The Effectiveness of COVID-19 Public Health Campaigns by The Ministry of Health Malaysia: An Exploratory Study in a University Campus

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Abstract

In Malaysia, public health campaigns are organized to educate the public about the danger of the COVID-19 pandemic and the government policies to contain a further spread of the pandemic, including the mandatory wearing of face masks in crowded public areas. The campaigns are also aimed at creating awareness among the public of the need to break the pandemic chain. The motto of 'prevention is better than cure' forms Malaysia's basis to strategize, implement, and execute public health campaigns. The aim of this study is to determine the level of knowledge, awareness, perception, attitude, and behavior of International Islamic University Malaysia (IIUM) community towards COVID-19. An online survey was conducted from July 3 to 13, 2020, involving 110 staff and students of IIUM as the respondents of the study. Results showed that the campaigns have been successful as the IIUM community has used the campaigns to be more informed about COVID-19 and more proactive in breaking the pandemic chain, including changing their unhealthy lifestyle, besides being ready to cooperate in observing the Standard Operating Procedures (SOP) implemented by the government as a source of information that educates the public on the pandemic.

Keywords: *COVID-19, Government Policy, Malaysia, Public Health Campaign, Public Relations*

Keberkesanan Kempen COVID-19 oleh Kementerian Kesihatan Malaysia: Kajian Rintis di Kampus Universiti

Abstrak

Kempen kesihatan awam untuk mengekang penularan pandemik COVID-19 di Malaysia adalah bertujuan mendidik orang awam tentang bahayanya dan memaklumkan polisi kerajaan seperti pemakaian topeng muka dalam khalayak awam. Kempen itu juga menyasarkan kesedaran masyarakat bagi melandaikan keluk penyebaran pandemik. Motto 'mencegah itu lebih baik dari mengubati" telah menjadi asas untuk menyusun strategi, merancang, dan melaksanakan kempen kesihatan awam ini. Oleh itu, kajian rintis ini dijalankan untuk menentukan tahap pengetahuan, kesedaran, persepsi, sikap dan perlakuan dalam kalangan komuniti di Universiti Islam Antarabangsa Malaysia. Kajiselidik secara dalam talian dilaksanakan pada 3 sehingga 13 Julai 2020 yang melibatkan 110 kakitangan dan para mahasiswa. Dapatan kajian awal ini menunjukkan kejayaan kempen kesihatan itu kerana lebih ramai ahli komuniti di kampus kajian mempunyai maklumat dan lebih proaktif untuk memutuskan rantaian virus berbahaya yang mengancam nyawa ini. Para responden didapati lebih cenderung mengamalkan gaya hidup yang sihat dan bersiap siaga untuk bekerjasama dalam mematuhi prosedur standard operasi (SOP) yang dikuatkuasakan oleh kerajaan melalui kempen yang menjadi sumber maklumat untuk membanteras penularan COVID-19 daripada terus merebak.

***Kata kunci**: COVID-19, Polisi kerajaan, Malaysia, Kempen Kesihatan Awam, Perhubungan Awam*

Introduction

Background of the Study

The novel coronavirus or COVID-19 was first detected in late December 2019 in Wuhan, China. It has now infected more than 15.4 million people globally, with global death reaching 631,015 persons by July 23, 2020 (Worldometers, 2020). The pandemic is the most severe flu virus since the *Spanish Flu* pandemic in 1918. In Malaysia, what began as a small wave of 22 cases in January 2020 brought into the country by tourists from China was followed by a bigger wave of more than 900 cases by March 2020. The country had recorded 8,804 cases by July 27, 2020, with 124 deaths in just seven months (Majlis Keselamatan Negara [MKN], 2020).

The following wave that caused an unexpected increase in the number of cases was due to a mass gathering in a mosque in Seri Petaling, Kuala Lumpur. It forced the Malaysian government to impose a stringent approach by introducing the Movement Control Order (MCO) or limited lockdown beginning on March 18, 2020, as a measure to mitigate the spread of the disease. The lockdown aimed to suppress the trajectory of the pandemic cases and to prepare the public healthcare system to accommodate the surge in the number of patients (Salim et al., 2020).

The MCO is divided into four phases: (1) MCO or limited lockdown, (2) Enhanced Conditional Movement Control Order (EMCO), (3) Conditional Movement Control Order (CMCO), and (4) Recovery Movement Control Order (RMCO). The first phase of the MCO, which lasted until May 4, 2020, created a major socio-economic disruption. Universities and schools were closed, and people were told to stay indoors at home. All sports and recreational activities were banned; border and air-space were closed; movements between states were prohibited; public transportations were halted; and authorities conducted hundreds of roadblocks and apprehended those who violated the orders. The MCO effectively restricted all non-essential activities. The public was only permitted to leave their house for basic activities, such as buying groceries and seeking medical treatment.

