



# Reopening National Border and the Treat of COVID-19 Towards Malaysia: A Systematic Review Approach

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**Abstract.** Pandemic pneumonia caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is spreading globally at an accelerated rate, with an approximate reproductive number of 2–2.5, suggesting that two or three individuals may be infected with index patient cases. Current coronavirus disease 2019 (COVID-19) impact on disadvantaged populations and areas where there are inadequate health services to treat the infection, it is entirely dangerous and triggering serious public health emergencies. This study also highlights the review of COVID-19 for the reopening of Malaysia's borders and puts together the new draught options for the country's reopening. Malaysia's border controls have been tightened to deter imported cases, mitigate locally transmitted cases, and increase the capacity of Malaysian health care facilities. The study has analysed secondary data as the primary input. The aim of this writing is to discuss the potential outbreak of COVID-19 in Malaysia in the event of the national border reopening and the question of COVID-19 protection and security. In order to find the required articles for reference, the literature search was performed throughout Google Scholar. The goal of the study is to express a view that can be seen by tertiary maternity units that are capable of treating those affected by the pandemic, but at the same time ensuring that the people at their heart are safe.

**Keywords:** Pandemic · COVID-19 · Border · MCO · Policy

## 1 Introduction

Coronavirus disease (COVID-19) can be categorised as an infectious illness that originated from a new virus called Coronavirus. People infected with COVID-19 who have

good immunisations will live with mild respiratory diseases. Only older people and people with chronic disorders such as cardiovascular disease, diabetes, chronic respiratory diseases, and cancer can have a significant disease-induced effect (WHO 2020). The virus that began as an epidemic in Wuhan, then all of China, has spread rapidly both nationally and worldwide (Liu et al. 2020). In addition, as stated by Dasaklis et al. (2012), a high mortality rate may be associated with the outbreak of epidermis or flu as it could be categorised as a disaster. This illustrates that COVID-19 is internationally categorised as a catastrophe. Therefore, owing to the outbreak of COVID-19 (Sohrabi et al. 2020), the WHO has declared a global emergency.

Since March 2020, Malaysia has been experiencing rising cases of COVID-19. In dealing with this pandemic outbreak, the government has introduced several measures. Since March 18, 2020, the Movement Control Order (MCO) has been placed in Malaysia to control and break down the infection chain of this epidemic, according to The Star (April 2020). Since March 2020, there has been a rising trend in cases and death rates, followed by an epidemic of epidermis that has become more extreme since April 2020. The main objective of this analysis is to justify a timeline that could have led to the crisis in connection with the COVID-19 outbreak in Malaysia. The study also sought an explanation to describe the risk of an outbreak of COVID-19 in cases of national border openings. This research also focuses on guidelines to tackle future pandemic crises. The Malaysian authorities need to respond to this case and try to comply strictly with the policy of mitigation. Malaysia is implementing coronavirus response initiatives and acts through this scheme to reduce its effect on economic development and ongoing outbreaks.

In addition, this virus usually causes confirmed infection and failed death in a large number of people, especially in the urban population zone. A timeline for the COVID-19 pandemic to hit Malaysia was verified in January 2020, when travellers arriving from China via Singapore were detected on the 25<sup>th</sup> of January, with members of the public closely following the infection update (Lee et al. 2020). At the end of 2019, the new details began to surface about COVID-19 targeting the planet. To avoid the emergence of new clusters and prevent the spread of the virus, this has led countries to close their borders immediately. Every attempt has been made by the Malaysian government to stop the spread of COVID-19. The Ministry of Health believes that if we do not follow the strategy, in particular with regard to large-scale collection, the transmission of the virus will take place more quickly. As a result, the transmission of this virus would be increased by a lack of social isolation and self-care, meeting, or being in a public location. The Malaysian government has temporarily directed all educational institutions, enterprises, and operations to halt for a while in order to achieve a smooth implementation of the movement control order. This will decrease the risk of illness or dissemination, and with this closure, the government will be able to apply the order of motion control to the general public.

Furthermore, in order to ensure the effective enforcement of the order for movement regulation, Malaysia has also set a restriction on travel across states or abroad and placed restrictions on each border of states to prevent movement. If this movement control order is breached by any civilian, they will be convicted, and if found guilty, they will be sentenced to several days in prison and get a fine as well. Malaysia has effectively

limited the spread of the COVID-19 virus with this harsh and extreme warning. In addition, COVID-19 has had a devastating effect on all countries in the world and has forced the government to close all of the country's international borders. The motivation of the public during the outbreak will be decided by action and advice from the Malaysian government. In order to prevent COVID-19 diseases, the Prime Minister has advised the Malaysian citizen to remain in their places. This is because they are able to keep their families and themselves protected from the infection by remaining at home.

Finally, to reduce the possibility of COVID-19 contamination, the government instructed the public to use the mask while going out and use the hand sanitiser. In order to minimise COVID-19 contamination, this step is essential as the virus would die when it has contact with hand sanitiser or soap. In conclusion, individuals should take and follow government advice to stay at home as an opportunity for them to battle COVID-19 in order to prevent and have the detrimental effect of COVID-19. This paper is organised as follows; Sect. 2 reviews the related literature and proposed relationships in the conceptual model. Section 3 describes the design of the study and data collection procedure. Section 4 analyses the data and presents the result. Section 4.1 discusses the interesting finding of the study. Finally, Sect. 5 concludes the paper, limitations of the study, and recommendation for future research.

## 2 Literature

COVID-19 refers to one SARS-CoV-2 (novel coronavirus)-caused disease. In the city of Wuhan in Hubei province, the first reported cases have appeared. Respiratory viruses usually become the most infectious when a patient is symptomatic. The lower respiratory tract can be affected and present in populations as pneumonia. As stated by Prevention and Control of Diseases Centres (2020) and (Rothe et al. 2020), there is a growing body of evidence suggesting that human-to-human transmission can occur during the asymptomatic incubation period of COVID-19, which is estimated to be between 2 and 10 days. The timeline for the outbreak of COVID-19 will be addressed globally in this section of the research paper.

The first incident in Wuhan City, China, which infected at least 5.1 million people and killed approximately 330,000 people, was announced in late December 2019. In just five months, Secon et al. (2020) announced, at least 185 states have now accepted and extended their cases. On December 31, 2019, the Municipal Health Commission of China announced a cluster of cases of pneumonia in Wuhan, Hubei Province and finally detected a new coronavirus, which was highlighted by the World Health Organization (WHO). After that, on 7 January 2020, China managed to detect a new coronavirus as the source of the outbreak. This virus is known as a large family of viruses which, from common colds to severe fatal diseases, have caused varying stages of the disease. It can infect and propagate among humans and sometimes found in animals. Jerving (2020) points out that coronaviruses are the cause of SARS and MERS.

According to the Johns Hopkins university tracker, global cases position is at 5,102,573 cases with deaths cases to be reported at 332,924 as of the 21st of May 2020. On the 22nd of May 2020, Malaysia has 78 new cases, bringing the number of total cases to 7,137. One thousand one hundred sixty-three was recorded as active cases,

nine people were treated in intensive care, and five in need of support from the ventilator, and also 63 cases have recovered, which bring the total number of recoveries to arrive at 5,859 cases. Malaysia is well aware of the new cases of death and took the cases of death to 115. New Zealand has stated one new case, passing the total number of plausible and confirmed cases to 1,504 cases while three people had recovered, which brings the total number of recoveries to 1,455 cases, and there are 28 active cases with one in hospital. Furthermore, Singapore has conveyed 614 new cases, which brings the total of cases to 30,426. Ukraine has reported 442 new cases and nine new deaths cases, conveying the overall numbers to 20,148 cases and 588 cases correspondingly, and a total of 6,585 patients have recovered. According to the timeline, we can see that the outbreak of COVID-19 has spread fast globally.

