

ORIGINAL ARTICLE

Covid-19 Awareness Among Healthcare Students and Professionals Around Johor, Malaysia

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Abstract: The purpose of this research is to study the awareness of healthcare workers and professionals during COVID-19 pandemic. It aims to estimate the awareness of COVID-19 disease and related infection control practice among healthcare students and professionals around Johor Bahru, Malaysia. The data were collected from the respondents which consists of 153 healthcare students and professionals. Median test and quantitative analysis were used to test the level of awareness. The empirical study results revealed that healthcare students and professionals were shown to have high levels of COVID-19 awareness and information, as well as optimistic attitudes toward the disease based on the total percentage of the correct response.

Keywords: Covid-19, Healthcare workers, Malaysia

1.0 INTRODUCTION

The novel coronavirus (COVID-19) was first recognized in Wuhan, China, in late December 2019 [1]. It was distinguished among a bunch of patients that gave an unidentified type of viral pneumonia with shared history of visiting the Huanan fish market. Wuhan is the most crowded city in central China with a populace surpassing 11 million. These patients most remarkably gave clinical indications of dry cough, fever, and two-sided lung invades on imaging [2]. Cases were totally connected to Wuhan's Huanan Seafood Wholesale Market, which exchanges fish and an assortment of live creature species including poultry, bats, marmots, and snakes.

In the mid of year 2020, Malaysia faces a very difficult situation when the COVID-19 pandemic case in Malaysia suddenly increases. Healthcare workers on the frontlines are particularly at risk for this infection among the public. The outbreak of severe acute respiratory coronavirus 2 syndrome (SARS-CoV-2) named by the International Committee on Virus Taxonomy (ICTV) has already taken on pandemic proportions, affecting more than 100 countries in a matter of weeks. It is a new strain of virus

that was discovered in December 2019 and was not previously present in humans. Most health care workers incidents occurred during the early stages of the outbreak [3].

With this mode of transmission, frontline workers, such as healthcare workers, are among the highest risk of COVID-19 infection. The highly infectious COVID-19 poses an additional risk to the healthcare system isolated from the weight of long hours of service, physical and emotional strain, burnout, and exhaustion [4]. Malaysia had reported the highest total number of cases of COVID-19 in South East Asia in just a few weeks. In active cases of COVID-19, from less than 30 at the beginning of March by the end of March, over 2000 were registered. The coronavirus disease was reported in every Malaysian state and federal territory on 16 March. The medical team that is reacting to this case is currently being checked by the Director General of Health of Malaysia. Dr. Noor Hisham Abdullah, under Malaysia 's health ministries, and two consecutive governments. Preparations for inventory medical supplies, identification, and surveillance of cases for treating COVID-19 patients in the face of this pandemic were launched in early January 2020, when the World Health Organization (WHO) reported on a coronavirus disease outbreak in Wuhan City, Hubei province, in late December 2019.

The indications of COVID-19 disease show up after a brooding time of roughly 5.2 days. The time from the onset of COVID-19 symptoms to death ranged from 6 to 41 days, with a mid-14-day time [5]. This period depends on the patient 's age and the state of the patient's insusceptible immune system. In comparison to those younger than 70 years, it was shorter in patients over 70 years old [6]. The most widely known side effects at the beginning of COVID-19 are fever, cough, and exhaustion, while various indications include sputum, migraine, haemoptysis, intestinal looseness, dyspnoea, and lymphopenia [7]. Clinical highlights revealed by a chest CT scan introduced as pneumonia were, in any case, rare highlights such as RNAemia [8], extreme respiratory distress disorder [9], serious cardiovascular injury [10], and the severity of stunning glass opacity that contributed to death [11].

The scene of the coronavirus disease 2019 (COVID-19) pandemic is quickly changing, with new hot spots of concentrated coronavirus contaminations developing over the Malaysia and around the globe [12]. While the biology scientist, the study of disease transmission, prevention, finding, and treatment of COVID-19 are the fundamental focus point of these reports, it will turn out to be progressively critical to study and address the health care department needs of clinicians and other

healthcare workers reacting to the uncommon requests of caring and treating patients with COVID-19 [13-15].