During the lockdown, the Crisis Preparedness and Response Centre (CPRC) under the National Security Council (MKN) and the Ministry of Health Malaysia (MOH) intensified their public health campaigns. The main purposes were to feed the public with the latest news and information on policies, methods, and actions taken by the authorities while people were put under the lockdown and to influence people to make significant behavioral changes to prevent the virus from spreading further. The health campaigns were focused on educating the public on personal hygiene like washing hands, wearing a face mask, and maintaining a social distance whenever in crowded places. In addition, the campaigns also informed the categories of COVID-19 victims treated in the hospitals and those who would be quarantined in more than 150 quarantine centers around the country.

Problem Statement

The measures initiated under the MCO were perceived as necessary to curb the virus's spread as rapid human-to-human transmission occurred and much about the virus remained unknown (Azlan, 2020). Further, due to the novel coronavirus's unknown identity, there has been much confusion and misunderstanding about the virus. The vast amount of misinformation and disinformation shared on social media, which clouds people's understanding of the virus, has posed immense challenges to the authorities (Azlan, 2020). Hence, a study on knowledge, perception, awareness, attitude, and practices towards COVID-19 plays an integral role in determining public readiness to accept behavioral change measures from the authorities. However, before knowing the readiness of the public and the effectiveness of the MOH health campaigns against COVID-19 pandemic, a few questions are posted. As a case study, the International Islamic University Malaysia (IIUM) community was selected because most the students and staff are Muslims and cleanliness is expected to be a part of their daily life routine. Furthermore, they are supposed to follow and obey the SOP set by the MOH as long as the rules and regulations provided support the health practices and preventive actions without contradicting the teachings of Islam. So, what is the level of knowledge, awareness, and

perception of COVID-19 Public Health Campaigns by the Ministry of Health Malaysia among IIUM community? Does the IIUM community have good attitude and behavior towards COVID-19 Public Health Campaigns by the Ministry of Health Malaysia?

Objectives of the Study

Based on the problem statement of the study, the following objectives are put forth. They are:

1. To determine the level of knowledge, awareness, and perception of COVID-19 Public Health Campaigns by the Ministry of Health Malaysia among IIUM community; and
2. To ascertain the level of attitude and behavior of the IIUM community regarding COVID-19 Public Health Campaigns by the Ministry of Health Malaysia.

Significances of the Study

Assessing the knowledge, perception, awareness, attitude, and behavior related to COVID-19 preventive actions taken among the IIUM community would provide an insight that would help in addressing the level of understanding about the disease, the development of preventive strategies, the effectiveness of health promotion programs, and how to engage them for better health campaigns (Azlan, 2020). Also, the results this study are expected to be important in informing future efforts about the readiness of the IIUM community to adhere to any immediate pandemic control.

This study is expected to add knowledge, information, and understanding of how the public educate themselves with the public health messages that they received about the pandemic. This study is also expected to provide a valuable input, which will hopefully help the relevant parties in designing communication strategies that would ensure that the IIUM community readiness to face the implications of the pandemic if the MCO is lifted on December 31, 2020.

Literature Review

Improved Knowledge is Key to Contain the Pandemic

Knowledge applies to facts or ideas acquired through a study, investigation, observation, or experience (Merriam-Webster, 2020). Public knowledge towards COVID-19 plays an integral part in determining public readiness to accept behavioral change measures introduced by the health authorities (Azlan, 2020).

Assessing the public knowledge of COVID-19 would help gain insight into their current level of knowledge. Poor knowledge about the disease prevention strategies implemented, such as ignoring compulsory home quarantine for oversea travelers once landed and disregarding health safety campaigns, means that the public is not ready to adapt to the new normal once the MCO is lifted on December 31, 2020. Cases like a lady in Ipoh, Perak, who did not home quarantine herself and quarantine wristbands found on the floor of Kuala Lumpur International Airport (KLIA) highlight both poor knowledge and attitude among the public (Taiming, 2020).

Initially, when the MCO was declared, Malaysians reacted with panic and confusion. People made panic buying, prices of face masks skyrocketed, and some people had traveled back to their hometown as the MCO announcement coincided with the school holidays. All these reactions to the MCO could increase the risk of infection to other parts of the country. While these reactions are expected, it raises questions regarding the level of understanding, awareness, perception and attitude towards COVID-19 among the public.

When the public has proper knowledge about the disease, the authorities will be able to determine the kind of preventive measures to adopt, which public health campaign areas to concentrate, and the type of intervention that may be required to change misconceptions about the virus.