The Chinese government is implementing a Direct Guideline, which is a closed national boundary, to avoid the outbreak of COVID-19 transmission. On 22 January 2020, the approximate median number of travel-free infections for mainland China, except for Wuhan, was 7474 cases. Wuhan has encountered the vast majority of infections. In order to investigate the effect of the travel ban on Wuhan, the Chinese authorities were under pressure in this case and imposed long-term travel restrictions, beginning on 23 January. Besides, the entire airport is restricted not to allow business operation. Via a data collection consisting of local population movement data within the Chinese provinces, they have placed a cap on the mobility of people within mainland China (China et al. 2020). With the exception of Wuhan City, which reported nearly 10% at the end of January 2020, there has to be a reduction in COVID-19 in mainland China, with a relative reduction in infections or reduction in cases ranging from 1% to 58% across specific sites.

In other words, functional studies have clearly shown that the degree of reduction within 4 to 5 days is associated with a mild delay in the epidemic trajectory of 1 to 6 days in mainland China. These results coincided with forecasts from the combination of evidence of epidemiological and human mobility to solve the problems of the pandemic crisis. With the opening of the Chinese border again, a potential outbreak of COVID-19 will occur. If they were to minimise their border controls, as China is seriously impacted by COVID-19, the country could experience a major outbreak. Therefore, the domestic economic growth plan must be prepared to increase the spending of the community's people. İşik (2015) stressed that foreign tourism has been the main driving force in the global economy since the 1950s.

A pandemic is a crisis that human beings have endured for several years. The previous approach to resolve and avoid the relevant pandemic crisis will be discussed in this section. First, the solution to resolving the previous pandemic crisis will be addressed in this chapter. One of the ways of controlling the occurrence of a pandemic is tracking. Research by Ji et al. (2015) suggested that social media monitoring such as Twitter has a potential opportunity to control and observe public health. The study illustrates the importance of social media in providing related information, such as preventive strategies, about the H1N1 pandemic. This illustrates that the accessibility of information via social media is a vital way of raising awareness to avoid the occurrence of a pandemic effectively.

Furthermore, to avoid the occurrence of a pandemic, a disaster response plan needs to be discussed. The government must enforce the pandemic response strategy, in particular by implementing a clear management plan for hospitalised patients, according to Mazzola and Grous (2020). The results of the study indicate a medical service pandemic response plan that should be implemented in advance in order to cope with the growing pattern of the pandemic. The proposal should include the provision of staff training as well. That is because, during the outbreak of a pandemic, there would be a growing demand for medical personnel. It requires workers concerned with the transfer of patients, treating and identifying patients who are contaminated for pandemic and other purposes. The response should also develop a team-based strategy for patients who need emergency medical surgery requirements to handle emergency medical care, identification, and treatment.

Finally, post-pandemic preparedness in the future is another means of overcoming the pandemic. A post-pandemic preparation should be carried out, according to Holmberg and Lundgren (2018) in terms of pandemic risk management, pandemic susceptibility, pandemic stages, and consideration of the unknown items faced during an outbreak of a pandemic. The planning of the plan could serve as a guide and enable the nation to face a possible pandemic.

### 3 Methodology

This study is using systematic qualitative research in data collection, as it is suitable for using and initially addressing the medical issues. According to Tranfield et al. (2003), systematic research is commonly used in research related to medical issues as this research serves as reducing bias and communicates between literature in a clear view. According to Denyer and Neely (2004), systematic research serves as a method that communicates literature or research paper between different scholars. Narrowing research on journals and reports could result in better transparency of outcome measures in the study as it helps in eliminating the error and unrelated information or data in the study. This study did a narrow scope of the manageable numbers of articles and reports. The following journal related to the study was selected, which includes the orthopaedic journal, journal of travel medicine, report that related to the COVID-19 positive case such as WHO and the medical journal New England. In order to narrow the scope of literature, some criteria have been applied in selecting the relevant journal article based on the different objectives of the study. The selection of these articles and journals shows the trends of COVID-19 in Malaysia in obtaining the relevant information to achieve the first study objective of COVID-19. Generally, there are four journals, and data have been selected in order to complete and achieve the first objective of the study. The narrowing scope of literature in selection helps reduce bias result in a study. The data or information related to the timelines of COVID-19 in Malaysia is interpreted by providing a relevant reason.

Besides, there have also been some criteria for the second objective of the study in order to make a point by narrowing the scope of literature in journals and articles of reducing the outbreak of COVID-19. Generally, there are six journal articles selected in order to complete the objective. This study also lays down the study scope to recommend against pandemic issues for the future. This section will select the journal or article

showing the possible solution or plan that have succeeded in overcoming or reducing the infection of COVID-19.

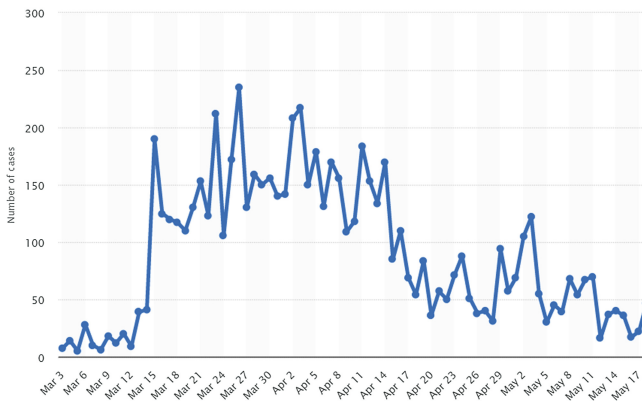
There are seventeen journal articles selected in order to achieve the accurate result of the third study objective. The study has also limited the date of publication of related literature by narrowing the scope of literature. Due to the nature of COVID-19 which started at the end of 2019, the related literature is found to have been published from 2019, and for 2020 the reporting will have portrayed a much worsen stories as it has become a global crisis. The date of publication is being narrowed as one of the strategies in the previous systematic research. According to Adhikari et al. (2020), the scoping date of published literature can help to select the relevant literature and therefore improving the validity of a study.

Lastly, a qualitative description is a method that is commonly used in describing health care research. According to Elliott and Timulak (2005), this analysis method is suitable in descriptive health care and nursing research. Therefore, this study utilises the analysis of data or information collected by a systematic review, which has been discussed in the previous chapter.

## 4 Analysis of Finding

### 4.1 Malaysia Outbreak of COVID-19

This figure shows the timeline of the latest COVID-19 statistics for Malaysia. Based on Fig. 1, it shows that on 15 March 2020, Malaysia’s COVID-19 cases have increased exponentially. From the growth rate of reported incidents, the government evaluated the data until 3 April 2020. The average rate of growth is recorded at 1.16.



