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Attitude and Adherence to COVID-19 Standard Operating Procedures (SOPs) among Malaysians

Theingi Maung Maung [a≡], Win Myint Oo [b≡], Goay Xin May [cω], Chin Huey Yi [cω], Jayamayuri Pathmanafan [cω] and Varun Pai [d*≡]

[a] Unit of Community Medicine, AIMST University, Malaysia.
[b] Faculty of Medicine, SEGI University, Malaysia.
[c] Faculty of Medicine, AIMST, Malaysia.
[d] Forensic Medicine Unit, AIMST University, Malaysia.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Introduction: The COVID-19 cases in Malaysia increased dramatically and every individual must comply with Standard Operating Procedures (SOPs) to prevent the high burden on health facilities. Since it has no effective treatment; nonetheless, early recognition of the disease and applying prevention strategies will help to mitigate the virus propagation. This study aimed to determine the attitude and adherence of COVID SOPs among Malaysians.
Materials and Methods: A cross-sectional questionnaire-based study was conducted through an online and a total of 206 participants from different states of Malaysia took part in this survey by convenience sampling method. Those who scored ≥ 80% were considered as having a favourable attitude and good adherence to COVID SOPs. Chi-square test and multiple logistic regression were applied to assess the association between sociodemographic characteristics of the respondents, attitude and adherence of COVID SOPs. A p-value less than 0.05 was considered statistically significant.
Results: More than two thirds of the respondents had favourable attitude (70.9%; 95% CI: 64.7%, 77.1%) and good adherence to SOP (69.4%; 95% CI: 63.1%, 75.5%). A compliance of < 60% .with

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[≡] *Associate Professor;*
[ω] *Student*
**Corresponding author: E-mail: varun_pai@aimst.edu.my;*

SOP measures like carrying hand sanitizers, avoiding visiting the crowded places and red zone areas were common among the respondents. The finding of this study showed that gender has a significant association with attitude (p=0.002).Females were three times more likely to have a positive attitude than males.

Conclusion: The Malaysian population studied exhibited a good knowledge, attitude and practice with regard to COVID 19 SOP's. Self-regulation is notably higher among the Malaysian population however, observing total compliance will require enforcement by the authorities.

Keywords: Attitude; COVID-19; adherence; SOPs; Malaysians.

1. INTRODUCTION

In December 2019, a novel Coronavirus infection (COVID-19) began its journey around the world. COVID-19 is an emerging respiratory disease caused by severe acute respiratory syndrome coronavirus.It was designated a public health emergency of international concern on 30th January 2020 [1]. COVID-19 has no effective treatment; nonetheless, early recognition of the disease and prevention strategies will help to mitigate the corona infection . As per World Health Organization,186 million confirmed cases including 4 million deaths were reported till 12th July 2021Globally [2].

In Malaysia, the COVID-19 cases increased dramatically and every individual was mandated to comply with Standard Operating Procedures (SOPs) to prevent the high burden on health facilities. As of June 2021, Malaysia had a total of 734 048 confirmed cases of COVID-19. The highest cases were reported in Selangor, Negeri Sembilan, and Federal Territory Kula Lumpur. Afterward, Alpha, Beta, and Delta variants of SARS-CoV-2 cases continued to be detected among local comunities. The Malaysia Ministry of Health then continues to urge the public to adhere to the SOPs and practice the new norms to prevent disease transmission. The new norms include avoiding 3Cs (avoid Crowed places, Confined spaces and Close conversations) and practicing 3Ws (Wash hands frequently, Wearing facemasks in public areas or if symptomatic, Warn self and others to avoid shaking hands, practice good coughing and sneezing etiquette, seek early treatment if symptomatic, stay home and to clean and disinfect touched surfaces in common areas) [3].

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Different studies related to awareness of COVID-19 are conducted worldwide these days. A study done in Saudi Arabia showed a high knowledge level (mean score of 17.96), optimistic attitude (mean score of 28.23) ,and good practice(mean score of 4.34) [4]. Male respondents exhibited poor awareness of the disease than females, and older adults were likely to have better knowledge and practice than younger respondents in that study [4]. Another study that had been carried out in Hubei, China revealed that majority of the respondents (97%) had the confidence to win the battle against COVID-19 and 98% of them wore masks when going out. The respondents from high socioeconomic status and women in that study were more knowledgeable about the disease, optimistic and they were more compliance with COVID SOP [5].

