RESEARCH ARTICLE

Exploring the association between mindful eating, food choice and health wellbeing: Evidence from Malaysian adults

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ABSTRACT

The increased prevalence of non-communicable diseases, especially those associated with poor diets, highlights the need for alternative behavioural measures to promote healthy food intake. Focussing on eating behaviours with awareness and non-judgment improves self-regulation and diet. However, data on its use and effects in Malaysian adults are scarce. Mindful eating (ME), food choice reasons, and health-related well-being among Malaysian adults are examined in this study. The Mindful Eating Questionnaire (MEQ), Food Choice Questionnaire (FCQ), and self-reported well-being indicators were completed by 1,002 respondents. Variable associations were assessed using descriptive and correlation analysis. The results showed no gender difference in total MEQ scores; however, subscales did vary. Men scored higher in awareness and external signals, whereas women scored higher in emotional response and disinhibition. Mindful eating had positive effects on health, mood, sensory appeal, natural content, and weight control. Mindful eating lowers Body Mass Index (BMI) by reducing disinhibition and emotional reactivity. Higher BMI participants were more conscious and sensitive to external signals. Wellness parameters like physical and mental health, lifestyle, and diet were associated with mindful eating. Mindful eating greatly affects healthy food preferences and may improve physical and mental health. The findings support targeted public health and educational interventions to encourage sustainable eating in Malaysian adults.

1. INTRODUCTION

The global prevalence of non-communicable diseases, including diabetes, obesity, and cardiovascular disorders, has increased significantly and continues to pose a serious public health challenge. The World Health Organisation (WHO, 2022) indicated a rise in diabetic diseases from 108 million in 1980 to more than 422 million by 2014, with the most substantial increases being noticed in low- and middle-income nations. In Malaysia, the trend is reflected in the data, indicating that approximately 20% of adults were diagnosed with diabetes in 2019, as reported by the National Health and Morbidity Survey (NHMS, 2019). As noted by the Ministry of Health of Malaysia, non-communicable diseases (NCDs) are considered the major factor in premature mortality for Malaysians aged under 70 (Ministry of Health Malaysia, 2024). Multiple factors have been identified as contributors, such as urban lifestyles, greater access to calorie-dense foods, and decreased levels of physical activity (Carbone et al., 2019; Piché et al., 2020).

Changes in dietary patterns over recent decades, particularly the rise in consumption of processed foods, sugars, and animal-based products, have intensified the risk of diet-related diseases among the Malaysian population (Khor, 2012).

Mindful eating (ME) has emerged as a behavioural strategy that promotes focused attention and non-judgmental awareness throughout the process of food consumption. ME practices entail the identification of hunger and satiety signals, an emphasis on the eating experience, and an analysis of the emotional triggers linked to food consumption (Fletcher, 2021). Studies indicate that this approach is successful in decreasing emotional eating, enhancing self-regulation, and fostering overall well-being (Miller et al., 2017; Mantzios et al., 2018). Many studies have demonstrated the beneficial effects of ME on dietary behaviour and health management in different populations, including Romanians, Chinese and Brazilians (Șerban et al., 2022; Zhang et al., 2022; Rodrigues et al., 2024); however,

research within the Malaysian context is constrained by its limited scope and sample diversity (Basir et al., 2021; Chamhuri et al., 2022). Local investigations have primarily concentrated on specific populations or clinic-based samples, resulting in a lack of inclusivity across various age groups, ethnic backgrounds, and geographic regions. This limitation hinders our ability to generalise findings and comprehensively understand ME practices within a wider Malaysian context.

The relationship between ME, food selection, and health-related well-being in the Malaysian population remains inadequately investigated. Food choices are influenced by cultural norms, sensory preferences, accessibility, and socioeconomic factors (Asraf Mohd-Any et al., 2014). The excessive usage of energy-dense foods, along with low usage of fruits and vegetables are related to inappropriate eating, are connected to negative health outcomes like obesity and metabolic disorders. ME can act as a mediator by guiding individuals to make healthier dietary choices based on internal cues instead of external factors (Nelson, 2017; Tapper, 2022). Despite this, public awareness and the implementation of ME behaviours in Malaysia are still minimal. An investigation into the influence of ME on food selection and the subsequent impact of these choices on overall health and well-being is necessary.