**Fig. 1.** The growth rate in Malaysia of confirmed cases. Sources: Statista (2020)

On the other hand, it also clearly indicates that it had led to drastic increases in the confirmed cases only a few days before MCO was enforced, which rose to 80% and decreased in growth rate but remained relatively high within the MCO periods. It also

**Table 1.** Cases COVID-19 in Malaysia from February to May 2020

Date	Confirmed COVID-19 cases	Recovered COVID-19 cases	Total Deaths
27 February	24	22	0
28 February	25	22	0
29 February	29	22	0
1 March	29	22	0
2 March	33	22	0
3 March	36	22	0
4 March	50	22	0
5 March	55	22	0
6 March	83	23	0
7 March	93	23	0
8 March	99	24	0
9 March	117	24	0
10 March	129	25	0
11 March	149	26	0
12 March	158	32	0
13 March	197	33	0
14 March	238	35	0
15 March	428	42	0
16 March	553	42	0
17 March	673	49	2
18 March	790	60	2
19 March	900	75	2
20 March	1,030	87	3
21 March	1,183	114	8
22 March	1,306	139	10
23 March	1,518	159	14
24 March	1,624	183	16
25 March	1,796	199	20
26 March	2,031	215	23
27 March	2,161	259	26
28 March	2,320	320	27
29 March	2,470	388	35

*(continued)*

**Table 1.** (continued)

Date	Confirmed COVID-19 cases	Recovered COVID-19 cases	Total Deaths
30 March	2,676	479	37
31 March	2,766	537	43
1 April	2,908	645	45
2 April	3,116	767	50
3 April	3,333	827	53
4 April	3,483	915	57
5 April	3,662	1,005	61
6 April	3,793	1,241	62
7 April	3,963	1,321	63
8 April	4,119	1,487	65
9 April	4,228	1,608	67
10 April	4,346	1,830	70
11 April	4,530	1,995	73
12 April	4,683	2,108	76
13 April	4,817	2,276	77
14 April	4,987	2,478	82
15 April	5,072	2,647	83
16 April	5,182	2,766	84
17 April	5,251	2,967	86
18 April	5,305	3,102	88
19 April	5,389	3,197	89
20 April	5,425	3,295	89
21 April	5,482	3,349	92
22 April	5,532	3,452	93
23 April	5,603	3,542	95
24 April	5,691	3,663	96
25 April	5,742	3,762	98
26 April	5,780	3,862	98
27 April	5,820	3,957	99
28 April	5,851	4,032	100
29 April	5,945	4,087	100
30 April	6,002	4,171	102

(continued)



**Table 1.** (continued)

Date	Confirmed COVID-19 cases	Recovered COVID-19 cases	Total Deaths
1 May	6,071	4,210	103
2 May	6,176	4,326	103
3 May	6,298	4,413	105
4 May	6,353	4,484	105
5 May	6,383	4,567	106
6 May	6,428	4,702	107
7 May	6,467	4,776	107
8 May	6,535	4,864	107
9 May	6,589	4,929	108
10 May	6,656	5,025	108
11 May	6,726	5,113	109
12 May	6,742	5,223	109
13 May	6,779	5,281	111
14 May	6,819	5,351	112
15 May	6,855	5,439	112
16 May	6,872	5,512	113
17 May	6,894	5,571	113
18 May	6,941	5,615	113
19 May	6,978	5,646	114
20 May	7,009	5,706	114
21 May	7,059	5,796	114
22 May	7,137	5,859	115
23 May	7,185	5,912	115

Sources: MOH (2020)

means that, in confirmed cases of COVID-19, the MCO is an effective way of reducing sudden growth. In order to provide more insight into the current phenomenon and pay further attention to it during the deteriorating time of the active cases, another simulation analysis is done.

Table 1 indicates the daily case trends from the COVID-19 outbreak as of February until May. Confirmed cases were reported as new cases every day. There is a quantity growing every period. From Table 1, Malaysia COVID-19 has two deaths cases on the 17th of March.

Figure 2 clearly shows that the positive cases confirmed was higher than the recovery cases as of the 16th of April throughout the MCO period. There are 5,182 confirmed cases of COVID-19 and 84 cases deaths, while 2,766 cases had recovered. The positive

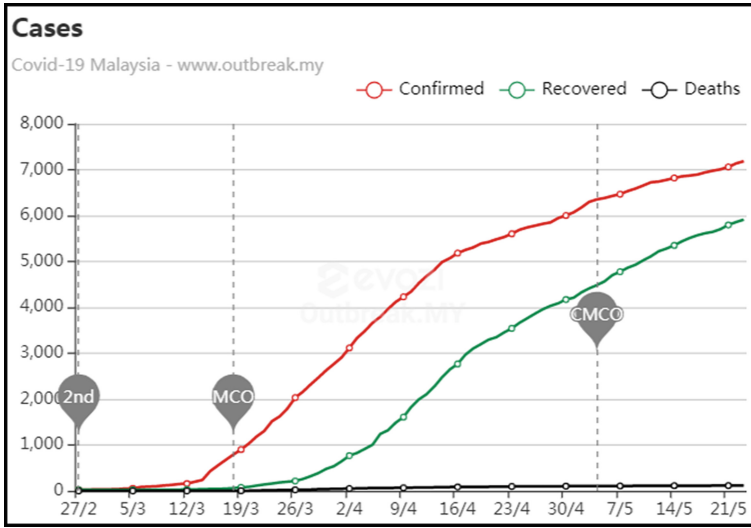


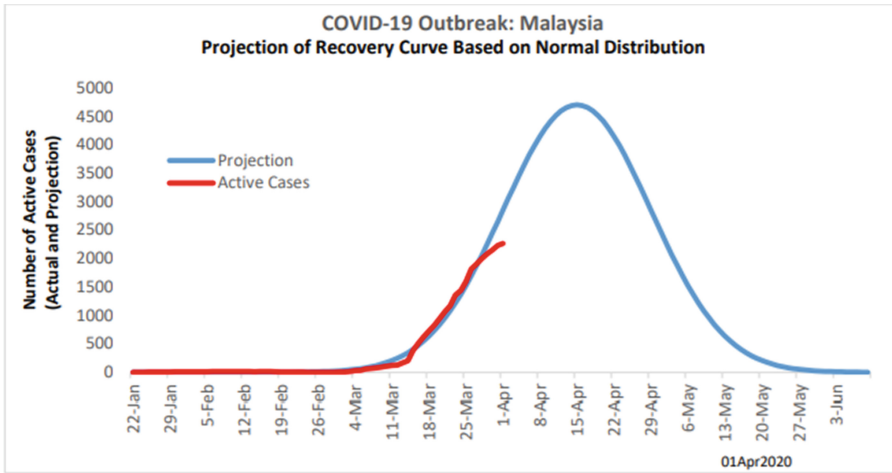
Fig. 2. Cases COVID-19 in Malaysia. Sources: [www.outbreak.my](http://www.outbreak.my) (2020)

cases confirmed has increased sharply and became 6,002 cases on the 30th of April, compared to 5182 positive cases confirmed on the 16th of April, and further to 6819 cases on the 14th of May. In fact, there are more than 7000 confirmed COVID-19 cases and 115 associated deaths, as of the 23rd of May 2020.

Although the government has limited public movements, the spectrums of symptoms of COVID-19 diseases have spread around, and there has been a substantial transmission of the virus from one person to another person. The public can also avoid the virus from passing around by reducing travel practises. It should be emphasised that by taking certain precautions for the public, government policy plays a vital role in minimising the outbreak.