This purpose of this research is to assess the awareness of COVID-19 disease and related infection control practice among healthcare students and professionals around Johor Bahru, Malaysia. It aims to analyze healthcare students and workers' knowledge, practices, and attitudes regarding COVID-19. The main objective is to compare the level of awareness during COVID-19 pandemic between healthcare students and professionals in Johor Bahru, Johor, Malaysia with other countries.

2.0 METHODS

Primary data are collected for this research from the responses of healthcare students and professionals around Johor Bahru, Malaysia who are currently serving as the frontliner during this COVID-19 pandemic. Convenient sampling method was used for data collection and the distribution of responses was presented as frequencies and percentages. Descriptive statistics were performed for all groups and subgroups based on the percentage of correct responses. Data are obtained from both categories for this study, and then converted into information to provide evidence and support the concept of this study. The survey was prepared in the form of an online form and was sent to 200 potential responders who included healthcare students and professionals in Johor Bahru. Using a survey is important for a researcher as the respondent is expected to answer the question about the specific subject. A total of 153 healthcare students and professionals' respondents participated in the questionnaire. Same methodology and set of questions as Modi et al [14] were used in this study.

3.0 RESULTS AND DISCUSSION

3.1 RELIABILITY ANALYSIS

A pilot test needs to be conducted since the researcher must know the result from the reliability test of the questions constructed before it could be distributed to the actual respondents. Kuder-Richardson Formula 20, or KR-20, is a measure reliability for a test with binary variables, for example answers that are right or wrong. For the pilot test, the researcher has a total of 30 respondents as the sample who are required to answer the questionnaires. The samples are from the healthcare students and professionals around Johor Bahru. According to the interpretation of reliability test, the greater the

number the better the reliability, with the maximum score of 1.0. The score obtained from the reliability test of the pilot study is 0.51, which is considered as acceptable and moderate reliability.

Table 1. Reliability analysis

K	Number of test item
P	The proportion of respondents who got the questions correct
Q	The proportion of the respondents who got the questions incorrect
S^2	The variance (var) of the scores
$\sum PQ$	The summation of the product of P and Q
SOLUTION	
K	17
$\sum PQ$	2.278
Var (S^2)	4.396
KR 20	0.51

3.2 GENDER

Most of the correct response in gender is male with 82.6% while female is 75.98%. This shows that the level of awareness of male is slightly higher than female during COVID-19 pandemic. In the current study, there was minimal difference in the comparison of gender and educational background; paralleled with previous researches carried out in Mumbai, India [14].

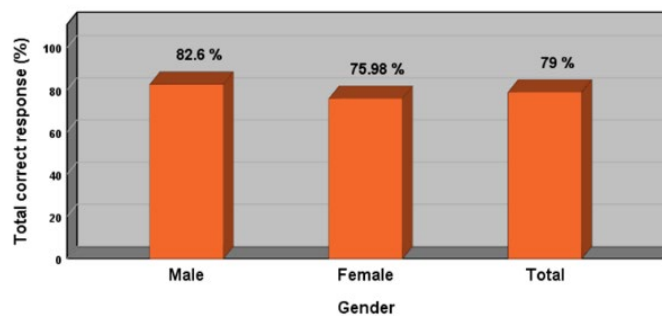


Fig. 1. Percentage of correct response for male and female

3.3 AGE GROUP

Figure below shows that the overall percentage of correct answers for this age group was 79.03%. A slightly higher percentage of correct responses were from the age sub-group of 31-45 years with

81.77%. This shows that the level of awareness and knowledge of healthcare students and professionals that age 31-45 years are higher than other age groups during COVID-19 pandemic.

