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## Preparedness and Attributes of COVID-19 among Malaysian Public during the Movement Control Order

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Article Info

Article history:

Received: 12 April 2021

Accepted: 9 August 2021

Published: 1 October 2021

Academic Editor:

Muhammad Safwan Ibrahim

Malaysian Journal of Science, Health & Technology

Vol. 7, No. 2 (2021)

eISSN: 2601-0003

<https://doi.org/10.33102/mjosht.v7i2.170>

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**Abstract**—The emergence of COVID-19 has affected people worldwide from all angles, from the aspects of health, wealth, emotional and also human interactions. This study aimed to look at the attributes such as positive behaviour, awareness, preparedness and relationships among Malaysians during the implementation of movement control order (MCO), and the predictors of preparedness in facing the COVID-19 pandemic. A cross-sectional study was conducted online involving 317 respondents above the age of 18 years old. A self-administered questionnaire was developed in both Malay and English languages to assess the level of positive behaviour, awareness, preparedness and relationships, as well as their main source of information retrieval regarding COVID-19. Overall, the measured attributes in this study showed the highest level in behaviour (84.2%), followed by awareness (73.5%), preparedness (62.5%) and relationships (60.6%). Multiple regression on preparedness revealed that all variables (behaviour, awareness, and relationships) are significant ( $p < 0.05$ ), while gender is not. The top two sources of information the respondents refer to during the MCO are social and broadcast media. This marks the influence of social and broadcast media in an Industrial Revolution 4.0 era. Despite having good awareness and positive behaviour, the MCO may also have caused relationship issues as well as lower preparation levels in facing a deadly pandemic. It is suggested that future research to look into whether this would have any association with the mental health of Malaysians facing the pandemic. By understanding the attributes related to the MCO during the COVID-19 pandemic, it would help the government in the implementation of policies and procedures in any future pandemic.

**Keywords**— Attributes, COVID-19, Preparedness, Movement Control Order, Relationships

### I. INTRODUCTION

The Malaysian community understands too little about the coronavirus disease virus (COVID-19) when it first emerged in Malaysia in January 2020. Even today, after the 3<sup>rd</sup> wave of COVID-19 has hit the country, some portions of the public are still ignorant of the actual harm that COVID-19 could impose. This has led to the increase in the

summons toward individuals (RM 10,000) and organisations (up to RM 50,000) who violate the standard operating procedure (SOP) of the movement control order (MCO) [1]. This lack of knowledge is alarming and the public health agencies must respond aggressively. Furthermore, it has been documented that understanding the perception of the public toward infectious disease threats would contribute to the ability of the Ministry of Health

(MOH) to determine knowledge gaps to be addressed in public health awareness campaigns. Malaysia MOH has committed a lot of resources toward effectively containing the outbreak, preventing COVID-19, and promoting health through public education. Despite these efforts, to obtain a collective responsibility by the public health community in Malaysia to raise public awareness toward this disease, more public involvement is needed.

Malaysia has undergone a few phases of Movement Control Order (MCO) over the last one year, to contain the spread of COVID-19. The first MCO dated back on 18 March 2020 and extended until June 2020. Even as at July 2021, conditional MCO still applies to certain areas, focused on large cities, with a sustained number of new COVID-19 cases daily. While other areas are undergoing recovery MCO. With the ongoing MCO and its restrictions, many are affected emotionally [1], leading to increased domestic and social problems locally [2] and worldwide [3]. Thus, it is important to continuously ascertain the public's awareness periodically and to evaluate how much impact the pandemic has caused on their behaviour, preparedness, awareness and relationships.

Locally, past coronavirus pandemic has shown that educating the public with clear information is important to avoid misperceptions and improved precautionary measures to avoid infections [4]. In Saudi Arabia, the coronavirus pandemic has taught that frequent two-way communication between health care providers and the public is a good way to help break myths about the disease, at the same time to provide ample information in curbing the disease [5]. Thus, it is important to continuously ascertain the public's awareness periodically and to evaluate how much impact the pandemic has caused on their behaviour, awareness, preparedness and relationships in subsequent pandemics.