Based on the cross-sectional study, most of the participants (83%) showed positive attitudes toward the COVID-19 control. Most of the respondents took proper precautions like avoiding crowds (83%), hand hygiene(87%) however wearing facemasks was less common (51%).Everage knowledge score related to COVID-19 was moderate (10.5±1.4) and those respondents older than 50 showed higher knowledge scores [7]. A local news also stated that visitors to the Kelatan State demonstrated a poor attitude towards COVID-19 preventive measures and most of them did not willing to follow SOPs [7]. In another study carried out among the general public of Turkey and Malaysia, gender and education were associated with overall knowledge in Turkey, while age and marital status were significantly related to COVID-19 related knowledge in Malaysia. Male, married and post-graduate respondents had a good attitude towards COVID-19 in Turkey whereas females,

married,and middle-school or higher education exhibited a good attitude towards the disease [8]. The same study also found that adherence to SOP was better in Malaysia than in Turkey.

In Malaysia, in spite of strict monitoring and numerous reminders given by the Ministry, many people seem to take the SOP's for granted. Many people do not use masks and they still enjoy visiting the crowded areas, especially at the festive time by neglecting social distancing. It is important to spread awareness about the SOP and urge people to register for the vaccination. This study aimed to assess the attitude and adherence to COVID-19 Standard Operating Procedures (SOPs) among Malaysians.By conducting this research can implant the importance of the SOP's which is to prevent the spread of the infection among the public. This research is expected to not only sensitise knowledge and encourage adherence to COVID SOPs but, reduce the battle against COVID-19,good knowledge and awareness about the infection but will also create a safer and an infection-free atmosphere for everyone.

2. MATERIALS AND METHODS

A cross-sectional questionnaire-based study was conducted through an online questionnaire (google form) from January 2021 to March 2021. In this study, a total of 206 participants took part in this survey. The participants were selected by convenience sampling and consented to the study.Both male and female respondents' aged over 18 years were eligible to take part in this survey.

The questionnaire was created based on the internet and done manually. The sources obtained were from valid websites, books, and journals. The questionnaire consists of questions pertaining to the demographic characteristics of the participants, their attitude towards COVID-19 ,and the practice of SOPs. Five-point Likert scale was given to the respondents for attitude questions, and they were asked to state their level of agreement from "strongly disagree," "disagree," "undecided," "agree," or "strongly agree." Participants were given "yes" and "no" for the practice questions. The questionnaires for attitude and practice were composed of both positive and negative statements. It was pilot tested among a sample of 20 adults, consisting of 10 males and 10 females. The data used for the pilot study was not included in the final analysis. The Cronbach's Alpha value obtained from this questionnaire was 0.747. The study was conducted in 2 different languages (English and Bahasa Malaysia).

In the survey information sheet, the participants were briefly explained the objectives of this study, and were informed of the importance of completing the questions precisely and honestly. They were also informed about ethical considerations including the right to withdraw from the study anytime. For any clarification, the mobile contact of two researchers was provided in the questionnaire.

Data entry, coding, and analysis were done by using the statistical package for social sciences (SPSS) software version 23. Chi-square test and multiple logistic regression have been applied to assess the association between sociodemographic characteristics of the respondents, and attitude and adherence. Attitude and adherence to SOP were divided into two categories based on total scores obtained. In this study ,those who scored ≥ 80% were considered as having a favourable attitude and good adherence to SOPs, whereas, those who scored less than 80% of the total score were considered to be unfavourable.

3. RESULTS

3.1 Sociodemographic Background of the Respondents

Altogether 206 persons were included in the study. General characteristics of them including their residence are shown in Table 1. Majority of the respondents were youth who were between 18 to 24 years old (70.9%), females (59.7%), singles (78.2%), students (61.7%), and those living in Penang (24.3%).

The attitude and adherence to SOPs were analyzed to identity the different levels (Fig.1). The results demonstrated that 140 out of the 206 respondents (70.9%; 95% confidence interval: 64.7%, 77.1%) had a favourable attitude toward COVID-19 SOPs and 60 (29.1%) of them had unfavourable attitude toward SOPs. Out of 206 respondents, 143 (69.4%; 95% confidence interval: 63.1%, 75.5%) showed good compliance to COVID -19 SOPs, while 63(30.6%) showed poor compliance. The attitude showed a mean of 39.9(SD=5), while the mean of COVID-19 SOP adherence was 8.3(SD=1.4).

