Journal of Engineering Science and Technology
Vol. 17, No. 5 (2022) 3055 - 3070

RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE AND FOOD CHOICES AMONG MALAYSIANS DURING COVID-19 LOCKDOWN

SOOK KHUAN. WONG, POULINE CL. KOH*

School of Business, Saito University College
The Design School, Taylor's University, Taylor's Lakeside Campus
Section 52, 18, Jalan Tengah, PJ New Town, 46200, Petaling Jaya, Malaysia
No. 1 Jalan Taylor's, 47500, Subang Jaya, Selangor DE, Malaysia
*Corresponding Author: pouline.koh@taylors.edu.my

Abstract

Health and weight remain a worrying topic in Malaysia due to the constant rising rate of obesity and chronic diseases related to poor food choices. The situation continues to cause anxiety especially weight gain during the Covid-19 lockdown among Malaysians were repeatedly reported, stressing a major concern on further straining the finances of healthcare allocations in the country. Despite many studies attempted to determine the risk factors and consequences, yet the relationship of emotional intelligence (EQ) and food choices among Malaysians is unknown. This study sets out to examine the relationship of four key EQ elements including (i) self-awareness, (ii) self-regulation, (iii) social awareness, and (iv) social skills among Malaysians when making food choices during lockdown. A total of 375 questionnaires were gathered from Klang Valley, Malaysia. Findings reported that the four elements of EQ have significant relationship with food choices ($p<0.05$) among the Malaysians. When compared further, study revealed that the score of self-awareness (47%), social skills (46%) and social awareness (45%) are parallel among Malaysians except for self-regulation, where 62% of Malaysian males are lacked better self-control when making food choices during lockdown. In contrast, higher self-awareness is recorded among Malaysian females where such feature enables them to better regulate their food choices. Findings also revealed that younger Malaysians portrayed lower score in all elements when compare to older participants during the lockdown period. The findings underline the role of EQ as vital as acquiring nutrition knowledge when deciding food choices.

Keywords: Covid-19 lockdown, Emotional intelligence, Food choices, Malaysian health.

1. Introduction

Health and weight remain an emerging foci in Malaysia especially the prevalence of obesity has increased steadily from 14% in 2006 to 18% in 2015 (NPANM III, 2016). While the Malaysian government has been steadfastly promoting healthy eating by implementing the National Plan for Action for Nutrition of Malaysia (NPANM) since 1996 with its latest plan in 2016 that stretches up to the year of 2025, these efforts seem to be futile where most Malaysians still fail to translate healthy eating into good practices [1]. Recent report showed that 63% of adults are likely to be subjected to at least one non-communicable disease (NCD) risk factors including obesity or high blood pressure or high cholesterol that are often caused by poor food choices [2].

The situation continues to become more concerning especially Covid-19, a highly pathogenic virus that is causing a global pandemic where quarantine and isolation measures are implemented to control the current outbreak since March 2020 in Malaysia. These measures, however, induce several conditions such as people are forced to stay at home leading to reduction of physical activity and outdoor movement; an apparent pattern of poor food choices and eating habits are reported, weight gain is rising in multiple countries, and the rate of anxiety and stress are increasing at the same time [3, 4]. In particular, studies pointed out that poor food choices are a common health issue that causes a large impact not just in physical, but also mental health. Poor food choices traits include having certain preference for type of food, or not choosing the appropriate daily need of healthy foods, or over-consuming too many types of unhealthy food [5, 6].

While the lockdown measures are imperative to abate the spreading of Covid-19, the impact on emotions among Malaysians' when making food choices by eating at home remains unclear. According to Johnson, Batey and Holdsworth, emotional intelligence (EQ) can be defined as the ability to perceive, control, and evaluate emotions and decision making, thus, having the ability to exercise EQ during difficult time is highly important [7]. Numerous research has also shown that EQ acts as a facilitator of positive health practices and behaviors. For example, in Poonamallee et al. [8], Zeidner and Roberts [9] various studies highlighted that emotionally intelligent individuals are more likely to maintain proactive self-care practices such as making choices for healthy diet and regular exercise.

Statement of Problem

There has been much research into the causes, health risk factors and consequences of obesity as well as the interventions and policies to promote healthy eating behaviour and smarter food choices across the country even before the pandemic. Nevertheless, with the emergence of Covid-19 and its impact towards the individuals and society at large, food choices during lockdown becomes more pertinent especially for emotional eating during the pandemic. Despite many studies have tried to determine the relationship between emotions and eating, yet the relationship of EQ and food choices among Malaysians, alas, remained rarely discussed till date [10].

Objectives of the Study

With EQ classified as a key role in determining the success of decision making in everyday life, Cherniss et al. [11] highlighted that it is important to assess how EQ among the consumers drive better decision when making food choices that can help

better inform the eating behaviors during the pandemic. Therefore, this study sets out to examine the relationship of EQ and food choices among Malaysians. In this research, four prime elements including (i) self-awareness, (ii) self-regulation, (iii) social awareness and (iv) social skills are further assessed. Objectively, this study aims to answer the following questions:

- What is the relationship between self-awareness and making food choices?
- What is the relationship between self-management and making food choices?
- What is the relationship between social awareness and making food choices?
- What is the relationship between social skills and making food choices?
- What is the relationship between the overall emotional intelligence and making food choices?