To the best of our knowledge, this study is among the first few, exploring the public's level of awareness about COVID-19 in Malaysia, in relation to their preparedness, behaviour and how it has affected relationships. The following research questions and hypotheses were formed:

1. What is the behaviour of Malaysians towards COVID-19 during MCO?
2. What is the level of awareness of Malaysians regarding the COVID-19 pandemic?
3. What is the effect of MCO on the relationship among Malaysians?
4. What is the preparedness level of Malaysians in facing the COVID-19 pandemic?

#### **Hypothesis 1: Behaviour**

$H_0$  : Malaysian public do not demonstrate positive behaviour towards the COVID-19 pandemic.

$H_A$  : Malaysian public demonstrate positive behaviour towards the COVID-19 pandemic.

#### **Hypothesis 2: Awareness**

$H_0$  : Malaysian public are not well aware about the COVID-19 pandemic.

$H_A$  : Malaysian public are well aware about the COVID-19 pandemic.

#### **Hypothesis 3: Relationship**

$H_0$  : Malaysian public do not have a better relationship with family and God as a result of the COVID-19 pandemic.

$H_A$  : Malaysian public have a better relationship with family and God as a result of COVID-19 pandemic.

#### **Hypothesis 4: Preparedness**

$H_0$  : Malaysian public are not well prepared in facing the COVID-19 pandemic.

$H_A$  : Malaysian public are well prepared in facing the COVID-19 pandemic.

Consequently, by gaining this information, it would contribute to making strong recommendations on effective strategies to get the community involved in efforts to control COVID-19 infection and other pandemics.

## II. MATERIALS AND METHODS

### A. Methodology

This cross-sectional survey was conducted for 6 months between Mei and October 2020, after gaining ethical approval. Since it was not feasible to execute a community-based national sampling survey during the MCO period, we decided to collect the data online.

Sample size calculation was done based on population survey formula, using **Epi Info Version 5.5.5 (CDC, Atlanta, USA)**. With a 50% expected frequency, 90% confidence interval and 5% margin of error, 270 is considered is a sufficient number for the sample size of this study.

A one-page description and link of the Google form were posted and re-posted to public groups and/or pages on WhatsApp, Instagram, Telegram and Facebook. This description contained a brief introduction on the background, objective, procedures, voluntary nature of participation, confidentiality, notes for filling in the questionnaire, as well as the link to the online questionnaire. Inclusion criteria were those above 18 years of age, Malay or English literate. Overall, 317 respondents were obtained. The flow chart of the study is portrayed in Fig. 1.

