ORIGINAL ARTICLE

Attitudes and Practices on COVID-19 amongst Residents of Two States in Northern Peninsular Malaysia

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ABSTRACT

INTRODUCTION: With the global evolution of COVID-19, and Malaysia's efforts in containing it, the onus of curtailing spread depends on the efforts of Malaysians to comply and adapt to the emerging new social norms. Our aim was to study the attitudes and practices of residents in Penang and Kedah towards COVID-19. **MATERIALS AND METHODS:** A comparative cross-sectional study was conducted in late October 2020 via an online self-reported structured questionnaire. A five-point Likert scale was used in both 12-item attitudes and 10-item practices questionnaires. Data scored was converted into categorical data based on median value of good and bad attitudes and practices. Spearman's correlation was used to analyse the relationship between attitudes and practices, while Chi-square test was used to determine the differences of attitudes and practices between the two states. **RESULTS:** A total of 834 respondents were enrolled, who were mostly aged 20 to 30, of Malay and Chinese ethnicity, and were from the green zone (40.9%). The mean attitudes score was 44.5 for Kedah and 44.3 for Penang. The mean practices score was the same for both states at 10.8. Gender was significantly associated with good attitudes (p=0.007) in Penang. Gender: Penang (p=0.007) and Kedah (p=-0.001), marital status (p=0.003) and employment status (p=0.001) in Kedah were significantly associated with good practices. Overall, 94.8% agreed to strict enforcement of social distancing and masking. A weak but positive correlation (r=0.30; p<0.001) was found between attitudes and practices. Shortfall in practices relating to not wearing mask properly, not disposing of masks properly and poor cough etiquette. **CONCLUSION:** Level of compliance to the new norms was generally good with little difference between the two states. A small proportion of people still had poor practices. We need to ensure that the social norms are sustained by the community.

Keywords
COVID-19, Attitudes, Practices, Pandemic, Public health measures

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INTRODUCTION

The current COVID-19 pandemic has forced all countries to strive to control the rapid spread of the disease. With the vaccination now available and being administered, it is anticipated that herd immunity would be achieved, and the disease would slowly be brought under control. Since the initial wave of COVID-19 in Malaysia that started with the first few cases in January 2020, the government has implemented various measures, focusing mainly on the measures for containment, to stop the spread of the disease.

During the initial wave, the total confirmed cases was 22.[1] The second wave started in February 2020 with localised clusters linked to a religious gathering held at a mosque in Seri Petaling, Kuala Lumpur. This cluster was the precursor to the cause of the nationwide Movement Control Order (MCO) that was initiated on 18th March 2020. More than 3370 confirmed cases from 17 subclusters from this religious cluster were recorded.[2] Subsequently, a series of MCO with varying levels of restriction of movement and socialising,[3] based on the number of cases and clusters, was implemented. The third wave of the COVID pandemic began on 8 September 2020.[4] The constant factor in all the MCO's was the implementation of social norms and the Standard Operating Procedures (SOP) that people had to follow.[5,6]

This included hygiene practices, such as frequent hand washing, wearing of face masks, social distancing and avoiding crowded places. Another requirement was that visitors to all outlets were compelled to have their temperature checked and contact details recorded preferably by the government recommended *MySejahtera* application via hand phones. The effectiveness of the MCO is highly dependent on the cooperation of residents of Malaysia. The Malaysian Government implemented many efforts in creating awareness about COVID-19 through various social platforms, including the mass media and social media. Stringent measures are implemented[7] and enforcement was done to ensure that the public adhere to the SOPs and the "new norms" as advised by the Ministry of Health, Malaysia. This diversified approach was used by the authorities to ensure that updated information reached all echelons of the society, as misinformation and lack of knowledge may lead to serious consequences.

People were asked to stay at home and limit all social activities. This was a new scenario for everyone, and the authorities depended on the people to change their behaviour and adhere to these new practices. States, districts, and subdistricts in the country were classified into four zones: red, orange, yellow and green with measures implemented specific to zones and commensurate with the number of cases. Even with the administration of vaccines, it was expected that the new social norms will have to be followed for some time in the future.