2. Related Work

The effect of Covid-19 lockdown

Covid-19 had brought huge impact on the eating and drinking habits among the people all around the world, this means that people are more cautious about what they eat and drink. People prefer to improve their health in order to boost their immunity level during this pandemic, therefore decreasing the risk of acquiring the disease [12]. However, by means of lifestyle changes, most people tend to spend more time at home due to the safety measures taken by the government. With the implementation of lockdown, it has exacerbated the existing issues in weight gain in these unprecedented times [13].

Studies show that the outbreak of Covid-19 where people adhere to the lockdown, has significantly caused confusion and lifestyle changes, including commuting restrictions, worried and scared of the disease, closure of schools and businesses, all these brought about devastating psychological impacts especially anxiety [14, 15]. As a result, there is a high percentage of people tend to increase their food intake and having weight gained issues, this may also be due to stress or more snacks at night [16, 17].

Similarly, in Malaysia, many Malaysians have been complaining about their weight gain during the movement control order (MCO) period which they were homebound and less active physically [18]. The figures are grim in Malaysia especially the data shows a threefold increase of obesity rate among children. Not only such early exposure will affect the overall quality of life and productivity for our generations to come, the pervasiveness of health and weight issues will soon become a burden to the country's finances of healthcare if it prevails [19].

Role of emotional intelligence

While the new condition brought by Covid-19 may compromise maintaining a healthy, varied diet, as well as a regular physical activity, research suggests that EQ could play a role to enhance and act as resources for adaptive habitual and coping behaviours that added health benefits [20]. According to Goleman [21], emotional intelligence includes abilities such as being able to motivate oneself and persist in the face of frustrations; to control impulse and delay gratification; to regulate one's moods and keep distress from swamping the ability to think; to empathize and to hope.

In his EQ framework, four main elements are most notably accepted as a compendium to measure the relationship of emotions: (i) self-awareness; (ii) self-regulation; (iii) social awareness; and (iv) social skills (Fig. 1). Several studies, in addition to Goleman's framework have investigated the control effect of EQ in health-related behaviour including having nutritious diet, demonstrating controlled efforts to maintain regular exercise, and adequate sleep, all of which have been associated with increased positive mood and better health-related quality of life [10]. Additionally, low perceived EQ has also been linked to a variety of adverse health outcome including poor coping, alcohol related issues, substance use issues and eating disorders [22, 23].

Goleman believes that high EQ can improve people's general quality of life and personal and social success [24]. For example, higher EQ shows how people can use efficiently their skills in different situations and shows an emotional state appropriate to these situations. One of the characteristics of high EQ people is the control, postponing, or removal of impulses or pressures that block the path to goal achievement. Study shows that those with high EQ rarely abandon their attitudes, and as a result, they can effectively control behaviour such as emotional eating when compared to those with low EQ [25].

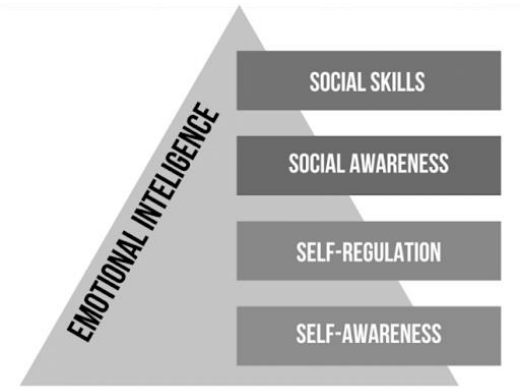

Fig. 1. The concept of emotional intelligence encapsulated by four main elements [21].

Emotional intelligence and food choices

With the emergence of Covid-19 and its impact towards the individuals and society at large, food choices during the lockdown becomes more pertinent especially for emotional eating during pandemic. Many studies have tried to determine the relationship between emotions and eating as eating has been commonly recognised as a way to deal with stress and emotions [26-29]. However, there are only very small group of studies that have examined positive emotions, indicating that positive and negative emotions differ in their association with specific eating behaviours and food choices, yet only negative emotions are often studied and linked to adverse eating behaviours [30-32]. It is apparent that gaps and inconsistencies remain in the study of emotion relating to eating and food choices during pandemic. In particular, the association between emotional intelligence and food choices are scarce in the literature and are rarely considered.

In addition, as the society is moving towards healthier lifestyle, food choices play fundamental and deciding role in this. There was some past research that linked emotional intelligence to eating behaviours and physical activities of individuals. Nonetheless, this is not prevalent in the Malaysian setting. Researches have focused on the emotional intelligence links to improve psychological and physical health [10, 33].

A research done by Gnanaiah [34] stipulated that there was no significant difference between the overall emotional intelligence of a binge eating disorder individual and a non-binge eating disorder individual. However, binge eating disorder individuals were found to have lower self-esteem and self-control and they were found to be emotional when eating. On another research by Wong et al. [35], it was found that there was no significant relationship between emotional intelligence and body mass index. Nevertheless, the same research revealed that there was a negative relationship between emotional eating and emotional intelligence.

Sidor and Rymski [36] disclose that more than 50% were reported to have eat and snack more frequently during the Covid-19 pandemic and these tendencies were more apparent in overweight and obese individuals. The research also highlighted that the lockdown imposed affected the eating behaviour and choices of food among individuals. Another research shows that individuals reported changes in their food choices and their eating habit demonstrated higher level of depression [37]. In short, individuals who were unable to control or manage their emotions will have drastic change in their food choices and eating habits.