Increased Public Awareness is Key to Successful Public Health Campaigns

Research on social marketing campaigns found that public campaigns can create awareness among people (Seymour, 2017). Social marketing can be used to achieve many potential objectives, not only in shaping individual health behaviors but also in changing the attitudes of policymakers and stakeholders who influence the legal environment for health (Duplaga, 2019). Public understanding, awareness, and cooperation are important for any government to be able to maneuver their country away from communicable diseases, especially from a pandemic that is giving a serious threat to the public health system, public safety, and economy. Over the last 100 years, the influenza pandemic has remained the most feared by politicians, policymakers, and health practitioners alike, unlike other communicable diseases such as HIV/AIDS, severe acute respiratory syndrome (SARS), and Ebola (Kamradt-Scott, 2012).

The Malaysian government has devised strategies to enhance public understanding of the danger of the COVID-19 pandemic and to get public support to contain the virus from spreading further. Under the MCO, the government only allowed essential businesses —particularly healthcare, food, energy, security, and defense — to operate. The country's border and air space were closed, thus shutting down all cross-border transportations. The stringent MCO was later followed with the Conditional Movement Control Order (CMCO), which began on May 4, 2020 and ended on June 9, 2020. Starting from June 9 until August 31, 2020, the government had implemented the Recovery Movement Control Order (RMCO) where all business sectors, sub-sectors, industries, social events, non-contact sports, and recreational activities were all allowed to operate. However, the country's border is still closed for international traveling, with the air space being restricted for domestic traveling only (2020 Malaysia Movement Control Order, 2020).

The steps taken by the Malaysian government are similar to the ones taken by the Korean government. South Korea has a successful history in implementing lockdowns and rigorous public health campaigns on

the COVID-19 pandemic. The government has made COVID-19 testing mandatory, implementing expansive testing technology and educating its people on testing. There is no treatment and no immunity, and therefore, there is no easy way out for the public to escape from the danger of the pandemic. By March 2020, South Korea had reduced the number of daily positive cases from 800 to 100 cases. The key success factor for South Korea is that the public trust the government to manage this particular crisis. The South Korean Ministry of Health held its briefings daily and delivered thousands of public messages to update the public and to convey best practices to curb the pandemic. These briefings were held by medical practitioners, not politicians (Thomson, 2020).

The MCO is a very important mechanism to contain the pandemic from exhausting the public health system. Public awareness is important to break the pandemic chain. Public health messages, organized daily during the MCO and CMCO, are important to inform, educate, create awareness, and ask the public to take appropriate actions. The government not only communicates through public campaigns but also implements enforcement measures to contain the pandemic. Due to these efforts and improved public awareness, the COVID-19 active cases dipped to 344 cases in June 20, 2020 from 1,014 cases in March 2020. As of July 17, 2020, the total number of active cases was 92 cases, while the total number of deaths was 122 victims. Since the beginning of the pandemic in Malaysia until July 17, 2020, a total of 8,541 patients had recovered (97%) from a total of 8,755 reported cases (MKN, 2020).

Public Perception of the Effectiveness of Public Health Campaigns

During the writing of this paper, the governmental responses range from social distancing and hygiene advice to border control and complete lockdowns of the general population. These measures or responses aim to protect the national health services from becoming overwhelmed by a sudden onslaught of cases. Yet, from past pandemics, the success of policies in slowing down the rapid transmission of a highly infectious disease relies, in part, on the public having accurate perceptions of personal and societal risk factors. In fact, collectively, public behavior can fundamentally influence and alter the spread of a pandemic (Dryhurst, 2020).

Compared to 100 years ago, public health messages such as on the Spanish Flu 1918 pandemic were organized and disseminated differently. The US city of Philadelphia, for instance, distributed 20000 flyers warning about the transmission of influenza in 1918. Nowadays, information about the COVID-19 pandemic is sent quickly around the world, and efforts to inform and educate the public are led by all governments worldwide, unlike before, where governments had little to no role in ensuring public health safety. How public health campaigns are organized today are totally against the widely accepted view that it is the media that plays a crucial role in framing public health debates and in shaping public perceptions by selecting which issues are reported and how they are represented (Kamradt-Scott, 2012).

To improve public perception of the effectiveness of public health, the campaigns must be easily and quickly accessible by the public, which would ensure the effectiveness of using the information. The public usually uses several media sources to obtain information about the government and its strategies. These sources are important because the medium through which the public receives a message shapes them. Young adults prefer to receive public health messages through the Internet, especially through the social media campaigns organized by the Malaysian government. Older people mostly prefer receiving campaign messages from online newspapers and/or television.

