Journal of Nutrition and Food Security
Shahid Sadoughi University of Medical Sciences
School of Public Health
Department of Nutrition

eISSN: 2476-7425 pISSN: 2476-7417 JNFS 2026; 11(4): 613-623 Website: jnfs.ssu.ac.ir

Perceived Body Weight and Food Choice Motives among Malaysian Adults: Comparative Study between the Pandemic and Endemic Phases of COVID-19

Nurfatin Shahriah Shahrasni; BSc [1] & Sharifah Intan Zainun Sharif Ishak; PhD [*1]

[1] *Department of Diagnostic and Allied Health Science, Faculty of Health and Life Sciences, Management and Science University, 40100 Shah Alam, Selangor, Malaysia.*

ARTICLE INFO

ORIGINAL ARTICLE

Article history:
Received: 6 Jul 2025
Revised: 16 May 2026
Accepted: 16 May 2026

Corresponding author:
sharifah_intan@msu.edu.my
Department of Diagnostic and Allied Health Science, Faculty of Health and Life Sciences, Management and Science University, 40100 Shah Alam, Selangor, Malaysia.

Postal code: 40100
Tel: +60 124099004

***Keywords*:**
Food choice motives; Perceived body weight; Obesity; COVID-19.

ABSTRACT

Background: The COVID-19 pandemic significantly disrupted dietary patterns, food purchasing behaviors, and food choice motives. This study aimed to examine differences in perceived body weight and food choice motives between the pandemic and endemic phases and to investigate the associations between the motives among a sample of adults residing in Selangor, Malaysia. **Methods:** A cross-sectional study was conducted among 318 adults aged 18–55 years recruited in Selangor using a convenience sampling approach in year 2022. Data on perceived body weight were gathered using a single-item scale, and food choice motives were assessed via a validated 38-item Food Choice Questionnaire. During the pandemic, body weight and height were self-reported, while measurements during the endemic phase were taken by trained researchers. **Results:** The proportion of participants classified as obese rose from 41.2% during the pandemic to 50.6% in the endemic phase. Approximately, half of the respondents misperceived their body weight in both phases (47.8% and 46.9%, respectively). Food choice motives shifted significantly, with religion, price, and convenience being most influential during the endemic phase, compared to mood, religion, and price during the pandemic. However, perceived body weight was not significantly associated with food choice motives in either phase. **Conclusion:** This study offers important insights into the evolving nature of food choice motives and body weight perception across two key phases of the COVID-19 pandemic, with implications for designing public health interventions promoting healthier dietary behaviors and accurate weight perception in Malaysian adults.

Introduction

COVID-19 pandemic, first reported in Wuhan, China in December 2019, rapidly escalated into a global health crisis that significantly disrupted daily life. In response, the Malaysian government implemented the Movement Control Order (MCO) on March 18, 2020, enforcing widespread restrictions including the suspension of public gatherings, closure of educational institutions, and shutdown of non-essential businesses (Tang, 2022). These restrictive measures lasted until March 30, 2022, after which Malaysia transitioned to the endemic phase on April 1, 2022, allowing for the reopening of institutions and a return to near-normal conditions.

Perceived body weight refers to an individual's subjective judgment of their own weight status,

This paper should be cited as: Shahrasni NS, Sharif Ishak SIZ. ***Perceived Body Weight and Food Choice Motives among Malaysian Adults: Comparative Study between the Pandemic and Endemic Phases of COVID-19.*** *Journal of Nutrition and Food Security (JNFS)*, 2026; 11(4): 613-623.

[Downloaded from jnfs.ssu.ac.ir on 2026-11-08]

[DOI: 10.18502/jnfs.v11i4.23075]

categorized typically as underweight, normal, or overweight (Shaikhomar *et al.*, 2021). This self-assessment plays a critical role in influencing health-related behaviours, including dietary habits and weight management strategies (Gonsalves *et al.*, 2014, Latimer *et al.*, 2013). Moreover, misperceptions can lead to adverse outcomes, such as disordered eating, psychological distress, and other maladaptive health behaviours (Badrin *et al.*, 2018).

Food choice motives are the factors that guide individuals' food selection decisions and are influenced by various dynamic and contextual variables (Chen and Antonelli, 2020). Unlike deeply rooted values, food choice motives can shift due to external circumstances. These motives are commonly grouped into dimensions such as health, mood, price, convenience, ethical concern, natural content, sensory appeal, weight control, familiarity, and religion (Marty *et al.*, 2021, Verain *et al.*, 2021).

While lockdowns were necessary to control the virus, they disrupted daily routines and lifestyle behaviours, particularly in terms of diet and physical activity. Prolonged confinement, stress, and exposure to distressing news increased tendencies toward emotional eating or meal skipping (Haddad *et al.*, 2020). Moreover, remote work and movement restrictions altered food purchasing patterns, while supply chain issues limited food availability (Drywień *et al.*, 2020, Tan *et al.*, 2021). Restaurant closures further shifted eating habits, leading many to cook at home and modify dietary behaviours, often with lasting implications (Grunert *et al.*, 2021, Scott and Ensaff, 2022).