In general people have good knowledge of COVID-19. During the period of May to June 2020, a study conducted in the Malaysia among the general population found that 70.2% of the respondents had good knowledge whilst 56.9% had good perception and showed good practices.[8] Elias et al found good knowledge amongst Malaysians to be 83%.[9] Knowledge has also been found to be good in other countries in different subsets of population. Amongst frontline healthcare workers in Nepal, both good knowledge and appropriate practices was about 79% despite good attitudes being 54.5%.[10] A study conducted amongst construction workers in China found that an overwhelming percentage had correct knowledge of COVID-19 and they generally took active preventive measures against the disease.[11]

We carried out a study among Malaysian residents of Penang and Kedah since the beginning of the third wave with a focus on attitudes and practices about COVID. In 2018 the two states are slightly different with a varied Gross Domestic Product of 4.1 for Kedah and 5.1 for Penang.[12,13] Penang is a more developed state in terms of infrastructure. The mobile broadband penetration rates are 98.6 per 100 population in Kedah whilst it was 136.9 per 100 population in Penang.[14] Therefore, having access to information is not a problem. Overall, in both these states, 98.9% of households have televisions and 99.4% households own phones,[15] and this allows for easy access to information. However, during the third wave, these two states were amongst the first to have an increased number of COVID cases in the peninsular after the state of Selangor. Practice determines the true actions of the people and that is important in COVID-19 control. Attitudes are difficult to change, and we needed to know attitudes towards public health measures to implement targeted interventions.[16] Therefore, we aimed to investigate if there were any differences in the attitudes and practices towards COVID-19 between the residents of these two states. Through the assessment of the level of practices and their attitudes towards the current SOP, we wished to discover the shortfalls in the practices of the SOP to identify areas where the government authorities could improve on.

METHODS

Questionnaire

A comparative cross-sectional study was conducted from 7th October to 7th November 2020. The structured questionnaire consisted of three sections – demography, attitudes, and practices.

There were 12 variables in the attitude section. Attitudes were measured using two categories: positive sentiment (enforcement must be strict; I will seek consultation if I think I am infected; people who break quarantine should be reported; those who break quarantine should be

punished; COVID-19 is a dangerous disease) and negative sentiments (visiting is not harmful if all are well; staying at home is stressful; social distancing makes me feel lonely and boring; I do not like to wear face masks; frequent hand washing is unnecessary; mildly sick is not likely COVID-19; with a good immune system, I cannot get infected;). Respondent was required to rate the level of agreement and disagreement based on a five-point Likert scale that ranged from 1 for "Strongly Disagree" to 5 for "Strongly Agree". When there was a bad attitude, the score was reversed for the question. The maximum score for attitude is 60. Based on the median value, a score of 52 and above was considered as good attitude. Practices consisted of 10 variables with five-point Likert scale, which ranged from 1 for "Never" to 5 for "Always". It was set based on the SOPs and "new norms" guidelines provided by the Ministry of Health, Malaysia such as frequent hand washing, avoiding crowded places, and wearing face masks. It was measured based on the level of compliance towards preventive measures through two categories: preventive measures (avoid unnecessary social activities; mask covers nose and mouth properly; avoid reusing face mask; change disposable masks daily; cover nose and mouth when sneezing; frequent hand washing; avoid eating outside) and social distancing (maintain safe distance; avoid crowded places; prevent touching people). The score was reversed whenever there was a wrong practice. The maximum score for this section was 50. Based on the median value obtained, a score of 44 and above was considered as good practices, while a score of 43 or lesser as poor practices.

The questionnaire was developed in English and translated into Bahasa Malaysia, and Mandarin. We translated the questionnaires backwards to detect and edit any discrepancies. We established the face value of the questionnaire. Content validation was done and was reviewed by two public health specialists and the internal review team of the Aimst University. The internal consistency of the questionnaire was tested using Cronbach's alpha for the 22 variables on a subset of the population of 30 respondents was 0.76. The Cronbach's alpha for the attitudes questionnaire was 0.72 and for the practices questionnaire was 0.73.

Sample Size

Sample size was calculated by Raosoft sample size calculator. With a margin of error of 5%, confidence level of 95%, and response distribution of 50% for both attitudes and practices, the expected sample size was 385 for each state.