Public Health Campaigns Induce the Public Behavioral Change

The lockdown decision by the government was immensely supported by the general public. A survey conducted by MKN on May 12, 2020, found that from a total of 283,042 respondents, 47% supported that the MCO or CMCO be continued, 24% wanted it to be tightened, while only 20% wanted it to be loosened and the remaining 9% wanted it to end (MKN, 2020). Interestingly, an online petition on May 1, 2020, by *Rakyat Malaysia Prihatin* on a similar note showed that 423,582 signatories wanted the MCO to continue despite government plan to relax the MCO with the introduction of the CMCO (Lim, 2020). Both survey results amplify that the general public was worried that easing the MCO would cause an increase in the number of positive cases.

The focus of COVID-19 public health campaigns by the MOH has always been about educating the public and raising their awareness on the best approaches to control the virus from spreading further. These public health campaigns and messages are later published by the mainstream media and shared with the masses. Yet, some people are not attentive enough of the government efforts to contain the virus from spreading to a dangerous level (Hanafiah, 2020). It is important that the news coverage of current health issues help provide the public with accurate, up-to-date health information so that individuals would be more capable of making informed health decisions (Willis, 2014).

Studies and research on various public health issues such as communicable diseases indicate that public health campaigns affect the public health behavior (Hornik, 2002). Public health campaigns are generally aimed at changing knowledge, awareness, and attitude, contributing to behavioral changes. Changing public motivation and attitude about health issues requires ensuring that contents are developed with styles that are not only informative but also threatening to a certain extent to support or warn of certain dangers if the advice is not complied to accordingly. Strategically designed messages inform, persuade, and influence the target audience's knowledge and awareness, leading to profound changes in public attitude and behavior (Robinson et al., 2014).

The public is ready to change their behavior when they know that there is support behind them that is willing to help them out to a new path that is unknown to them. The public may see COVID-19 as a pandemic that requires them to change their routines to an unknown new normal; if the authorities are supportive of this change, they will know that the authorities are on their side (PWC, 2020).

The MCO, CMCO, EMCO, and RMCO require the public to change their behavior to adapt to the new norms, as their normal norms are no longer suitable in the current situation. If they fail to change, they will risk facing more problems (Wakefield, 2010)

Theoretical Framework

This study used the situational theory of publics (Grunig, 1966). This theory proposes that the publics can be divided into four types: (1) non-public, (2) latent-public, (3) aware public, and (4) action public. Each type of public has a different way of gathering and reacting to information, from the most active to the most passive. The key concepts explain why certain publics are active while others remain passive in searching for information (Grunig, 1997).

Three specific variables determine a person's inclusion into any one of the four publics, namely, (1) problem recognition, (2) constraint recognition, and (3) level of involvement (Grunig, 1997). Each of the four publics has a different way of gathering information about a situation. The publics also have different responses to a situation after processing the information (Aldoory et al., 2010).

MKN through its official *Telegram* found that on April 3, 2020, individuals believed that their local community was abiding by the MCO rules and regulations, including the Standard Operating Procedures (SOP), where from a total of 30,562 respondents, 98% agreed that they were abiding by the MCO. The theory helps to point out why public responses towards the SOP, such as 14-day quarantine, social distancing, and washing hands are uncertain despite information has been widely communicated to them. Indeed, some individuals were found to have breached the SOP. Throughout July 2–4, 2020, 173 individuals were apprehended for violating the RMCO.

Research Methodology

Research Design

This study employed a quantitative research design using a survey method with an online questionnaire as the research instrument for data collection. The quantitative research design has specific well-structured items which have been tested for their validity and reliability, and could be explicitly defined and recognized (Kumar, 2011). The quantitative research approach is able to create minimum bias in data, thus increasing trust in the accuracy of the collected data.

The type of research design used is the descriptive design, which aims to describe the situation or case being studied. It is a theory-based design method created by gathering, analyzing, and presenting the collected data. The descriptive design is a type of research that describes a population, situation, or phenomenon that is being studied. It focuses on answering the *how*, *what*, *when*, and *where* questions of a research problem (Kumar, 2011). The descriptive design helps others understand better the need for the research.

Population and Sampling Procedure Technique

The study population comprised students and staff of the International Islamic University Malaysia (IIUM) community at the Gombak campus. The respondents were identified through an online survey questionnaire distributed using social media, such as *WhatsApp* and *Twitte*r, based on the networking sampling technique. The survey was conducted from July 3 until July 13, 2020 and garnered 110 respondents. Due to the COVID-19 pandemic, the whole country, including universities, was under lockdown. Hence, some staff members were allowed to work from home and students were banned from entering and leaving the university. This sample size is considered as a subset of the population representing the IIUM community.

Research Instrument and Measurement

The questionnaire consisted of five parts. Part A explored the respondents' demography, such as gender, age, and nationality. Part B1 tapped on the respondents' knowledge and awareness. Part B2 elucidated the respondents' perceptions. Part B3 measured the respondents' attitude, and finally, Part B4 gauged the respondents' behavior/action.

