

KNOWLEDGE, ATTITUDES AND PRACTICES TOWARDS SELF-PROTECTION DURING POST COVID-19 PANDEMIC ERA AMONG DIPLOMA IN PHARMACY STUDENTS

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ABSTRACTS

The Ministry of Health (MOH) Malaysia continues to monitor the progression of Coronavirus disease 2019 (COVID-19) despite COVID-19 was declared as endemic since 2022. Statistically, the infection of COVID-19 is unstable or still fluctuating as there are significant increases in positive cases. Given this ongoing situation in Malaysia, it's essential to assess diploma in pharmacy student's knowledge, attitude and practise towards dealing with prevention and management during COVID-19 endemic era because they are generally thought to possess good knowledge about disease prevention and management. A cross-sectional study was conducted by employing a pre-validated, self-administered questionnaire (SAQ) and distributed online via Google Form to the students of Diploma in Pharmacy at Universiti Teknologi MARA, Bertam Campus. The collected data was analysed using IBM SPSS Statistics version 22. The median age for the students was 20 years (interquartile range, IQR = 20–21). The results revealed that most of the respondents (73%) were highly knowledgeable about COVID-19 disease characteristics and guidelines. However, the respondents' attitudes and practices in managing the disease were selectively aligned with their personal preferences. The attitudes and practices observed among diploma in pharmacy students also reflected that their actions, based on personal comfort,

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may prioritise COVID-19 infection over the importance of prioritising COVID-19 prevention. This may contribute to a lack of awareness regarding the potential risks associated with contracting COVID-19.

Keywords: COVID-19, Knowledge, Attitude, Practice, Diploma in Pharmacy

INTRODUCTION

The Coronavirus disease 2019 (COVID-19) originated in Wuhan, China. It was caused by severe acute respiratory syndrome Coronavirus 2 (SARS-CoV-2) and has infected over 108 million people in over 150 countries (Alwi *et al.* 2021). The main clinical signs and symptoms of COVID-19 include breathing difficulties, high fever, dry cough, dyspnoea, fatigue and myalgia, which may lead to death (Yang *et al.* 2022). COVID-19 can be transmitted directly or indirectly through contact with contaminated objects. SARS-CoV-2 can be transmitted through bodily fluid droplets from the mouth or nose, spreading when an infected individual coughs, sneezes or speaks (Puspitasari *et al.* 2020). Due to its fast-spreading disease over the continents, on March 12, 2020, the World Health Organisation (WHO) announced that COVID-19 was a pandemic (Azlan *et al.* 2020).

The first case of COVID-19 in Malaysia was reported on January 25, 2020 (Tang 2020). Following the initial infection cases, Malaysia witnessed a sharp rise in COVID-19 positive cases in March 2020. The virus spreads rapidly due to its high transmissibility from person to person. In response, WHO issued preventive guidelines to help control the outbreak. One key measure is practising proper respiratory etiquette, such as coughing into a flexed elbow for individuals experiencing symptoms (World Health Organization 2020a). WHO suggested proper handwashing practices where both hands are washed with soap and water for at least 20 seconds using a correct technique or using alcohol-based hand sanitiser on a frequent basis (Elengoe 2020). Additionally, the rule also comprises at least one metre of social distancing (also known as physical distancing) and staying at home (Elengoe 2020).

On June 15, 2021, the Malaysian government announced the National Recovery Plan (NRP) to control the COVID-19 outbreak (Pelan Pemulihan Negara 2021). In the NRP programme, the government has taken drastic measures by carrying out the movement control order (MCO) and COVID-19 vaccine immunisation programme throughout the country. The efficacy of the COVID-19 immunisation programme and the well-managed health service system from NRP have convinced the Malaysian government that the country was ready to change from the pandemic to the endemic phase (Kementerian Kesihatan Malaysia Now [KKMNOW] 2022). Consequently, in March 2022, the Prime Minister of Malaysia declared that Malaysia would enter the endemic phase in April 2022 (Gani *et al.* 2023). The decision by the government was motivated by 98.7% of adults receiving all recommended vaccinations and just 0.7% of severe cases. Besides, the transition into the endemic phase was manifested by the transition in the government's narrative from relying on strict containment measures to relying on individual responsibility and communal cooperation (Gani *et al.* 2023).