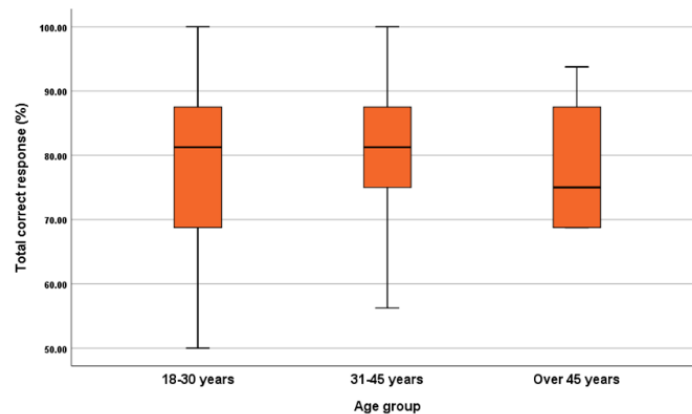


Fig. 2. Percentage of correct response (median) for age group

3.4 PROFESSION

Table 2 shows that the overall percentage of correct answers for the professions between healthcare students and professionals was 79.03%. A slightly higher percentage of correct responses were medical officer with 81.77% while the lowest percentage of correct response are from physiotherapy / occupational therapy (students and faculty) with 71.9%. This shows that the level of awareness and knowledge of medical officer are higher than other professions during COVID-19 pandemic. Furthermore, medical officers in Johor Bahru are often exposed and handle the COVID-19 cases that occur in Johor Bahru area. Hence, they need to have a good knowledge and practices of infection control in order to prevent the virus from spreading to all healthcare workers. The overall percentage of correct answers in this study participants was 79.03% with the highest percentage of correct response from medical officers (82.4%) and the lowest are from the physiotherapy or occupational therapy (71.9%).

Table 2: Total correct response between profession

Profession	Mean	N	Std. Dev.	Median	Range
Allied Health Science	80.56	9	10.572	81.25	31.25
Dentistry	80.83	15	5.523	81.25	18.75
Medical Post-Graduates	74.22	8	8.476	71.88	25.00
Medical Students	80.71	23	7.745	81.25	31.25
Non-Clinical / Admin Staff	75.90	7	14.63	68.75	43.75
Nursing (students and faculty)	74.45	34	12.35	75.00	50.00
Paramedical staff	81.60	18	10.16	84.38	37.50
Physiotherapy/ Occupational therapy (Students and faculty)	71.88	4	15.73	75.00	37.50
Medical Officer	82.41	35	8.24	81.25	31.25
Total	79.02	153	10.288	81.25	50.00

3.5 HAND HYGIENE TRAINING

According to Centers for Diseases Control and Prevention, hand hygiene is a way of cleaning one's hands that substantially reduces potential pathogens (harmful microorganisms) on the hands. Hand hygiene is considered a primary measure for reducing the risk of transmitting infection among patients and health care personnel. Hand hygiene is the most effective measure for preventing infections related to healthcare, and its impact on the reduction of these infections is estimated at 50%. Hence, it is important to ensure that healthcare students and professionals are aware about the effectiveness of hand hygiene training.



Fig. 3. Percentage of Hand Hygiene Training

Based on Figure 3, it shows that the percentage of healthcare students and professionals that received hand hygiene training is 86.3% while the percentage that are not received training is 13.7%. This also shows that the healthcare students and workers are aware about the importance of hand hygiene in the healthcare industry.

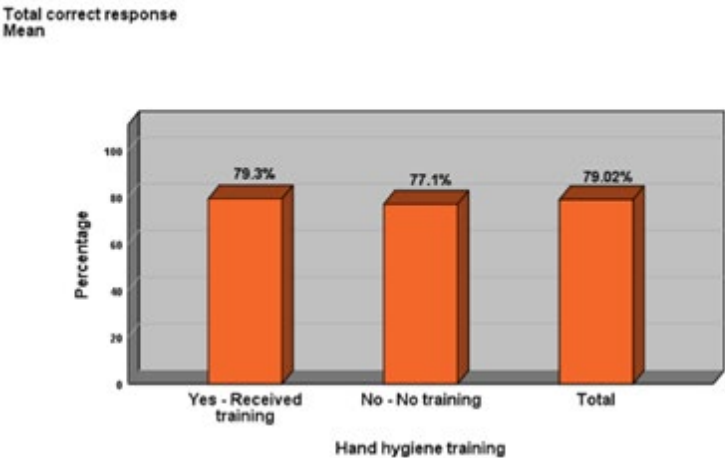


Fig. 4. Percentage of correct response between hand hygiene training

Figure 4 shows that the highest percentage of correct responses were from the respondents that received training with 79.3%. A slightly lower percentage were from respondents that not received training with 77.1% This shows that the level of awareness and knowledge of healthcare students and professionals that received training are higher during COVID-19 pandemic.

