

Associations between sociodemographic and level of knowledge, attitudes and practices towards COVID-19 among nursing students of University Malaysia Sabah, Malaysia



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ABSTRACT

Background: The novel coronavirus disease (COVID-19) emerged in Wuhan, China, in December 2019. Since then, it has spread to 215 countries, and 42 million people around the globe are affected. The knowledge, attitudes, and practices (KAP) toward COVID-19 play a role in determining the acceptance of behavioral change measures from health authorities to suppress this pandemic status. The KAP on COVID-19 is also important among university students during the COVID-19 pandemic to mitigate the outbreak of COVID-19. Hence, this study aimed to determine the level of knowledge, attitudes and practices towards COVID-19 and its association with sociodemographic factors among nursing students of Universiti Malaysia Sabah.

Methods: A cross-sectional, questionnaire-based study was conducted among the Year 1, Year 2 and Year 3 nursing students. The questionnaire consists of four parts: 1) demographics, which surveys participants' sociodemographic information; 2) knowledge about COVID-19; 3) attitude towards COVID-19; and 4) practices relevant to COVID-19. Statistical Package for Social Science (SPSS) version 26.0 was used for data entry and analysis.

Result: A total of 113 Nursing Students participated in the study. More than half of the respondents have good general knowledge and practices of COVID-19. However, only one in three respondents have positive attitudes towards COVID-19. Older age was associated with good knowledge about COVID-19 ($p=0.02$). Female ($P=0.02$) and high household income ($P=0.02$) has a better attitude towards COVID-19. However, no significant association between sociodemographic and practices towards COVID-19.

Conclusion: Most of the respondents demonstrate a good level of knowledge and practices towards COVID-19 but not for attitudes. Sociodemographic characteristics such as younger, male respondents and those with lower-income families have inadequate knowledge and practices towards COVID-19. Hence, health education programs such as campaigns need to be conducted to increase the knowledge and encourage adequate preventive practice towards COVID-19 should be targeted towards this group.

Keywords: COVID-19, knowledge, attitudes, practices, nursing students.

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INTRODUCTION

A new disease due to coronavirus (COVID-19) emerged in the city of Wuhan, China, around the end of 2019.¹ It is a highly contagious disease caused by a newly discovered type of coronavirus that has spread to 215 countries around the world. This caused the World Health Organization (WHO) on March 11, 2020 to declare that COVID-19 is a global pandemic.² More than 221 billion people

have tested positive for COVID-19 to date, and there have been 4,581,268 deaths globally (as of 6 September 2021).³

The mode of transmission for COVID-19 is direct (droplet from nasal and mouth secretion), indirect (through the contaminated objects or surface) or close contact with infected people.⁴ The virus quickly spread via human-to-human transmission, raised the public emergency response, and a series of extraordinary measures have

been taken to suppress the transmission of the disease. The infection can be both symptomatic and asymptomatic.⁵ People infected with COVID-19 will show some general symptoms such as general weakness, fatigue, headache, muscle aches, sore throat, dyspnea, anorexia/nausea/vomiting, diarrhea, to changes in mental status. Most patients with early diagnosis and prompt treatment have a better prognosis.⁶ However, high-risk individuals such as children, the elderly, pregnant

women, and immunocompromised individuals were severely affected.^{7,8}

Acceptance of behavioral changes that have been announced by health authorities depends on knowledge, attitudes, and practices (KAP) towards COVID-19 itself, and plays a role in suppressing the development of this pandemic.⁹ Studies related to KAP can establish basic information to determine the types of interventions that are appropriate and needed to change knowledge and misconceptions about COVID-19 in the community.^{10,11} Studies on the KAP among the public is also helpful in providing better insight to address poor knowledge about COVID-19, the implementation of preventive strategies by authorities and health promotion program.^{12,13} Moreover, KAP regarding COVID-19 is also important for nursing students at the University of Malaysia Sabah (UMS) during the COVID-19 pandemic as an effort to mitigate the COVID-19 outbreak. The cooperation and compliance of all elements of society will determine the effectiveness of the COVID-19 mitigation measures.^{14,15} This study aims to determine the level of KAP of UMS nursing students against COVID-19 and its relationship with sociodemographic factors.