3. Materials and Methods

Sampling and data collection

To examine the relationship between EQ and food choices among Malaysians, this study adopted cross-sectional design through an online survey conducted between March to May 2020, where the targeted respondents were selected using purposive sampling with the inclusion and exclusion criteria. In particular, Malaysians who are aged between 18 - 55 and above living within Klang Valley were invited to participate in the survey. Those who are non-Malaysians or residing outside the Klang Valley were excluded from sampling.

Such sampling was made based on the similarity in the lockdown phenomenon faced by the respondents who reside in Klang Valley. To that end, not only Klang Valley contains Malaysia's most populated areas sprawling with major commercial capitals, but the area also received alarming rate of increase in obesity since 2015 in comparison to other areas in Malaysia [38]. Additionally, criteria such as qualification, marital status and professions were not part of the selection consideration in this study.

Survey invitation through Google forms was distributed to a total of 750 respondents by sharing the link of the questionnaire form using emails, WhatsApp messages and via social media platforms. With periodic reminders, 412 responses were received. With data reduction technique, only 375 surveys were fully completed and met the sampling criteria, they were included in the study for further analysis by Krejcie and Morgan [39] and Tongco [40]. Participation in the survey was voluntary and respondents' consents were obtained prior to the start of the

survey During this process, participants were assured regarding the confidentiality of their responses.

Study instrument

Explicit and straightforward statements were designed to gauge responses to the given constructs. This approach can obtain an appropriate and accessible understanding of the survey respondents. The questionnaires were designed by using a Five-Point Likert Scale ranging from 1 to 5 (1=*Never;* 2=*Seldom*, 3=*Sometimes*, 4=*Frequently and* 5=*Always*), adapted from Goleman's Theory of Emotional Intelligence (EQ) and its four prime elements whereby the frequency of number presented in each figure represents the highest and lowest score of EQ as shown in Arnow et al. research [41]. The instrument had undergone words checking and were designed with a total of 40 items. The distribution of items is as follow:

a. Self-awareness (10 items)
b. Self-regulation (10 items)
c. Social awareness (10 items)
d. Social skills (10 items)

The survey questionnaire consisted of two parts in total. Part One encompassed basic demographic information such as nationality, age, gender, and race. Part Two was designed with the emphasis on measuring EQ and food choices which the four prime elements of EQ were presented in each section under Part Two to further assessed: (i) self-awareness, (ii) self-regulation, (iii) social awareness and (iv) social skills.

The questionnaire was designed in English language. Initially, a pilot test was carried out among 30 respondents to ensure appropriate wording, and areas were checked for improvements. As a result of piloting, few minor changes were made in wordings to fit with the aim of this research. This process was deemed vital to allow minimising measurement error.

Statistical analysis

In order to explain the features of the study participants, frequency distribution and descriptive statistic (mean ± standard deviation) and regression coefficient analysis were performed. Data were then categorised into demographic profiles and regression data to measure the relationship of each EQ element and food choices among the Malaysians. Statistical testing was conducted using statistical package for social science (SPSS 25.0). The significance level was set at two-sided $p<0.05$.

4. Results and Discussion

A total of 375 respondents participated in this study and their socio-demographic characteristics are shown in Table 1. The sample disclosed that majority of the respondents were between the age of 18-24 followed by 25-34 (24%). Gender composition of the respondents were 66% female whilst 34% were male. In addition, Chinese female comprised the highest number of respondents with approximately 33%, Malay female respondents at 23% while 18% were Malay male respondents. Female aged between 18-24 recorded the highest number (24%) followed by female in the age group of 25-34 (15%) while only 13% of male respondents were from the age group of 18-24.

Table 1. Characteristics of respondents participated in the study.

Characteristics	Frequency	Percentage
Age		
Below 17	6	1.6
18-24	139	36.6
25-34	90	23.9
35-44	66	17.5
45-54	35	9.3
55 and above	41	10.6
Gender		
Male	128	34.2
Female	247	65.5

Means and standard deviations

Figure 2 presents the mean and standard deviation for the food choices and elements of emotional intelligence among respondent. Findings reveal that social skills consist of the highest mean of 3.53 with standard deviation of 0.68 while self-regulation entails the lowest mean among the elements of emotional intelligence (3.33) and standard deviation of 0.53. In short, data disclose that participants who scored high in social skills are good in socialising however may have lower self-regulatory.

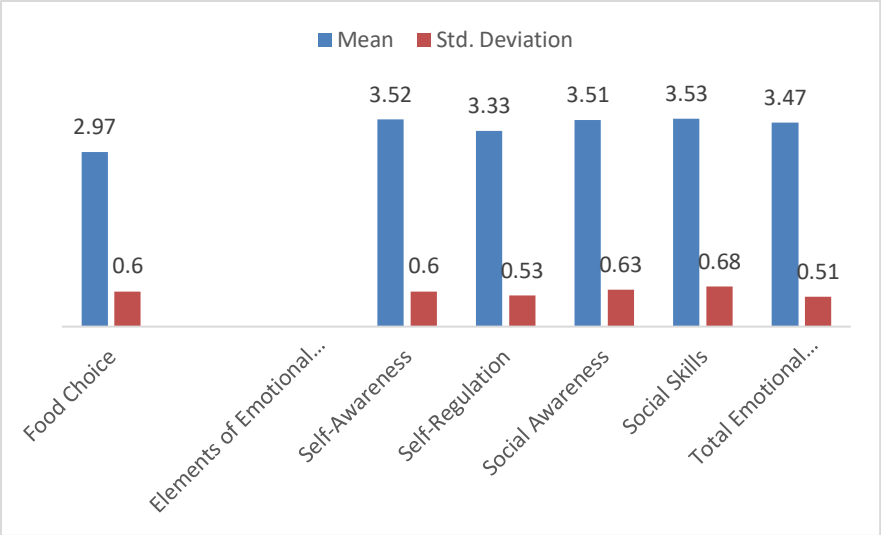

Fig. 2. Mean and standard deviation of variables.