Each variable of **knowledge, awareness**, **perception**, **attitude**, and **behavior** consisted of seven items and was measured on a 5-point Likert scale, where 1 = *strongly disagree*, 2 = *disagree*, 3 = *slightly agree*, 4 = *agree*, and 5 = *strongly agree*. An example of the items for **Knowledge** is "I access the Ministry of Health Malaysia (CPRC)'s social media accounts, i.e., Facebook, Twitter, and Telegram to get information on the COVID-19 pandemic in Malaysia."

As for **awareness**, an example of the items is "The campaigns have improved my awareness about the COVID-19 pandemic, e.g., social distancing and wearing a facemask in public areas." For **perception,** an example of the items is "If I follow the SOP like social distancing and practice good personal hygiene, I will not get infected by the virus." An item for **attitude** is "I agree that the campaigns have persuaded me to change my lifestyle because of the pandemic, e.g., eat healthy food and meet with my physician regularly." Finally, an example of **behaviour** items is "I trust the government on public health messages they sent."

Validity and Reliability

The instrument was tested for face validity by getting an expert in measurement to assess the questionnaire. The items for each variable were tested for reliability using Cronbach's alpha. Table 1 shows that the reliability values range from .655 to .845. Hence, it can be concluded that behavior (α = .845), knowledge (α = .822), and attitude (α = .760) are very reliable while awareness (α = .692) and perception (α = .655) are acceptably reliable.

Table 1: Reliability Tests for Selected Variables

Section	Variable	No. of Items	Cronbach's Alpha (*N* = 110)
B1	Knowledge	7	.822
B2	Awareness	7	.692
B3	Perception	7	.655
B4	Attitude	7	.760
B5	Behavior	7	.845

Findings

Demographic Characteristics

Of the 110 respondents, almost two-thirds of them (64.5%) were females, while the rest (35.5%) were males (Table 2). More than three-quarters of them (76.4%) were adolescents or young adults aged from 19 to 25 years old, and the remaining 24.6% were adults. Two-thirds of them (68.2%) were pursuing their undergraduate degree while 13.6% had already obtained their first degree, 16.4% were doing their postgraduate degree, and the rest of them (1.8%) already obtained

their master's degree/Ph.D. About two-thirds of the respondents (66.4%) were Malaysian; while another one-third of them (33.6%) were international students and staff. The majority of them (84.5%) were students, and only 15.5% were staff members. Half of the respondents (50.0%) stayed on campus and 34.5% stayed outside, while the rest (15.5%) did not respond to the question.

Table 2: Demographic Characteristics of the Respondents

Demographic Characteristics	Category	Frequency	%
Gender	Male	39	35.5
	Female	71	64.5
	Total	**110**	**100.0**
Age (years old)	Below 20 years old	1	0.9
	20–25	83	75.5
	26–31	7	6.4
	32–37	5	4.5
	38–43	3	2.7
	44–49	5	4.5
	50 years and above	6	5.5
	Total	**110**	**100.0**
Current education level	Pursuing a bachelor's degree	75	68.2
	Obtained bachelor's degree	15	13.6
	Pursuing a master's degree /PhD	18	16.4
	Obtained a master's degree/PhD	2	1.8
	Total	**110**	**100.0**
Nationality	Malaysian	73	66.4
	International	37	33.6
	Total	**110**	**100.0**
Status	Student	93	84.5
	Staff	17	15.5
	Total	**110**	**100.0**
Residence	In *mahallah* (hostel)	55	50.0
	Out of campus	38	34.5
	No response	17	15.5
	Total	**110**	**100.0**

Level of Knowledge

The respondents' average knowledge score is high and significant, with a mean value of 4.427 (*SD* = 0.710; *t* = 21.089, *p* =.000). Table 3 shows that almost all of the respondents knew the intent of the public health campaigns is to advise, inform, and warn them about the pandemic (92.5%). About 90.7% of the respondents thought that the campaigns improved their knowledge and information about the pandemic. Further, they thought that the campaigns had some impact on people's

knowledge about public safety (90.4%). The majority of them knew how to obtain the latest information on COVID-19 from local online newspapers/websites (89.8%), and they thought that it is important for them to share public health messages on COVID-19 in the country with friends/colleagues (89.6%). Besides, they knew that IIUM could do more to improve its community's awareness about the pandemic (87.6%), and they knew how to access to the Ministry of Health Malaysia (CPRC) social media accounts, i.e., *Facebook*, *Twitte*r, and *Telegram* to obtain information on the COVID-19 pandemic in Malaysia (86.4%). Hence, in terms of knowledge, it can be inferred that the IIUM community is knowledgeable about the information related to MOH campaigns on COVID-19 pandemic.