This study seeks to identify and analyse the relationship between mindful eating behaviours, food choices, and health-related well-being in Malaysia's adult population. The objectives outlined are designed to provide essential insights for nutrition educators, health professionals, and policymakers. These insights will aid in the development of targeted interventions aimed at promoting sustainable dietary behaviours and improving population health outcomes in Malaysia.

2. MATERIALS AND METHODS

2.1 Study design and participants

This study used a cross-sectional design that focused on Malaysian participants between ages of 18 and 65. A total of 1,002 participants who provided informed consent completed the survey. Participants of both genders and diverse ethnic backgrounds were recruited through an online platform. The study excluded individuals outside the specified age range, those with diagnosed health conditions, and those living with chronic illnesses.

Participation in the study was entirely voluntary, with no incentives provided or penalties imposed for withdrawal. Confidentiality was maintained throughout the research process, ensuring that personal information was excluded from published reports. Access to participant records was restricted to authorised researchers only. The study was conducted following ethical approval from the UniSZA Human Research Ethics Committee (UHREC) of Universiti Sultan Zainal Abidin (UniSZA). Approval was granted under the protocol code UniSZA/UHREC/2023/500, which served as the reference for all correspondence with UHREC regarding the study.

2.1.1 Sample size

The sample size required for the survey was calculated using the formula provided below:

$$n = \frac{Z^2 P(1-P)}{d^2}$$

(Equation 1)

where:
n = sample size;
Z = Z statistic for a level of confidence (1.96);
P = expected prevalence or proportion (0.5);
d = precision (0.05);

The confidence level for the study was set at 95%, corresponding to a Z value of 1.96 (Naing et al., 2006). A precision of 0.05 and a p-value of 0.5 were applied. These variables indicated that a minimum required sample size was calculated to be 385 individuals.

2.2 Evaluation instruments

2.2.1 Mindful eating questionnaire

Mindful eating was evaluated using the Mindful Eating Questionnaire (MEQ), established by Framson et al. (2009). This validated questionnaire consists of 28 items categorized into five subscales: disinhibition (8 items), awareness (7 items), external cues (6 items), emotional feedback (4 items), and distraction (3 items). Participants provided responses on a five-point Likert scale that ranged from "Never" to "Usually/Always", being equivalent to scores that ranged from one to five, respectively. Higher overall scores indicated greater levels of ME. The scores for each subscale were computed as the average of their respective items, while the overall ME score was calculated as the mean of the five subscale scores.

2.2.2 Food choice questionnaire

The Food Choice Questionnaire (FCQ), developed by Steptoe et al. (1995), was utilized as a tool to evaluate the relative significance of various factors influencing dietary choices. This questionnaire evaluates both health-related and non-health-related food features, as elaborated by Cunha et al. (2018). The Food Choice Questionnaire (FCQ) consists of 36 items divided into nine motivational dimensions: health, mood, convenience, sensory appeal, natural content, price, weight control, familiarity, as well as

ethical concern. Participants rated the significance of each item regarding "the food consumed on a typical day" through a 4-point Likert scale. The scale ranged from 1 ("not at all important") to 4 ("very important"), providing insight into the motivational priorities underlying food choices.

2.2.3 Sociodemographic characteristics of participants

Sociodemographic data, including gender, age, level of education, career status, ethnicity, height, and weight, were gathered at the end of the survey. Categorical variables were created for gender (female, male), age groups (18–24, 25–34, 35–44, 45–54, 55–64 years), and Body Mass Index (BMI). BMI (kg/m²) was calculated using self-reported data by dividing weight (kg) by the square of height (m²). BMI was categorized as follows: underweight (<18.5), healthy weight (18.5–24.99), overweight (25–29.99), and obese (≥30).

2.3 Data collection

After collection, the questionnaire data were systematically organized into a dedicated database and thoroughly reviewed to address any errors or inconsistencies. Special attention was given to identifying and rectifying data entry inaccuracies and detecting outliers to ensure data integrity. For each questionnaire category, the mean values were calculated for total scores and subscales, including MEQ, FCQ, socio-demographic characteristics, and well-being.

The organised data were then analysed using the Statistical Package for Social Sciences (SPSS, version 25.0) for further analysis. Statistical testing was conducted at a significance level of 0.05 with a 95% confidence interval. Descriptive statistics, including means, standard deviations, frequencies, and percentages, were generated for all variables. Pearson bivariate correlation analysis was employed to examine the associations between mindful eating (ME) and food choice, as well as the relationships between mindful eating, Body Mass Index (BMI), and well-being. Statistical significance was defined as $p < 0.05$. This approach enabled the evaluation of ME scores and their connections to food choices, demographic variables, and well-being factors.