METHODS

Study design and setting

This research was performed using a cross-sectional and descriptive study between the 22nd of March 2021 to the 9th of April 2021. The target populations were Year 1, Year 2 and Year 3 nursing students in 2021. A questionnaire was self-administered through a Google form and was sent to all the respondents through a WhatsApp group. The participants were recruited using stratified random sampling, and the respondents must fulfill both inclusions and exclusion criteria. The inclusion criteria include the current Year 1, Year 2 and Year 3 Nursing students of Faculty of Medicine and Health Sciences, UMS and the exclusion criteria are students who refused to participate in the study and students with no internet access. A single population proportion formula, $n = \frac{(Z\alpha/2)^2 P(1-P)}{d^2}$, was used to calculate the sample size.¹⁶ A 96.9% proportion was used to get the

maximum sample size by considering a 95% confidence interval ($Z\alpha/2=1.96$), marginal error (d) of 5%. The calculated sample size was 113, in line with the above consideration.¹⁷ Using the stratified random sampling formula, the stratified sample size needed from year one, year two, and year three were 26, 48, and 39, respectively. The questionnaire was estimated to take around 10 minutes to complete. A set of questionnaires were prepared for this research. The questionnaire that we used in this study is an adaptation of a study in China that examines Chinese public accounting firms to the COVID-19 pandemic situation.¹⁸ The Cronbach's alpha value of 0.71 was computed. The questionnaire we used consists of four parts. The first section deals with the demographics of the respondents, which surveys participants' sociodemographic information including age, gender, year of study, race, current place of residence, and family income. The second part contains a survey on knowledge about COVID-19. The third and fourth sections contain surveys on attitudes towards COVID-19 and practices relevant to the COVID-19 pandemic, respectively.

Study variables

The study variables can be divided into independent and dependent variables. Independent variables are gender, age, year of study, current residence, and family income of the participants. Dependent variables are respondents' knowledge, attitudes and practices towards COVID-19. COVID-19 is defined as an illness caused by a new coronavirus, which is currently referred to as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Knowledge is defined as understanding or information about something that is obtained by someone through experience or study, either known by one person or by people in general. Attitude is a mental state - conscious or unconscious; values, beliefs or feelings; and the tendency to behave or act. Practice is the act of doing something regularly or repeatedly.

The questionnaire has 13 questions about knowledge, consisting of four questions regarding clinical presentation, four questions about the route of

transmission, and five questions about the prevention and control of COVID-19. In this part of the questionnaire, the respondent only needs to answer it by saying "true" or "false" with the additional option of "don't know". Correct responses to a question item will be awarded 1 point, while incorrect or "don't know" responses will be awarded 0 points. The total knowledge score ranges from 0 to 13. Individual scores of 0-9 are considered poor knowledge, while ≥ 10 are considered to have good knowledge regarding COVID-19.¹⁸

Attitudes towards COVID-19 will be measured with five questions using the Likert scale. Scoring of 1 point will be given for Strongly Agree, 2 points for Agree, 3 points for neither agree nor disagree, 4 points for Disagree and 5 points for Strongly Disagree. The total attitudes score ranges from 5 to 25, and the scores 13 and more were taken as a positive attitude, and 12 and less were taken as negative attitudes.¹⁸ Finally, the assessment of respondents' practices relevant to COVID-19 is composed of four behavior questions, and practice scores were dichotomized to good practice with a score ≥ 4 or poor practice with a score < 4 .¹⁸

Statistical analysis

IBM SPSS version 26.0 (IBM Corp., Armonk, NY, USA) was used for data entry and analysis. The descriptive analysis was reported as frequency (percentage %). The Pearson Chi-square test was applied to determine the association of knowledge (good vs. poor), attitude (positive vs. negative), and practice (good vs. poor) with sociodemographic characteristics. All tests were performed at a 95% Confidence Interval (CI), and a p-value < 0.05 was considered statistically significant.

RESULTS

Demographic characteristics

Table 1 shows the sociodemographic characteristic of the study respondents. A total of 113 Nursing Students participated in the study. Out of the total respondents, 93 (82.3%) were female, and 92 (81.4%) ranged from 19-21 age years. Twenty-six (23%) of them were year-one students, forty-eight (42.5%) were year-two

students, and the other thirty-nine (34.5%) were year-three students. The majority of them are from lower-income families (78.8%).