The present descriptive research is to examine the awareness of the COVID-19 epidemic and the information and perceptions of healthcare students and professionals in Johor Bahru. Participants were shown to have high levels of COVID-19 awareness and information, as well as optimistic attitudes toward the disease based on the total percentage of the correct response. Based on this study, a majority of the respondents are well-informed and know about the attributes of the COVID-19 disease in terms of its mode of transmission, early symptoms, and of course its origin. Nevertheless, the study shows that there are some lacking in terms of the name of the virus. This is paramount because it has many terms and names such as Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2), 2019-nCoV before it was official announced as COVID-19.

The findings of this study indicate that the correct term of “close contact” between humans are being within approximately 6 feet (2meters) of a patient with COVID-19 for a prolonged period of time and having direct contact with infectious secretions (sputum, serum, blood) from a patient with COVID-19. As such, the Ministry of Health Malaysia have roles to play in advancing the knowledge of the healthcare students and professionals in implementing the social distancing during the COVID-19 crisis. In general, the study shows that most of the respondents are responding positively towards the pandemic. Although COVID-19 is a new phenomenon, healthcare students and professionals’ positive responses towards the items asked implicitly portrayed their state-of-mind. The high in the mean score per item denotes this. They are optimistic that this disease can be controlled and the numbers of positive cases among healthcare students and professionals can be lower. They are also aware of its risks to human health, and that it could affect the comfort of their life. But they also strongly believe that their cooperation between healthcare students, workers and professionals are needed to overcome this pandemic. As a frontliner during this pandemic, they also believe a good mental and spirit are necessary to treat the patients with COVID-19 and to prevent the positive cases in Malaysia going higher every day.

In the midst of this crisis, Malaysia has proposed to provisionally permit volunteers, especially experienced doctors, and healthcare students to treat COVID-19 patients. This move could also help plug the shortage of healthcare students and professionals provide care and treatment to a large number

of people that are positive with COVID-19. Hence, students from various healthcare professions were included in this study.

The results of a similar survey carried out in healthcare students and professionals in Mumbai metropolitan region, India suggested poor awareness and knowledge about emerging infectious diseases among participants [14]. This shows that the healthcare students and professionals in Johor Bahru, Johor, have a high level of awareness and knowledge about COVID-19 compare to the Mumbai region. This is a good sign that the healthcare department in Johor are very competent in handling the COVID-19 pandemic from spreading towards the healthcare sector and the community in Johor Bahru, Johor. It is important to note that every healthcare students and professionals in Malaysia are working very hard to break the chain of COVID-19 cases from spreading towards the community in Malaysia. The awareness and infection control practices related to COVID-19 diseases in the healthcare industry are very important because it will help them to treat the patients more carefully and fully prepared if the number of positive cases suddenly high.

4.0 CONCLUSIONS AND RECOMMENDATIONS

There are few of suggestion that healthcare department should be considered. Empower healthcare students and professionals to undergo training in hand hygiene because it is one of the important infection control practices in the healthcare setting. Furthermore, practicing of social distancing is one of the important methods to prevent the COVID-19 from spread among community. In the current context, social distancing practice is not an absolute solution to stop the COVID-19 widespread, but it is the effective mechanism adopted to reduce the COVID-19 widespread among the healthcare setting in Malaysia. In addition, the use of PPE has recently been prominent in healthcare institutions such as hospitals, clinics, and clinical laboratories during this pandemic. When used correctly, Personal Protective Equipment (PPE) work as a barrier between infectious viruses and bacteria and the human body. They stop from contaminating the skin, mouth, nose, or eyes. The comprehension of PPE has definitely played a significant role in containing the COVID-19 pandemic in most of the countries around the world.

Healthcare professionals and students from the Johor Bahru region showed appropriate awareness of COVID-19 in the healthcare setting with an overall percentage of 79% correct response.

The highest percentage of correct response in gender is male, for age group were from 31-45 years and for profession were from medical officers. This study was able to provide a comprehensive examination of awareness related to COVID-19 knowledge, attitudes and practices of healthcare students and professionals. This research may utilize by future researchers for reference purposes.