The people of Malaysia should actively engage in various aspects of the method of preparation or prevention, such as ensuring that they have good respiratory hygiene, washing their hands thoroughly with hand sanitiser and others. COVID-19 cross border outbreaks are believed to be influenced by international travellers. This suggests that after being tested by practitioners in medical or public health agencies, they have become a vector of Coronavirus, regardless of the positive or negative findings. Preventing the transmission of COVID-19 is also subject to strict criteria for localisation and cross-border surveillance.

The figure above illustrates the predicted result of the recovery. Active cases are expected to reach a peak by mid-April. The current cases may be terminated before the end of May, subject to full MCO conformity. This is the simple solution that the  $C(x)$  curve of symmetry before and after the peak. Nevertheless, this can be true at all the time, particularly in the case of uncertainties. Healthcare network flexibility, social isolation and MCO compliance are some uncertainties that may likely arise. As expected, the rate of COVID-19 infection has dropped dramatically after MCO enforcement for four months. The percentage of recovery has also increased, and the Malaysia government is



**Fig. 3.** Recovery of active cases expected for Malaysia. Sources: Salim et al. (2020)

starting to open the international entry for Malaysians whose stranded abroad to return to Malaysia by stages. The entry of foreigners who have resided and married locals are also allowed to enter Malaysia by conducting a 14-day quarantine at home.

However, the freedom granted been tainted by quarantine violations set by the Malaysia Ministry of Health, which has resulted in the uncontrolled transmission of COVID-19. For example, case of Sivagangga in Kedah; a 57-year-old carrier of the highly contagious COVID-19 virus, has drawn outrage from netizens as his act of violating a home quarantine order has wiped out the northern region's green zone status (The Star, August 2020). The owner of the nasi kandar restaurant, who is currently warded, is the index case that has seen 43 people becoming infected. Of the 25 new cases reported in Malaysia, 12 were from the Sivagangga cluster, named after the location in India where the owner resided before returning to Malaysia on 22 July, where he holds permanent resident status. And the man was only penalised with a RM1,000 compound for breaching his home quarantine order, and become epidemic carrier to super spreader of COVID-19 and the cause of the potential third wave of infections up north. A client has taken a picture of the owner lazing around his outlet with a pink bracelet seen on his wrist viral.

Dr Noor Hisham Abdullah, Health Director-General, stated that COVID-19 samples from the Benteng cluster in Sabah were found to have a D614 G mutation found in samples taken from the Kedah clusters. The Institute for Medical Research (IMR) conducted genome sequencing tests on 32 COVID-19 samples from the Benteng cluster (23 samples), PUI Sivagangga cluster (four samples), Tawar cluster (three samples), Sungai cluster (one sample) and Bukit Tiram cluster (one sample). The D614 G mutation was, as suspected, detected in all 32 virus samples. In August, IMR detected the D614 G mutation, stating that if passed by a "super spreader" it is 10 times easier to infect other people. Meanwhile, the Benteng cluster was detected on Sept 2 after 50 illegal immigrants were apprehended under Ops Benteng during the multi-agency tracking of

illegal smuggling routes. At the Lahad Datu police headquarters, subsequent COVID-19 screenings found seven positive tests, with the infection then spreading to Tawau prison, some 150 km away. Current COVID-19 trend in Malaysia until 17th October 2020 (Fig. 4).

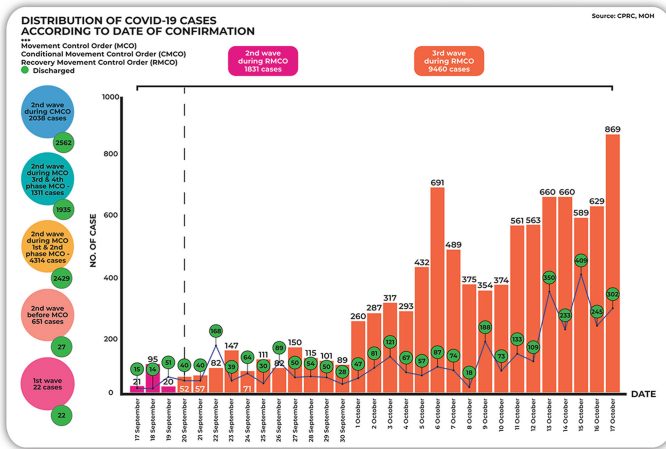


Fig. 4. Trend of COVID-19 in Malaysia. Sources: CPRC MOH 2020

Based on the latest number of cases, three possibilities trend will occur, depending on certain action taken by government: (1) open and no restricted/control measure, (2) restricted (MCO) in the certain area affected by COVID-19, (3) implementation of MCO to all-state in Malaysia. The projection of pandemic, as shown below (Fig. 5). Every

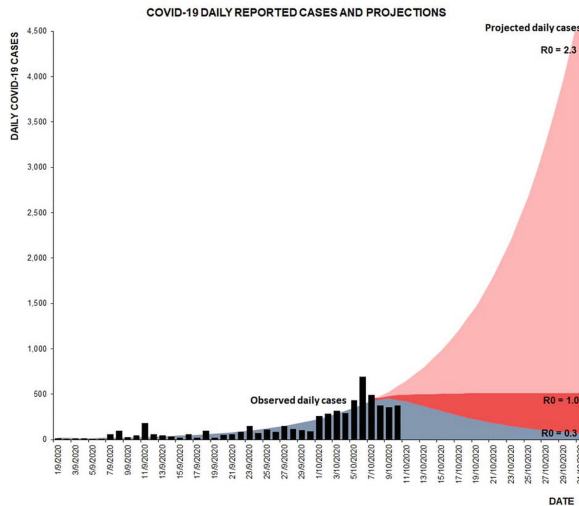


Fig. 5. Projection of COVID-19 based on 3-model implementation. Sources: CPRC MOH 2020

single action taken by the government has an impact on the economic and stability of politics in Malaysia.

