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Health Behaviour Changes Among Malaysian Citizens During COVID-19 Pandemic: A Review

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Abstract
Since the outbreak in early 2020, COVID-19 has fundamentally altered many aspects of society and human lives globally. The changes are likely to remain for many years to come. The COVID-19 pandemic hit the world in the least expected way and many countries were caught unprepared and struggled to establish public policies to avoid economic downturn while still providing adequate protection to the people in the initial stage. Various preventive steps were put in place to curb the spread of the pandemic. Malaysia has been praised as one of the five model nations that successfully stopped the virus transmission while safeguarding the welfare of its population. The impact on the mental wellbeing of these preventive strategies on Malaysians is still being felt. This paper aims to provide a comprehensive understanding of health behaviour changes reported in Malaysia from the first to the last movement control order (MCO). The behaviour changes observed in this study included physical activity, eating habits, sleep habits, smoking, and alcohol consumption, as well as psychological distress.

Keywords: COVID-19, physical activity, eating habits, sleep habits, smoking, alcohol consumption, psychological distress, health behaviours change

1. Introduction

The new coronavirus (2019-nCoV) that led to the Coronavirus Disease 2019 (COVID-19) pandemic was first detected in Wuhan, Hubei Province, China before spreading to the whole world [1]. In January 2020, the World Health Organization (WHO) announced the COVID-19 outbreak as a global public health emergency. Following the spread of the virus to every continent in the world, WHO declared a COVID-19 pandemic on March 11, 2020 [2]. The transmission of this disease in Malaysia started on January 25, 2020. By March 17, 2020, a total of 673 cases with two deaths had been reported. Following the WHO declaration of a pandemic, the Malaysian government announced a national lockdown, also known as the Movement Control Order (MCO) on March 18, 2020 [3]. Malaysia was one of the first countries in Southeast Asia to implement such a movement restriction strategy to contain the spread of the virus [2].

This pandemic led to a massive global health crisis that necessitated widespread behavioural modifications that imposed significant physical and psychological burdens on individuals and societies [4]. These

modifications, which included social isolation, shutdowns or lockdowns, quarantine, etc. were necessary in overcoming the COVID-19 pandemic [5]. The implementation of several safety precautions under MCO serves as evidence of the profound shift in social norms that MCO brought about in Malaysia. Additionally, the movement restrictions and economic shutdown have significantly altered normal activities and habits of the people, with widespread effects from altered dietary habits, and food preferences, to lifestyle choices for physical exercise and weight control [6]. Alcoholism, PTSD, anxiety, angry outbursts, constant worries about infections, risk perception, ambiguity, and distrust are some of the negative psychological outcomes [7]. In short, both the economy and the health of the people suffered as a consequence of this pandemic.

Throughout the implementation of MCO, substantial modifications in the health behaviours of the population emerged, which is the focus of this paper. It is important to understand how lockdown changed the health behaviour of individuals, but also how these disruptions might have affected the Quality of Life (QoL) in the population. This article outlined the transformation of various behavioural aspects, such as physical activity, eating habits, sleep habits, smoking, alcohol consumption, and psychological distress among Malaysians during MCO, and how they impact the overall QoL. By shedding light on these behavioural modifications, professionals involved in health promotion activities can gain valuable insights into the significance of consistent implementation of comprehensive health promotion strategies to mitigate the impact of future pandemics.

2. Physical Activity

According to WHO, physical activity can be undertaken in various ways: walking, cycling, sports, and other active forms of recreation, e.g., dance, yoga, and tai chi that can be performed either at work or home. All forms of physical activity can confer health benefits if undertaken regularly with sufficient duration and intensity [8]. Prior to the MCO, occupational physical activity was identified as the primary contributor to overall physical activity [9]. However, this particular form of physical activity saw a considerable decline during MCO due to workplace closure and the switch to remote work, as reported by Lim et al. (2022) who emphasised major changes in the working environment due to movement restrictions [10]. The restrictions on movement outside the home meant that any forms of physical activity were prohibited and they were required to stay home for schooling and working purposes which directly causing a decrease in physical activity [11]. Similarly, a Chilean study reported similar results regarding physical inactivity being a major consequence of the work-from-home (WFH) policy [12].