Misperception of body weight was commonly observed during this time, particularly overestimation, which hindered appropriate weight management efforts (Shaikhomar *et al.*, 2021). While global studies have documented these impacts, there is limited evidence from Malaysia which specifically examines how perceived body weight interacts with food choice motives across both the pandemic and endemic phases.

Therefore, this study aims to examine differences in perceived body weight and food choice motives between the pandemic and endemic periods among a sample of adults residing in Selangor. It also investigates the associations between perceived body weight and food choice motives within each phase. The findings will contribute to a deeper understanding of pandemic-induced behavioural changes and support the development of targeted public health strategies.

Materials and Methods

Study design and respondents

This cross-sectional study was conducted in Selangor, Malaysia and applied a convenience sampling approach. The convenience sampling approach was chosen due to practical constraints and the lack of an accessible sampling frame during and after the COVID-19 pandemic. As this current study aimed to examine differences and associations within the study sample rather than to generate population-level estimates, convenience sampling was considered appropriate.

This study focused on two phases of COVID-19 in Malaysia: the pandemic phase (March 18, 2020 - March 30, 2022), and the endemic phase (April 1, 2022 – December 31, 2022). The inclusion criteria for this study were Malaysian adults aged 18 to 55 years who had resided in Selangor during both phases, were not pregnant (for females), and did not have chronic illnesses. Data were collected online via Google Forms, accompanied by an information sheet and a consent form prior to participation.

The sample size for this study was calculated using (Daniel, 1999) formula considering a 95% confidence level and the current prevalence of obesity among adults in Selangor of 19.3% (Mohd-Sidik *et al.*, 2021). Thus, the minimum sample size required for this study was 239. To account for potential non-response, 30% was added to the minimum sample size, made up to 311. Ultimately, a total of 318 responses were collected and included in the final analysis.

Socio-demographic characteristics

Respondents self-reported their socio-demographic characteristics including gender, age, ethnicity, education level, working status during

[Downloaded from jnfs.ssu.ac.ir on 2026-11-08]

[DOI: 10.18502/jnfs.v11i4.23075]

CC BY-NC 3.0

both pandemic and endemic phases, and marital status.

Body weight and height

Participants self-reported their height (cm) and weight (kg) during pandemic phase of COVID-19. The measurements could not be done during the pandemic phase because of restrictions on movement and physical contact and the safety of both respondents and researchers. As the relaxation of the previous restrictions during the endemic phase, their current (ie. endemic phase) body height and weight were measured physically by the researchers using a weighing scale and a stadiometer.

Perceived body weight status

Perceived body weight status of the respondents during pandemic and endemic phases of COVID-19 was assessed, using the questions: "What do you think of your body weight during the pandemic of COVID-19?" and "What do you think of your current body weight (i.e. during endemic of COVID-19)?". The one-item question has five answer options: "extremely underweight," "slightly underweight," "normal weight," "slightly overweight," and "extremely overweight." Following that, the responses were divided into four groups: underweight, normal, overweight, and obesity. Respondent's perceived weight status was then compared to their actual weight status, and classified as correct-estimators (accurate perception), over-estimators (perceiving higher than actual) and under-estimators (perceiving lower than actual) (Kim *et al.*, 2018, Wan Abdul Hamed and Abd Aziz, 2020).

Food choice motives

Food choice motives during the pandemic and endemic were assessed with a validated 38-item food choice questionnaire (FCQ) adapted from the study by Asma *et al.* (Asma *et al.*, 2010). This 38-item questionnaire was further sorted into 10 factors: convenience (5-item), weight control (3-item), health (6-item), natural content (3-item), mood (6-item), ethical concern (3-item), price (3-item), familiarity (3-item), sensory appeal (4-item) and religion (2-item). Each item was then rated with a 5-point Likert scale ranging from "not very important" (1 point) to "very important" (5 points). The respondents were required to answer two sets of FCQs, which were intended to assess their food choice motives during pandemic and at the present (ie. during endemic). The mean score was calculated by averaging the total score to the number of items in a factor. For example, for 'mood' factor with 6 items, the total score is ranged from 6 to 30. To get the average score, the total score is divided by the total item number, which is 6. Then, the average score for 'mood' factor is from 1 to 5.

Ethical considerations

The study was approved by the Research Ethics Committee of Management and Science University (Ref: MSU-RMC-02/FR01/09/L1/027) and conducted in accordance with the Declaration of Helsinki. Written informed consent was obtained from all the respondents.

Data analysis

Data analysis was carried out using IBM SPSS statistics 26.0 (IBM Corp., Armonk, NY, USA). Frequency, percentage, mean and standard deviation (SD) were used to describe variables where appropriate. Chi-square test of independence was performed to assess the association between proportions of body weight status and perceived body weight categories among adults with the pandemic and endemic phase of COVID-19.

Body weight status and perceived body weight categories were collapsed for Chi-square independence test analyses to enhance conceptual clarity, while original categories were retained for descriptive reporting of the proportion. Paired sample t-test was used to identify the differences in food choice motives among adults between pandemic and endemic phase of COVID-19. In addition, one-way ANOVA with Ryan-Einot-Gabriel-Welsch F (REGWF) post-hoc analysis were performed to determine the mean difference in food choice motives by perceived body weight categories (under perception, correct perception, and over perception) among adults during pandemic and endemic phase of COVID-19. Pearson's correlation was also used to determine the correlation between

[Downloaded from jnfs.ssu.ac.ir on 2026-11-08]

[DOI: 10.18502/jnfs.v11i4.23075]

perceived body weight and food choice motives during pandemic and endemic phase of COVID-19.