Even though COVID-19 has been declared as an endemic in Malaysia, the prevalence of COVID-19 cases has fluctuated, as shown in Figure 1 (KKMNOW 2024). There were significant increases of COVID-19 cases in November and December in the year 2023, with 13,070 and 84,877 cases, respectively. Meanwhile, during this study conducted in the year 2024, a significant increase was observed in Jun and July, with 12,303 and 10,130, respectively. It is feared that the current surge in cases of COVID-19 is the result of

the public being complacent in curbing the continuous spread of the disease and forgetting about information related to the occurrence of COVID-19. With the update of the COVID-19 disease that is still hovering in Malaysia, it is crucial to examine the public's comprehension of dealing with health issues, especially among diploma in pharmacy students who are believed to have had good exposure to disease prevention and management. This study focuses on the level of knowledge, attitudes and practices among Diploma of Pharmacy students in dealing with COVID-19 endemic era.

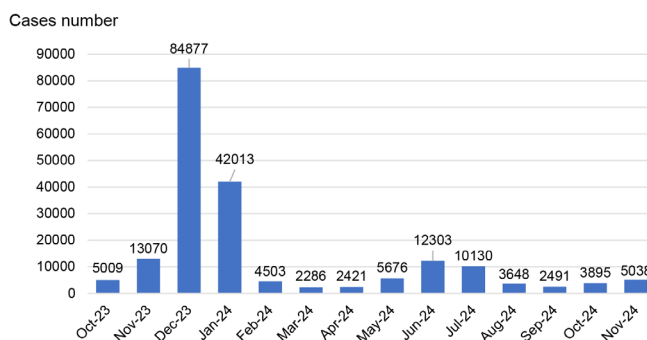


Figure 1: Number of COVID-19 cases in Malaysia from October 2023 until November 2024.

MATERIALS AND METHODS

Study Design and Setting

A cross-sectional study was conducted by distributing a self-administered questionnaire (SAQ) survey among diploma in pharmacy students, UiTM Bertam Campus from the Faculty of Pharmacy. The was conducted online via Google Form. The questionnaire was developed and validated by three experts from the Ministry of Health (MOH) staff and five students from UiTM Bertam Campus for face validation. The questionnaire link was then distributed to the students through WhatsApp since it is the most widely used social media among people in Malaysia. The data collection took place from June 14, 2024, to July 1, 2024. This study included respondents who participated voluntarily and with their informed consent.

Sample Size

The sample size was determined using the Qualtrics XM online calculator (Qualtrics 2023). Based on a population of 227 diploma pharmacy students, the required sample size was calculated with a 95% confidence level and a 5% margin of error. As a result, the calculator recommended a minimum sample size of 143 participants for this study. The inclusion and exclusion criteria are as follows:

Inclusion criteria:

- Active student (not on medical leave)
- Full-time student

Exclusion criteria:

- Graduated student from UiTM Bertam Campus
- Deferral student

Ethics Approval

This study was approved by the UiTM Pulau Pinang Branch Ethics Research Committee, [BERC/6/2024 (UG/MR/290)].

Data Collection Tool

A set of questionnaires was developed based on knowledge, attitude and practice in dealing with the post COVID-19 era. This questionnaire consists of four parts (Sections A, B, C and D). Section A consists of socio-demographic with four questions consisting of gender, year of study, age and current residency status. Section B is related to general information about COVID-19 and consists of seven questions. Section C is related to the respondents' attitude in dealing with COVID-19. This section is a Likert-scale question containing eight statements where the respondents have to mark a scale from 1 to 5 on the extent of their agreement regarding the statements. Scale 1 to 5 are interpreted as follows: 1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree. There were about six questions related to the respondents' practices in dealing with the COVID-19 outbreak in Section D. For each question, respondents had to choose one appropriate answer. Among the answer options provided is whether the respondents "Always", "Occasionally" or "Never" do the stated practices. The questionnaire included questions in both English and Malay to provide a clearer understanding for respondents while they answered the survey.