Table 3: One-sample *t*-test for Level of Knowledge

No.	Level of Knowledge (*N = 110*)	*M**	*SD*	%	*t***	*p*
1	I know that the intent of the public health campaigns is to advise, inform, and warn me about the pandemic.	4.627	0.648	92.5	26.353	.000
2	I think the campaigns have improved my knowledge and information about the pandemic.	4.536	0.645	90.7	24.980	.000
3	I think the campaigns have some impact on people's knowledge about public safety.	4.518	0.674	90.4	23.637	.000
4	I know how to gather the latest information on COVID-19 from local online newspapers/websites.	4.491	0.821	89.8	19.043	.000
5	I think it is important for me to share public health messages on COVID-19 in the country with friends/colleagues.	4.482	0.787	89.6	19.755	.000
6	I know that IIUM can do more to improve its community awareness about the pandemic.	4.382	0.754	87.6	19.222	.000
7	I know how to access the Ministry of Health Malaysia (CPRC)'s social media accounts, i.e., Facebook, Twitter, and Telegram to get information on the COVID-19 pandemic in Malaysia.	4.318	0.948	86.4	14.591	.000
	Overall Knowledge	**4.427**	**0.710**	**88.5**	**21.089**	**.000**

*On a 5-point scale, where 1 = *strongly disagree*, 2 = *disagree*, 3 = *slightly agree*, 4 = *ag*ree, 5 = *strongly agree*.
** Test value = 3.

Level of Awareness

Table 4 shows that the average mean score for awareness of MOH campaigns on the COVID-19 pandemic is high and significant (*M* = 4.032, *SD* = 0.668; *t* =16.200, *p* = .000). Almost all of the respondents (92.0%) were aware that

the MOH campaigns had improved their awareness about the COVID-19 pandemic, e.g., social distancing and wearing a facemask in public areas. They knew that the pandemic had increased their awareness about the importance of a healthy lifestyle (91.8%). Further, they were aware that MOH campaigns are one of the government strategies to combat the spread of the virus (91.1%). They were also aware that laws are important to contain the pandemic from threatening public safety in the country (91.1%). Besides, they were aware that MOH campaigns had informed the public that the authorities know what and how to handle the pandemic (88.4%), and they trusted that the people around them had good awareness about the COVID-19 pandemic (81.5%). Lastly, they thought that some IIUM students were not aware of the campaigns, especially during the MCO and CMCO (69.3%). The results indicate that the IIUM community, as a whole, has a high level of awareness towards MOH campaigns and their consequences to the public.

Table 4: One-sample t-test for Level of Awareness

No.	Level of Awareness (*N = 110*)	*M**	*SD*	%	*t***	*p*
1	The campaigns have improved my awareness about the COVID-19 pandemic, e.g., social distancing and wearing a facemask in public areas.	4.600	0.652	92.0	25.720	.000
2	The pandemic has increased my awareness of the importance of a healthy lifestyle.	4.591	0.654	91.8	25.521	.000
3	The campaigns are one of the government strategies to combat the virus spread.	4.555	0.658	91.1	24.784	.000
4	In the country, laws are important to contain the pandemic from threatening public safety.	4.555	0.773	91.1	21.085	.000
5	The campaigns inform the public that the authorities know what and how to handle the pandemic.	4.418	0.806	88.4	18.460	.000
6	I trust people around me have good awareness of the COVID-19 pandemic.	4.073	0.775	81.5	14.523	.000
7	Some IIUM students are not aware of the campaigns, especially during the MCO and CMCO.	3.464	1.202	69.3	4.047	.000
	Overall Awareness	**4.032**	**0.668**	**80.6**	**16.200**	**.000**

*On a 5-point scale, where 1 = strongly disagree, 2 = disagree, 3 = slightly agree, 4 = agree, 5 = strongly agree.

** Test value = 3.

Level of Perception

The levels of perception of MOH campaigns are presented in Table 5. Results show that overall, the respondents had a high level of perception of MOH campaigns, with a mean value of 3.814 (SD = 0.792) and it is significant (t = 10.770, p = .000). The majority of the respondents (88.7%) thought that the campaigns had influenced them to give their cooperation whenever needed. They thought that the campaigns helped

them stay vigilant during this pandemic (87.5%), and they thought that the authorities should continue with limiting public activities and gradually easing them off when vaccines are found (86.9%). Further, they thought they could probably be infected with the virus if they did not adhere to the SOP (86.2%). Besides, they thought that the authorities had been transparent on how they had been handling the pandemic through the COVID-19 campaigns (83.3%). They also perceived that the COVID-19 campaigns were still not enough despite the daily messages (65.8%). However, some respondents perceived that the seriousness of the pandemic was exaggerated by the campaigns (65.6%). Overall, the results imply that the IIUM community has a positive perception of MOH campaign strategies.