Results

Socio-demographic characteristics

Table 1 indicates the socio-demographic characteristics of the respondents. Among 318 respondents, there was about the same number of respondents from both genders (males = 51.9%, females = 48.1%), and the mean age of the respondents was 33.08±9.51 years. The majority of the respondents were Malay (92.5%) and more than half of the participants were married (56.6%) and had a Bachelor's degree (51.3%). During the pandemic, about 40.3% of the respondents worked with the private sector. The mean of household's monthly income was MYR 2688.20±2056.74 and most of the respondents come from the B40 group of Malaysian household income category (84.9%) during the pandemic. This was while during the endemic phase, 44.3% of the respondents worked with the private sector and the household monthly income was MYR 3033.39±2048.54. Similar to the pandemic, majority of the respondents come from the B40 income group (81.1%). None of the respondents come from the T20 income group in either phase.

Body weight status and perceived body weight during pandemic and endemic phase of COVID-19

As shown in **Table 2**, the proportion of obesity increased from 41.2% during the pandemic to 50.6% in the endemic phase. However, overweight proportion slightly declined (from 19.5% to 14.5%). The discrepancy between actual body weight status and self-reported body weight perception was analysed as misperception and reported as under-perception, correct perception, and over-perception. Half of the respondents were reported to perceive themselves correctly for both phases of COVID-19 (pandemic=52.2%, endemic=53.1%). It was followed by over-estimator (pandemic=37.1%, endemic=40.3%) and under-estimator (pandemic=10.7%, endemic=6.6%).

Food choice motives during pandemic and endemic phase of COVID-19

Table 3 shows differences in food choice motives between the two phases. All the factors, except "mood," significantly increased in mean scores during the endemic phase (P<0.001).

Table 1. Socio-demographic characteristics of the respondents (n=318).

Variables	n (%)
Gender	
Male	165 (51.9)
Female	153 (48.1)
Age (years)	33.08±9.51[b]
Marital status	
Single	136 (42.8)
Married	180 (56.6)
Divorce	2 (0.6)
Ethnicity	
Malay	294 (92.5)
Chinese	13 (4.1)
Indian	11 (3.5)
Educational level	
Primary	2 (0.6)
Secondary	65 (20.4)
High school Diploma	72 (22.6)
Bachelor's degree	163 (51.3)
Master's degree	15 (4.7)
PhD	1 (0.3)
Working status during pandemic COVID-19	
Working in government sector	71 (22.3)
Working in private sector	128 (40.3)
Self-employed	54 (17.0)
Studying	54 (17.0)
Unemployed	11 (3.5)
Monthly income during pandemic of COVID-19[a]	2688.20±2056.74[b]
B40: <4,850 (MYR)	270 (84.9)
M40: 4,851–10,970 (MYR)	48 (15.1)
T20: 10,971 (MYR)	0 (0.0)
Working status during endemic phase of COVID-19	
Working in government sector	73 (23.0)
Working in private sector	141 (44.3)
Self-employed	53 (16.7)
Studying	46 (14.5)
Unemployed	5 (1.6)
Monthly income during endemic phase of COVID-19	3033.39±2048.54[b]
B40: <4,850 (MYR)	258 (81.1)
M40: 4,851–10,970 (MYR)	60 (18.9)
T20: 10,971 (MYR)	0 (0.0)

[a]: *For the monthly income, B40 represents the bottom 40%, M40 represents the middle 40%, whereas T20 represents the top 20% of Malaysian household income;*
[b]: *Mean± SD.*

[Downloaded from jnfs.ssu.ac.ir on 2026-11-08]

[DOI: 10.18502/jnfs.v11i4.23075]

CC BY-NC 3.0

Figure 1 shows the ranking of food choice motives during pandemic of COVID-19. Mood, religion, and price factors were rated as the most prominent motives underlying the selection of foods. However, there was a slight change in the top three food choice motives in the endemic phase whereby religion, price and convenience were the top three ranks of food choice motives during the period (**Figure 2**). It can also be seen that the bottom three factors of food choice motives during pandemic and endemic were similar, namely the familiarity, weight control, and ethical concern factors.

Food choice motives by perceived body weight during pandemic and endemic phase of COVID-19

Table 4 depicts the mean difference in food choice motives by perceived body weight during pandemic and endemic phase. During the pandemic, significant differences in food choice motives were observed by perceived body weight category for weight control (*P*=0.021), natural content (*P*=0.010), sensory appeal (*P*=0.039) and ethical concern (*P*=0.001). However, during the endemic phases, none of the food choice motives differed significantly by perceived body weight category.

Table 2. Body weight status and perceived body weight during pandemic and endemic phase of COVID-19.