Data Analysis

IBM SPSS version 22 software was used to analyse the data after the data collection process was completed. The Kolmogorov–Smirnov and Shapiro–Wilk tests were used to analyse the normality of distribution. The Mann-Whitney U and Kruskal-Wallis tests were performed for the non-parametric test to compare the median knowledge scores in pre-determined factors, including age, gender, year of study and current residence. The significance level was set at $p < 0.05$ for all statistical tests. Descriptive analytical such as median, frequency and percentage of frequency were used to characterise the data obtained from the respondents.

RESULTS

Socio-Demographics of Diploma in Pharmacy Students

Based on the Qualtrics XM online calculator (with a 95% confidence level), the suggested sample size was 143 from a total of 225 diplomas in pharmacy students. Based on Table 1, a total of 143 students responded to the questionnaire. Most of the respondents were female, comprising 104 students (72.7%) and 39 male students (27.3%). The students' ages are 19 years old ($n = 33$, 23.0%), 20 ($n = 49$, 34.3%), 21 years old ($n = 52$, 36.4%)

and 22 (n = 9, 6.3%). The median age for the students was 20. The students involved in this study consist of 23.1% (n = 33) of year one, 39.9% (n = 57) of year 2 and 11.2% (n = 16) of year 3.

Table 1: Socio-demographics of respondents.

Demographics		Frequency (n)	%
Gender	Male	39	27.3
	Female	104	72.7
Year of Study	Year 1	33	23.0
	Year 2	57	39.9
	Year 3	53	37.1
Age	19	33	23.0
	20	49	34.3
	21	52	36.4
	22	9	6.3
	Median (IQR)	20 (IQR = 20–21)	
Current Stay	Family Home	21	14.7
	Campus	95	66.4
	Rental House/Room	27	18.9

Note: n = the total respondents; % = percentage of respondents; IQR = interquartile range.

According to Bloom's cut-off categories, knowledge scores were classified into three levels: low (< 60%), moderate (60%–79%) and high (80%–100%) (Alzahrani *et al.* 2022). The results illustrated in Figure 2 indicate that a majority of students (73%) achieved high scores, while 23% scored at a moderate level and 4% fell into the low score category for their knowledge of COVID-19-related facts, including the disease's origin and risk factors. These scores pertain to students' understanding of essential COVID-19-related facts, including the origin of the disease and associated risk factors.

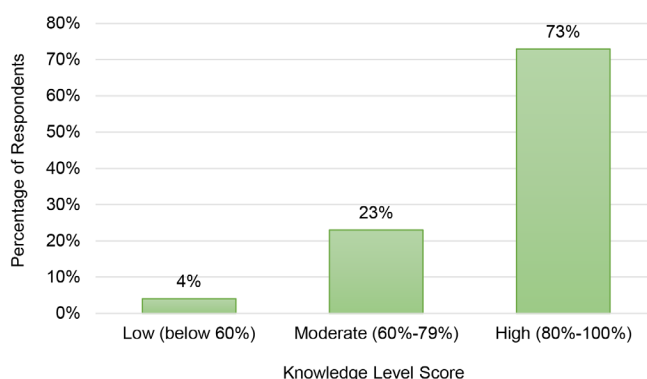


Figure 2: Knowledge level of COVID-19 related information among diploma in pharmacy students.

Table 2 shows the majority of the respondents have a strong understanding with more than 90% gaining correct answers regarding COVID-19 aspects such as COVID-19 origin (Item 1), symptoms of COVID-19 (Item 3), personnel with a high risk of COVID-19 (Item 4 and 5) and duration of self-quarantine (Item 7). The majority of students, 50.3% (n = 72), gave incorrect answers, and 13.3% (n = 19) were unsure that COVID-19 can only be spread through conversation and close contact with an infected individual for item 6. Meanwhile, in item 2, only 79.7% of respondents (n = 114) correctly identified the origin of the name SARS-CoV-2, the virus responsible for COVID-19 and 17.5% responded as unsure.

Table 2: Respondents' knowledge regarding COVID-19.