Table 5: One-sample *t*-test for Level of Perception

No.	Level of Perception (*N = 110*)	*M*	*SD*	%	*t***	*p*
1	I think that the campaigns have influenced me to give my cooperation whenever needed.	4.436	0.736	88.7	20.467	.000
2	I think the campaigns help me to stay vigilant during this pandemic.	4.373	0.740	87.5	19.451	.000
3	I think the authorities should continue with limiting public activities and gradually easing them off when vaccines are found.	4.346	0.872	86.9	16.184	.000
4	I can probably be infected with the virus if I do not adhere to the SOPs.	4.309	0.787	86.2	17.448	.000
5	I think the authorities have been transparent on how they have handled the pandemic through the COVID-19 campaigns.	4.164	0.972	83.3	12.551	.000
6	I perceive that the COVID-19 campaigns are still not enough despite the daily messages.	3.291	1.259	65.8	2.424	.017
7	I perceive that the seriousness of the pandemic is exaggerated by the campaigns.	3.282	1.335	65.6	2.214	.029
	Overall Perception	**3.814**	**0.792**	**76.3**	**10.770**	**.000**

*On a 5-point scale, where 1 = *strongly disagree*, 2 = *disagree*, 3 = *slightly agree*, 4 = *agree*, 5 = *strongly ag*ree.

** Test value = 3.

Level of Attitude

As shown in Table 6, on the whole, the respondents had a positive attitude towards MOH campaign strategies (*M* = 3.473, *SD* = 0.870; *t* = 5.702, *p* = .000). The majority of them (87.5%) agreed with the campaign messages informing that those who do not adhere to the SOP should be penalized. About 84.9% of the respondents agreed that the campaigns helped them navigate their lives through this new normal by always

adhering to the social distancing rule. Reading the campaigns felt like reading other news to them, as it concerned them a lot (81.6%). Besides, they agreed that the campaigns helped them navigate their lives in this new normal by buying things online (80.9%). They also agreed that the campaigns persuaded them to change their lifestyle by eating healthy food (76.7%) and that the campaigns persuaded them to change their lifestyle by seeing their physician regularly. However, half the number of respondents felt that the messages gave them unnecessary panic (57.3%), but this statement is not significant. Therefore, the MOH campaigns have generally caused the IIUM community to adopt a positive attitude towards MOH strategies.

Table 6: One-sample *t*-test for Level of Attitude

No.	Level of Attitude (*N = 110*)	*M**	*SD*	%	*t***	*p*
1	I agree with the campaign messages informing that those who do not adhere to the SOP should be penalized.	4.373	0.728	87.5	19.785	.000
2	I agree that the campaigns help me navigate my life in this new normal by always adhering to social distancing.	4.246	0.792	84.9	16.493	.000
3	I feel like reading the campaigns is like reading other news as it does concern me a lot.	4.082	0.987	81.6	11.491	.000
4	I agree that the campaigns help me navigate my life in this new normal by buying things online.	4.046	1.026	80.9	10.686	.000
5	I agree that the campaigns have persuaded me to change my lifestyle by eating healthy food.	3.836	1.054	76.7	8.324	.000
6	I agree that the campaigns have persuaded me to change my lifestyle by seeing my physician regularly.	3.509	1.123	70.2	4.754	.000
7	I feel the messages gave me unnecessary panic.	2.864	1.391	57.3	-1.028	.306
	Overall Attitude	**3.473**	**0.870**	**69.5**	**5.702**	**.000**

*On a 5-point scale, where 1 = *strongly disagree*, 2 = *disagree*, 3 = *slightly agree*, 4 = *agree*, 5 = *strongly agree*.
** Test value = 3.

Level of Behaviour

Behaviour is the outcome of knowledge, awareness, perception, and attitude towards the MOH campaigns (Table 7). Results show that the behavioral outcomes are positive and significant (M = 4.336, SD = 0.671; t = 20.893, p = .000). Specifically, the respondents believed that if everyone follows the campaign messages, e.g., social distancing, they will all be safe (89.3%). Further, they trusted the government on the public health messages sent (88.0%), and they believed that

the public health messages gave them safety assurances about the pandemic (87.5%). Besides, they believed that the campaigns helped them plan better on their daily life routine (85.5%), and they planned to seek more information about the pandemic (84.5%). They believed that the campaigns influenced them to do more and to contribute more socially (84.4%), and they had persuaded their friends/colleagues to observe the SOP in public areas (84.2%). These results demonstrate that the IIUM community has a positive support to the MOH campaigns on the COVID-19 pandemic.