## 4.2 Contagion of COVID-19 China and Travel Ban

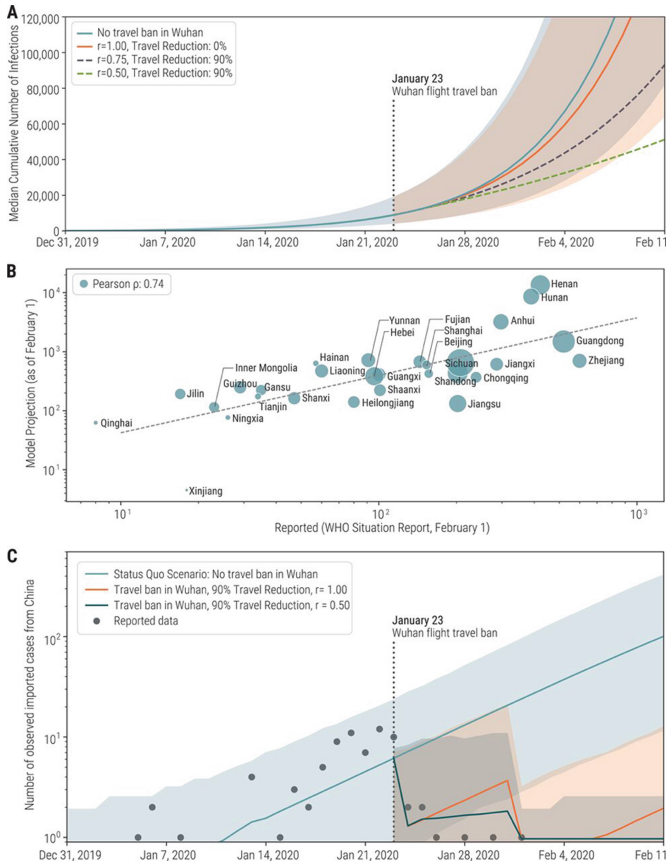
As of December 2019, with a population of more than 11 million, the Chinese Office of the World Health Organization (WHO) has received the first confirmed cases in Wuhan. The virus that causes viral pneumonia and COVID-19 in infected individuals has recently been recognised as a viral coronavirus disease. This latest pandemic started in China as an epidemic, but it is now a global crisis. The outbreak was possibly caused by the Wuhan seafood market, where dangerous animals were illegally traded, including marmots, chickens, rabbits, and other wild animals. In the meantime, this new coronavirus could be transmitted from animal to human, and the researcher was of the belief that it was the cause of this new pandemic. It was obtained by a group made up predominantly of seafood stallholders through interaction with animals. According to the John Hopkins University COVID-19 dashboard, which collects information from national and international health agencies, there are currently more than 5,014,943 reported cases and 328,462 deaths. About 200 countries and regions have detected the infection. The most widely distributed outbreaks are in the United States, Russia, and the United Kingdom, followed by Brazil, Spain, and Italy.

WHO has made the declaration for this new pandemic on the beginning of March. The Director-General, Tedros Adhanom Ghebreyesus, said that 'WHO' is concerned with studying the spread and frequency of this pandemic, which has become a global crisis. While on 30 January, the WHO classified COVID-19 as a "Public Health Emergency of International Significance" (PHEIC), it was reluctant to term it a pandemic. According to the Director-General of WHO, it is an identification word that, if misapplied, may lead to an undue groundless acceptance that the war is over and lead to an increased death rate. On 22 February, the WHO announced that the official name of this pandemic was COVID-19. This virus can lead to a short-term infection called Serious Acute Respiratory Syndrome Coronavirus 2 or Sars-CoV-2 Fin.

Finally, as COVID-19 could lead to respiratory-related diseases ranging from common flu to even more severe contamination, coronaviruses are listed as a virus that could infect animals and humans. The outbreak was assumed to be a well-known coronavirus outbreak of Severe Acute Respiratory Syndrome (SARS), which was earlier reported in China. The virus continued to infect nearly 26 countries, resulting in a decline in coronavirus incidence (China et al. 2020). Domestically and globally, the affected countries have behaved concerning the transmission and outbreak of the novel virus epidemic. The special consequences of the Wuhan travel ban implemented and the global border protection strategy adopted by many countries in early February 2020 are studied. On 22 January 2020, the estimated average positive cases of infections without the introduction of a travel ban for mainland China was 7474, except Wuhan.

The overwhelming majority of confirmed cases that took place in Wuhan were 117,584 cases. In order to analyse the effect of the Wuhan travel ban, the Authority enforced long-distance travel restrictions starting on 23 January with the closure of the airport. In addition, previous researchers have simulated policies and decisions in

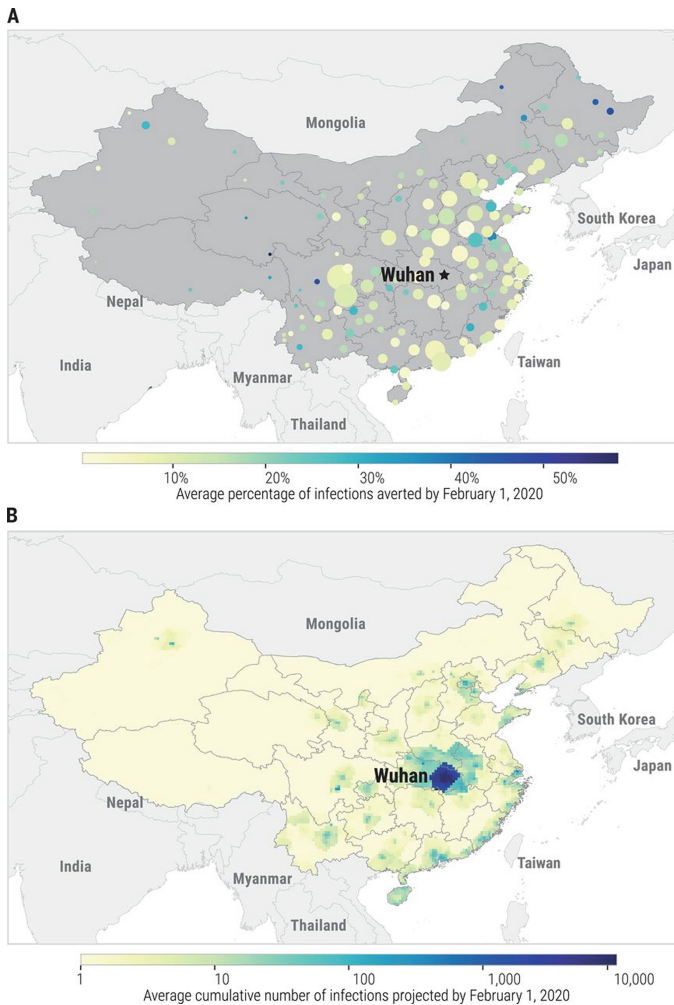
mainland China using data from February 2020 on consolidated and de-identified local population changes in cities in China (Fig. 6).



**Fig. 6.** Impact of the Wuhan travel ban on COVID-19 epidemic. Sources: WHO (2020)

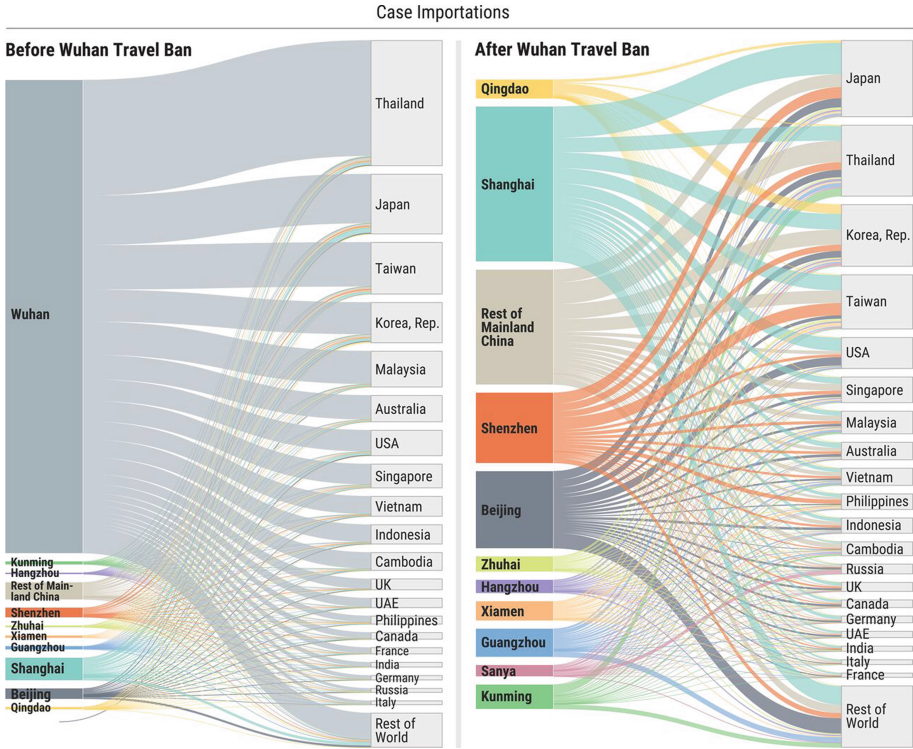
Part A describes the growth path of this pandemic in a Chinese city that excludes Wuhan under the travel restriction from Wuhan city on the end of January 2020. The oscillations are also plotted for situations of concomitant decrease of acceleration  $r$  and global travel restrictions. In comparison, part (B) illustrates the correlation between some positive cases reported from the different region by WHO situation report and model estimates as of 1 February 2020. From part B, it is no regions reported zero positive cases by the date given. The circle size is proportional to the size of the population in each province. In addition, part (C) clearly estimates the daily imports of foreign cases observed for various modelling scenarios. Shaded areas comprise 99% of the comparison ranges. The researcher has recorded the experimental results on imported cases with a travel history from China, categorised by date of arrival. The researcher also present simulations for the reduction of relative acceleration  $r$ . Economic indicators