Item	Section B(1): Statements of COVID-19 Knowledge	Answers option					
		True		False		Unsure	
		n	%	n	%	n	%
1	The first appearance of COVID-19 started from an unknown acute respiratory tract infection and was reported to have occurred in the city of Wuhan, China.	141	98.6	1	0.7	1	0.7
2	SARS-CoV-2 is the name of the virus for COVID-19.	114	79.7	4	2.8	25	17.5
3	The main common symptoms of COVID-19 include fever, cough, fatigue, dyspnoea and sputum.	142	99.3	1	0.7	0	0
4	Children, the elderly and patients with a low immune system are at high risk if infected with COVID-19.	142	99.3	0	0	1	0.7
5	Some individuals can be infected by COVID-19 without showing any symptoms.	143	100.0	0	0	0	0
6	COVID-19 can only be spread through conversation and close contact with an infected individual.	72	50.3	52	36.4	19	13.3
7	One of the self-practices to reduce the spread of COVID-19 is to self-quarantine for 5 days after starting to experience symptoms.	136	95.1	4	2.8	3	2.1

Note: Correct answers are in bold; n = the total respondents; % = percentage of respondents.

In Table 3, Mann-Whitney U and Kruskal-Wallis tests were conducted to identify potential factors that may affect respondents' knowledge scores. The findings reveal significant differences in knowledge scores, as observed in the independent variables of year of study and current stay among respondents.

Table 3: Factors affecting respondents' total knowledge scores.

Independent variables		Median total knowledge scores	Z-score/ Chi-square value	p-value
Age	< 21 years old	87	-0.967	0.334*
	21 years old and above	87		
Gender	Male	88	-0.048	0.962*
	Female	89		

(continued on next page)

Table 3: (continued)

Independent variables		Median total knowledge scores	Z-score/ Chi-square value	p-value
Year of study	1	86	8.713	0.013*
	2	87		
	3	90		
Current Stay	Campus	87	19.309	0.001*
	Family Home	93		
	Rental House/Room	78		

Note: * = Mann-Whitney U test; * = Kruskal-Wallis test.

Respondents' Attitudes in Dealing With the COVID-19 Endemic Era

In this study, the students in diploma pharmacy's attitude towards COVID-19 prevention standard of procedure (SOP) during the COVID-19 endemic was assessed and the findings are presented in Table 4. Statements in items one, two and three highlight the attitude towards self-protection of COVID-19. About 93% (n = 133) of students strongly agree and agree with Item 1, "wearing a face mask to prevent the spread of the COVID-19 epidemic". However, one student (0.7%) strongly disagrees with Item 1. The majority of the students agree and strongly agree with Items 2 and 3, with 93% and 80.5%. None of the students disagreed with the statements in items 2 and 3 for statements that avoid touching the eye and nose for COVID-19 self-prevention. Items 4 and 5 relate to COVID-19 vaccination attitude. About 99.3% of students agreed to complete the vaccination doses. However, there are various responses to Item 5, "I will take an immune booster dose for COVID-19 to increase my body's immune system". The finding for Item 5 indicates that the majority of students, comprising 90.9% (n = 132), expressed a willingness to receive the COVID-19 booster vaccine. Additionally, 11 students (7.7%) indicate a neutral preference, while two students (1.4%) are unwilling to receive the COVID-19 booster vaccine. Item 6 highlights their attitude to keep up with the news of the COVID-19 outbreak and be alert to the information presented by the Malaysian MOH, but only one student did not agree to do that, while the other majority indicated a positive attitude in engaging with COVID-19 updates.

Table 4: Respondent's attitudes during COVID-19 endemic.