The inclusion criteria were residents of Malaysia aged from 20 and above living in either Penang or Kedah. A resident referred to be a Malaysian citizen or anyone who is legally living or working in Malaysia currently. Foreigners including expatriates living in Malaysia are expected to follow the norms as implemented by the Government as they are also susceptible to COVID-19 and can contribute to the spread of the disease. Therefore, we included them in our survey. Those who lived outside these two states were excluded.

Data Collection

The survey was approved by the ethical committee of the University the (FOM/SSM/2020/013A). Data was collected by Google form. Google forms were sent out in three languages: Bahasa Malaysia, English, and Mandarin. The responses were voluntary, and a consent form was incorporated into the first page of the questionnaire. The respondents had to read, understand, and agree to the survey before participating. The forms were directed to two states - Penang and Kedah. Responses from other states were accepted as we had no control over where the forms were sent, but these were not included in the analysis. All data collected was confidential and anonymous.

Statistical Analysis

Data were analysed using IBM Statistical Packages for Social Sciences (SPSS) software version 23 (IBM Corporation, Chicago, IL, USA). Demographic data was presented in frequencies and percentages Practices and attitudes were scored as good or bad based on the respective median values. Differences between attitudes and practices level between the two states and across the various demographic characteristics were evaluated by

Pearson's Chi Square test. Fisher Exact test was used when more than 25% of cells had expected count more than five and when minimum expected count was less than two. A *p* value of <0.05 was considered as statistically significant. We used Spearman's rho to determine the association between attitudes and practices.

RESULTS

We had a total of 834 respondents (Table I) with 50.2% from Penang and 49.8% from Kedah. Most of the respondents were from the age groups of 20 to 40 years constituting 33.5% from Kedah and 26.6% from Penang. Less than half of the respondents were from the green zone with the rest being in either yellow, orange, or red zones. More than half of the respondents were Chinese though Kedah had more Malays. There were 20 non-Malaysian (comprising of Indians, Chinese, Bangladeshis, Americans, British and Myanmar respondents with 10 from each state. Approximately half of the respondents were employed full time and 55.4% were married. In addition, 71.8% had completed tertiary level education, of whom 34.7% were from Kedah and 37.2% from Penang.

Table I: Demographic profile of the respondents by state

		Kedah Frequency (%)	Penang Frequency (%)	Total Frequency (%)
Total respondents		**415 (49.8)**	**419(50.2)**	**834(100)**
Gender	Male	144 (17.3)	141 (16.9)	285 (34.2)
	Female	271 (32.5)	278 (33.3)	549 (65.8)
Age	20-40 years old	279 (33.5)	222 (26.6)	501 (60.1)
	41 – 60 years old	115 (13.8)	148 (17.7)	263 (31.5)
	>60 years old	21 (2.5)	49 (5.9)	70 (8.4)
Zone*	Green	178 (21.4)	162 (19.5)	340 (40.9)
	Yellow	188 (22.6)	111 (13.4)	299 (36.0)
	Orange	9 (1.1)	20 (2.4)	29 (3.5)
	Red	39 (4.7)	124 (14.9)	163 (19.6)
Ethnic Group	Malay	198 (23.7)	82 (9.8)	280 (33.5)
	Chinese	179 (21.5)	254 (30.5)	433 (52.0)
	Indian	29 (3.5)	65 (7.8)	94 (11.3)
	Others	9 (1.1)	18 (2.1)	27 (3.2)
Nationality	Malaysian	405 (48.6)	409 (49.0)	814 (97.6)
	Non-Malaysian	10 (1.2)	10 (1.2)	20 (2.4)
Marital status	Single	180 (21.6)	162 (19.4)	342 (41.0)
	Married	223 (26.7)	239 (28.7)	462 (55.4)
	Divorced/ widowed	12 (1.4)	18 (2.2)	30 (3.6)
Employment	Full time	206 (24.7)	219 (26.3)	425 (51.0)
	Part time	13 (1.6)	7 (0.8)	20 (2.4)
	Own business	38 (4.6)	41 (4.9)	79 (9.5)
	Retired	21 (2.5)	42 (5.0)	63 (7.5)
Educational level	Secondary or less	77 (9.2)	65 (7.8)	142 (17.0)
	Pre-University	49 (5.9)	44 (5.3)	93 (11.2)
	Tertiary	289 (34.7)	310 (37.2)	599 (71.8)

* 3 respondents did not state the zone they were in.