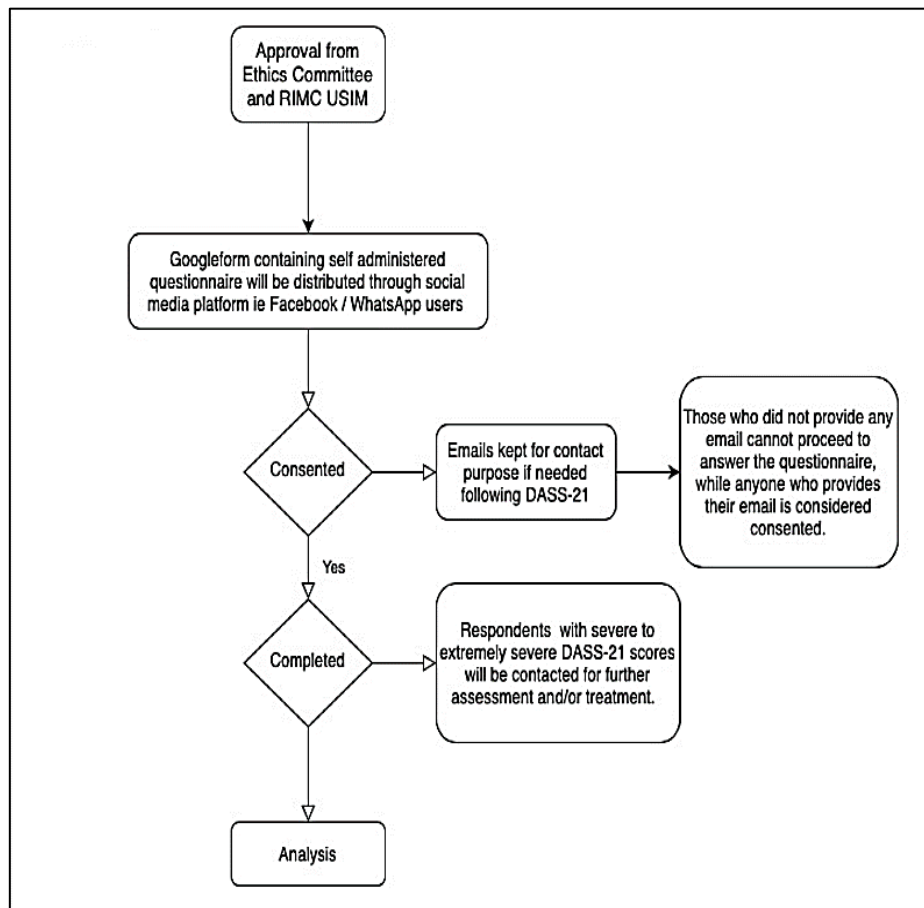


Fig. 1 Flow chart of the study

### B. Questionnaire

The self-administered questionnaire was developed in both the Malay and English languages after a thorough search of relevant recent literature on public behaviour, awareness, preparedness and relationships. Both the English and Malay versions were proofread and validated by medical professionals. The questionnaire was translated (English-Malay) and back translated (Malay-English) to guarantee the questionnaire's face validity. Subsequently, it was piloted among 30 respondents, which were deemed sufficient for its validity [6]. Reliability testing revealed a Cronbach alpha of 0.699 for behaviour, 0.775 for relationships, 0.837 for preparedness and 0.667 for awareness. The questionnaire is designed to contain 5 parts which included socio-demographic information (age, gender, ethnicity, occupation, number of people in the household), three questions on the participants' behaviour towards COVID-19, four questions on the relationship with family and God during MCO, four questions on awareness, and five questions on their preparedness towards this pandemic. A Likert scale (1 = Strongly disagree, 2 = Disagree, 3 = Not Sure, 4 = Agree, 5 = Strongly agree) is used in the questions to measure the variables. One question was asked on the sources of news (social media, broadcast media such as television or radio, family or friends, agencies or ministries, and healthcare personnel) that

participants referred to with regards to COVID. For this question, two maximum answers were allowed. The questionnaire items for behaviours, awareness, relationship, and preparedness are shown in Table I.

### Ethical Issues

The study gained ethical approval from the Research Ethics Committee of Universiti Sains Islam Malaysia on 22 May 2020, with **ethical approval number: (USIM/JKEP/2020-93)**.

### Data Analysis

Data entry and statistical analysis were performed using Statistical Package for Social Science (SPSS™) for Windows (IBM Corp. Released 2019. IBM Statistics for Windows, Version 26.0, Armonk, NY: IB Corp). Descriptive statistics, such as modes, frequency and percentages were calculated. Modes were calculated in this study due to the number of Likert items used is less than 11. According to Wu and Leung, for ordinal data to be more generalised, the number of Likert items must be about 11, where means can be calculated [7]. Multiple regression analysis was performed to determine the significant predictors of preparedness. Statistical significance will be considered at a  $p$ -value of less than .05 for all analyses.