Relationship of emotional intelligence and food choices

As presented in Table 2, it was found that there is a significant relationship between self-awareness and food choices with its significance level at $p<0.05$. This can be deduced that individuals are aware of their emotions when they are making the food choices decision. For instance, when they are feeling happy, they are more likely to resort to certain food choices as opposed to when they feel stress or anger during the pandemic. These individuals are more aware of the feelings they have, external

events that may affect their feelings and the food choices they made. As a result, they are likely to make better food choices decision and not resort to panic eating or poor food choices decision.

Table 2. Coefficient of self-awareness and food choices.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.215	.179		11.880	.000
	AVGSA	.240	.050	.241	4.796	.001

In further comparison, Table 3 portrayed that there is a significant relationship between self-regulation and food choices ($p<0.05$). Findings uncover that individuals who have better control of their self and emotions are able to make better food choices. For example, these individuals are likely to be able to control themselves and not to overindulge or overeat when they make food choices decision during the situation such as lockdown. They are less likely to be distracted nor affected by any event or stressful situation due to their high self-control ability.

Table 3. Coefficient of self-regulation and food choices.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.903	.189		10.058	.000
	AVGSR	.321	.056	.284	5.720	.001

In Table 4, data shows the significant relationship between social awareness and food choices ($p<0.05$). Finding explains that in a scenario such as lockdown during the pandemic period where people are required to work from home to avoid the spread of covid-19, not only individuals who have high social awareness are likely to be more aware of their own emotions but also those around them. Given that these individuals are more aware of the other's emotions, they are also perceived more capable to identify mood changes and have better understanding on how others make food choices.

Table 4. Coefficient of social awareness and food choices.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.038	.168		12.097	.000
	AVGSocA	.266	.047	.280	5.631	.001

In this study, the coefficient of social skills and food choices is studied. Results shows that there is a significant relationship between social skills and food choices (Table 5). This can be deduced that individuals with good social skills are likely to have better communication and have better ability in making food choices. Moreover, these individuals are able to share their emotions with the people around

them such as their thoughts of making certain food choices, discussing about their food choices or communicate with others about making food choices. In contrast, those who are less inclined in socializing are likely to have difficulties in communicating and thus likely to resort to poor decision making in food choices during the lockdown period.

Table 5. Coefficient of social skills and food choices.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.004	.154		12.989	.000
	AVGSS	.274	.043	.314	6.389	.001

In sum, results in Table 6 shows that there is a significant relationship between overall EQ and food choices ($p<0.05$). Findings also reveal that despite the many restrictions imposed due to the pandemic, food choices remain a pivotal role in ensuring the sanity, healthiness and happiness of individuals in the society [42]. With that, individuals with high emotional intelligence are likely to make better food choices and maintain better emotional and wellbeing.

Table 6. Coefficient of overall EQ and food choices.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.583	.202		7.841	.000
	Total EQ	.010	.001	.339	6.952	.001

Emotional intelligence Among Malaysians in food choices

As much as making healthy food choices remains an important part of maintaining one's health and emotions amid the global pandemic, this study revealed a significant relationship of all the four elements of EQ and food choices, as well as the level of EQ among 375 Malaysians are alarmingly low (Fig. 3).

Majority of the Malaysians scored the lowest in self-regulation with 62% followed by self-awareness (47%), social skills (46%) and social awareness (45%). Most of the respondents scored the medium range for all EQ elements and only a handful percentage scored highest for all the elements in all elements of EQ.

Figure 4 shows the lowest and highest score of EQ based on gender. Results show that female carried the lowest score for self-awareness (n=103) during lockdown. The low score in self-awareness among female participants portray a less inclined scenario in acknowledging their own feelings and emotions thus avoidance behaviour often occur. However, these situations may actually help regulate and moderate their food choices and eating behaviour [43].

Male on the other hand, scored the lowest for self-regulation when it comes to food choices during lockdown (n=80). Studies reported that between men and women, women tend to have better self control on food, they are more invested in food-related issues, have better knowledge of food and nutrition, are more prone to go on a diet, and are more likely to perceive themselves as needing to watch their food intake [44-46].

On the high spectrum, females and males scored the highest for social skills (*n*=97) and (*n*=43) respectively. The findings suggest that both male and female participants tend to be friendly and sociable, wanting to create relationship and friendships with others. One possible reason was that during the pandemic, the pace of the whole society slowed down and have created more opportunities and time among the community members to want to care for each other [47, 48].