The internal consistency of the MEQ was evaluated using Cronbach's alpha coefficient. A coefficient value of 0.70 or higher was considered indicative of satisfactory internal consistency. The reliability of the MEQ was further established through this measurement, ensuring its validity as a tool for assessing ME. According to established criteria, items were deemed reliable if the Cronbach's alpha score exceeded 0.6, and acceptable reliability was noted for scores between 0.6 and 0.7.

Additionally, items with a corrected item-total correlation above 0.3 were included in the analysis, as per the guidelines proposed by Hajjar (2018) and Cronbach (1951).

3. RESULT AND DISCUSSION

3.1 Isolation and identification of isolated bacteria

Table 1 presents the socio-demographic characteristics of the participants categorized by gender, age, educational level, employment status, ethnicity, and body mass index, as assessed through self-reported height and weight. The survey included a total of 1002 participants. The majority of the respondents were females, accounting for 63.57% (n = 637), while males represented 35.43% (n = 355). The largest demographic group among participants was those aged between 18 and 24 years, which made up 50.70% (n = 508). Subsequently, the age groups of 25 to 34 years and 35 to 44 years were represented with values of 21.50% (n = 215) and 12.30% (n = 123), respectively. Additionally, 9.4% (n = 94) and 5.8% (n = 58) were classified within the age groups of 45 to 54 years and 55 to 64 years, respectively.

Table 1: Socio-demographic characteristics of the participants, n = 1002.

Characteristics	Range	%
Gender	Male	35.4
	Female	63.6
	Prefer not to answer	1.0
Age	18 – 24 years old	50.7
	25 – 34 years old	21.5
	35 – 44 years old	12.3
	45 – 54 years old	9.4
	55 – 64 years old	5.8
	65 – 74 years old	0.1
	75 and over	0.1
	Prefer not to answer	0.2
Educational level	No schooling completed	0.2
	Primary	0.4
	Secondary	21.3
	Tertiary (Undergraduate degree)	66.9
	Tertiary (Postgraduate degrees)	9.9
	prefer not to answer	1.3
Employment status	A student	54.2
	Employed	39.8
	Unemployed	1.5
	Retired	4.0
	prefer not to answer	0.5
Ethnicity	Malay	64.9
	Chinese	18.0
	Indian	8.5
	Bumiputera	6.9
	Mixed	0.6
	Other ethnic groups	0.5
	prefer not to answer	0.6
BMI	Underweight	10.7
	Healthy Weight	48.2
	Overweight	28.4
	Obese	12.7

The educational attainment of the survey participants was categorized as follows: the largest group consisted of individuals with an undergraduate degree,

accounting for 66.9% (n = 670) of the total participants. This was followed by those with high school, college, vocational qualifications, or equivalent, representing 21.3% (n = 213). Lastly, 9.9% (n = 100) of participants held postgraduate qualifications, including master's or doctorate degrees. Additionally, the composition of participants revealed that students constituted the largest group, accounting for 54.2% (n = 543). This was followed by employed individuals at 39.8% (n = 399), unemployed individuals at 4.0% (n = 40), and retirees at 1.5% (n = 15), respectively. Furthermore, 64.9% (n = 650) of the participants identified as Malay, followed by Chinese at 18.0% (n = 181), Indian at 8.5% (n = 85), and Bumiputera, excluding Malay, at 6.9% (n = 69). In conclusion, 10.7% (n = 107) of the participants fell into the underweight category, 48.2% (n = 483) maintained a healthy weight, 28.4% were classified as overweight, and 12.7% (n = 127) were identified as obese.

3.2   Mindful Eating Questionnaire (MEQ) score

Table 2 displays the average total score of the Mindful Eating Questionnaire (MEQ) alongside its five subscale components: Disinhibition, Awareness, External Cues, Emotional Response, and Distraction. The average total MEQ scores for male and female participants were 3.34 ± 0.26 and 3.35 ± 0.28, respectively. The analysis showed no statistically notable change in total MEQ score between genders (p > 0.05). Although the overall scores were comparable, notable gender disparities were identified within the subscales. Male participants demonstrated notably elevated scores in the Awareness and External Cues domains, whereas female participants exhibited significantly higher scores in Disinhibition, Emotional Response, and Distraction. This suggests that although the overall levels of mindful eating were similar between males and females, the factors influencing these scores differed.