were being used for out-of-sample validation and were not used for numerical simulation after 23 January 2020 (Boldog et al. 2020).



**Fig. 7.** Impact of travel ban by Wuhan on incidence of COVID-19 in mainland China. Sources: WHO (2020)

Part (A) in Fig. 7, highlights the comparative deterioration of mortality rate as of the 1st of February 2020. Circle colour indicates a comparable decline in the number of infections, while the size of the circular pattern corresponds to the population (Leung et al. 2020). On the other hand, part B clearly proposed the total positive cases on the same date, despite the implementation of travel bans in Wuhan. A scale of  $0.25^\circ$  by  $0.25^\circ$  geographical structure has been used in this model.



**Fig. 8.** Effect of the way import case. Sources: WHO (2020)

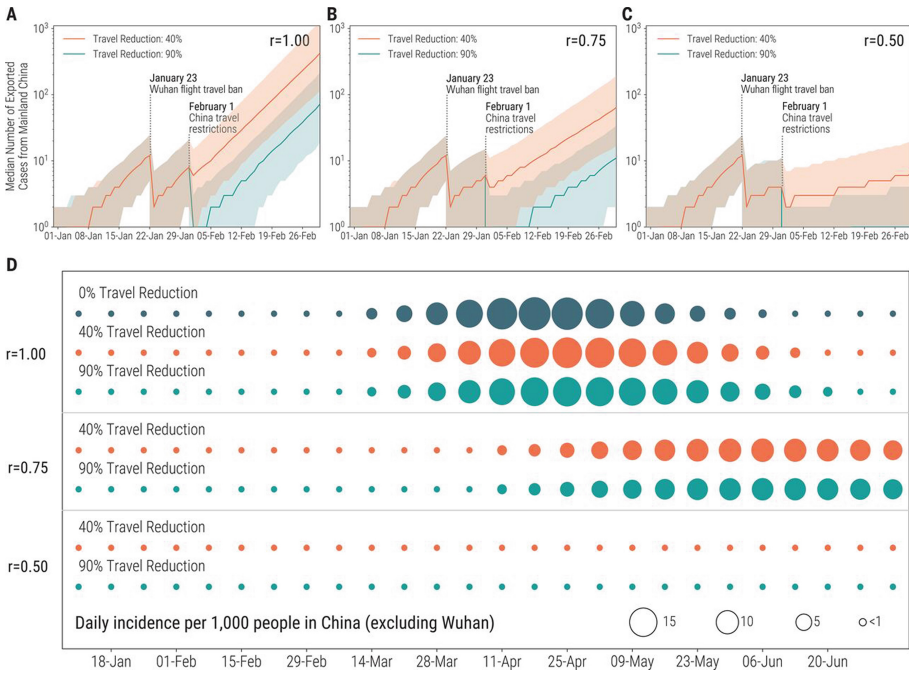
Figure 8 highlights the 20 countries with the greatest risk of imported cases. The left part is a concession to the confidence interval of import from 10 cities in China with the highest positive case of COVID-19 (plus the rest of mainland China) on January 2020. While the right part illustrates the cases of COVID-19 after the implementation of Wuhan travel ban from the end of January to the beginning of March 2020.

This section will highlight the significant impact of COVID-19 cases in Mainland China towards 20 countries that had recorded the highest imported cases before and after the travel ban was imposed on the local authority of Wuhan. There are top 10 locations ranged from less to relatively high risk (China et al. 2020). It includes Shanghai (28.1%), Beijing (14%), Thailand (22.8% before the-ban, 13% post-ban), Republic of Korea (7.4% before the-ban, 11.3% post-ban), Taiwan (9.5% before the-ban, 10% post-ban), the United States (4.7% before the-ban, 5.7% post-ban) and Shenzhen (12.8%) – accounted for at least 80% of globally isolates collected. Japan (11% pre-ban, 13.9% post-ban) are the countries precisely of a high risk of importation after the implementation travel ban in Wuhan.

After the beginning of February 2020, 59 airline companies have cancelled their flights to mainland China and some countries, such as the United States, Russia, Italy and others. For those countries with travel restrictions, it is not easy to precisely measure the degree of reduction in traffic carried out by these measures. To this end, we have analysed



two main situations in which foreign travel restrictions result in an estimated decline in traffic to and from mainland China of 40 and 90%. By early isolation and detection of cases, depressive symptoms and knowledge and understanding of the disease in the population, a comparative decline in transmission could be achieved.

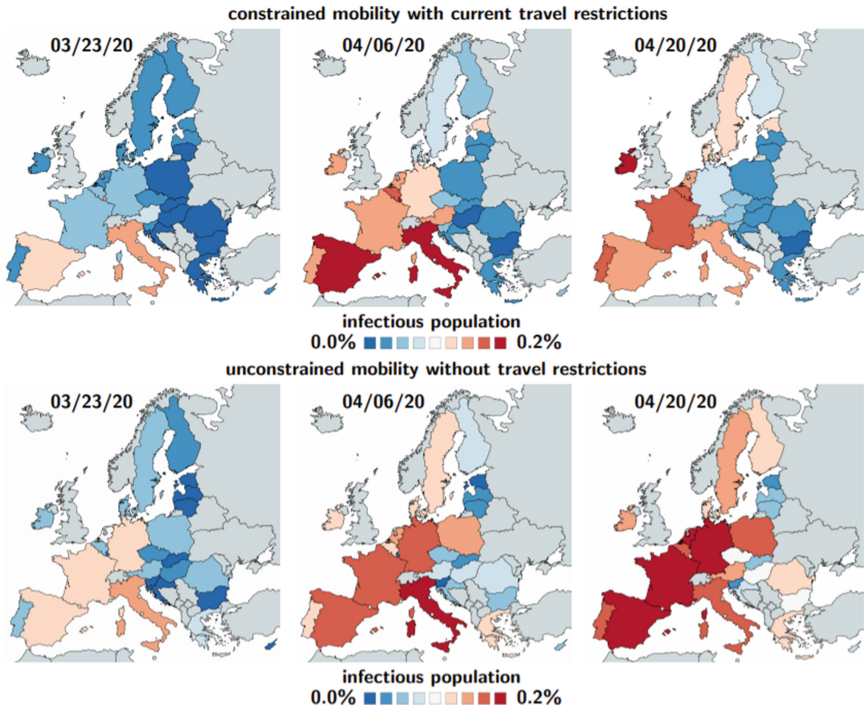


**Fig. 9.** Deterioration of international travel restrictions and transferability. Sources: WHO (2020)

The overall average number of foreign-made infections from Mainland China with no decrease in transmutability and a travel deterioration of 40 and 90%. (A) Same as (B) for the mild reduction scenario ( $r = 0.75$ ). (C) is the same as (A), for a compelling decrease scenario ( $r = 0.5$ ). Shaded areas represent 90% of the C.I.s. (D) which describes the infection rate of disease in mainland China, except Wuhan, for the scenarios set out in (A) to (C). In conclusion, previous research on the outbreak of COVID-19 and the forecasting evaluation of travel restriction can help in supporting the local and international public health response planning agencies. On 23 January 2020, this pandemic has to spread to other cities in China.