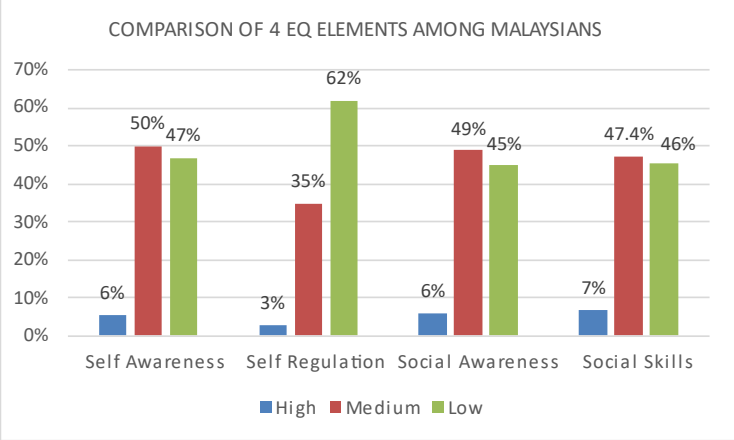

Fig. 3. Malaysians recorded the lowest score in self-regulation.

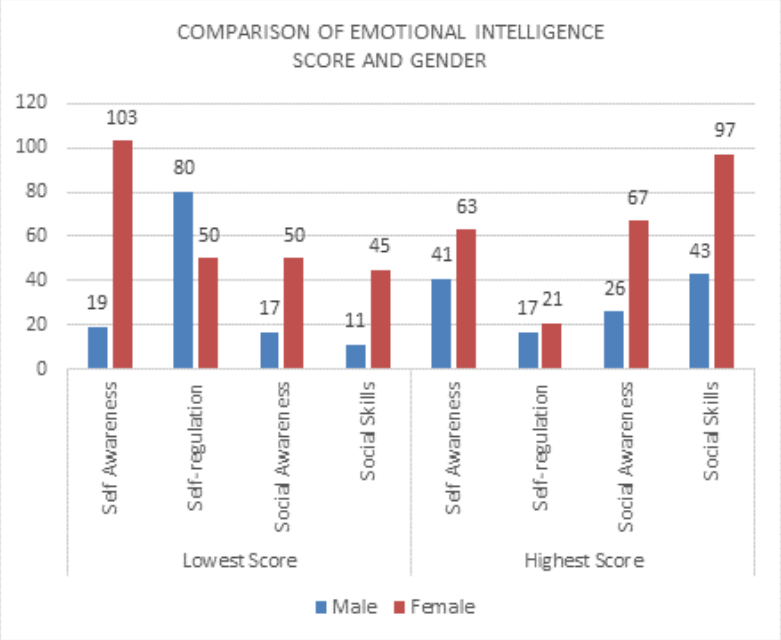

Fig. 4. Malaysian males scored the lowest in self-regulation while females scored the lowest in self-awareness.

EQ in age differences were also observed. According to World Health Organization, young people are classified in the 10-24 year age group. In this study,

finding revealed that younger participants projecting low score in all elements where self-regulations marked the lowest compare to older participants over the lockdown period (Fig. 5). Despite that the healthy food choices regarded an essential feature for body weight management, emerging studies also revealed that when indivudual experiencing negative affect or mood especially during lockdown phase of Covid-19, comfort eating will be adopted as a form of coping strategy to contend with the stressful situations [29, 41, 49].

This is concerning the younger adults as recent studies suggested that they are more likely to subject to comfort eating compare to older adults simply because older adults have better emotional experience than younger people - even during a pandemic that is placing them at greater risk than any other age group [50]. Two factors likely account for age advantages. The first is experience where older adults have had more years to encounter stressful and negative experiences; the second is that older adults experience changes in their motivations and goals. There is considerable evidence that older adults are more motivated to focus on the good in their daily lives, display greater emotional stability in day-to-day life and when faced with critical situation, they are like to accept than younger adults who tend to experience greater feelings of anxiety [51, 52].