TABLE I  
QUESTIONNAIRE ITEMS OF BEHAVIOUR, AWARENESS, RELATIONSHIP AND PREPAREDNESS DURING COVID-19

Questions	Options
<b>Behaviour</b>	
I am more concerned about my cleanliness (wash hands, sanitize, facemask).	5 point Likert scale
I have obeyed the Movement Control Order (MCO) as ordered by my government and am fully staying at home	5 point Likert scale
I double-check the information I receive regarding COVID-19 to ensure that I do not spread the wrong information	5 point Likert scale
<b>Awareness</b>	
I own a hand sanitizer, which I carry with me wherever I go.	5 point Likert scale
I am aware and follow the steps to wash hands the right way.	5 point Likert scale
I am aware of the right source of information.	5 point Likert scale
I own a facemask which I wear all the time to avoid catching the COVID-19 virus.	5 point Likert scale
<b>Relationship</b>	
During Movement Control Order, I have spent quality time at home with my family.	5 point Likert scale
During Movement Control Order, I have spent quality time obeying my religion.	5 point Likert scale
During Movement Control Order, I have spent quality time catching up with family members/friends/colleagues/neighbours.	5 point Likert scale
During Movement Control Order, I utilized this time to redeem the lost precious time not spent with my family members, due to previously being highly busy with my work or other commitment.	5 point Likert scale
<b>Preparedness</b>	
I made sure to have enough food supply at home to last during the pandemic duration prior to Movement Control Order.	5 point Likert scale
I discussed with a friend/family member on what we need to do if one of us catches the COVID-19 virus.	5 point Likert scale
I know the main symptoms of COVID-19 (fever, cough, sore throat), and am prepared to get a further assessment from health personnel.	5 point Likert scale
I am aware of the nearest healthcare/hospital location and phone number to seek medical assistance if I fall sick with symptoms of COVID-19.	5 point Likert scale
I have enough information on what to do if my family members or I fall ill during the Movement Control Order	5 point Likert scale

### III. RESULTS AND DISCUSSION

Descriptive statistics as shown in Table II, illustrates the socio-demographic profiles of respondents in the study. In terms of gender, the majority of the respondents are female with a total of 80%. This is similar to a study by Nor et al, that was done earlier during the MCO and had more female respondents compared to males [8]. Looking at marital status, the respondents are mostly single (74.4%); while 24.6% are married, while 0.946% are in the 'others' category. Correspondingly, the main group of the respondents who answered the survey consist of those who are in the 18-30-year-old group while a minor portion is from the >50-year-old group. This is also related to the respondents' education level, as half of the total respondents consist of those who have bachelor's degree (53.6%).

Most participants reported using social media, and broadcast media i.e. television, radio, which received the highest combination ( $f=118$ ). This is not also in compliance with the study by Nor et al, where the top sources of information were social media and electronic media [8]. Surrounding contacts and social media was the second-highest combination in this study ( $f=32$ ), while agencies or ministries and social media ( $f = 28$ ) were the third chosen combination. The remaining seven combinations were too varied as portrayed in fig. 2.

The following discussion will highlight the objectives and attempt to answer each of them chronologically. The first objective is to find out the level of positive behaviour and awareness of Malaysians towards COVID-19 during the MCO period earlier in 2020. The items included for behaviour are related to statements on cleanliness, remaining at home, and making sure that the correct information received on any news related to the pandemic.

Table III illustrates that Malaysians tend to follow the Standard Operations Procedure (SOP) in relation to the COVID-19 phenomenon, as 84.2% of the respondents strongly agree that they observe and comply with either the aspects of cleanliness, remain staying at home and ensure they get the correct information on the pandemic news. Only 0.6% of the respondents strongly disagree with the same attributes included under behaviour. The act of remaining at home and observing cleanliness during a pandemic are considered to help reduce transmission of disease. However, another study by the Institute for Health Behavioural Research, Ministry of Health Malaysia (MOH) found that up to 85.5% of their respondents spend more than 30 minutes of their daily routine for screen time, and almost half had eaten more than usual whilst at home [9], which could lead to health problems. In one systematic review found that several factors were associated with poor

knowledge, attitude and practice skills during the pandemic, including the level of education, gender, religion and marital status [10], which were not ascertained in this study. A study in China and Egypt also found that better knowledge, attitudes, and practices were among those of the higher socioeconomic status [11, 12].