Most of the respondents had good attitudes towards COVID-19, with many choosing to be neutral in their views. About 82% strongly agreed to the authorities being strict in enforcing social distancing and masking. This was reflected in the practices where most avoided unnecessary visits and maintained social distancing and avoided crowded places. There was a small percentage with poor practices, such as did not avoid crowded places, did not pay attention to how they wore masks, and reused their disposable masks. Discomfort with wearing face masks was noted by 19.9% of respondents. Ninety-six percent of respondents thought that people who break quarantine should be reported immediately, and 95.3% felt those who break quarantine are a danger to public and should be punished.

There was a female respondent who had been infected with COVID-19, showed poor attitudes and poor practices. In addition, 11.8% of the respondents personally knew someone who had been infected with COVID-19. Overall, 35.6% admitted that they were fed up with the restrictions and wanted things to go to how it was (17% of them are from Kedah and 18.6% are from Penang).

We found that 431 (51.6%) of the respondents had good attitudes (Table III) and 463 (55.5%) had good practices towards COVID-19 prevention. According to states, 53.5% of the respondents in Kedah and 49.5% of the respondents in Penang had good attitudes. As for practices, 54.2% of respondents from Kedah and 56.8% of the respondents from Penang had good practices. The overall mean score for attitudes in Kedah was 44.5 with a range of 15 to 50; for practices was 10.82 with a range of 10 to 12. The overall mean score for attitudes in Penang was 44.31 with a range of 26 to 50; for practices it was 10.83 with a range of 10 to 12. In Penang, attitude was significantly associated with gender where females had better attitudes than males (p= 0.007). None of the other variables in both the states were associated with good attitudes. Practices was significantly associated with gender in both Kedah (p=<0.001) and Penang (p=0.002).

Table II. Respondents' o verall attitudes and practices towards COVID-19 in Kedah and Penang

Variables		Frequency and percentage of respondents				
		Strongly agree. (Score 5)	Agree (Score 4)	Neutral (Score 3)	Disagree (Score 2)	Strongly disagree. (Score 1)
Attitudes						
1.	Our authorities must be strict in implementing social distancing and masking even though our cases are not as high as some other countries.	684(82.0)	107(12.8)	33(4.0)	9(1.1)	1(0.1)
2.	There is no harm for me to visit my friends or relatives if both of us are healthy and not sick.	98(11.8)	146(17.5)	241(28.9)	175(21.0)	174(20.9)
3.	I feel stressed and bored staying at home, avoiding gatherings and other group activities.	82(9.8)	126(15.1)	159(19.1)	175(21.0)	292(35.0)
4.	Social distancing makes me feel isolated from the others especially during gatherings.	53(6.4)	60(7.2)	112(13.4)	197(23.6)	412(49.4)
5.	I do not like to wear face masks because it is difficult to breathe, and it makes me feel uncomfortable.	66(7.9)	100(12.0)	161(19.3)	162(19.4)	345(41.4)
6.	Frequent hand washing is a waste of water and money and does not help in controlling COVID-19.	15(1.8)	17(2.0)	24(2.9)	94(11.3)	684(82.0)
7.	I will consult doctors immediately if I think I am infected with COVID-19.	676(81.1)	98(11.8)	41(4.9)	9(1.1)	10(1.2)
8.	If I am mildly sick, it is mostly likely not Covid-19, therefore it is a waste of money for me to consult doctors.	38(4.6)	85(10.2)	140(16.8)	192(23.0)	379(45.4)
9.	People who break quarantine should be reported to the authorities immediately.	756(90.6)	45(5.4)	23(2.8)	4(0.5)	6(0.7)
10.	Those who break quarantine are a danger to public health and should be punished.	720(86.3)	75(9.0)	27(3.2)	6(0.7)	6(0.7)
11.	I feel that it is impossible for me to get infected if I have a good immune system.	55(6.6)	48(5.8)	160(19.2)	174(20.9)	397(47.6)
12.	Overall, I think COVID-19 is a dangerous disease.	689(82.6)	94(11.3)	35(4.2)	7(0.8)	9(1.1)
Practices						
1.	I avoid unnecessary activities such as visiting friends and relatives, picnics, and group sports.	436(52.3)	208(24.9)	99(11.9)	48(5.8)	43(5.2)
2.	I keep three feet (one meter) away from others in public.	506(60.7)	227(27.2)	73(8.8)	17(2.0)	11(1.3)
3.	I avoid crowded places. (Confined area with a lot of people in closed contact).	599(71.8)	181(21.7)	34(4.1)	10(1.2)	10(1.2)
4.	I do not shake hands or have any physical contact when I meet anyone in public.	643(77.1)	127(15.2)	34(4.1)	6(0.7)	24(2.9)
5.	I make sure that my face mask covers my nose and mouth properly when I leave home.	725(86.9)	82(9.8)	15(1.8)	6(0.7)	6(0.7)
6.	I reuse my face masks as much as I can.	80(0.6)	77(9.2)	163(19.5)	194(23.3)	320(38.4)
7.	I change my disposable face mask daily.	473(56.7)	136(16.3)	125(15.0)	64(7.7)	36(4.3)
8.	I cover my nose and mouth with a handkerchief or tissue whenever I cough or sneeze.	518(62.1)	177(21.2)	85(10.2)	29(3.5)	25(3.0)
9.	I wash my hands frequently with soap or hand sanitizers.	582(69.8)	180(21.6)	52(6.2)	13(1.6)	7(0.8)
10.	I avoid eating outside at any restaurants.	290(34.8)	224(26.9)	211(25.3)	76(9.1)	33(4.0)