Variables	During pandemic of COVID-19	During endemic of COVID-19	P-value[c]
Body weight status[a]			
Underweight	39 (12.3)[d]	18 (5.7)	<0.001
Normal	86 (27)	93 (29.2)	
Overweight	62 (19.5)	46 (14.5)	
Obesity	131 (41.2)	161 (50.6)	
Perception of body weight[b]			
Correct-estimator	166 (52.2)	169 (53.1)	
Over-estimator	118 (37.1)	128 (40.3)	<0.001
Under-estimator	34 (10.7)	21 (6.6)	

[a]: Body weight status was combined as two groups (1- Non-overweight and non-obesity or underweight and normal weight); 2- Overweight and obesity); [b]: Perception of body weight were combined as two groups (1- Correct estimator; 2- Incorrect estimator) [c]: Chi-square test; [d]: n(%).

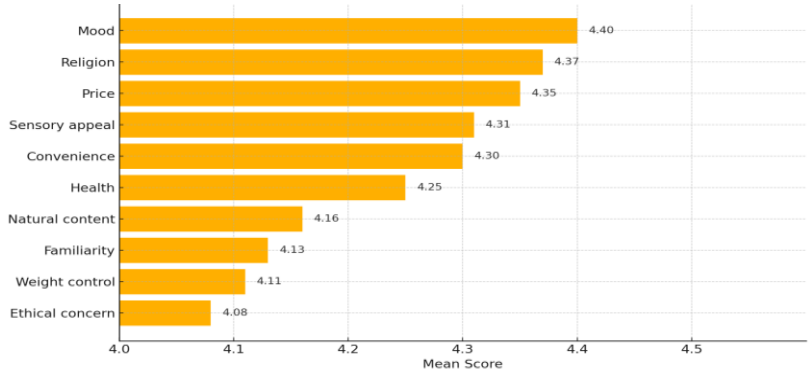


Figure 1. Ranking of food choice motives during COVID-19 pandemic.

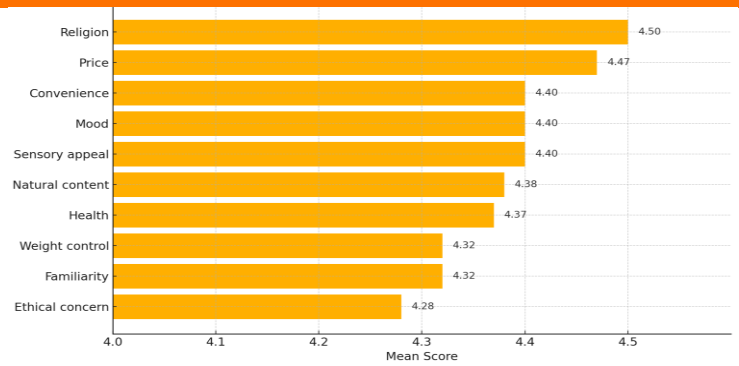


Figure 2. Ranking of food choice motives during COVID-19 endemic.

[Downloaded from jnfs.ssu.ac.ir on 2026-11-08]

[DOI: 10.18502/jnfs.v11i4.23075]

Table 5 illustrates that there were no significant correlations between perceived body weight and any food choice motive during either the pandemic or endemic phase (P>0.05). This suggests that while motives shifted over time, they were not directly associated with how individuals perceived their body weight.

Table 3. Differences between food choice motives during pandemic and endemic phase of COVID-19.

Food choice motives	During pandemic of COVID-19	During endemic of COVID-19	Mean difference	P-value[b]
Health	4.25 ± 0.52[a]	4.37 ± 0.51	0.13 ± 0.41	<0.001
Convenience	4.30 ± 0.46	4.40 ± 0.49	0.10 ± 0.44	<0.001
Weight control	4.11 ± 0.67	4.32 ± 0.60	0.21 ± 0.61	<0.001
Mood	4.40 ± 0.49	4.40 ± 0.49	NA	NA
Natural content	4.16 ± 0.63	4.38 ± 0.57	0.22 ± 0.03	<0.001
Familiarity	4.13 ± 0.65	4.32 ± 0.64	0.19 ± 0.54	<0.001
Sensory appeal	4.31 ± 0.52	4.40 ± 0.52	0.09 ± 0.47	<0.001
Ethical concern	4.08 ± 0.70	4.28 ± 0.65	0.20 ± 0.65	<0.001
Price	4.35 ± 0.55	4.47 ± 0.50	0.13 ± 0.52	<0.001
Religion	4.37 ± 0.58	4.50 ± 0.56	0.11 ± 0.58	0.001

[a]: Mean±SD; [b]: Student t-test.

Table 4. Mean difference in food choice motives by perceived body weight during pandemic and endemic phases of COVID-19.