On the other hand, while it is evident that high-intensity physical activities have been limited among Malaysians during the MCO [13], there was also a noticeable shift in the uptake of moderate activities, such as dancing, jogging, and home workouts among individuals interested in performing physical exercise [11]. Another interesting finding by Hamzaid et al. (2022) showed an increased total time in doing house chores activities, likely due to more time being spent at home [14].

During the confinement period, it has been recommended that physical activity should be increased to at least 200-400 min per week to compensate for the reduction in the routine daily activity levels. Recommended aerobic exercises included walking inside the house, dancing, or balancing exercises such as walking on a line on the floor, on the toes or heels, heel-to-toe, and stepping over obstacles [15]. On a

similar note, increasing physical activity such as exercising at home with family and friends helped university students in Malaysia to cope with boredom and loss of daily routine, potentially safeguarding their mental and physical health [16]. Lim et al. (2022) reasoned that the increase in sedentary activities and screen time usage such as televisions, mobile phones, and laptops contributed to the decrease in frequency and duration of physical activity [10]. Similarly, a study from Spain also mentioned that prolonged screen exposure could contribute to inactive sedentary behaviours [17]. In addition, Ali et al. (2021), concluded that although the majority of the students engaged in low-intensity physical activity, they did not follow the recommended exercise time in the guidelines [13].

Another key point discovered among studies in Malaysia was the difference in the uptake of physical activity between females and males. Ali et al. (2021) stated that before the pandemic, male was more involved in outdoor physical activity compared to females [13]. However, during MCO, females were more active in daily physical activity. This finding was also supported by Salway et al. (2021) who observed a large drop-in physical activity in males [9]. Meanwhile, in China, the average steps per day and the average level of moderate or vigorous-intensity exercise also declined significantly for both males and females during the lockdown [18].

3. Eating Habits

The controls implemented during the MCO have also been associated with significant alterations in eating habits. Some dietary alterations may serve as a motivating factor for individuals to adopt healthier dietary practices [19]. Sustainable practice of healthy nutrition is essential for attaining optimal growth and development of all individuals in the physical, mental, and social aspects. According to a study conducted before the COVID-19 outbreak by Fulkerson et al. (2018), people living at home spend more time with their family members and they also tend to consume more home-cooked meals [20]. This study is in line with a study conducted among working adults in Selangor, Malaysia whereby home-cooked food has been linked with improved diet quality as individuals were more aware of the quality of ingredients and menu planning [21]. Similarly, our study results also showed that individuals became more creative with home cooking during the lockdown as they did not have the option of dining out.

Likewise, the confinement and control orders also led to a newfound appreciation of many aspects of life that they had previously taken for granted. As highlighted by Mohammed et al. (2020), students in Egypt became more appreciative of seemingly insignificant details in life, such as engaging in conversation with fellow students, having a variety of dining options with diverse dishes, as well as free from health and safety concerns [22]. Moreover, another study by Ahmad et al. (2022), observed an improved adherence to dietary guidelines [11]. The increment suggests an overall improvement in diet quality during the lockdown as compared to before, ranging from attaining adequate energy and protein intake, reducing salt, fat, and sugar intake, as well as increased consumption of fibre-rich foods.

On the other hand, eating habits and food preferences among individuals may also change due to restricted access to nutritious foods as compared to easier access to fast-food products [23]. According to an Italian study, individuals experiencing high levels of tension would have resorted to "comfort food" to fulfil their emotional, social, or gastronomic desires. "Comfort foods" refer to food rich in simple carbohydrates that increase serotonin production, thereby alleviating tension and boosting mental health. Nevertheless, the

negative impact of "comfort food" is contingent upon the high glycaemic index that is linked to an increased likelihood of obesity, diabetes, and heart disease, all of which can predispose to COVID-19 complications [24].

The implementation of stay-at-home orders and the limited availability of food options might have also caused certain individuals to skip meals or relax their calorie control, thus potentially worsening pre-existing tendencies of dietary restriction [25]. Moreover, Jun Chen et al. (2022) also discovered that more than half of the student respondents in their study reported consuming fast food, salty snacks, and sweets on a daily or weekly basis, as well as sugary beverages multiple times per day. In contrast, only one-quarter of the respondents indicated that they regularly consumed fruits and vegetables during the lockdown [26]. In the same study, lockdown measures also negatively impacted their dietary patterns and food preferences. The increase in body weight can be attributed to limitations imposed by the university administration that forbade them from procuring food from outside sources.