The Wuhan travel quarantine has delayed the spread of the pandemic to other regions of Mainland China. This result is consistent with the conclusions of separate studies in mainland China on SARS-CoV-2 diffusion. In reducing imported cases, the Wuhan travel ban was only initially effective. In comparison, within 2 to 3 weeks, the number of isolates collected outside mainland China will begin to increase. Furthermore, the prediction study indicates that additional travel restrictions (up to 90% of traffic) only have an unassertive impact unless they are paired with public health engagement and behavioural improvements that can minimise the substantial risk of disease transmission.

Our findings include data with possible applications, including the local and international dimensions of the COVID-19 outbreak, for determining tailored quarantine schemes and survival policies.



**Fig. 10.** The effect of travel restriction on the mobility of people across Europe. Sources: WHO (2020)

The figure above (Fig. 10) shows the simulation by scholars in Europe regarding the spreading of COVID-19 across Europe. The top 3 diagrams indicate the spreading of COVID-19 across Europe from March with travel restriction within Europe. At the same time, the 3-bottom diagrams show the outbreak of COVID-19 without the travel restriction between the country in Europe. As a result of the top 3 diagram stimulation, it shows the less spreading of this pandemic among European countries that have not restricted travel among the country. On the other hand, the 3-bottom diagram shows the significant of COVID-19 in the spread of this pandemic among the community in Europe without travel restriction. In a nutshell, there is significant in controlling the mobility of people in order to reduce the infection among European countries.

This section of the research paper will discuss the effect of travel restriction on the spread of COVID-19 to Malaysia. According to Fig. 10, it shows signs of travel restriction in control the spreading of COVID-19 among Europe country (China et al. 2020). Based on the existing situation nowadays, the situation of COVID -19 outbreak in the world is still in a worse condition. To reduce the risk of the COVID-19 outbreak, China has implemented a travel restriction for its citizen. The action by China has brought both

positive and negative impact on their country. Each country can take China as an example before implementing its travel restriction since this action brings many impacts to the country in different ways.

First, China has implemented a long-range travel restriction (airport shutdown). However, the travel restrictions are only for Wuhan, and no travel restrictions are implemented in mainland China. Due to the action taken by China, COVID-19 cases may well increase again in mainland China. After analysing the cases in China, Malaysia should not do the same thing because this will increase the risk of COVID-19 in Malaysia. If Malaysia has taken the same action done by China, Malaysia will face the same situation as China. In order to ensure the safety and health of Malaysia's citizens, Malaysia should implement the travel restrictions to all states in Malaysia and should not open the border. In cases of European countries, they have implemented the travel restriction. As the stimulation result in Fig. 9 shows the significance of travel restriction in spreading this pandemic. As the simulation also shows the infection resulting from the origin of the pandemic from Italy to other countries in Europe.

Moreover, the relative risk of import case has been reduced from mainland China to other countries because of the travel ban in Wuhan. However, after a few weeks, the number of cases began to increase because of the international importation. Malaysia should not open the border and close both domestic and international travel, as this will bring benefit to Malaysia. In cases of Europe country, the travel ban could control the spread of the pandemic to another country, which is less connected, with this pandemic such as Estonia, Slovakia and other. Consequently, Malaysia will reduce both domestic and international case importation. This is because if Malaysia only implements one travel ban, the case of importation of COVID-19 will increase. To reduce the risk of increasing the case of both domestic and national case importation, Malaysia should implement both domestic and international travel ban. By doing this, Malaysia can keep the country and its citizens safe.

Lastly, after facing the growth import of COVID-19, China finally has implemented Government-issued travel restrictions. These travel restrictions are for international flight. After imposing the travel ban, the transmissibility reduction can be achieved. Taking China as an example, Malaysia should not issue the international travel ban later because this will bring a negative impact on the country. If Malaysia has taken the same action as China, this will cause an increase in cases in the transmissibility of COVID-19 since the international case of COVID-19 will begin to rise faster day-by-day. In turn, it will cause an increase in the case of COVID-19 in all the countries in Malaysia. To avoid the case of COVID-19 from spreading so fast, Malaysia should take a measurable action so that this pandemic can be controlled (Table 2).

This section will be discussing the recommendation against the pandemic crisis for the future. Generally, there are three recommendations that have been suggested based on a review on a related journal article which includes telemedicine approach in dealing with non-pandemic disease, fair allocation on medical equipment and crisis resonant in dealing with spreading of the pandemic among the community. Bashshur et al. (2020) mentioned that telemedicine is a measure that can help in dealing with the outbreak of pandemic in the future. Telemedicine could help in dealing with the current shortage or dilemma of health care system globally. The application of this method could enhance

**Table 2.** Summary to accompany the author's present recommendation against the future pandemic crisis

Author of journal	Description of recommendation to overcome the pandemic crisis on future
Bashshur et al. (2020) Hannessian et al. (2020) Prasad et al. (2020)	Telemedicine approach in dealing with non-pandemic diseases
Emanuel et.al. (2020) White et al. (2020)	Fair allocation in relative medicine equipment
Organisation (2020) Lee (2020)	Crisis respond plan in dealing with spreading of the pandemic among the community

safety social distance between the doctor and patient who got affected by COVID-19. During the consultancy section via telemedicine service, the clinician must abide by the current medical system and ensure the quality of consultancy as well.

Besides, this study also addresses the organised health care system that should avoid developing a new structure for telemedicine, excluding some necessary centralised function, includes the training, maintenance, and support. Indeed, telemedicine should be decentralised in order to allow doctors or medical consultants to give instruction and consultant to patients in a safe distance. Ohanesian et al. (2020) highlighted a new telemedicine framework that has been carried out in dealing with the pandemic outbreak as telemedicine consultant service would be given to those who are asymptomatic but did have contact with patients who got infected with COVID-19 as well as those who cannot seek medical consultant service in a hospital. As this has been applied by a lot of countries in the world including China, the United States of America, and the United Kingdom. The study of Prasad et al. (2020), has mentioned that telemedicine could be applied in consultancy on a patient and head cancer. The physicians and patients could involve in consultancy and physical exams on the oral cavity, salivary glands, and oropharynx in order to identify the patient cancer level.