Assessment of knowledge, attitudes and practices towards COVID-19

Table 2 shows the knowledge of COVID-19 among the study respondents. More than half of the respondents have good general

knowledge about COVID-19, where 55.8% of the respondents obtained scores of 10 and above. Most respondents answered correctly in ten out of 13 questions. More than 80% of the respondents know about the main clinical symptoms of COVID-19 (95.6%), no effective cure treatment for COVID-19 (91.2%), and elderly and people who have chronic illnesses are more likely to be severe cases (87.6%). Most respondents also know well about the mode of transmission (98.2%), the spread of COVID-19 through respiratory droplets (91.2%), wearing a face mask to prevent COVID-19 infection (88.5%), can be avoided by avoiding crowded places and social distancing (89.4%), washing hands is one of the preventive measures (90.3%), isolation and treatment are the effective ways to reduce the spread of the

Table 1. Sociodemographic characteristic of study respondents (N =113).

Sociodemographic characteristics		n	%
Gender	Male	20	17.7
	Female	93	82.3
Age	19-21	92	81.4
	22-25	21	18.6
Year of Study	Year 1	26	23.0
	Year 2	48	42.5
	Year 3	39	34.5
Household Income	Lower income	89	78.8
	Middle and higher income	24	21.2

Table 2. Questions on knowledge towards COVID-9 among study respondents.

No.	Question	Correct, n (%)	Incorrect, n (%)	Don't know, n (%)
1	The main clinical symptoms of COVID-19 are fever, fatigue, dry cough and myalgia.	108 (95.6%)	3 (2.7%)	2 (1.7%)
2	There is no effective cure for COVID-19, but early symptoms & supportive treatment can help most patients recover from the infections.	103 (91.2%)	10 (8.8%)	0 (0.0%)
3	Unlike the common cold, stuffy nose, runny nose and sneezing are less common in people infected with the COVID-19 virus.	63 (55.8%)	27 (23.9%)	27 (23.9%)
4	Not all persons with COVID-19 will develop severe cases. Only those who are elderly and have chronic illnesses are more likely to be severe cases.	99 (87.6%)	9 (8.0%)	5 (4.4%)
5	People can get the infection from others who have the virus.	111 (98.2%)	2 (1.8%)	0 (0.0%)
6	People infected with the virus cannot spread the disease when they have no fever.	13 (11.5%)	89 (78.8%)	11 (9.7%)
7	The COVID-19 virus spreads when you breathe in the respiratory droplets that are coughed out or exhaled by an infected person.	103 (91.2%)	6 (5.3%)	4 (3.5%)
8	The COVID-19 virus is airborne.	86 (76.1%)	18 (15.9%)	9 (8.0%)
9	Ordinary residents can wear a face mask to prevent the infection by the COVID-19 virus.	100 (88.5%)	9 (8.0%)	4 (3.5%)
10	Avoiding crowded places and maintaining a minimum distance of 1m from others can prevent the spread of the COVID-19 virus.	101 (89.4%)	12 (10.6%)	0 (0.0%)
10	Regularly and thoroughly washing your hands with soap and water or cleaning them with an alcohol-based hand rub can protect against the COVID-19 virus.	102 (90.3%)	9 (8.0%)	2 (1.7%)
12	Isolation and treatment of people with the COVID-19 virus are effective ways to reduce the spread of the virus.	98 (86.7%)	12 (13.3%)	0 (0.0%)
13	People who have contact with someone infected with the COVID-19 virus should be immediately isolated in a proper place.	102 (90.3%)	11 (9.7%)	0 (0.0%)

infection (86.7%), and people who have contact with COVID-19 positive patient should be isolated (90.3%).

Table 3 shows the attitudes about COVID-19 among study respondents. Out of 113 study respondents, 41 respondents have positive attitudes about COVID-19. More than half of the respondents agreed/strongly agreed that COVID-19 would be controlled (56.8%), Malaysia would be able to win the battle against the COVID-19 virus (67.2%), Malaysia is handling the COVID-19 health crisis very well (52.2%), to do a voluntary test for COVID-19 (56.6%) and they might be infected if their living with someone working in a hospital (53.1%).

Table 4 shows the practices toward COVID-19 among the study respondents. More than 90% of the study respondents showed good practices towards COVID-19, where all the participants reported wearing a face mask when going out in public and practicing social distancing when leaving home during this pandemic. More than 90% of the study

respondents reported avoiding crowded places recently (93%) and practicing proper hand hygiene by washing hands and using hand sanitizers (97.3%).

Associations between sociodemographic and knowledge, attitudes and practices towards COVID-19

Table 5 showed the association between sociodemographic and knowledge of COVID-19 among the study respondents. The level of knowledge among nursing students in UMS regarding COVID-19 was significantly associated only with their age ($p=0.02$). There was no significant association between the level of knowledge and other demographic characteristics.