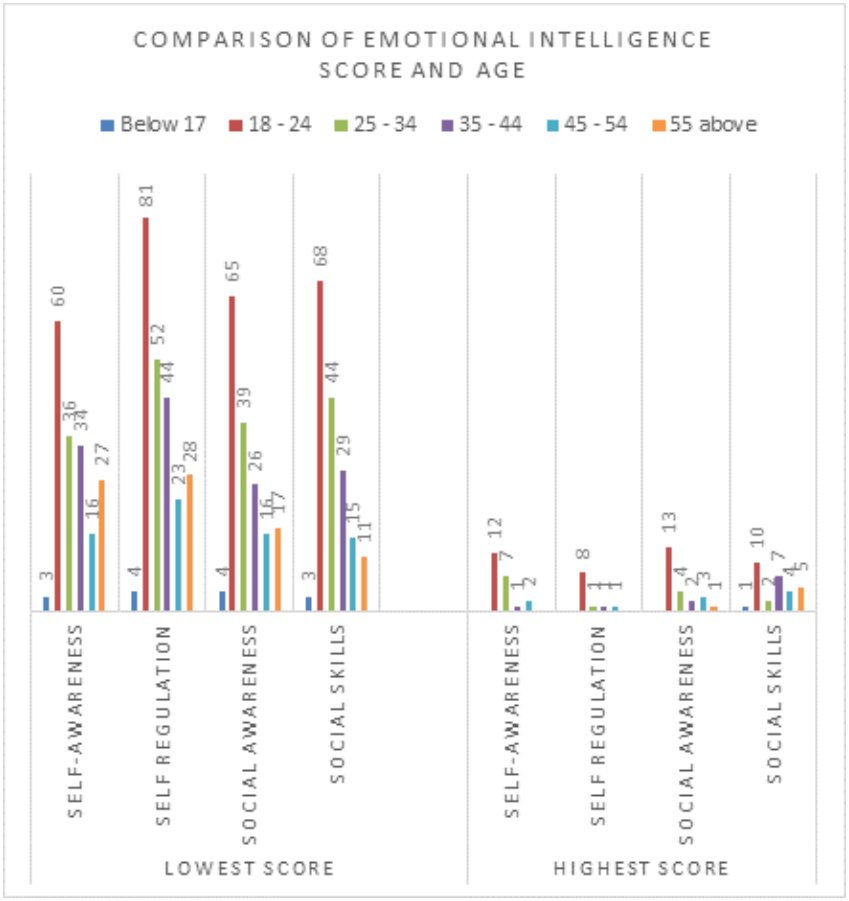

Fig. 5. Malaysian's young adults recorded lower score across all EQ elements.

5. Conclusions

A total of 375 participated in the study, 65.5% were females and 36.6% were aged between 18 - 24 years old. The study found out that during the lockdown, a significant relationship of all the four elements of EQ and food choices, as well as the level of EQ among 375 Malaysians are alarmingly low. Across the four elements in EQ, there were more than half of the Malaysians scored the lowest in self-regulation. To compare further, when it comes to food choices during lockdown, the score for self-regulation is seemingly poor among male respondents while females displayed better self-control. In addition, between younger and older Malaysians, lower score in all four EQ elements are marked among younger respondents when making food choices during the lockdown. On the contrary, finding shows that Malaysians yearn to create relationships with others during the lockdown where the social skills are scored the highest across all respondents.

Implications of the Study

Explicit and This study provides an overview of the relationship of EQ and food choices among Malaysians during the Covid-19 lockdown in Malaysia. While this research shows correlation between each element of emotional intelligence and food choices among Malaysians, participants in this study appear to thrive in some aspects of EQ, yet many struggled with self-regulation when faced with food choices. Our results revealed that Malaysians who are less aware of their own emotions are in fact better in making food choices and are less likely to resort to comfort eating. Notably, the study also brought dramatic pessimism for self-regulation among young Malaysian adults. The findings suggest that older Malaysian adults have better self-control and are highly motivated, thus have better control from making poor food choices when going through stressful atmosphere.

In addition, our findings suggest that Malaysians scored higher in social skills where it has been assumed that a close relationship with others and an understanding environment have better contribution to a positive emotion which is essential to avoid emotional eating [53]. As social skills proven to play a key role in determining the level of resilience at the times of adversity, it is perceived as one of the most powerful coping strategy that can influence one's level of resiliency [54, 55]. For instance, individuals who are able to accept negative experiences as a part of growth experiences are more exposed to positive coping mechanism such as adaptive eating instead of comfort eating.

Thus, not only Covid-19 put Malaysians' relationship with food at risk through the continuous rise of stressors (e.g. anxiety of lockdown, worried and scared of the disease), it has also given ultimatum to the finances of healthcare in the country. Nevertheless, this study recommends that by identifying and improving one's EQ, it enables Malaysians to make better food choices and help increases their resilience to overcome the lockdown.

Limitations and Future Research

Although the current study has a commendable contribution to the literature and practice, however, this study also has a few limitations which could be the future directions. First, with the current Covid-19 pandemic affecting the lives of many individuals, it is indispensable to look into how emotional intelligence can be improved among young Malaysians when making food choices especially post-

pandemic. Second, future research can further explore the benefits of working on self-regulation strategies as part of treatment in a post-pandemic world at a time when people have limited control over the antecedents of negative experience. Lastly, this study is based on questionnaire survey, however, in order to get an in-depth understanding of the impact of food choices during critical time, future studies should include interviews and focus group discussions.

References

1. *National plan for action for nutrition of Malaysia III* (2016). Retrieved October 20, 2020, from http://nutrition.moh.gov.my/wp-content/uploads/2016/12/NPANM_III.pdf
2. News Straits Times. (2018). *Choosing to eat healthy*. Retrieved October 23, 2020, from https://www.nst.com.my/opinion/columnists/2018/01/327860/choosing-eat-healthy
3. Mattioli, A.V.; Pinti, M.; Farinetti, A.; and Nasi, M. (2020). Obesity risk during collective quarantine for the COVID-19 epidemic. *Obesity Medicine*, 20, 100263.
4. Varshney M.; Parel J.T.; Raizada N.; and Sarin S.K. (2020). Initial psychological impact of COVID-19 and its correlates in Indian community: An online (FEEL-COVID) survey. *PLOS ONE*, 15(5): e0233874.
5. Ganasegeran, K.; Al-Dubai, S.A.; Qureshi, A.M.; Al-abed A.A.A.; Rizal, A.M.; and Aljunid S.M. (2012). Social and psychological factors affecting eating habits among university students in a Malaysian medical school: A Cross-Sectional Study. *Nutrition Journal*, 11:48, 7 pages.
6. Driskell, J.A.; Kim, Y.N.; and Goebel, K.J. (2005). Few differences found in the typical eating and physical activity habits of lower-level and upper-level university students. *Journal of the American Dietetic Association*, 105(5), 798-801.
7. Johnson, S.J.; Batey, M.; and Holdsworth, L. (2009). Personality and health: The mediating role of trait emotional intelligence and work locus of control. *Personality and Individual Differences*, 47, 470-475.
8. Poonamallee, L.; Harrington, A.M.; Nagpal, M.; and Musial, A. (2018). Improving emotional intelligence through personality development: The effect of the smart phone application based dharma life program on emotional intelligence. *Frontiers in Psychology*, 9, 169.
9. Zeidner, M.; Matthews, G.; and Roberts, R.D. (2012). The emotional intelligence, health, and well-being nexus: What have we learned and what have we missed? *Applied Psychology Health Well Being*, 4(1), 1-30.
10. Malinauskas, R.; and Malinauskiene, V. (2018). The mediation effect of perceived social support and perceived stress on the relationship between emotional intelligence and psychological wellbeing in male athletes. *Journal of Human Kinetics* 65:291-303.
11. Cherniss, G.; Extein, M.; Goleman, D.; and Weissberg, R.P. (2006). Emotional intelligence: What does the research really indicate? *Educational Psychologist*, 41(4), 239-245.
12. Zachyary, Z.; Forbes, B.; Lopez, B. et al. (2020). Self-quarantine and weight gain related risk factors during the COVID-19 pandemic. *Obesity Research & Clinical Practice*, 14(3), 210-216.