Food choice motives	Perceived body weight during pandemic of COVID-19			P-value[b]	Perceived body weight during endemic of COVID-19			P-value
	Under perception	Correct perception	Over perception		Under perception	Correct perception	Over perception	
Health	4.29 ± 0.48[a]	4.18 ± 0.60	4.26 ± 0.37	0.256	4.38 ± 0.48	4.35 ± 0.55	4.46 ± 0.46	0.563
Convenient	4.33 ± 0.44	4.26 ± 0.52	4.30 ± 0.37	0.405	4.39 ± 0.43	4.41 ± 0.55	4.37 ± 0.47	0.882
Weight control	4.19 ± 0.62	3.97 ± 0.75	4.18 ± 0.59	0.021	4.34 ± 0.57	4.29 ± 0.63	4.35 ± 0.55	0.817
Mood	4.44 ± 0.43	4.33 ± 0.57	4.38 ± 0.45	0.196	4.43 ± 0.41	4.34 ± 0.57	4.44 ± 0.48	0.261
Natural content	4.25 ± 0.59	4.02 ± 0.69	4.20 ± 0.56	0.010	4.42 ± 0.52	4.29 ± 0.63	4.52 ± 0.40	0.086
Familiarity	4.19 ± 0.58	4.02 ± 0.75	4.23 ± 0.54	0.061	4.40 ± 0.50	4.23 ± 0.76	4.30 ± 0.62	0.066
Sensory appeal	4.32 ± 0.51	4.24 ± 0.57	4.49 ± 0.29	0.039	4.41 ± 0.46	4.37 ± 0.57	4.42 ± 0.58	0.820
Ethical concern	4.19 ± 0.63	3.39 ± 0.77	4.20 ± 0.61	0.001	4.32 ± 0.59	4.20 ± 0.71	4.46 ± 0.49	0.161
Price	4.37 ± 0.50	4.31 ± 0.65	4.35 ± 0.44	0.632	4.47 ± 0.48	4.48 ± 0.51	4.42 ± 0.57	0.904
Religion	4.43 ± 0.54	4.32 ± 0.61	4.27 ± 0.61	0.150	4.50 ± 0.50	4.46 ± 0.61	4.50 ± 0.67	0.851

[a]: Mean SD; [b]: One-way ANOVA test.

Discussion

The findings of this study provide further insight into the obesity problem in Selangor, Malaysia. During the pandemic phase of COVID-19, 41.2% of respondents were having obesity, but the proportion was increasing during the endemic phase to 50.6%. The high prevalence of overweight and obesity was illustrated in a study in Selangor, Malaysia which indicated that nearly two-thirds of their respondents (67.2%) were overweight or obese (Wan Abdul Hamed and Abd Aziz, 2020). In addition, a recent Malaysian national study, the National Health and Morbidity Survey (NHMS) 2023 revealed that 1 in 2 Malaysian adults are overweight (32.6%) or obese (21.8%) (Institute for Public Health (IPH), 2024). Weight gain has been linked to COVID-19 pandemic in several Malaysian studies (Ng and Cheng, 2025, Tan *et al.*, 2021, Tan *et al.*, 2022). It was also demonstrated in a systematic review by Nour and Altintas (Nour and Altintas, 2023) that the prevalence of weight gain ranged from 17.9% to 52.2% during the COVID-19 pandemic lockdown. The increasing prevalence of obesity may be attributed to various factors, including socio-demographic influences, physical inactivity, sedentary behaviour, poor sleep

[Downloaded from jnfs.ssu.ac.ir on 2026-11-08]

[DOI: 10.18502/jnfs.v11i4.23075]

CC BY-NC 3.0

quality, excessive use of technology, substance abuse, unhealthy dietary habits, and psychological challenges (Nour and Altintas, 2023).

Table 5. Correlation between perceived body weight and food choice motives during pandemic and endemic phase of COVID-19

Food choice motives	Perceived body weight during COVID-19 pandemic r (P-value)	Perceived body weight during COVID-19 endemic r (P-value)
Health	-0.057 (0.314)	0.006 (0.919)
Convenience	-0.052 (0.354)	0.008 (0.882)
Weight control	-0.077 (0.173)	-0.017 (0.757)
Mood	-0.074 (0.187)	-0.052 (0.359)
Natural content	-0.099 (0.079)	-0.038 (0.503)
Familiarity	-0.044 (0.437)	-0.108 (0.054)
Sensory appeal	0.034 (0.550)	-0.016 (0.772)
Ethical concern	-0.082 (0.146)	-0.015 (0.784)
Price	-0.034 (0.548)	-0.009 (0.874)
Religion	-0.106 (0.059)	-0.022 (0.700)

In the current study, during both pandemic and endemic phases, almost half of the respondents incorrectly perceived their body weight. This finding was in line with the recent findings among Malaysian adults which found that 58.6% of the sample population misperceived their body weight (Wan Abdul Hamed and Abd Aziz, 2020). The Korea National Health and Nutrition Examination Survey also revealed this trend whereby 45.3% of men and 25.7% of women had a distorted body image regarding body weight (Song *et al.*, 2020). The possible reason for incorrect perceived body weight is the duration of weight status. Previous study found that individuals who were overweight or obese in the past, present, or both time periods had increased odds of having an inaccurate weight perception (Coleman and Loprinzi, 2018). Another reason is psychological-related in which individuals with unfavorable psychological conditions, such as anxiety and low self-esteem (Kim *et al.*, 2021) and mental distress (Saeedzadeh Sardahaee and Kvaloy, 2022) were more likely to have a distorted body weight perception.