4. Sleep Habits

Another significant alteration in daily routines following the lockdown was changes in sleep habits. In a study by Robillard et al. (2020), three (3) notable shifts in sleep behaviour were observed: a reduction in the time spent in bed, delayed sleep onset, and an extension of time spent in bed. Moreover, the study findings indicated that these sleep difficulties may be influenced by gender, comorbidities, work and family commitment, waking times, stress, alcohol consumption, as well as television exposure [27]. This observation is further corroborated by Knell et al. (2020) who reported that sleep can be negatively affected by increased free time, heightened stress levels, and concerns about emerging issues [28].

Based on the findings of a Malaysian study, the sleep quality of the local population deteriorated throughout the lockdown period [11] which is similar to findings in European countries including Spain and Italy [17]. Additionally, Elhadi et al. (2021) suggested that the widespread use of the Internet for work and social interactions during the lockdown could have worsened sleep quality during the pandemic. However, these effects seem to differ in other countries [29]. For example, participants in a Korean study reported a decline in the satisfaction of sleep quality [30] while the Malaysian populace did not report any changes in their sleep quality [14].

As for sleep duration, there was an observed decline in the proportion of those who slept for less than six hours per day during the lockdown. The observed shift can be linked to the individual circumstances, for example, they no longer had to rise at early hours for their regular work commutes. Additionally, they may also encounter a decrease in job-related stress, thus enabling them to sleep longer [31].

5. Smoking And Alcohol Consumption

The extended period of lockdown during the pandemic has also altered smoking behaviours among the public. In a way, the pandemic has resulted in a significant shift in societal perspectives towards the cessation of tobacco consumption. In a study by Hoo et al. (2021), smokers appeared to be more thoughtful about the negative impacts of smoking cigarettes following COVID-19 [32]. In other words, the COVID-19 pandemic serves as a significant opportunity and a strong incentive for smokers to embark on a quitting

journey as a study finds that the MCO implemented was identified as a significant motivation for smokers to embark on smoking cessation endeavours [33].
Smoking rates among Italians increased noticeably during the pandemic with younger participants exhibited a higher propensity to engage in smoking behaviour during this time [34]. In contrast, the study in Poland revealed no statistically significant changes in smoking patterns during MCO period [23]. According to Elling et al. (2020), almost 20% of individuals surveyed reported a decrease in their daily cigarette consumption due to the perception that the coronavirus can cause serious morbidities if they continue to smoke [35].

Locally, a Malaysian study revealed that a significant majority (60.1%) of adult smokers demonstrated a strong desire to actively quit smoking due to the impact of the COVID-19 pandemic. The implementation of the MCO was recognised as a major incentive for smokers to initiate efforts to quit smoking [33]. Globally, one-third of smokers in the Netherlands exhibited the inclination to cease smoking [34]. It was echoed by Kowitt et al. (2020) in which nearly half of US smokers who attempted to quit within the first six months of the pandemic were able to achieve their goal of quitting [36].

With regard to alcohol consumption, two distinct patterns emerged amid the COVID-19 pandemic depending on the specific circumstances [37]. An examination of the increased consumption of cigarettes, alcohol, and cannabis during the pandemic revealed several key factors. Respondents cited reasons such as boredom, lack of social contacts, loss of daily structure, self-reward after a hard-working day, loneliness, and conviviality [34]. However, the consumption of harmful levels of alcohol may elevate undesirable behaviours such as aggression, domestic violence, child abuse, and neglect, ultimately impacting the sense of security within families and society [38]. Additionally, previous research has suggested that college students with poor sleep quality tended to consume alcohol more frequently and in larger quantities during the lockdown, thus resulting in an array of negative consequences. Overall, about 20% of higher education students from Asia, Europe, and North America reported an increased alcohol consumption during the pandemic while another 20% reported a reduction in their alcohol intake compared to pre-pandemic times [38].