Females had overall better practices than males. Marital status (p=0.003) and employment (p=-0.001) were significant for Kedah, with the single respondents and unemployed having overall poorer practices. There were no other variables to be significantly associated with practice level in both the states.

Spearman's correlation showed an overall weak but positive correlation between attitudes and practices (r= 0.30; p<0.001).

DISCUSSION

COVID-19 is relatively a new disease despite the large number of research that has been conducted to understand its true nature and origin. At present, in addition to the vaccine, we still need to internalize public health measures to control it. The overall good attitudes and good practices for both the states in this study were still low.

Table III. Respondents' attitudes and practices towards COVID-19 by states.

	Attitude Level						Practice Level					
	Kedah			Penang			Kedah			Penang		
	Poor (%)	Good (%)	*p* value	Poor (%)	Good (%)	*p* value	Poor (%)	Good (%)	*p* value	Poor (%)	Good (%)	*p* value
Total Respondents	193(46.4)	222(53.5)		210(50.1)	209(49.9)		190(45.8)	225(54.2)		181 (43.2)	238 (56.8)	
Age(years)												
20-40	132 (47.3)	147 (52.7)	0.686	102 (45.9)	120 (54.1)	0.193	133 (47.7)	146 (52.3)	0.314	96 (43.2)	126 (56.8)	0.930
41-60	50 (43.5)	65 (56.5)		81 (54.7)	67 (45.3)		46 (40.0)	69 (60.0)		65 (43.9)	83 (56.1)	
>61	11 (52.4)	10 (47.6)		27 (55.1)	22 (44.9)		11 (52.4)	10 (47.6)		20 (40.8)	29 (59.2)	
Gender												
Male	68 (47.2)	76 (52.8)	0.831	84 (59.6)	57 (40.4)	**0.007**	84 (58.3)	60 (41.7)	**<0.001**	76 (53.9)	65 (46.1)	**0.002**
Female	125 (46.1)	146 (53.9)		126 (45.3)	152 (54.7)		106 (39.1)	165 (60.9)		105 (37.8)	173 (62.2)	
Zone												
Green	81 (45.5)	97 (54.5)	0.353*	83 (51.2)	79 (48.8)	0.938	87 (48.9)	91 (51.1)	0.069	72 (44.4)	90 (55.6)	0.996
Yellow	84 (44.7)	104 (55.3)		54 (48.6)	57 (51.4)		82 (43.6)	106 (56.4)		48 (43.2)	63 (56.8)	
Orange	6 (66.7)	3 (33.3)		11 (55.0)	9 (45.0)		3 (33.6)	6 (66.7)		8 (40.0)	12 (60.0)	
Red	22 (56.4)	17 (56.4)		61 (49.2)	63 (50.8)		17 (43.6)	22 (56.4)		53 (42.7)	71 (57.3)	
Race												
Malay	95 (48.0)	103 (52.0)	0.418*	39 (47.6)	43 (52.4)	0.088	78 (39.4)	120 (60.6)	0.066*	34 (41.5)	48 (58.5)	0.966
Chinese	77 (43.0)	102 (57.0)		119 (46.9)	135 (53.1)		91 (50.8)	88 (49.2)		112 (44.1)	142 (55.9)	