REFERENCES

- [1] H. Lu, "Drug treatment options for the 2019-new coronavirus (2019-nCoV)," *BioScience Trends*, 2020, doi: 10.5582/bst.2020.01020.
- [2] M. Battegay, R. Kuehl, S. Tschudin-Sutter, H. H. Hirsch, A. F. Widmer, and R. A. Neher, "2019-novel Coronavirus (2019-nCoV): estimating the case fatality rate – a word of caution," *Swiss Medical Weekly*, Feb. 2020, doi: 10.4414/smw.2020.20203
- [3] Y.-C. Wu, C.-S. Chen, and Y.-J. Chan, "Overview of The 2019 Novel Coronavirus (2019-nCoV)," *Journal of the Chinese Medical Association*, vol. 83, no. 3, p. 1, Feb. 2020, doi: 10.1097/jcma.0000000000000270.
- [4] C. Carmassi et al., "PTSD symptoms in healthcare workers facing the three coronavirus outbreaks: What can we expect after the COVID-19 pandemic," *Psychiatry Research*, vol. 292, no. 113312, p. 113312, Oct. 2020, doi: 10.1016/j.psychres.2020.113312.
- [5] Q. Li et al., "Early Transmission Dynamics in Wuhan, China, of Novel Coronavirus-Infected Pneumonia," *The New England journal of medicine*, vol. 382, no. 13, pp. 1199–1207, 2020, doi: 10.1056/NEJMoa2001316.
- [6] W. Wang, J. Tang, and F. Wei, "Updated understanding of the outbreak of 2019 novel coronavirus (2019-nCoV) in Wuhan, China," *Journal of Medical Virology*, vol. 92, no. 4, Jan. 2020, doi: 10.1002/jmv.25689.
- [7] L.-L. Ren et al., "Identification of a novel coronavirus causing severe pneumonia in human," *Chinese Medical Journal*, vol. 133, no. 9, p. 1, Feb. 2020, doi: 10.1097/cm9.0000000000000722.
- [8] H. Li et al., "Risk Factors of Viral RNAemia and Its Association With Clinical Prognosis Among Patients With Severe COVID-19," *Chest*, vol. 159, no. 4, pp. 1382–1386, Apr. 2021, doi: 10.1016/j.chest.2020.11.071.
- [9] E. Fan et al., "COVID-19-associated acute respiratory distress syndrome: is a different approach to management warranted?," *The Lancet Respiratory Medicine*, vol. 0, no. 0, Jul. 2020, doi: 10.1016/S2213-2600(20)30304-0.
- [10] B. Long, W. J. Brady, A. Koyfman, and M. Gottlieb, "Cardiovascular complications in COVID-19," *The American Journal of Emergency Medicine*, vol. 38, no. 7, Apr. 2020, doi: 10.1016/j.ajem.2020.04.048.
- [11] C. Huang et al., "Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China," *The Lancet*, vol. 395, no. 10223, pp. 497–506, Jan. 2020, doi: 10.1016/s0140-6736(20)30183-5.
- [12] J. A. Jaimes, J. K. Millet, A. E. Stout, N. M. André, and G. R. Whittaker, "A Tale of Two Viruses: The Distinct Spike Glycoproteins of Feline Coronaviruses," *Viruses*, vol. 12, no. 1, p. 83, Jan. 2020, doi: 10.3390/v12010083.
- [13] M. Bassetti, A. Vena, and D. R. Giacobbe, "The novel Chinese coronavirus (2019-nCoV) infections: Challenges for fighting the storm," *European Journal of Clinical Investigation*, Feb. 2020, doi: 10.1111/eci.13209.
- [14] P. D. Modi et al., "COVID-19 Awareness Among Healthcare Students and Professionals in Mumbai Metropolitan Region: A Questionnaire-Based Survey," *Cureus*, Apr. 2020, doi: 10.7759/cureus.7514.
- [15] A. Pandrowala, S. Shaikh, M. Balsekar, S. Kirolkar, and S. Udani, "Characteristics and Transmission Dynamics of COVID-19 in Healthcare Workers in a Pediatric COVID-Care Hospital in Mumbai," *Indian Pediatrics*, vol. 58, no. 6, pp. 568–571, Feb. 2021, doi: 10.1007/s13312-021-2243-1.