TABLE II  
SOCIO-DEMOGRAPHICS PROFILE OF RESPONDENTS

Variables	Categories	Frequency (N=317)	Percentage (%)
Gender	Male	64	20.2
	Female	253	79.8
Marital Status	Single	236	74.4
	Married	78	24.6
	Others	3	0.946
Age Group	18-30 years old	234	73.8
	31-40 years old	46	14.5
	41-50 years old	24	7.6
	>50 years old	13	4.1
	Primary School	1	0.3
Education Level	SPM / Vocational	15	4.7
	Diploma/A-level/STPM/Matriculation	73	23
	Bachelor's Degree	170	53.6
	Master's Degree	46	14.5
	PhD/Doctorate/Subspecialty	12	3.79
Income (RM)	< 2000	104	32.8
	2001-4000	64	20.2
	4001-6000	51	16.1
	6001-8000	32	10.1
	8001-10,000	22	6.9
	>10,001	33	13.9

TABLE III  
BEHAVIOUR LEVEL OF MALAYSIANS DURING MCO PERIOD

Scale	Frequency (N=317)	Percentage (%)
Strongly Disagree	2	0.6
Disagree	0	0
Neutral	6	1.9
Agree	34	10.7
Strongly Agree	267	84.2
No Mode	8	2.5

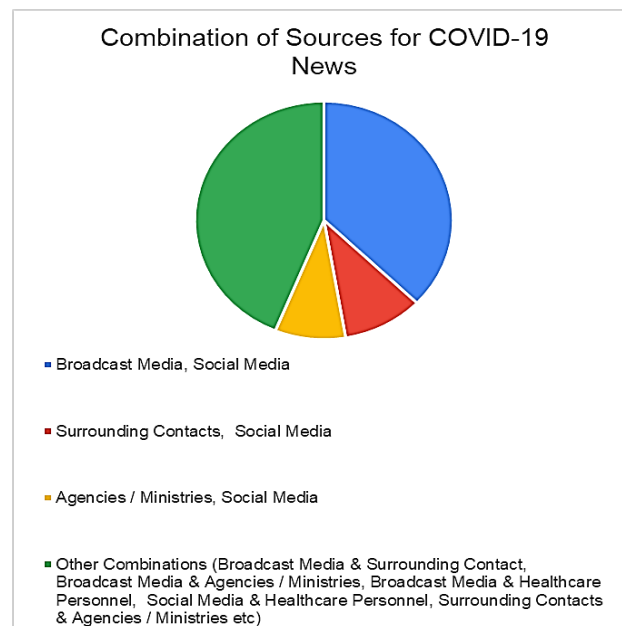


Fig.2 Combination of sources for COVID-19 news

For awareness, the items included in the survey are related to the use of hand sanitizer, awareness of the steps for handwashing, awareness of the information and data related to deaths and infected persons, and awareness on wearing masks. Similar to behaviour, respondents from the Malaysian public are considered aware of the items mentioned in this variable, with 73.5% who strongly agree with the statements on awareness and 19.6% who agree; as shown in Table IV. Only a minor 1.3% considered strongly disagree with these statements. From the Institute for Health Behavioural Research, MOH, it was noted that there was similar awareness toward responsibility toward COVID-19 preventive measures such as handwashing, wearing facemasks and sanitizing [9]. This shows that the respondents had received adequate information on the awareness of COVID-19 SOPs that should help to contribute to control the transmission of COVID-19 at the community level. These findings are quite similar to a study by Wong et al, where from a total of 352 respondents in Hong Kong, more than 80% are considered to practice social distancing and the wearing of masks [13]. Additionally, Zhong et al also found that the level of awareness and knowledge on the pandemic among respondents in China are quite high, where 98% wore masks while the knowledge score is 90% [11].

TABLE IV  
AWARENESS LEVEL OF MALAYSIANS DURING MCO PERIOD

Scale	Frequency (N=317)	Percentage (%)
Strongly Disagree	4	1.3
Disagree	0	0
Neutral	13	4.1
Agree	62	19.6
Strongly Agree	233	73.5
No mode	5	1.5

Secondly, the objective is to identify the relationship variable in connection to the MCO. Table V shows the same analysis on the relationship. It can be seen that results for relationship are consistent with behaviour and awareness variables; where 60.6% strongly agree on the statements relating to quality time with family, religious activities, friends and neighbours. However, this is lower compared to the behaviour and awareness variables as discussed above. There is still a paucity of research looking at relationships during COVID-19 especially in Malaysia. However, due to the raising concerns of domestic problems during the MCO, the authors would like to suggest that relationship issues are contributory to psychosocial problems. Relating this to mental health, a study done by Pieh et al noted that relationship per se was not associated with better mental health, however, the quality of the relationship was essential. Compared to no relationship, a good quality relationship was a protective factor for mental health [14].