Indian	17 (58.6)	12 (41.4)		41 (63.1)	24 (*36.9)		15 (51.7)	14 (48.3)		27 (41.5)	38 (58.5)	
Others	4 (44.0)	5 (55.6)		11 (61.1)	7 (38.9)		6 (66.7)	3 (33.3)		8 (44.4)	10 (55.6)	
Nationality												
Malaysian	187 (46.2)	218 (53.8)	0.525*	204 (49.9)	205 (50.1)	0.378*	184 (45.4)	221 (54.6)	0.523*	174 (42.5)	235 (57.5)	0.109*
Non-Malaysian	6 (60.0)	4 (40.0)		6 (60.0)	4 (40.0)		6 (60.0)	4 (40.0)		7 (70.0)	3 (30.0)	
Marital Status												
Single	85 (47.2)	95 (52.8)	0.924	79 (48.8)	83 (51.2)	0.770	99 (55.0)	81 (45.0)	**0.003**	78 (48.1)	84 (51.9)	0.147
Married	103 (46.2)	120 (53.8)		123 (51.5)	116 (48.5)		88 (39.5)	135 (60.5)		98 (41.0)	141 (59.0)	
Divorced/ Widowed	5 (41.7)	7 (58.3)		8 (44.4)	10 (55.6)		3 (25.0)	9 (75.0)		5 (27.8)	13 (72.2)	
Employment												
Employed	110 (42.8)	147 (57.2)	0.245	130 (48.7)	137 (51.3)	0.780	111 (43.2)	146 (56.8)	**0.001**	120 (44.9)	147 (55.1)	0.216
Retired	11 (52.4)	10 (47.6)		24 (57.1)	18 (42.9)		7 (33.3)	14 (66.7)		15 (35.7)	27 (64.3)	
Housewife	26 (49.1)	27 (50.9)		13 (50.0)	13 (50.0)		18 (34.0)	35 (66.0)		7 (26.9)	19 (73.1)	
Unemployed	46 (54.8)	38 (45.2)		43(51.2)	41 (48.1)		54 (64.3)	30 (35.7)		39 (46.4)	45 (53.6)	
Education Level												
Secondary	31 (40.3)	46 (59.7)	0.263	33 (50.8)	32 (49.2	0.623	37 (48.1)	40 (51.9)	0.905	33 (50.8)	32 (49.2)	0.301
Pre-university	27 (55.1)	22 (44.9)		19 (43.2)	25 (56.8)		22 (44.9)	27 (55.1)		16 (36.4)	28 (63.6)	
Tertiary	135 (46.7)	154 (53.3)		158 (51.0)	152 (49.0)		131 (45.3)	158 (54.7)		132 (42.6)	178 (57.4)	

* Fisher Exact test was used.

Consistent with other research,[18] our study showed that female respondents scored better than male on practices towards COVID-19 in both states.[19] A study in eight countries found that generally women perceive COVID-19 as a dangerous disease in comparison to men and therefore they were found to be more compliant with public policy rules resulting in overall better practices.[20] We anticipated that those who are active in online platforms would be savvier towards COVID-19 and would have overall better practices. In the early stages of COVID-19, studies showed that the elderly was disproportionately at greater risk,[21,22] and therefore we expected the older respondents to have better attitudes and practices. However, we did not see any difference here.