Item	Section C: Statements related to attitudes	Answers option	Frequency (n)	%
1	I will wear a face mask to prevent the spread of the COVID-19 epidemic.	Strongly Disagree	1	0.7
		Disagree	0	0
		Neutral	9	6.3
		Agree	47	32.9
		Strongly Agree	86	60.1

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Table 4: (continued)

Item	Section C: Statements related to attitudes	Answers option	Frequency (n)	%
2	To avoid the infection of COVID-19, I will avoid touching the eyes, nose and mouth area.	Strongly Disagree	0	0
		Disagree	0	0
		Neutral	10	7
		Agree	59	41.3
		Strongly Agree	74	51.7
3	I have prepared several self-test kits at home so that I am always ready to do tests when I have symptoms of COVID-19.	Strongly Disagree	0	0
		Disagree	5	3.5
		Neutral	20	14
		Agree	46	32.2
		Strongly Agree	72	50.3
4	I have completed COVID-19 vaccination dose.	Strongly Disagree	0	0
		Disagree	0	0
		Neutral	1	0.7
		Agree	47	32.9
		Strongly Agree	95	66.4
5	I will take an immune booster dose for COVID-19 to increase my body's immune system.	Strongly Disagree	1	0.7
		Disagree	1	0.7
		Neutral	11	7.7
		Agree	55	38.5
		Strongly Agree	75	52.4
6	I will always follow the developments during the COVID-19 outbreak and be alert to the information presented by the Malaysian MOH.	Strongly Disagree	0	0
		Disagree	1	0.7
		Neutral	16	11.2
		Agree	52	35.7
		Strongly Agree	75	52.4
7	As a Malaysian, I will take on a role to help spread knowledge about COVID-19 to the general public to reduce the burden on the frontline who are struggling to deal with the issue of the COVID-19 outbreak.	Strongly Disagree	0	0
		Disagree	0	0
		Neutral	12	8.4
		Agree	56	39.2
		Strongly Agree	75	52.4

Note: n = the total respondents; % = percentage of respondents.

Respondents' Practices in Dealing With the COVID-19 Endemic Era

Section D reveals the student's response to practising events related to COVID-19 outbreak prevention. The findings of Section D are shown in Table 5. Most of the students responded as always (n = 77, 53.8%) and occasionally (n = 66, 46.2%) on complying with the standard

operating procedures set by the MOH to prevent the spread of COVID-19 as in Item 1. However, for Item 2, some respondents choose to always go out to public places despite being infected with COVID-19 ($n = 10$, 7.0%) and occasionally ($n = 30$, 21%). Items 3, 4 and 5 are statements related to practices that are mandatory in the regulation during the pandemic, such as the application of facemasks, hand sanitiser and social distancing. After the COVID-19 pandemic was declared endemic, this regulation was repealed, affecting how students practice. Item 3 states the frequency of students wearing the face mask when in public places during the time of endemic, notably that 52.4% ($n = 75$) of students chose occasionally and 22.4% ($n = 32$) never. Item 5, most students occasionally ($n = 82$, 57%) and never ($n = 35$, 24.5%) maintain physical distance when in public or crowded places. However, when it comes to personal hygiene (Item 4), like washing hands and using hand sanitiser frequently in a day, 65.7% ($n = 94$) and 32.9% ($n = 47$) chose it as always and occasionally, respectively. The practice of using traditional medicine in treating COVID-19 symptoms as in Item 5 shows that 46.9% ($n = 67$) of students chose occasionally and 39.2% ($n = 56$) as never.

Table 5: Respondent's practices in during COVID-19 endemic.

Item	Section D: Statements of Practices in Dealing with COVID-19 Prevention	Answers option	Frequency (n)	%
1	The Malaysian MOH has issued several standard operating procedures to prevent the spread of COVID-19. As a Malaysian, do you follow the standard operating procedures?	Always	77	53.8
		Occasionally	66	46.2
		Never	0	0
2	If you are infected with the COVID-19 virus, you will go about your daily life as usual. For example, you will go out to work, go to the store, be in public places and others.	Always	10	7
		Occasionally	30	21
		Never	103	72
3	How often do you wear a face mask when in public places even though the Malaysian government no longer mandates this?	Always	36	25.2
		Occasionally	75	52.4
		Never	32	22.4
4	Do you wash your hands and use hand sanitiser frequently in a day?	Always	94	65.7
		Occasionally	47	32.9
		Never	2	1.4
5	Do you still maintain physical distance when in public or crowded places?	Always	26	18.2
		Occasionally	82	57.3
		Never	35	24.5
6	You use traditional treatment methods if you have symptoms of COVID-19.	Always	20	14
		Occasionally	67	46.9
		Never	56	39.2

Note: n = the total respondents; % = percentage of respondents.