Table 2: Comparison of the total mindful eating measure scores and its subscales of male and female participants.

Subscale	Male	Female	t-Value	p-Value
Total MEQ	3.34 ± 0.26[a]	3.35 ± 0.28[a]	-0.66	0.51
Disinhibition	3.06 ± 0.55[b]	3.26 ± 0.61[a]	-5.16	0.00
Awareness	4.00 ± 0.65[a]	3.79 ± 0.59[b]	5.04	0.00
External Cues	3.76 ± 0.68[a]	3.43 ± 0.67[b]	7.34	0.00
Emotional Response	2.56 ± 0.97[b]	2.91 ± 0.87[a]	-5.73	0.00
Distraction	2.77 ± 0.82[b]	3.03 ± 0.86[a]	-4.69	0.00

The independent samples t-test measured the difference in mindful eating scale scores between both genders. Means with the same superscript in a row between males and females were not statistically different at p < 0.05.

The results align with earlier research conducted by Kose and Ciplak (2020) and Özkan and Bilici (2021), which also indicated no notable gender differences in total MEQ scores. Nonetheless, the current study's finding of

greater awareness among males could be linked to a rise in health consciousness, possibly influenced by age-related responsibilities or an increased sensitivity to health risks, as observed by Ek (2015). Conversely, elevated scores in Disinhibition, Emotional Response, and Distraction in females might indicate a stronger inclination towards emotional and distracted eating. Prior studies indicate that women may be more susceptible to emotional eating, frequently influenced by stress and hormonal changes linked to the menstrual cycle (Beydoun, 2014). Furthermore, interactions between genes and depression, potentially more pronounced in women, have been associated with specific eating behaviors. Serban et al. (2022) highlighted that stress significantly influences emotional eating among women, noting that mindfulness and nutritional awareness can be improved through focused knowledge and education. The notably elevated Disinhibition scores in females (3.26 ± 0.61) in contrast to males (3.06 ± 0.55) could play a role in emotional eating, especially when reacting to satiety signals. Levoy et al. (2017) emphasised that heightened disinhibition correlates with emotional eating, but mindfulness-based stress reduction interventions can help alleviate this effect.

3.3   Association of mindful eating with food choice

Table 3 presents the correlation between the total Mindful Eating Questionnaire (MEQ) score of participants and its five subscale elements—Disinhibition, Awareness, External Cues, Emotional Response, and Distraction—and the total Food Choice Questionnaire (FCQ) score of participants along with its nine subscale elements: Health, Mood, Convenience, Sensory Appeal, Natural Content, Price, Weight Control, Familiarity, and Ethical Concern.

A significant positive correlation was observed between the total MEQ score and the total FCQ score, indicating that individuals who consider their food choices tend to eat mindfully. The results indicate a significant correlation between the total MEQ score and the total FCQ score, as well as five of its subscales: health, mood, sensory appeal, natural content, and weight control. In contrast, no significant correlation was found with four of its subscales: convenience, price, familiarity, and ethical concern. This indicates that individuals who select healthy foods, those that enhance mood, possess sensory appeal, contain natural ingredients, and assist in weight management – tend to be more mindful in their eating habits.

The total FCQ score exhibited a significant correlation with all MEQ subscales, with the exception of the disinhibition score. This indicates that food choice influences all MEQ subscales, with the exception of disinhibition. The weight control score (r = 0.237) exhibited a significant positive correlation with the total MEQ score

and its subscales of disinhibition, awareness, and external cues. This finding indicates that individuals with better weight control exhibited greater mindfulness in their eating habits. Weight control was influenced by disinhibition, heightened awareness of food consumption, and external factors. Healthy weight loss is attained through a reduction in the consumption of excess calories. Calorie restriction, combined with enhanced mindful eating behaviours, may contribute to weight reduction in obesity treatments (Demir and Bozyel, 2022). Mindful eating necessitates the removal of distracting environmental factors and detrimental food choice habits. This practice can diminish food cravings and slow down the pace of eating, which aids in weight management (Özkan and Bilici, 2021).

Table 3: Pearson's bivariate correlation (r) between Mindful Eating Questionnaires (MEQ) and Food Choice Questionnaires (FCQ) (N = 1002).