Table 1. Conclus Characteristics of the respondents

No.	Variables	Frequency (n=206)	Percent
1	**Age-group***		
	18-24	146	70.9
	25-39	25	12.1
	40-68	35	17.0
2	**Gender**		
	Male	83	40.3
	Female	123	59.7
3	**Marital Status**		
	Single	161	78.2
	Ever married	45	21.8
4	**Employment**		
	Student	127	61.7
	Otherwise	79	38.3
5	**Residence (State)**		
	Kedah	25	12.1
	Penang	50	24.3
	Pahang	13	6.3
	Kelantan	1	0.5
	Terengganu	1	0.5
	Selangor	25	12.1
	Wilayah Persekutuan	10	4.9
	Johor	37	18.0
	Perak	29	14.1
	Sarawak	9	4.4
	Sabah	1	0.5
	Malacca	5	2.4

**Mean age (standard deviation) was 28.3 (12.1) years.*

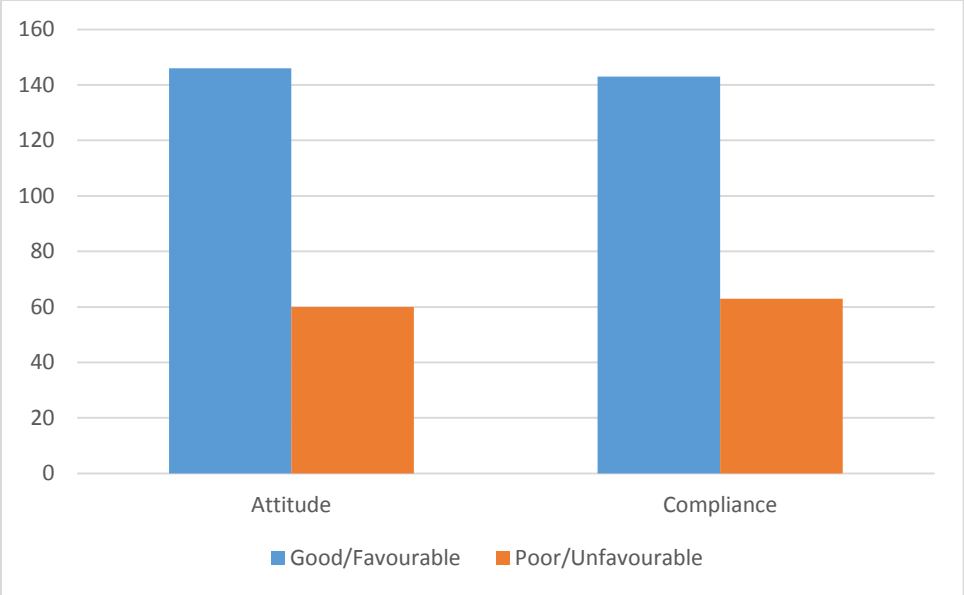

Fig. 1. Different levels of attitude and adherence to COVID-19 SOPs

Table 2. Characteristics of the respondents and attitude towards COVID 19 SOPs

No.	Variable	Attitude		p-value
		Favourable (%)	Unfavourable (%)	
1	**Age-group**			0.358
	18-24	102 (69.9)	44 (30.1)	
	25-39	16 (64.0)	9 (36.0)	
	40-68	28 (80.0)	7 (20.0)	
2	**Gender**			0.002**
	Male	49 (59.0)	34 (41.0)	
	Female	97 (78.9)	26 (21.1)	
3	**Marital Status**			0.249
	Single	111 (68.9)	50 (31.1)	
	Ever married	35 (77.8)	10 (22.2)	
4	**Employment**			0.998
	Student	90 (70.9)	37 (29.1)	
	Otherwise	56 (70.9)	23 (29.1)	