DISCUSSION

As Malaysians have experienced the COVID-19 pandemic phase from the year 2020 to 2022, many facts about the COVID-19 virus, the way of infection, and how to prevent and treat the disease have been massively announced by the MOH. Even though Malaysia has declared COVID-19 as endemic, the statistics of the disease still show that there is a sudden large wave in the number of infection cases from 2022 to 2024 (KKMNOW 2024). As individuals who have firsthand experience with the risk of COVID-19, it is essential for citizens to exhibit greater sensitivity, irrespective of their educational qualifications or professional background.

The discipline of pharmacy, which is closely associated with health management, requires an extensive understanding of diverse health challenges, including infectious like COVID-19. Consequently, diploma in pharmacy students are expected to have a fundamental knowledge of the complex dynamics and implications associated with COVID-19. Therefore, the purpose of this study is to assess the level of knowledge, attitudes and practices among diploma pharmacy students in dealing with the COVID-19 endemic era has been successfully achieved.

The findings of this study indicate that a substantial majority of students (73%) possess a high level of understanding regarding essential information related to the COVID-19 pandemic in the post-pandemic era. The analysis reveals that the factors influencing students' knowledge scores include their year of study and place of residence. There is a significant difference in their 1st, 2nd and 3rd years of study. This finding closely aligns with the results of a previous study, which noted a difference in score between year 4 students and those in year 1 (Xuan *et al.*, 2022). Additionally, students' living arrangements seem to impact their level of knowledge; for instance, those living with parents may receive more guidance on safety and health issues even after COVID-19 pandemic era (Hawary *et al.*, 2025).

About 36.4% of students are convinced that COVID-19 cannot be transmitted through close contact and conversation, which is in contrast with the fact that the disease can be transmitted from person to person or indirectly through contact with contaminated objects. Body fluid droplets can transfer the virus from the mouth or nose, which spreads when a COVID-19 patient coughs, sneezes, or speaks (Puspitasari *et al.* 2020).

From the present study, there are 79.7% of students recognise that COVID-19 originated from the SARS-CoV-2 virus. The outcome observed could be attributed to the long virus name that is difficult to remember and the spelling differences between the virus name and COVID-19. The study performed by Jiang *et al.* (2020) disagreed when COVID-19 was referred to as SARS-CoV-2 virus infection because they had a stand that a virus with such a huge global should have an outstanding name. Nevertheless, COVID-19 is the short form of "Coronavirus disease" and was named "severe acute respiratory syndrome Coronavirus 2 (SARS-CoV-2)" by the International Committee on Taxonomy of Viruses (ICTV) on February 11, 2020. The virus's genetic similarity to the Coronavirus that caused the 2003 SARS outbreak led to the choice of this name (World Health Organization 2020b).

In general, wearing a mask can help filter out more germs that you breathe in or out (Centre for Disease Control [CDC] 2024). According to He *et al.* (2021), based on a study conducted on Tweepers in the United States, people claim that using a face mask might result in unpleasant side effects including redness, acne or dyspnoea. Since the COVID-19 outbreak was well contained, the majority of governments have likewise loosened the restrictions on face mask wear, making it optional instead of mandatory (Kwon and Yang 2022). This may be a reason for students who disagree with the idea or feel that

wearing face masks to stop the COVID-19 virus from spreading was unnecessary. The majority of the students have completed the COVID-19 vaccination doses and are willing to take the COVID-19 booster vaccination dose to improve the body's immune system. According to Khoo *et al.* (2024), higher academic attainment will increase the likelihood of consenting to receive the booster vaccination. This explains that it is possible that the student's willingness to take the COVID-19 booster vaccination.

When comparing the results for Section C, Items 6 and 7, it raises the question of how one can effectively contribute to public education while being reluctant to learn about the latest COVID-19 developments and information from the MOH. Because there is a significant concern that the disseminated information given to the public may not be accurate. Therefore, the public can find information and developments related to COVID-19 at the CDC Respiratory Virus Guidance (CDC 2024). It is imperative for students to cultivate a proactive attitude towards the continuous pursuit of knowledge and remain informed about the latest updates regarding COVID-19. Engaging in ongoing education about COVID-19 is crucial for empowering students to play a constructive role in public health efforts.