Even though food choices have been demonstrated to be relatively stable in adulthood (Marty *et al.*, 2021), they can change as environments change. Habits are sensitive to change because they participate in a new non-automatic decision-making process (Verplanken and Wood, 2006). Thus, the atypical lockdown period had resulted in discontinuities and changes in eating patterns. Mood, religion, and price considerations were evaluated as the most prevalent motives underpinning food choice among individuals in Selangor during the pandemic. Meanwhile, religion, price, and convenience were considered as the most important food choices among adults during endemic period. It can also be noted that the bottom three elements of food choices were identical across these two phases, namely sensory appeal, ethical concern, and familiarity. During pandemic, it was the times of uncertainty and stress, where individuals may turn to food as a coping mechanism to regulate emotions and alleviate negative mood states (Bilici *et al.*, 2020). This also can be seen during the lockdown in France, whereby 48% of the respondents mentioned that their food choices were influenced more by their emotions than other factors (Marty *et al.*, 2021). It is also a concern which relates to weight gain as young adults who experienced weight gain throughout the pre-pandemic and post lock-down had statistically higher scores in uncontrolled eating and emotional eating compared to those in the sustained weight category (Tan and

[Downloaded from jnfs.ssu.ac.ir on 2026-11-08]

[DOI: 10.18502/jnfs.v11i4.23075]

CC BY-NC 3.0

Kannan, 2023).

Religion (i.e. religious guidelines) was ranked as the most essential motivation for choosing food in this study throughout the endemic period. During the pandemic COVID-19, it was ranked second. This result might be illustrated because the majority of respondents were Malay, who were also Muslim, which may impact the religious ranking in food choice motivations. This finding is also consistent with Asma *et al.'s study* (Asma *et al.*, 2010) who found that the majority of respondents in their survey were Muslims who adhered to Islamic dietary rules. They prioritized picking items based on 'Halal' rather than other culinary motivations. According to the study by Lindeman and Vaananen (Lindeman and Vaananen, 2000), in certain nations or places, religion may take precedence over other eating considerations, but in others, religion is viewed as unimportant. Religion was listed as the least significant motivator in Finland, which contradicted the findings of this study (Lindeman and Vaananen, 2000).

Furthermore, in both pandemic and endemic stages, pricing was ranked among the top three food choice motives. This is also consistent with the findings of the study by Marty *et al.* (Marty *et al.*, 2021) among adults in France during the COVID-19 shutdown. Interestingly, independent of the pandemic condition, pricing was ranked with the highest mean scores. Significant income losses and an increase in the unemployment rate were caused by the COVID-19 economic downturn. Due to changes in the income elasticity of food demand during the pandemic, food price became the most significant factor influencing the dietary choices made by adolescents in Malaysia (Tan *et al.*, 2021). People are still on high alert to spend more to rebuild their own family's economy, which suffered during the COVID-19 pandemic, putting the price during the endemic period in the top three.

During the pandemic, 48% of the sample reported a decline in the value of convenience, while 83% stated that they spent more on cooking during the lockdown. During the pandemic, the growing trend of convenience to the top three rankings might be attributed to the time spent cooking (Sahiran *et al.*, 2020). According to the study by Tan *et al.* (Tan *et al.*, 2021), convenience has the highest rate of increase among the 10 food choice factors during endemic. The rise was mostly driven by the Federal Government of Malaysia imposing more home cooking and travel restrictions during the state-wide lockdowns, which contrasted with findings of this study, in which convenience was ranked fifth during the pandemic. The variations in rank for convenience may be due to the fact that during the pandemic people might have more time at home because of work-from-home policy. Thus, they had more time for them to cook at home. However, during the endemic phase, people can go out freely and restart their job at their workplace as usual. For this reason, they may choose convenience as a meal selection due to limited food preparation time.

During the pandemic and endemic phases of COVID-19, familiarity, weight management, and ethical concern were assessed as the three meal choice factors. Asma *et al.* obtained similar results for these lowest rankings prior to the pandemic (Asma *et al.*, 2010); meanwhile, ethical concern was also reported as the least important food choice motive both before and during the pandemic in a Croatian study (Soric *et al.*, 2021). According to their findings, a greater degree of occupation was associated with decreased motivations for the familiarity component in meal choices. Moreover, higher income was found to have a strong relationship with a decreased motive of familiarity because people with higher income may have more freedom to try new cuisines and are less likely to buy items they are acquainted with. This is consistent with findings of this study, as the majority of the respondents have a tertiary education.

In the current study, the authors found that differences in food choice were impacted by perceived body weight during the pandemic COVID-19. Weight control, natural content, familiarity, and ethical concern were associated with under perception; this was while only sensory

[Downloaded from jnfs.ssu.ac.ir on 2026-11-08]

[DOI: 10.18502/jnfs.v11i4.23075]

CC BY-NC 3.0

appeal was associated with correct estimator. Meanwhile, during the endemic phase of COVID-19, there was no significant difference in the mean scores of all food choice motivations by perceived body weight among adults in Selangor. Accordingly, the majority of the respondents tend to under perceive their body weight during pandemic. This can be associated with the results from Tan *et al.* (Tan *et al.*, 2021). Obesity is recognized as one of the predisposing factors for COVID-19. People may deliberately demand nutritious foods with reasonable health claims to reduce the risk of infection. Thus, engagement in healthy eating for weight control, natural content, familiarity and ethical concern during the pandemic could be among the factors that drove healthier food choices. However, by having healthy option for food choice, misperception body weight is also influenced. People think that taking healthy food results in low weight but it is actually not.