13. The Press and Journal, (8 June 2020). *Why we've gained weight during lockdown and what to do about it.* Retrieved January 2, 2021, from https://www.pressandjournal.co.uk/fp/lifestyle/food-and-drink/2236103/why-weve-gained-weight-during-lockdown-and-what-to-do-about-it/
14. Laitinen, J.; Ek, E.; and Sovio, U. (2002). Stress-related eating and drinking behaviour and body mass index and predictors of this behaviour. *Preventive Medicine*, 34(1), 29-39.
15. Van der Ploeg, H. P.; Chey, T.; Korda, R. J.; Banks, E.; and Bauman, A. (2012). Sitting time and all-cause mortality risk in 222 497 Australian adults. *Archives of Internal Medicine*, 172(6), 494-500.
16. Haidar, S.A.; De Vries, N.K.; Karavetian, M.; and El-Rassi, R. (2018). Stress, anxiety, and weight gain among university and college students: A systematic review. *Journal of the Academy of Nutrition and Dietetics*, 118 (2), 261-274.
17. Mughamis, N.S.; AlAsfour, S.; and Mehmood, S. (2020). Poor eating habits and predictors of weight gain during the COVID-19 quarantine measures in Kuwait: A cross sectional study. *International Journal of Biomedical and Clinical Sciences*, 5(3), 257-271.
18. The Star. (16 June 2020). MCO Diets Drive Up Malaysia's Obesity Rates. Retrieved January 12, 2021, from https://www.thestar.com.my/news /nation/2020/06/22/mco-diets-drive-up-malaysias-obesity-rates
19. Chong, S.P.; Appannah, G.; and Sulaiman, N. (2019). Predictors of diet quality as measure by Malaysian healthy eating index among aboriginal women (Mah Meri) in Malaysia. *Nutrients*, 11(1), 135.
20. Salovey P.; and Mayer J.D. (1990). Emotional intelligence. *Imagination, Cognition and Personality*, 9(3), 185-211.
21. Goleman, D. (1995). *Emotional intelligence: Why it can matter more than IQ*. New York: New York Times.
22. Riley, H.; and Schutte, N.S. (2003). Low emotional intelligence as a predictor of substance use problems. *Journal of Drug Education*, 33(4), 391-398.
23. Fernandez-berrocal P.; Alcaide R.; Ex-tremera, N.; and Pizarro, D. (2006). The role of emotional intelligence in anxiety and depression among adolescents. *Individual Differences Research*, 4(1), 16-27.
24. Ranjbordar, S. (2010). Emotional intelligence and ways of increasing it. *Journal of Counselor*, 5(3), 12-14.
25. Firouzjah, H.; Sheikh, M.; and Homayouni, M.A. (2014). Investigating the relationship between emotional intelligence, body image, and eating disorders in team and individual athletes. *Journal of Motor Behavior* 15, 141-154.
26. Meyer, C. N.; Leung, N.; Barry, L.; and De Feo, D. (2010). Emotion and eating psychopathology: Links with attitudes toward emotional expression among young women. *The International Journal of Eating Disorders*, 43(2), 187-189.
27. Cserjesi, R.O.; Luminet, A.S.; Poncelet, A.S.; and Lenard, L. (2009). Altered executive function in obesity. exploration of the role of affective states on cognitive abilities. *Appetite*, 52(2), 535-539.
28. Li, J.; Olsen, J.; Vestergaard, M. et al. (2010). Prenatal stress exposure related to maternal bereavement and risk of childhood overweight. *PloS One*, 5(7), e11896.