***p<0.001, statistically significant*

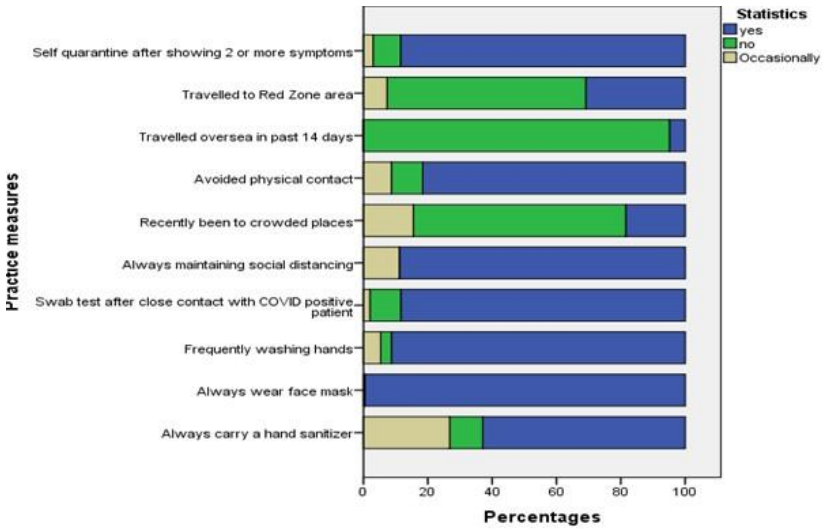

Fig. 2. Practice measures toward COVID SOPs among Malaysian population

Table 3. Characteristics of the respondents and adherence to COVID-19 SOPs

No.	Variable	Adherence to SOP		p-value
		Good (%)	Poor (%)	
1	**Age-group**			0.194
	18-24	96 (65.8)	50 (34.2)	
	25-39	19 (76.0)	6 (24.0)	
	40-68	28 (80.0)	7 (20.0)	
2	**Gender**			0.155
	Male	53 (63.9)	30 (36.1)	
	Female	90 (73.2)	33 (26.8)	
3	**Marital Status**			0.312
	Single	109 (67.7)	52 (32.3)	
	Ever married	34 (75.6)	11 (24.4)	
4	**Employment**			0.109
	Student	83 (65.4)	44 (34.6)	
	Otherwise	60 (75.9)	19 (24.1)	

Table 4. Characteristics of respondents attitude and adherence to COVID-19 SOPs

No.	Variable	Adherence to SOP		p-value
		Good (%)	Poor (%)	
	Attitude			0.907
	Favourable	101 (69.2)	45 (30.8)	
	Unfavourable	42 (70.0)	18 (30.0)	

3.2 Attitude based on the Background Characteristics of the Respondents

The association between general characteristics of the respondents, and their attitude toward SOP is shown in Table 2. Only gender was found to have a significant association with attitude (p = 0.002). In this study, age, marital status, and employment did not show any statistically significant association (p > 0.05) with respondents' attitudes. The residence was not considered as an independent variable in the present study.

Based on the findings (Fig. 2), almost all the respondents used face masks with 99.5%compliance. More than 80% of the respondents adhered to SOPs such as frequent washing hands, maintaining social distancing,avoiding physical contact, avoiding overseas travelling, self-quarantine after showing symptoms, and testing swabs after they had been exposed to COVID patient.In this study, compliance of less than 60% to carrying hand sanitizers, avoiding visiting crowded places, and red zone areas were observed among the respondents.

3.3 Respondents' Characteristics and Adherence to SOPs

Respondents' backgrounds like age, gender, marital status and employment were analysed against adherence to SOPs in Table 3. Findings from this study demonstrated that adherence to SOPs was not related to participants' characteristics, showing all p-values bigger than 0.05.

Multiple logistic regression analysis was done with a backward deletion strategy to assess the association between characteristics of the respondents (such as age, gender, marital status and employment) and attitude to COVID-19 SOPs. Only gender was found to have a significant association (p=0.002) with adherence to SOPs. Females were about three times (OR = 2.6) more likely to have a favourable attitude compared to males. However, nothing was found to be significantly associated with adherence to SOP in multiple logistic regression analyses.

In this current study, total 10 attitude-related questions and 10 items on practice towards SOPs were given to the respondents and asked about their opinion. Those who scored 80% and above were considered favourable and respondents who score lower than 80% were considered unfavourable. The Chi-square test of association proved that the attitude of respondents was not significantly related to their adherence to SOPs (Table 4).