	Total MEQ Score	Disinhib ition	Awaren ess	External Cues	Emotion al Respon se	Distracti on
Total FCQ Score	0.228**	0.033	0.388**	0.233**	-0.219**	-0.095**
Health	0.303**	0.129**	0.338**	0.146**	-0.096**	0.003
Mood	0.209**	-0.016	0.484**	0.320**	-0.357**	-0.169**
Conveni ence	0.025	-0.033	0.058	0.056	-0.025	-0.017
Sensory Appeal	0.297**	0.056	0.409**	0.285**	-0.212**	-0.059
Natural Content	0.272**	0.104**	0.368**	0.162**	-0.151**	-0.046
Price	0.025	-0.032	0.018	0.039	0.016	0.022
Weight Control	0.237**	0.094**	0.306**	0.135**	-0.116**	-0.034
Familiar ity	-0.031	-0.070*	0.088**	0.086**	-0.095**	-0.116**
Ethical Concer n	0.028	-0.060	0.276**	0.199**	-0.288**	-0.184**

Note. **$p \leq 0.01$, *$p \leq 0.05$, MEQ = Mindful Eating Questionnaires, FCQ = Food Choice Questionnaires.

The present study revealed significant positive correlations between total MEQ scores and four subscales of the FCQ: health, mood, sensory appeal, and natural content. These findings indicate that individuals engaging in more mindful eating (ME) behaviours tend to prioritise health-conscious food options, seek emotional satisfaction from food, appreciate sensory features, and prefer natural ingredients. The positive association between mindful eating and health motives supports prior research indicating that mindful eaters are more likely to choose foods based on their nutritional value and long-term health benefits. For example, Paolassini-Guesnier et al. (2025) found that individuals with high ME tend to consume more plant-based foods, particularly healthy ones, and were more likely to be vegetarian or vegan. Moreover, ME is linked with healthier dietary patterns (e.g, organic food consumption, Mediterranean diet and French dietary guidelines) and reduced food intake (Paolassini-Guesnier et al., 2025, Hinton et al., 2021; Warren et al., 2017).

The correlation between ME and mood as a food choice motive may reflect mindful eaters' greater awareness of the emotional impact of food. ME practices help individuals recognise emotional triggers for eating and regulate emotional responses without resorting to unhealthy eating behaviors. This is consistent with studies that show ME reduces emotional and stress-induced eating (Fayasari & Lestari, 2022; Mentzelou et al., 2025). The relationship between ME and sensory appeal highlights the importance of sensory awareness, a core component of mindful eating. Mindful eaters often are thought to pay attention to their signals relating to hunger and fullness, which enhances their appreciation of food and may promote satiety (Egan et al., 2020; Hussain et al., 2021). This aligns with the idea that mindfulness increases sensory sensitivity and enjoyment of eating experiences.

3.4 Association of mindful eating with BMI and wellbeing

Table 4 presents the relationship between the total MEQ score of participants and the five subscale elements of the Mindful Eating Questionnaire (MEQ): "Disinhibition, Awareness, External Cues, Emotional Response, and Distraction," alongside BMI and eight well-being items: "Physical health, Mental health, Lifestyle status, Diet & health status, Dieting status, Physical activity, sleeping status, and Sleeping hours". The findings indicated a significant negative correlation between the total MEQ score and BMI (r = -0.090). Despite the weak correlation observed, this suggests that individuals with lower BMI levels may engage in more mindful eating practices compared to those with higher BMI. The result aligns with findings indicating that a lower BMI is significantly associated with overall mindful eating, suggesting that students with lower BMI tend to be more mindful eaters (Moor et al., 2013). Moreover, this aligns with Framson et al. (2009)'s findings that ME negatively correlates with BMI among individuals from various settings such as fitness gyms, preparatory schools, software companies, and non-profit organisations.