29. Ozier, A.D.; Kendrick, O.W.; Knol, L.L. et al. (2007). The eating and appraisal due to emotions and stress (EADES) questionnaire: Development and validation. *Journal of the American Dietetic Association*, 107(4), 619-628.
30. Macht, M. (1999). Characteristics of eating in anger, fear, sadness and joy. *Appetite*, 33(1), 129-139.
31. Macht, M.; and Simons, G. (2000). Emotions and eating in everyday life. *Appetite*, 35(1), 65-71.
32. Lyman, B. (1982). The nutritional values and food group characteristics of foods preferred during various emotions. *The Journal of Psychology*, 112(1st Half), 121-127.
33. Austin, E.J.; Saklofske, D.H.; and Egan, V. (2005). Personality, well-being and health correlates of trait emotional intelligence. *Personality and Individual Differences*, 38(3), 547-558.
34. Gnanaiah, R. (2019). Emotional intelligence in binge eating disorder among the obese population. University of Wolverhampton. Retrieved April 17, 2021, from https://wlv.openrepository.com/handle/2436/622199
35. Wong, C.S.; Kenneth, S.L.; and Wong, P.M. (2004). Development and validation of a forced choice emotional intelligence measure for Chinese respondents in Hong Kong. *Asia Pacific Journal of Management*, 21(4), 535-559.
36. Sidor, A.; and Rzymski, P. (2020). Dietary choices and habits during COVID-19 lockdown: Experience from Poland. *Nutrients*, 12(6), 1657.
37. McAtamney, K.; Mantzios, M.; Egan, H.; and Wallis, D.J. (2021). Emotional eating during COVID-19 in the United Kingdom: Exploring the roles of alexithymia and emotional dysregulation. *Appetite*, 161, 105120.
38. Mohamad Nor, N.S.; Ambak, R.; Mohd Zaki, N. et al. (2018). An update on obesity research pattern among adults in Malaysia: A scoping review. *BMC Womens Health* 18, 114.
39. Krejcie, R.V.; and Morgan, D.W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement* 30, 607-610.
40. Tongco, M.D.C. (2007). Purposive sampling as a tool for informant selection. *Ethnobotany Research & Applications*, 5, 147-158.
41. Arnow, B.; Kenardy, J.; and Agras, W.S. (1995). The emotional eating scale: The Development of a measure to assess coping with negative affect by eating. *The International Journal of Eating Disorder,s* 18(1), 79-90.
42. De Faria Coelho-Ravagnani, C.; Corgosinho, F.C.; Sanches, F.F.Z.; Prado, C.M.M.; Laviano, A.; and Mota, J.F. (2020). Dietary recommendations during the COVID-19 pandemic. *Nutrition Reviews*, 79(4), 382-393.
43. Gibbons, F.X. (1990). *Self-attention and behaviour: A review and theoretical update*, in M.P. Zanna (Ed.), Advances in experimental social psychology 23, 249-303. New York: Academic Press.
44. Pingitore, R.; Spring, B.; and Garfield, D. (1997). Gender differences in body satisfaction. *Obesity Research*, 5(5), 402-409.
45. Neumark-Sztainer, D.; Rock, C.L.; Thornquist, M.D. et al. (2000). Weight-control behaviours among adults and adolescents: associations with dietary intake. *Preventive Medicine*, 30(5), 381-391.

46. Davy, S.R.; Benes, B.A.; and Driskell, J.A. (2006). Sex differences in dieting trends, eating habits and nutrition beliefs of a group of midwestern college students. *Journal of the American Dietic Association*, 106(10), 1673-1677.
47. Lau, J.T.; Yang, X.; Tsui, H.Y.; Pang, E.; and Wing, Y.K. (2006). Positive mental health-related impacts of the SARS epidemic on the general public in Hong Kong and their associations with other negative impacts. *The Journal of Infection*, 53(2), 114-124.
48. Lau, J.T.; Yang, X.; Tsui, H.; and Kim, J.H. (2003). Monitoring community responses to the SARS epidemic in Hong Kong: from Day 10 to Day 62. *Journal of Epidemiology and Community Health*, 57(11), 864-870..
49. Folkman, S.; and Lazarus, R.S. (1984). *Stress, appraisal, and coping*. Springer Publishing Company. New York, USA
50. Witte, D.M. (2020). Despite Covid-19 risks, older people experience higher emotional well-being than younger adults, Stanford psychologists finds. Retrieved June 15, 2021, from https://news.stanford.edu/2020/10/27/despite-covid-19-risks-older-people-experience-higher-emotional-well-younger-adults/
51. Burr, D.A.; Castrellon, J.J.; Zald, D.H.; and Samanez-Larkin, G.R. (2020). Emotion dynamics across adulthood in everyday life: older adults are more emotionally stable and better at regulating desires. *Emotion* (*Washington, D.C.*), 21(3), 453-464.
52. Hart, S.L.; and Charles, S.T. (2013). Age-related patterns in negative affect and appraisals about colorectal cancer over time. *Health Psychology: Official Journal of the Division of Health Psychology, American Psychological Association*, 32(3), 302-310.
53. Mo, P.K.H.; Lau, J.T.F.; Yu, X.; and Gu, J. (2014). The role of social support on resilience, posttraumatic growth, hopeless, and depression among children of HIV-infected parents in Mainland China. *AIDS Care*, 26(12), 1526-1533.
54. Thompson, G.; Mcbride, R.B.; Hosford, C.C.; and Halaas, G. (2016). Resilience among medical students: The role of coping style and social support. *Teaching and Learning in Medicine*, 28(2), 174-182.
55. Nath P.; and Pradhan, R.K. (2012). Influence of positive affect on physical health and psychological well-being: Examining the mediating role of psychological resilience. *Journal of Health Management*, 14(2), 161-174.