Table 6 showed the association between sociodemographic and attitudes of COVID-19 among the study respondents. Nursing students' attitudes in UMS towards COVID-19 are significantly associated with gender ($p=0.017$) and family income ($p=0.020$). There was no significant association between the attitudes and

other demographic characteristics.

Table 7 showed the association between sociodemographic and practices of COVID-19 among the study respondents. However, there was no significant association between the practices and sociodemographic characteristics.

DISCUSSION

COVID-19 is a relatively new viral disease that has had a tremendous effect in a short period of time and has covered the entire world since it was first detected in October 2019.¹⁹ As a result of the novelty of this disease, there is a lot of ignorance about this disease and it is difficult for health authorities to plan appropriate strategies for managing the community. Therefore, KAP is very important in the community to implement the health strategy set by the health authorities. Lack of adequate knowledge is suspected to be one of the factors driving public panic, especially in the early stages of the COVID-19 pandemic. In this study, we found that

Table 3. Attitudes of COVID-19 among study respondents.

No.	Question	Strongly disagree, n (%)	Disagree, n (%)	Neither agree nor disagree, n (%)	Agree, n (%)	Strongly agree, n (%)
1	Do you agree that COVID-19 will be successfully controlled?	12 (10.6%)	1 (0.9%)	36 (31.9%)	47 (41.6%)	17 (15.0%)
2	Do you have the confidence that Malaysia can win the battle against the COVID-19 virus?	15 (13.3%)	0 (0.0%)	22 (19.5%)	50 (44.2%)	26 (23.0%)
3	The government of Malaysia is handling the COVID-19 health crisis very well.	10 (8.8%)	6 (5.3%)	38 (33.6%)	44 (38.9%)	15 (13.3%)
4	Are you willing to do a voluntary test for COVID-19?	16 (14.2%)	4 (3.5%)	29 (25.7%)	45 (39.8%)	19 (16.8%)
5	If you live with someone working in a hospital, do you think they can infect you?	9 (8.0%)	7 (6.2%)	37 (32.7%)	52 (46.0%)	8 (7.1%)

Table 4. Practices towards COVID-19 among study respondents.

No	Question	Yes, n (%)	No, n (%)
1	In recent days, did you avoid going to crowded places?	105 (92.9%)	8 (7.1%)
2	In recent days, did you wear face masks when leaving home?	113 (100%)	0 (0.0%)
3	Did you practice proper hand hygiene by washing your hands and using hand sanitizers in recent days?	110 (97.3%)	3 (2.7%)
4	In recent days, did you practice social distancing when leaving home?	113 (100%)	0 (0.0%)

55.8% of the respondents had good knowledge of COVID-19, indicating that most of the participants had knowledge of COVID-19. This finding is slightly lower than a study conducted in China where 90% of respondents had good knowledge.¹⁸ The possible reason for this slight difference may be due to the variation of sample size, whereby a larger sample size was used in the China study. The current study results are similar to a previous study in Malaysia, with an overall good score of 80,5%.⁹ In Oman, the good knowledge of COVID-19 scores among

nursing students was 72%.¹⁷ The good COVID-19 knowledge found among the study participants is related to the nature of their nursing study program. Research subjects have the opportunity to learn more about COVID-19 from their education during class and clinical teaching.²⁰ In addition, because COVID-19 is a serious pandemic and there is a lot of news about this public health emergency, knowledge about this infectious disease will be actively studied from various sources, especially from the internet, official websites such as WHO, CDC and

social media such as Instagram, Facebook, and Twitter.²¹ Our study depicted a significant association between age group and the level of knowledge about COVID-19. It is almost similar to a study done in China and Oman, whereby they found that age group is one of the sociodemographic factors that is significantly associated with knowledge.^{17,18} This significant positive association could be because around 65% of the participants are in their first and second years of study and have not had sufficient clinical training. Nursing students of the 22- 25

Table 5. Associations between sociodemographic and level of knowledge.