The Malaysian MOH has issued several standard operating procedures to prevent the spread of COVID-19. Based on Section D Item 1, the confession of some students following the SOP issued by the MOH to prevent the spread of COVID-19 was not reflected by their actions as in Item 2, Section D, in which there are numbers of students who claimed, as always go out even though being infected by the disease. With the contrast findings in Section D revealed that the respondents did not fully follow the standard operating procedures. This situation can be related to the studies by Hwang *et al.* (2020), which stated that despite quarantine being a vital precaution to stop the virus from spreading, it also increases feelings of social isolation and loneliness. Consequently, the individual may suffer from psychological impacts, including post-traumatic stress disorder (PTSD), anger, and disorientation (Chen *et al.* 2020). It partially explains the reason for the respondents' reluctance to stay at home while infected with COVID-19.

Adherence to COVID-19 pandemic rules is now optional for the community. According to this study, students still practice hand sanitising and hand washing, though wearing face masks and social distancing are less popular among the students. According to Cha *et al.* (2023), some individuals refuse to wear face masks because they have a high self-perception that is confident in their face which is able to attract attention and leave a good impression on others. This may be the reason for some respondents who refuse to wear face masks. Social distancing rules are challenging if other people in their social circles don't follow the rules (Berry *et al.* 2022). The percentage of non-adherence in this study may also be influenced by incorporative behaviour by other people in practising social distancing. Section D Item 5 has the highest number of non-compliant respondents. According to Khan *et al.* (2022), individual behaviour dictates how effective physical distance is. Young people who are considered medically well have a lesser risk of experiencing complications of COVID-19, but they nevertheless have a significant impact on preventing the virus's spread. Young individuals are more likely to be influenced by their peers, which could make following social distancing rules challenging if other people in their social circles don't follow the rules (Berry *et al.* 2022). The same factors may also influence the percentage of non-adherence in this study. Therefore, the case of COVID-19 still cannot be controlled to be at a safe and satisfactory level.

The use of traditional medicine in the treatment of COVID-19 is very widespread in several countries such as China (Ai *et al.* 2020), Ethiopia (Chali *et al.* 2021) and Vietnam (Phuc *et al.* 2021). However, this study indicated that traditional medicine is not the main choice for COVID-19 treatment among pharmacy students. A study by Zahari *et al.* (2023)

showed that more than half of the Malay traditional medicine practitioners (51.5%) said that they would not advise the community to use traditional medicine to treat COVID-19. This may be attributed to the limited availability of evidence-based research regarding the use of Malaysian herbal medicine to treat COVID-19 (Zahari *et al.* 2023). Furthermore, the existing evidence is insufficient, necessitating robust clinical trials to substantiate the claim (Ang *et al.* 2022).

Strengths and Limitations of Study

This study offers valuable insights into students' awareness levels following several years of the pandemic. It serves as a reminder that students' attitudes and practices can remain vigilant in response to the evolving status of COVID-19, transitioning from a pandemic to an endemic phase. However, a limitation of this study is that it did not explore the underlying factors contributing to changes in attitudes and practices in greater depth due to time constrain.

CONCLUSION

In conclusion, the results indicate that the majority of diploma in pharmacy students at UiTM Bertam Campus have a good knowledge of COVID-19. The diploma in pharmacy students demonstrate a favourable disposition towards adherence to the SOP and guidelines established by relevant authorities. The attitudes and practices among pharmacy diploma students indicated a take-for-granted mindsets and behaviour regarding the potential risks associated with contracting COVID-19. This phenomenon suggests that these students may not fully recognise the implications of their current behaviours, which could influence their susceptibility to the virus. However, they exhibit a tendency to selectively apply the rules, opting for those that align with their personal preferences. By being consistent, individuals can protect themselves and others, contribute to reducing transmission rates and support overall community health. Consequently, consistency in self-care during the COVID-19 endemic is crucial for maintaining health and preventing the spread of the virus in the future.

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