During the pandemic and endemic phases of COVID-19, there was no significant connection between perceived body weight and food choice reasons. This is consistent with the study by Sahiran *et al.* (Sahiran *et al.*, 2020). Their research found that not attempting to lose body weight was a significant risk factor for body weight misperception. Tan *et al.* found that the proportion of overweight or obesity increased from 39.5% (pre-pandemic) to 40.6% (during the pandemic) as a result of the pandemic lockdown (Tan *et al.*, 2021). Their research also found that kids who gained weight as a result of lockdown had a higher preference for natural foods than those who lost weight. Furthermore, overconsumption of functional foods with added sugar may be the underlying cause of weight increase in this unprecedented epidemic. This clearly demonstrates that participants did not aim to lose weight, and that not choosing appropriate meals resulted in a misperception of their own body weight.

The strength of this study is its comparative analysis of perceived body weight and food choice motives across the pandemic and endemic phases, providing timely insights into behavioral changes during a prolonged public health crisis. Furthermore, the use of a validated FCQ and the inclusion of both self-reported and measured anthropometric data enhance the robustness and depth of the analysis. Additionally, the focus on weight perception offers valuable psychological context for understanding dietary decision-making among adults in an urban Malaysian setting.

There are some limitations for this study that need to be acknowledged. Firstly, the convenience sampling approach used in this study might have limited the population's generalization. Although the convenience sampling limits generalizability, it allowed for the timely recruitment of participants and the examination of behavioral patterns during two phases within a real-world setting. Secondly, respondents in the current study were asked to recall their pandemic's food choice motives, body weight, and height, which might lead to recall and social desirability biases. Due to movement restriction and safety concern during the pandemic phase, body weight and height were self-reported by the respondents, and this may have introduced the reporting bias. In contrast, during the endemic phase, researchers were able to conduct direct measurements which ensured greater accuracy and reliability of the data. This methodological difference represents a potential source of bias and should be considered when interpreting comparisons between the two phases. Thirdly, the menopausal status and the history of COVID-19 infection were not assessed in the current study. This may have influenced perceived body weight, body composition, and food choice motives of some participants. Lastly, the potential confounders such as socio-demographics information were not being adjusted in this study, and the fact that the majority of respondents were Muslim, may have influenced their dietary preferences, and thus impact the overall findings.

Conclusions

Based on the current study, during the pandemic and endemic phases of COVID-19, there was no significant connection between perceived body weight and food choice reasons. However, the

[Downloaded from jnfs.ssu.ac.ir on 2026-11-08]

[DOI: 10.18502/jnfs.v11i4.23075]

CC BY-NC 3.0

proportion of obesity in Selangor has been consistent with the prevalence of obesity across Malaysia over the years. This study also sheds light on how people make food choices and how the tendency shifts to new reasons of food choice selection as a result of the transition from pandemic to endemic period. In this population, the lockdown was associated with changes in food choice motivations, most notably boosting people' mood as a food choice reason. Future studies should look at the link between body weight misperception and other critical elements including psychology and eating habits. With a considerably bigger sample size, future study might investigate the motivations which drive the food choices among Malaysian adults as well as other population groups. Future intervention should be tailored to promote a positive body image, establish a healthy relationship with food, and facilitate individuals in making informed and balanced food choices.

Acknowledgments

The authors would like to thank all study participants for their time and cooperation.

Authors' contributions

Shahrasni NS and Sharif Ishak SIZ conceptualized the study. Shahrasni NS conducted data collection. Data analysis and manuscript preparation were performed by both authors. All authors read and approved the final version.

Conflict of interests

The authors declared no conflict of interest.

Funding

No external funding was received for this study.

References

Asma A, Nawalyah A, Rokiah M & Mohd Nasir M 2010. Comparison of food choice motives between Malay husbands and wives in an urban community. *Malaysian journal of nutrition.* **16 (1)**: 69-81.

Badrin S, Daud N & Ismail S 2018. Body weight perception and weight loss practices among private college students in Kelantan state, Malaysia. *Korean journal of family medicine.* **39 (6)**: 355-359.

Bilici S, Ayhan B, Karabudak E & Koksal E 2020. Factors affecting emotional eating and eating palatable food in adults. *Nutrition research practice.* **14 (1)**: 70-75.

Chen P & Antonelli M 2020. Conceptual models of food choice: influential factors related to foods, individual differences, and society. *Foods.* **9 (12)**.

Coleman L & Loprinzi P 2018. The influence of weight status duration on weight perception accuracy. *American journal of health promotion.* **32 (3)**: 816-820.

Daniel W 1999. Biostatistics: A foundation for analysis in the health sciences (7th ed.). John Wiley & Sons.

Drywień ME, Hamulka J, Zielinska-Pukos MA, Jeruszka-Bielak M & Górnicka M 2020. The COVID-19 pandemic lockdowns and changes in body weight among Polish women. A cross-sectional online survey PLifeCOVID-19 study. *Sustainability.* **12 (18)**.