Characteristics		Level of Knowledge		P-value ^a
		Good, (n= 63)	Poor, (n= 50)	
Gender	Male	10 (50.0%)	10 (50.0%)	0.326
	Female	53 (57.0%)	40 (43.0%)	
Age	19-21	51 (55.4%)	41 (44.6%)	0.020
	22-25	12 (57.1%)	9 (42.9%)	
Year of Study	Year 1	13 (50.0%)	13 (50.0%)	0.518
	Year 2	27 (56.3%)	34 (43.7%)	
	Year 3	23 (59.0%)	16 (41.0%)	
Household Income	Lower income	48 (53.9%)	41 (46.1%)	0.562
	Middle and higher income	15 (62.5%)	9 (37.5%)	

Note: ^a P-value by Pearson Chi-Square test

Table 6. Associations between sociodemographic and level of attitude.

Characteristics		Level of Attitude		P-value ^a
		Positive, (n=41)	Negative, (n=72)	
Gender	Male	7 (35.0%)	13 (65.0%)	0.017
	Female	34 (36.6%)	59 (63.4%)	
Age	19-21	37 (40.2%)	55 (59.8%)	0.876
	21-25	4 (19.0%)	17 (81.0%)	
Year of Study	Year 1	13 (50.0%)	13 (50.0%)	0.658
	Year 2	14 (29.2%)	34 (70.8%)	
	Year 3	14 (35.9%)	25 (64.1%)	
Household Income	Lower income	32 (36.0%)	57 (64.0%)	0.020
	Middle and higher income	9 (37.5%)	15 (62.5%)	

Note: ^a P-value by Pearson Chi-Square test

Table 7. Associations between sociodemographic and level of practices.

Characteristics		Practices		P-value ^a
		Good, (n= 103)	Poor, (n= 10)	
Gender	Male	17(85.0%)	3(15.0%)	0.286
	Female	86(92.5%)	7(7.5%)	
Age	19 - 21	83(90.2%)	9(9.8%)	0.465
	22 - 25	20(95.2%)	1(4.8%)	
Year of Study	Year 1	22(84.6%)	4(15.4%)	0.249
	Year 2	46(95.8%)	2(4.2%)	
	Year 3	35(89.7%)	4(10.3%)	
Household Income	Lower income	81(91.0%)	8(9.0%)	0.920
	Middle and higher income	22(91.3%)	2(8.7%)	

Note: ^a P-value by Pearson Chi-Square test

years age group have received more advanced nursing courses and had more exposure to the clinical setting during their practices in the hospitals. Hence, they are more able to understand the concept of COVID-19 better. This significant positive association between level of knowledge and nursing students who have been previously enrolled in clinical courses and much older supports this speculation. Most participants in this study correctly mentioned the main clinical symptoms of COVID-19. Similarly, many other studies conducted in China, Oman, and Morocco among the general public showed good knowledge about the clinical symptoms of COVID-19 in their participants.^{9,14,18} The majority of the nursing students appeared to have sufficient knowledge regarding the nature of the disease dimension. It reflects that the students have a good relationship between their understanding and the information about COVID-19 published in the literature and media. For example, most of the participants defined the correct symptoms of the disease (i.e., fever, dry cough, fatigue and myalgia) and indicated that those who are elderly and have chronic illnesses are more likely to develop severe cases. These results are similar to the findings from another study in Morocco evaluating the knowledge of high-risk groups that can develop severe COVID-19.¹⁴ The good level of knowledge could be attributed to the seriousness of COVID-19, the number of new cases, and the mortality rate announced daily by the

Malaysian Ministry of Health (MOH) via mass media and social media. Regarding the mode of transmission, most of the study participants knew well that the virus could be spread via close contact with positive cases and by inhaling the respiratory droplets coughed out by an infected person. This result is consistent with a study done in China, whereby 98.9% of the participants knew the correct transmission mode of the disease.²² However, the percentage of correct answers was lower compared to non-correct answers when the majority of the participants agreed that the virus could not be spread when the infected individual had no fever. It could be explained by the novelty of the virus and several inconsistent information about the mode of transmission. In terms of control and prevention, the survey results depicted that most of the participants reported the importance of using the face mask, avoiding crowded places, and practicing hand hygiene to prevent the spread of the disease. This result is in accordance with a study done in Saudi Arabia. The results similarly reported the importance of frequent hand washing, mask, and social distancing in controlling the spread of COVID-19 large majority of participants in this study held a positive attitude towards overcoming COVID-19.²³ Most of the participants agreed that the COVID-19 pandemic would be successfully controlled, as well as they agreed that Malaysia could win the battle against COVID-19. This similar optimistic