Furthermore, the disinhibition score (r = -0.234) and the emotional response score (r = -0.154) exhibited significant negative correlations with the BMI score. This indicates that individuals with lower BMI levels exhibited higher scores on disinhibition and emotional response. In contrast, individuals with higher BMI levels exhibited lower disinhibition during eating and did not display emotional eating behaviours. This result aligns with the study by Moor et al. (2013), which indicates that higher disinhibition and

emotional response to food are associated with lower BMI values. In the meantime, the awareness score (r = 0.109) and the external cues score (r = 0.161) demonstrated a significant positive correlation with the BMI score. This indicates that individuals with lower BMI levels exhibited higher awareness and sensitivity to external cues compared to those with higher BMI values. Consequently, individuals become more conscious of their eating habits. The study conducted by Clementi et al. (2017) revealed that individuals classified as obese, exhibiting the highest BMI levels, demonstrated lower scores in awareness and recognition. Conversely, those categorised as underweight, with the lowest BMI levels, achieved higher scores in these areas, thereby reinforcing this observation. This aligns with the findings of Serban et al. (2022), which indicate that awareness was notably diminished among individuals with excess weight and those reporting a lower self-perceived health status.

Awareness involves a deliberate focus on how food influences emotions and physical sensations (e.g., "Before I eat, I take a moment to appreciate the colours and smells of my food"); the External Cues subscale includes items that reflect instances where eating behaviour is triggered by environmental cues (e.g., "I notice when I'm eating from a dish of candy simply because it's present"); all items related to wellbeing measures showed significant correlations with the total MEQ score, with the exception of dieting status and sleeping hours. A significant negative correlation was observed between the total MEQ score and the physical wellness score, suggesting that individuals who practice mindful eating tend to have better physical health.

A notable negative correlation was also discovered between the total MEQ rating score and the mental wellbeing rating scores. This finding indicates that individuals with higher levels of mental wellbeing tended to report lower levels of ME behaviour, which appears to contrast with previous literatures. This outcome contradicts the research by Khan and Zadeh (2014), which shows a notable positive relationship between total MEQ rating scores and mental wellbeing, suggesting that individuals with higher mental wellbeing are generally more mindful in their practices. According to the findings of Kose and Ciplak (2020), an increase in individuals' mindfulness of eating correlates with an enhanced ability to manage emotions. The unexpected inverse relationship in this study may suggest a more complex interaction between mental health and eating behaviours in this population. One possible explanation is that individuals with poorer mental health may have adopted mindful eating practices as a coping strategy, thereby increasing their MEQ scores. Alternatively, the result could reflect context-specific factors such as stress-

induced hyper-awareness of food intake, or demographic and cultural influences. These findings highlight the need for further research to explore the directionality and underlying mechanisms of the relationship between ME and mental health.

Table 4: Pearson's bivariate correlation (r) between Mindful Eating Questionnaires (MEQ) with BMI and wellbeing (N = 1002).

	Total MEQ Score	Disinhibition	Awareness	External Cues	Emotional Response	Distraction
BMI	-0.090**	-0.234**	0.109**	0.161**	-0.154**	-0.061
Physical health	-0.198**	-0.118**	-0.127**	-0.035	-0.002	-0.104**
Mental health	-0.239**	-0.169**	-0.068*	0.034	-0.099**	-0.206**
Lifestyle status	0.169**	0.057	0.236**	0.164**	-0.112**	-0.100**
Diet & health status	-0.284**	-0.215**	-0.087**	0.104**	-0.158**	-0.252**
Dieting status	0.057	-0.011	0.178**	0.176**	-0.167**	-0.157**
Physical activity	0.172**	0.110**	0.083**	-0.039	0.091**	0.106**
Sleeping status	-0.167**	-0.113**	-0.061	0.010	-0.049	-0.137**
Sleeping hours	0.026	-0.023	0.050	0.068*	-0.051	0.001

Note. **p ≤ 0.01, *p ≤ 0.05, MEQ = Mindful Eating Questionnaires, BMI = Body Mass Index

A notable positive correlation was observed between the total MEQ score and the lifestyle status score. The observed correlation (r = 0.169) is classified as weak. It can be inferred that individuals who practice ME are likely to engage in high levels of activity, as indicated by their elevated lifestyle status score. The relationship between diet and health status exhibited a significant negative correlation with the total MEQ score (r = -0.284). The findings indicate that a high total MEQ score correlates with a low diet and health status score. A low diet and health status score indicates a very healthy diet with high quality. This shows that people with higher mental well-being are generally more mindful in their eating practices compared to individuals with poorer diet quality. ME was associated with better overall diet quality, including lower consumption of ultra-processed foods, greater intake of organic foods, better food group choices, and improved nutrient intake (Paolassini-Guesnier et. al., 2025). Moreover, lower ME scores can be linked to poorer dietary patterns and higher indicators of obesity (Lazarevich et al., 2025); and also related to binge behaviours and mood disturbances (Giannopoulou et al., 2020).