Table 7: One-sample *t*-test for Level of Behaviour

No.	Level of Behavior (*N = 110*)	*M**	*SD*	%	*t***	*p*
1	I believe if everyone follows the campaign messages, e.g., social distancing, we are all going to be safe.	4.464	0.809	89.3	18.973	.000
2	I trust the government on public health messages they sent.	4.400	0.826	88.0	19.773	.000
3	I believe the public health messages have given me safety assurances about the pandemic.	4.373	0.855	87.5	16.835	.000
4	I believe the campaigns help me to plan better on my daily life routine.	4.273	0.789	85.5	16.923	.000
5	I plan to seek more information on the pandemic.	4.227	0.820	84.5	15.694	.000
6	I believe the campaigns have influenced me to do more and contribute more socially.	4.218	0.783	84.4	16.325	.000
7	I have persuaded my friends/colleagues to observe the SOP in public areas.	4.209	0.889	84.2	14.261	.000
	Overall Behavior	**4.336**	**0.671**	**86.7**	**20.893**	**.000**

*On a 5-point scale, where 1 = *strongly disagree*, 2 = *disagree*, 3 = *slightly agree*, 4 = *agree*, 5 = *strongly agree*.
** Test value = 3.

Discussions

The public health campaigns on the COVID-19 pandemic by the MOH have impacted the IIUM community regarding their knowledge, awareness, perception, attitude, and behavior. They accessed all the information about the pandemic through MOH social media platforms and online newspapers. It is not surprising that most IIUM community members believed that the campaigns gave them some safety assurances and helped them negotiate their lives in this new normal. They did not get panicked easily with the outbreak, for they knew that the campaigns helped them to plan their daily lives, and they would

seek more information whenever they needed to understand it because they could trust the government as their prime source of information update (Seymour, 2017). The MOH campaigns have influenced the IIUM community to take certain actions to break the pandemic chain by accommodating the sudden change in their life norms. The campaigns information helped them encourage friends and colleagues to adhere to the government standard operating procedures (SOP). Trust in the messages delivered by the government is one of the success factors for the change in people's behavior. This is because the campaign messages can invoke people cognitive or emotional responses when campaigns are designed to influence people decision-making (Wakefield, 2010). The findings show that the IIUM community has a significant trust in the government as the sender of the campaign messages.

The campaigns had influenced the IIUM community to become information-seeking and action-oriented public. They affirmed that the campaigns had influenced them to cooperate in breaking the pandemic chain whenever needed. They thought they could be infected with the virus if they did not listen to government advice, thus leading them to believe in the current campaigns. This is consistent with the assumption that the campaigns influenced the IIUM community's perception of the seriousness of the COVID-19 pandemic.

Due to the change in knowledge, awareness, perception, attitude, and behavior of the IIUM community about the COVID-19 pandemic, the campaigns managed to improve the IIUM community thinking that they need to maintain a healthy lifestyle to break the pandemic chain. Hence, the campaigns had increased their awareness of the danger of the pandemic, thus supporting that public health campaigns as one of the government strategies to break the pandemic chain through creating and improving people's awareness.

This study affirms that the public health campaigns on the COVID-19 pandemic by the MOH have a significant impact on the knowledge, awareness, perception, attitude, and behavior of the IIUM community (Duplaga, 2019). The campaigns have a strong impact on the attitude

and behavioral change of the IIUM community. This is because they know that if they fail to change, they will risk more problems as the pandemic is still active, which has led them to adjust to the new environment (Wakefield 2010). Therefore, to change their attitude and behavior, the IIUM community needs to improve their level of knowledge, awareness and perception. Particularly, they need to trust the government, who is the sender of the campaign messages to avoid disinformation that could lead them to a wrong decision-making. Improvement in perception is a direct consequence of the improved level of awareness and knowledge (Seymour, 2017).

This study has supported the use of social media platforms to communicate public health messages in disseminating and spreading of messages with better penetration and acceptance (Seymour, 2017). Empowering the IIUM community with the campaigns can improve their knowledge of the pandemic, thus making them better informed of the strategies.

Conclusions

This study has affirmed that the public health campaigns on the COVID-19 pandemic by the MOH of Malaysia have a significant impact on the knowledge, awareness, perception, attitude, and behavior of the IIUM community at the exploratory stage. The campaigns have influenced their attitude and behavioral change tremendously. The IIUM community in the study understands that to change their attitude and behavior, they need to improve their knowledge, general awareness, and perception of the COVID-19 pandemic. Disinformation can lead them to make wrong decisions, and these wrong decisions can bring more harm than good to the community. In the long run, disinformation can create discontent and a lack of trust in message contents and thus giving a negative impact the usefulness of the campaigns. With the right attitude and accommodative behavior, the university management will get community support and assurance to abide by the government directives. Therefore, the MOH campaigns in the scope of the study are effective in disseminating information on combatting COVID-19 pandemic, implying a support for the situational theory of publics. However, a comprehensive study in future is crucial as those findings limited at exploratory stage only.

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