attitude was also documented in previous studies in China, Malaysia, Morocco, and Oman.^{9,14,17,18} The positive attitude shown by the study participants could be attributed to the adequate prevention and control policies implemented by the Malaysian government. It includes the enforcement of the Movement Control Order (MCO) in Malaysia since March 2020.²⁴ It is supported by the World Health Organization (WHO), which has declared Malaysia as one of the successful countries in handling COVID-19. It is attributed to the country's strong capacity in outbreak preparedness and response, which has helped establish a stable foundation in its outbreak response to COVID-19. The current study also depicted that nursing students' attitudes in UMS towards COVID-19 are significantly associated with gender. This finding is similar to a previous study from China.¹⁸ This unexpected finding may be due to the difference in the number of male and female participants. On the other hand, similar findings by another study published from China explained the significant association between gender difference and attitude.²² Females showed a better attitude score than males, including proper and rational protective measurements to reduce the risk of human-to-human transmission. The results also showed a significant association between attitude and family income. A similar significant association was observed in a previous study done in Ethiopia, whereby monthly family income

was associated with more positive attitudes regarding COVID-19.²⁵ Regarding prevention practices, most participants in this study avoided crowded places during this COVID-19. Similar results were reported from China, Malaysia, Morocco, and United Arab Emirates.^{9,14,18,26} However, the remaining 7.1% of the participants did not avoid crowded places during this pandemic. A better explanation for this is the requirement for the students to go outside, which makes it quite difficult to avoid crowded places all the time. Regarding mask-wearing, 100% of the participants wore face masks when leaving home. These practices could be attributed to the very strict prevention and control measures implemented by the government, such as banning public gatherings and summoning those without face masks in public. Secondly, this could also be the result of good knowledge regarding the high infectivity of the COVID-19 virus, which can be easily transmitted from person to person via inhalation of respiratory droplets. Evidence from the literature showed that hand hygiene is one of the most important measures to prevent and control infectious diseases, including COVID-19. Additionally, the WHO has also recommended the frequent use of alcohol-based sanitizer and has considered this practice one of the most effective preventive measures to prevent the spread of this disease. In this study, 97.3% of the participants practice proper hand hygiene by frequent hand washing and hand sanitizers. Similar results were reported from a previous study in Malaysia, whereby most participants practiced proper hand hygiene the week before MCO was implemented.⁹ It shows that the participants acknowledge the importance of hand hygiene in preventing the virus's spread and transmission and their willingness to make behavioral changes in the face of the COVID-19 pandemic. Finally, 100% of the participants in this study practiced social distancing when leaving home. As recommended by the WHO and CDC, physical distancing helps limit the spread of COVID-19 by maintaining a safe distance of at least 1 meter from others. It reduces the risk of infection when others cough, sneeze or speak.^{27,28}

This study has several strengths and limitations. The questionnaire used in the study had been validated and yielded good reliability. To the best of our knowledge, this study was the first published study assessing levels of knowledge, attitude and practice of COVID-19 among nursing students in Malaysia Borneo. However, the study cannot be generalized to all nursing students because this study was conducted at a single center. The generalizability of the findings also may be affected by the knowledge that they get during their training. Additionally, this study was a cross-sectional study which does not conclude the cause-effect relationship.

CONCLUSION

Most of the respondents demonstrate a good knowledge and practices towards COVID-19 but not for attitudes. Sociodemographic characteristics such as younger, male respondents and those with lower-income families have inadequate knowledge and practices towards COVID-19. Hence, health education programs such as campaigns need to be conducted to increase knowledge and encourage adequate preventive practice towards COVID-19 should be targeted towards this group.

DISCLOSURES

Ethics Approval

Permission to conduct research was applied from the Research Ethics Committee from Faculty of Medicine and Health Sciences, University Malaysia Sabah (JKEtika 2/21(6)).

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No funding is available for this study.

Conflict of Interest

The author reports no conflicts of interest in this work.

Author Contribution

Abdul Rahman Ramdzan and Zulkhairul Naim bin Sidek Ahmad were involved in this manuscript's conceiving, editing, review, and guarantor. Abdul Rahman Ramdzan is also involved in defining intellectual content. Danish Shazrein Binti Kaslan and Mohd Nurman Bin Aman

Setia contribute to designing, defining intellectual content, and searching literature. Don Harris Bin Sundang and Hetrice Hunsoi acquire and analyze the data and contribute to statistical analysis. Rachel Chin Zin Vun, Tan Ker Xin, and Mohana A/P Saran contribute to literature searching, data analysis, and statistical analysis. All authors contributed equally in preparing the manuscript.

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