Gonsalves D, Hawk H & Goodenow C 2014. Unhealthy weight control behaviors and related risk factors in Massachusetts middle and high school students. *Maternal and child health journal.* **18 (8)**: 1803-1813.

Grunert K, et al. 2021. No lockdown in the kitchen: How the COVID-19 pandemic has affected food-related behaviours? *Food research international.* **150 (Pt A)**: 110752.

Haddad C, et al. 2020. Association between eating behavior and quarantine/confinement stressors during the coronavirus disease 2019 outbreak. *Journal of eating disorders.* **8 (1)**: 40.

Institute for Public Health (IPH) 2024. Technical Report National Health and Morbidity Survey (NHMS) 2023: Non-Communicable Diseases and Healthcare Demand, Malaysia.

Kim M, Kim S, Kim W & Choi H 2021. Mental health of people with distorted body weight perception using medicinal remedies: A representative study. *International journal of clinical and health psychology.* **21 (2)**: 100224.

Kim Y, Austin S, Subramanian S & Kawachi I 2018. Body weight perception, disordered weight

[Downloaded from jnfs.ssu.ac.ir on 2026-11-08]

[DOI: 10.18502/jnfs.v11i4.23075]

CC BY-NC 3.0

control behaviors, and depressive symptoms among Korean adults: The Korea National Health and Nutrition Examination Survey 2014. *PLoS One.* **13 (6)**: e0198841.

Latimer L, Velazquez C & Pasch K 2013. Characteristics and behaviors of non-overweight college students who are trying to lose weight. *Journal of primary prevention.* **34 (4)**: 251-260.

Lindeman M & Vaananen M 2000. Measurement of ethical food choice motives. *Appetite.* **34 (1)**: 55-59.

Marty L, de Lauzon-Guillain B, Labesse M & Nicklaus S 2021. Food choice motives and the nutritional quality of diet during the COVID-19 lockdown in France. *Appetite.* **157**: 105005.

Mohd-Sidik S, Lekhraj R & Foo CN 2021. Prevalence, associated factors and psychological determinants of obesity among adults in Selangor, Malaysia. *International journal of environmental research and public health.* **18 (3)**: 868.

Ng G & Cheng S 2025. Weight gain, poor mental health and increased sedentary hours among Malaysian adults during the COVID-19 pandemic. *Nutrition and health.* **31 (1)**: 187-196.

Nour T & Altintas K 2023. Effect of the COVID-19 pandemic on obesity and it is risk factors: a systematic review. *BMC public health.* **23 (1)**: 1018.

Saeedzadeh Sardahaee F & Kvaloy K 2022. Cross-sectional study of BMI, weight concern, body size perception, dieting and mental distress in adolescents: The HUNT Study. *BMJ open.* **12 (4)**: e045962.

Sahiran M, Lee P, Mawardi M & Mohd Azizi F 2020. Bodyweight status misperception among reproductive-aged women in primary care settings. *Malaysian family physician.* **15 (3)**: 62-73.

Scott L & Ensaff H 2022. COVID-19 and the national lockdown: how food choice and dietary habits changed for families in the United Kingdom. *Frontiers in nutrition.* **9**: 847547.

Shaikhomar O, et al. 2021. Effect of self-perceived body weight on BMI and behaviors controlling body weight among Saudi Arabians during COVID-19 quarantine. *Bioscience research.* **18 (1)**: 999 -1008.

Song Y, Kwon M & Kim S 2020. Distorted body weight perception and its gender differences in middle-aged adults: population based study. *BMC public health.* **20 (1)**: 280.

Soric T, et al. 2021. Evaluation of the food choice motives before and during the COVID-19 pandemic: a cross-sectional study of 1232 adults from Croatia. *Nutrients.* **13 (9)**.

Tan S & Kannan T 2023. Comparison of eating behaviour by relative weight change status of young adults throughout the COVID-19 pandemic. *Dialogues in health.* **2**: 100094.

Tan S, Tan C & Tan S 2021. Trajectories of food choice motives and weight status of Malaysian youths during the COVID-19 pandemic. *Nutrients.* **13 (11)**: 3752.

Tan S, Tan S & Tan C 2022. Weight trajectory during the COVID-19 pandemic: A cross-sectional study in Malaysia. *Open health.* **3 (1)**: 44-49.

Tang K 2022. Movement control as an effective measure against Covid-19 spread in Malaysia: an overview. *Journal of public health.* **30 (3)**: 583-586.

Verain M, Snoek H, Onwezen M, Reinders M & Bouwman E 2021. Sustainable food choice motives: The development and cross-country validation of the Sustainable Food Choice Questionnaire (SUS-FCQ). *Food quality and preference.* **93**: 104267.

Verplanken B & Wood W 2006. Interventions to break and create consumer habits. *Journal of public policy and marketing.* **25 (1)**: 90-103.

Wan Abdul Hamed W & Abd Aziz N 2020. Barriers in adopting healthy body weight among Malaysian population: a cross-sectional study of body weight perception and misperception versus actual body weight. *Journal of primary care and community health.* **11**: 2150132720907472.

[Downloaded from jnfs.ssu.ac.ir on 2026-11-08]

[DOI: 10.18502/jnfs.v11i4.23075]