By knowing the zones in the living area, people can prevent themselves from going out without purpose, which can help them to lessen the chance of exposure. When this survey was carried out, most of the respondents were in the green zone. Currently in 2021 almost the whole country is in the red zone, indicating that the disease is widespread.[23] In addition, as in Bangladesh,[24] female respondents in Penang who are married and divorced or widowed scored better in terms of practices. Housewives and those retired in Penang also scored better. Penang has a smaller average household size of 3.7[25] compared to the national average of 4.2. Most of the retired people and those divorced or widowed may be living alone and therefore essential for them to be able to take care of themselves. Hence, they are more inclined to follow good practices.

There is little we can do about the attitudes of people towards COVID-19 as this has to come from within the individual. The only action we can take is to provide them

knowledge which may change their perceptions and practices. Fortunately, almost half of the respondents have good attitudes towards COVID-19 prevention. Initially, face masks and sanitizers were difficult to come by, but with Government's intervention it became easily accessible at an affordable price.[26] In addition, those who do not practice these preventive measures in public are subjected to a fine of about RM1000 or more. So even though attitudes may not be good, the fear of enforcement make one to follow the norms as required.

Our findings show that people are gravitating towards social activities and eating out. As we develop herd immunity with the availability and giving of vaccines against COVID-19, this could be a low-risk activity provided the norms are still followed.[27] Wearing a face mask in public places is mandatory in this country and it is a global activity during this pandemic. Wearing a mask, if worn appropriately, has been shown to reduce transmission of COVID-19.[28] However, as seen elsewhere,[29] reusing face masks or not changing disposable face masks daily is a common practice and this defeats the purpose of wearing them. This is also seen in the attitude of the respondents, most of whom do not like to wear face masks.

We note that despite all the health promotion, good practices were still not fully internalized by the residents in these two states. There is still a percentage of the respondents who have poor attitudes and poor practices. Attitudes may be poor, but practices affect the spread of the disease directly. Even a few people with poor practices are a risk to everyone else. In this study, the only respondent who was tested positive for COVID-19 showed overall poor attitudes and practices, which may have exposed her to the disease.

It is very difficult to predict how people behave. Early in the pandemic, the people had a positive outlook especially in its control. As the pandemic progressed, people become tired of the restrictions placed on them and they may become lax with the continuous precautions they are required to take. With good attitude towards the disease, there is a higher likelihood to adhere to all the measures advised by professional healthcare providers. The governments and the residents' efforts have played a major role in flattening the curve after the second wave. The third wave that started on September 8th, 2020, continues. As time progresses, and more than a year later since the start of the pandemic, people may get weary of all the restrictions in place and may get fed up with the never-ending daily number of cases. They may just give up, "pandemic fatigue" may set in, and unless there is behavioural change towards good practices and these good practices gets internalized by the people, control of COVID-19 will remain a challenge.

LIMITATIONS

We declare two limitations in this study. We used Google forms for the questionnaire, so we had no control over how the forms were distributed online. It would have reached only those who had access to the internet. The questionnaire had all the three main languages – English, Bahasa Malaysia, and Mandarin – incorporated inside. During validation, we were unable to separate for each language to validate the questionnaire separately. In addition, as we are collecting self-reported responses here, there is a possibility of reporting bias as respondents may have given socially desirable answers in the forms.

CONCLUSION

This study reveals that during the third wave of Covid-19 attack of Malaysia, at the period of minimal movement restrictions, more than half of the residents of Penang and Kedah demonstrated overall good attitudes and practices. There was very little difference between the two states implying that targeted actions to ensure that good practices be maintained can be generalized for both. There was a significant but weak correlation between attitudes and practices. Those with poor practices and poor attitudes are a threat as their actions may contribute to the spread of COVID-19. They might be the one who feel that preventive measures are not necessary anymore especially as COVID-19 fatigue sets in and more are getting vaccinated. We recommend that laws should be enforced tightly to ensure all residents continue practicing the new social norm as required. Meanwhile, mass health education and promotions should be continued to keep

our residents up to date with the latest medical information and the need to be vaccinated.

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