Another study in Jordan revealed that social relationships are being compromised due to COVID-19 and may lead to negative health implications [15]. This certainly fits with the ongoing domestic violence problems that are seen to rise in the news during the MCO in Malaysia [2]. Not only is this happening locally but is also endemic to other countries [16].

TABLE V  
RELATIONSHIP LEVEL OF MALAYSIANS DURING MCO PERIOD

Scale	Frequency (N=317)	Percentage (%)
Strongly Disagree	5	1.6
Disagree	14	4.4
Neutral	25	7.9
Agree	79	24.9
Strongly Agree	192	60.6
No Mode	2	0.6

Table VI depicts the results related to preparedness level. This variable is based on statements relating to how well the public is prepared in terms of food supply, preparation if any family members get infected, knowledge on further health check-ups and information on COVID-19 and contact numbers to call for COVID emergencies. From the results, it can be summarized that the preparedness level of respondents in the study is also above average. This is also in keeping with the findings in a study done by the Institute for Health and Behavioural Research, MOH, where the respondents were found to have good preparedness if they or their family members were to fall sick [9]. However, the reported mode is still comparatively lower than behaviour and awareness components and could explain why in reality community cases continued to rise during the time this study was conducted, whereby cases in the central region of the country doubled on average, every five days, in November to December 2020,

TABLE VI  
PREPAREDNESS LEVEL OF MALAYSIANS DURING MCO PERIOD

Scale	Frequency (N=317)	Percentage (%)
Strongly Disagree	4	1.3
Disagree	7	2.2
Neutral	23	7.3
Agree	85	26.8
Strongly Agree	198	62.5

Multiple regression analysis was conducted to see the relationship between awareness, relationship, behaviour and gender on preparedness. From table VII, it can be concluded that all variables included, except gender are significant towards the preparedness, with each giving a *p*-value of less than 5%. The R squared value is 0.573 in the regression which means that all variables included explaining 57.3% of the preparedness variable. In other words, the statements on awareness, relationship, and behaviour are significant towards the preparedness level amidst the COVID-19 phenomenon.

TABLE VII  
PREPAREDNESS LEVEL OF MALAYSIANS DURING MCO PERIOD

Model	Unstandardized Coefficients		t	Sig.
	B	95% CI for B		
(Constant)	.40	(-.37, 1.1)	1.02	.31
Awareness	.34	(.19, .45)	4.46	.00
Relationship	.29	(.20, .39)	6.25	.00
Behaviour	.22	(.03, .40)	2.30	.02
Gender	.10	(-.09, .30)	1.04	.30

a. Dependent variable: Preparedness  
b. R<sup>2</sup> = 0.573

#### IV. CONCLUSION

The strength of our study is that it adds to our knowledge some information regarding relationships of respondents during the MCO as a result of the COVID-19 pandemic. The limitations of this study would be the lower number of sample size despite the long duration of data collection. Also, as it was distributed online, and relying on the authors' networks, the respondents are not able to represent the true Malaysian population and only capturing those who have access to the internet and mentioned applications. To conclude, the respondents' level of preparedness, behavior, awareness, and relationships were considerably high. However, levels of relationships and preparedness are lower compared to the other two variables. Due to this, it can be postulated that despite having good awareness and positive behavior, the MCO also may have caused relationship downfalls as well as lower preparation levels in facing a deadly pandemic. Despite this, behavior, awareness, and relationships showed a significant association toward preparedness. It is suggested for future research to investigate whether these attributes would have any association with human mental health. Perhaps to present more clarity to this, a qualitative assessment could be executed.

## CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this paper.

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