Next, the fair allocation of health care equipment is another method that we can learn from the outbreak of the COVID-19. Fair allocation in medical equipment follows the ethical values in dealing with the COVID-19 pandemic. There are some ethical values and guiding principles to guide in the usage of uncommon health care properties in the COVID-19 pandemic, which include maximising the benefit of resources, treat people similarly, sponsor and reward influential value and give more attention to heavy cases. According to Emanuel et al. (2020), maximising the benefit of health care resources can save more lives by receiving the highest priority of patients. This can be applied as a measurement in selecting the patient who suffers more in dealing with COVID-19. Apart from that, the priority of usage scare health care resources is given to researcher and frontline worker or other to promote the most effective usage of scare health care resources. Treating people fairly is not applied and not suggested in handling the health care resources in order to give priority to suspect patients. It could help in preventing the spreading of COVID-19 pandemic. According to White et al., multiple criteria have

been applied to a single tool in dealing with scarce health care resources. It includes giving priority to those who have a high opportunity to be discharged.

Lastly, an effective crisis response plan needs to be carried out in managing the outbreak of a pandemic. According to the organisation W.H (2020), the crisis action that has been done by WHO has identified the critical preparedness, action in dealing with this crisis since March 2020. The WHO declares some immediate action to slow and stop the transmission, prevent the spreading rates as well as providing optimal care for those infected seriously. WHO has classified the country into four categories based on the reported COVID-19 cases, which includes the country with no case, sporadic cases, countries that experience common explore, and the countries that are facing the transmission among the community. A lot of countries have done a crisis response plan immediately, and it is successful in controlling the outbreak of a pandemic. Lee (2020) point out that Singapore has in place a crisis response plan, which involves surveillance and containment measures in order to identify the many potential causes.

Singapore government is also involved in controlling the national border and controlling the community and social approach. As a result, the measure to interrupt the transmission of COVID-19 very effectively. Therefore, a crisis response plan should be carried out immediately in dealing with the pandemic crisis. On the other hand, the ineffective crisis plan that runs by the China government in the initial outbreak of COVID-19. The failure of the Chinese government in response crisis immediately and handling the human mobility between the cities of China in an earlier outbreak of COVID-19, such as at Wuhan. This situation is getting worst in which the COVID-19 was initially an outbreak on Chinese Lunar New Year, and there is a growing trend travelling o between cities during the period.

## 5 Discussion and Conclusion

Malaysia is a country that is suffering from an outbreak of COVID-19 since February 2020. The evidence shows that the epidemic has been spreading from one state to another in Malaysia. Based on Fig. 1, as of May, the cases per day were decreasing significantly from 142 cases on the 2nd of April 2020, to 47 cases per day. It should be highlighted that the significance of movement control order (MCO) and CMCO in preventing the outbreak of COVID-19 among the community and imported cases as well has been effective in combating this pandemic. Based on Fig. 3, Salim et al. (2020) had predicted this pandemic would reach a peak in the middle of April. As these policies have been allowed, Malaysia is likely to control the number of COVID-19 cases, which projected a peak in mid-April despite Malaysia had restricted travel and quarantine in order to postpone disease transmission to other areas of Malaysia. This finding is reliable with the results of dissimilar research on the dissemination of COVID-19.

In a nutshell, the Malaysia government needs to implement a great effort in term of controlling the spreading of COVID-19 from March until May. The travel restrictions to COVID-19-affected areas will have unassertive effects, and transmission control measures will have the highest advantage to mitigate the disease. The results provide data with possible use and application for identifying efficient restraint outlines and mitigation strategies, including local and international COVID-19 dimensions. Based on Fig. 2,

Malaysia is facing the continuously increasing COVID-19 cases from March until May. The cases have been increasing from 55 positive cases to 7059 cases, while the total number of patients who have recovered from the virus is 5,796 cases on the 21st of May 2020. It shows the ability to address a crisis objectively in spreading among the community in Malaysia. Figure 2 also shows the effectiveness of MCO and CMCO in preventing the spread of COVID-19 in Malaysia. MCO and CMCO have been flattening the confirmed cases and successfully increased the daily recovery patient. It supports the decreasing cases per daily, which showed in Fig. 1, especially from April to May.

Malaysia is suffering from the outbreak of COVID-19 since the end of March 2020. If based on Fig. 4, Malaysia is facing back continuously increasing of cases from 18th September until 17th October. The cases have been increasing from 21 positive cases up to 869 on 17th October 2020. It shows the pandemic is spreading is sprawling much faster in the community in Malaysia. Figure 4 also shows the CMCO is no more effective in preventing the COVID-19. Malaysia has taken action to mitigate the pandemic by implement MCO in the high-risk area. These policies had been allowing Malaysia effectively to control the COVID-19 cases, which projected a peak in the end of September.

The travel ban has been issued by the European country and China government after this pandemic became seriously. In cases of China government, the travel restriction serves as a significant point in breaking the spreading chain of COVID-19. Taking the lessons of China and European country, Malaysia should not issue the travel ban policy in the future to avoid the negative impact on the country. However, the Malaysia government need to control the imported cases from abroad for control the international transmission of this pandemic that suffering by Europe country. After facing this pandemic, there have some recommendation suggested in order to face future pandemic crisis includes telemedicine to apply a safety social distance in order to reduce the possibility of an infected pandemic. Apart from that, a fair allocation is also suggested in order to give priority to those who riskier or seriously as well as frontlines workers for preventing the future spreading of the pandemic among the community. The last recommendation is an immediate crisis response plan should be carried out in an earlier stage of the pandemic as it could break the possibility of remission of the pandemic among the community.

COVID-19 in Malaysia has been a heated discussion and of deep social concern to everyone where this pandemic is impacting the mental health of people worldwide, giving lessons to the public in strikingly different forms and at varying levels of severity. Specifically, the pandemic directly poses questions of vulnerability, as this pandemic will unreasonably much more impact those people with a lower salary. COVID-19 also affects the behavioural demand reactions of resident's short term and longer-term, especially business travel. This study suggests exploring the possibility of reopening the country's borders from COVID-19 for the people assessed at lower risk with the safeguard of community transmission. The key of this study is to give an opinion and guides the public health response to reopening the Malaysia border with an efficient system to help detect and manage the COVID-19 issues in a way to help them find out people to take responsibility for their actions.

Besides, COVID-19 also offers the Malaysian policymakers and researchers with convincing lessons about the implications of global changes. The task now is to learn together from this global tragedy in order to accelerate the sustainable development

of the world. In this report, all information was obtained to explore this problem. The knowledge gained from this crisis has become a source of inquiry. In addition, the ability of a closed border could boost protection and security issues. Security and security issues are critical and need to be tackled in order to prevent problems and give certain parties greater knowledge. Changing the outcome of COVID-19 is difficult to predict and affects everyday operations. There are a few drawbacks to this research. The sources obtained for this study came from secondary data; thus, the results of the data in analysis findings have been checked and may not be generalizable for ministering within particular industries. There has been a lack of empirical studies on these problems. It is crucial to carry out more research on the strategy to understand the impact of stigma on people when assessing the response to COVID-19. This will help deter and more accurately monitor COVID-19's existence by observing the outlines and patterns of the cases.

There is a crucial requirement not to return to business-as-usual in reopening the border when the pandemic over with the scale of the COVID-19 pandemic. This is because restricted control command is important to help reduce the overall number of people infected with COVID-19 and to safeguard the people's health facilities.

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