During the initial phase of the lockdown, there was a noticeable lack of strong regulations in Malaysia pertaining to the purchase of alcoholic beverages. An increase in alcohol consumption could be attributed to the lax regulatory environment. However, following the MCO, bars and clubs were closed. Alcohol brewing operations were also suspended [39]. Among government employees in Malaysia, the COVID-19 epidemic has resulted in a notable alteration in the patterns of alcohol use, likely due to the heightened levels of stress experienced and increased duration of staying indoors14. Among students, the prevalence of substance use was relatively low, with 3.9% of cigarette smoking and 12% of alcohol consumption in the last 30 days when surveying a group of university students in Malaysia [40].

6. Psychological Distress

The dread, concern, and anxiety associated with COVID-19 represented the main psychological impact of the pandemic that gave rise to strong emotional responses, hence predisposing to stress and depression [41]. The implementation of lockdown measures that entail movement limitations and disruptions to regular work schedules could have also elicited emotional responses, such as increased levels of anxiety

and feelings of boredom [14]. Among the Malaysian community, about one-third of individuals encountered varying degrees of mild to severe during the MCO era. Multiple factors have been identified as potential contributors to an increased propensity for depression, including younger age, the lack of a romantic partner, residing in a red zone (high COVID cases), low-income group, and those employing avoidant coping mechanisms. Yee et al. (2021) revealed a higher likelihood of depression symptoms among younger individuals [42], consistent with studies conducted in the initial stage of COVID-19, for instance, a national survey in China revealed that young adults had a higher susceptibility to depression [43].

In a recent online survey, it was found that university students in Malaysia experienced negative emotions while performing self-quarantine during lockdown. They expressed frustration arising from poor internet connectivity, restricted movement, limited freedom, lack of access to their favourite foods, challenges in focusing on their assignments, limited options for physical activities, and a lack of human touch [22]. Some individuals responded to these circumstances by watching online drama series, acquiring new culinary skills, engaging in physical activity, and maintaining social connections with their loved ones. The variability in coping mechanisms could be associated with the individual's perception of self-control [40]. Additionally, Alam et al. (2021) demonstrated that sharing the load of house chores at home with other family members reduced the mental health issues faced by students [44]. Thus, this is one of the coping mechanisms that can be recommended to mitigate potential mental issues during lockdown.

A significant increase in psychological suffering was reported among university students who remained with their families during the lockdown as compared to those who stayed apart from families, either in residential colleges or rented accommodations [40]. College students who were females, younger (<18 years old), and living alone were strongly linked to higher anxiety levels. Financial limitations, distance learning, and uncertainty about one's future professional and academic prospects emerged as the primary stressors that lead to various adverse mental health effects [45]. This finding is consistent with a study conducted among students in Bangladesh in which the students' mental health state during the pandemic was correlated with their age. Furthermore, a higher prevalence of stress was reported among students residing in urban areas than in rural areas [44].

Next, Mohammed et al. (2023) indicated that many students experienced symptoms indicative of stress, specifically sleep disturbance. Maintaining a consistent rest schedule might be challenging for certain individuals. Some suffer from prolonged periods of wakefulness throughout the night, frequently surpassing a daily duration of eight hours of alertness [33]. Furthermore, Sundarasen et al. (2020) revealed that almost 30% of university students displayed varied levels of anxiety as a result of prolonged confinement during lockdown [45].

7. Conclusion

Without a doubt, the COVID-19 pandemic has placed a substantial strain on the daily lives of individuals. It is widely acknowledged that behaviour changes evolved from a multifaceted process that involved both individuals and society. As recommended by the WHO, education, isolation, prevention, transmission control, and effective treatment of infected individuals were the key strategies in the management of contagious diseases such as COVID-19. All of these strategies involve health behaviour modifications to

ensure overall wellbeing, particularly in the challenging times of outbreaks. This review provided a comprehensive understanding of the outcomes resulting from the public reactions to this unprecedented public health crisis. We believe that this review offered significant insights into the intricacies and ramifications resulting from behaviour changes among the general population following the lockdown that will be beneficial for better planning in anticipation of future pandemics or outbreaks.

8. Conflict of Interest

The authors declare no conflict of interest.

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