4. DISCUSSION

Evidence has shown that public knowledge is important in combating pandemics [9]. COVID-19 disease by the virtue of its high transmission rate, needs a higher rate of public compliance to reduce and control its infection rate [10]. Several studies have been conducted across the globe, highlighting attitude and perception towards COVID-19. A study conducted in Iran on 8591 participants reported an overall score of 90% and 89% for attitude towards and practice of COVID-19 respectively [11]. The result showed a significant association between female gender, higher age, and higher education with favourable attitude, and practice. Studies conducted in Jordan similarly showed that higher educational qualifications and married status enhanced better adherence to COVID -19 guidelines [12].

A study conducted in China reveals a good SOP adherence in the sample population with 76 % of the population wearing masks the correct and fair majority indulging in good practices like hand washing (56%) and most of them (75%) avoiding large gatherings and meetings [11]. This is comparable to the findings in our study, where the compliance was noted to be higher. A Ugandan study reported that knowledge and practice regarding face masks were satisfactory at 60 percent. 83.4%believed that a face mask can protect against COVID-19 and 75.9% disagreed with ever sharing their facemasks which indicates good attitude and practice which

was also observed in the current study [13]. Authors in Singapore have concluded that a good attitude towards mask wearing has persisted even though 78.4% reported discomfort while wearing masks [14].

A Korean study observed that knowledge directly affected both attitudes (e.g., perceived risk and efficacy belief) and practices (e.g., personal hygiene practices and social distancing). Belief in efficacy of the SOP's mediated the relationship between knowledge and all three preventive behaviors i.e wearing facial masks, practicing hand hygiene, and avoiding crowded places [15]. A study from Bangladesh reports that a sizeable minority were observed without wearing face masks (18.2%) and a vast portion (97.5%) without any hand protection. The mean scores of KAP were 6.1±2.6 (out of 17), 12.3±1.7 (out of 14), and 9.8±1.6 (out of 12), respectively [16]. Moreover, the KAP were strongly and positively correlated with each other. An Ethiopian study conducted by Molla & Abegaz, 2021 also reports poor practice and less compliance to the COVID SOP's like social distancing with non-compliance at 66 percent [17].

Similar findings were observed in terms of hand sanitizer usage (28%), but mask compliance and practise was noted to be satisfactory (63%). The study correlates good attitude and practice with educational status. Though no such correlation was observed in the current study, this phenomenon can be explained by the generally high literacy rate in Malaysia which is shown to correlate with good knowledge, attitude and practice. An Irish study reports poor hand hygiene practices in the community was poor in 82% of the studied population [18]. This was contrary to the present study where hand washing compliance was high in the community at 80%. Hence studies across the globe show that compliance with COVID SOP's was variable in most population. The general rule of thumb was that better educational qualifications, knowledge,and better enforcement by the authorities ensured good compliance with COVID SOP's.

5. CONCLUSION

Covid 19 disease has raised havoc throughout the globe with infections ranging from asymptomatic to symptomatic severe diseases requiring ventilation. Mortality has been noted to be high in the elderly and people with comorbid conditions. The major onus is not only on the government and the authorities, but also on the population practicing good compliant behaviour to the COVID SOP's like wearing face masks, social distancing, hand washing, and avoiding crowded places. Studies have shown that public awareness, and print, electronic and social media can ensure the knowledge flow to the entire population which can help in improving their attitude towards the COVID 19 disease. But practice on grounds in the COVID 19 disease though has been good in most countries, there is scope for improvement. This can be probably be enhanced by better enforcement by the health and the Police department. The present study conducted in Malaysia shows that attitude and adherence to the COVID SOP's was not significantly related to age, employment or marital status, except the significant difference in gender attitudes. This emphasises that Malaysian society is generally more mature and receptive to public awareness programmes conducted by various agencies and this has to an extent helped Malaysia in tiding over the COVID crisis. The authors recommend continuing public awareness over good respiratory hygiene practices even after the cessation of the pandemic, as their benefits can be observed in other infectious respiratory diseases like Tuberculosis, influenza etc.

CONSENT AND ETHICAL APPROVAL

As for the ethical consideration, online informed consent was obtained before proceeding with the questionnaire. This study was conducted for learning purposes and anonymity and confidentiality were always maintained. The ethical approval has been taken (reference number FOM/SSM/2021/18) and guidelines set by Institutional Ethical Committee (FOMRHAEC) were strictly followed.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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