.8	98.0
3	I avoid go to the crowded place	0.0	0.7	99.3
4	I keep a social distance with other person	0.2	12.8	87.0
5	I avoid to join any gathering/event	0.2	0.9	98.9
6	I will go to hospital to get the medical attention if found to have COVID-19 symptoms	0.9	2.0	97.1
7	I will self quarantine when contact with COVID-19 suspected person	0.2	1.5	98.3

Moreover, a total of 97.1% respondents revealed that there will go for medical attention if they have COVID-19 symptoms. 2.0% have neutral opinion and only 0.9% will not go for COVID-19 testing. Additionally, 98.3% of the respondents will self quarantine if they have contacted with suspected patients and only 0.2% or 1 respondent disagreed with it.

Consequently, the level of attitude of tertiary students on COVID-19 is at high level. This may be due to the COVID-19 still in the progress of producing vaccine and the Coronavirus has mutated, hence, all the Malaysian have to follow the government's standard operating procedure (SOP).

Correlation Analysis

This paper also aims to investigate the correlation between the level of knowledge, awareness and attitude of the students on COVID-19 transmission. Table 5 depicts the correlation between the variables.

Table 5. Correlation

		totK	totAW	totAT
totK	Pearson Correlation	1	-.438**	-.179**
	Sig. (2-tailed)		.000	.000
	N	453	453	453
totAW	Pearson Correlation	-.438**	1	.310**
	Sig. (2-tailed)	.000		.000
	N	453	453	453

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totAT	Pearson Correlation	-.179**	.310**	1
	Sig. (2-tailed)	.000	.000	
	N	453	453	453

**. Correlation is significant at the 0.01 level (2-tailed).
totK = Knowledge
totAW = Awareness
totAT = Attitude

In Table 5, the Pearson correlation between knowledge and awareness is -0.438 which indicates that there is a negative association between the knowledge and awareness of the students on the transmission of COVID-19. Additionally, the Pearson correlation for knowledge and attitude is -0.179. This can be concluded that there is a negative correlation between the level of knowledge and attitude of students on COVID-19. This can be supported by referring Zhong et al. (2020) that the knowledge score was negatively associated with the attitude towards Covid-19 in China. Meanwhile, the students' level of awareness and attitude on transmission of Covid-19 is positively associated which is 0.310.

Conclusion

Most of the students aware with the method of COVID-19 virus transmitted and held positive attitudes towards it. Hence, this study is aim to serve as a reference for the researchers and policy makers in preparing the guidelines COVID-19. Also, this study investigated the correlation between the students' level of knowledge, awareness and attitude on the transmission of COVID-19.

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