There were a notable change and a positive correlation (r = 0.172) between physical activity and the total MEQ score, suggesting that increased physical activity is connected to a higher MEQ score. This may be attributed

to individuals beginning to recognise the significance of maintaining healthy eating habits alongside regular physical activity in their everyday lives. It was discovered that mindfulness practices were consistently connected to greater participation in physical activity, although the exact nature of this relationship remained unclear (Roychowdhury, 2021). The research by Roychowdhury (2021) examined the relationships among mindfulness, physical activity, and health behaviours, concluding that higher levels of mindfulness correlated with increased physical activity. However, the findings of this study do not align with those of Framson et al. (2009), which indicated that physical activity did not have strong associations with ME scores, except in the case of yoga activity. Moreover, Moor et al. (2013) found that while overall mindful eating scores did not indicate a notable difference in relation to physical activity levels, they did identify a notable negative correlation between physical activity and both awareness and emotional response. The results were achievable as the number of exercises increased, while mindful eating decreased. This may be attributed to the notion that any food can be consumed, as it will be worked off later.

The analysis of sleeping status and total MEQ score revealed a significant negative correlation between the two variables. The high total MEQ score correlated with a low sleeping status score. A low sleeping status score is associated with high sleep quality, suggesting that individuals with better sleep quality tend to be more mindful eaters compared to those with poorer sleep quality. This study aligns with the findings of Sağlam and Cebirbay (2023), which indicate a significant difference in the Pittsburgh Sleep Quality Index (PSQI) and a low correlation with the Mindful Eating Questionnaire (MEQ-30), suggesting that an increase in PSQI score corresponds to an increase in MEQ-30 score. The findings indicate that adults exhibiting good sleep quality achieved higher total scores in mindful eating compared to those with poor sleep quality. Individuals require adequate sleep quality to ensure clear thinking and sound decision-making. Briguglio et al. (2020) and Zhang et al. (2017) emphasise that sleep quality plays a vital role in ensuring one feels prepared and energised for the next day. When sleep quality is compromised both qualitatively and quantitatively, it can adversely affect memory, health, work, and social interactions, as well as mental well-being.

3.5 Internal consistency reliability of MEQ's subscales

Table 5 presents the Cronbach's alpha coefficients for the subscales of the Mindful Eating Questionnaire (MEQ). Chua et al. (2020) indicate that a coefficient value of $\alpha \geq 0.70$ signifies acceptable internal consistency. In the meantime, a coefficient value of $\alpha < 0.70$ suggests questionable internal consistency, necessitating correction or elimination as required.

Table 5: Cronbach's alpha coefficients for the Mindful Eating Questionnaire's subscales.

Subscale	No. of Items	Cronbach's α
Disinhibition	8	0.687
Awareness	7	0.769
External Cues	6	0.706
Emotional Response	4	0.783
Distraction	3	0.615

The internal consistency reliability for the five subscales of MEQ element measures varied between $\alpha = 0.615$ and $\alpha = 0.783$. The Cronbach's alpha for the disinhibition subscale was 0.687, indicating questionable internal consistency. This finding suggests that the items in this subscale lack correlation with one another. The removal of item 7 from the disinhibition subscale, specifically, "When I'm at a restaurant, I can tell when the portion I've been served is too large for me," resulted in an increase in the Cronbach's alpha value for disinhibition from 0.687 to 0.718, indicating acceptable internal consistency. The Cronbach's alpha values for awareness, external cues, and emotional response were in the range of 0.70 to 0.79, indicating satisfactory internal consistency coefficients. Despite the questionable Cronbach's alpha value for the distraction subscale, the items within this subscale cannot be removed. The distraction subscale comprises only three items. Cronbach's alpha exhibits high sensitivity, suggesting that the reliability of two to three items may be diminished.

4. CONCLUSION

This study's findings demonstrate a significant correlation between mindful eating behaviours, food choice patterns, and health and well-being indicators among Malaysian adults. Increased mindful eating is positively associated with healthier food selections, especially those influenced by health, mood, natural ingredients, sensory attributes, and weight management factors. Additionally, mindful eating exhibited a modest inverse correlation with body mass index, indicating its potential contribution to weight management. Notable correlations were identified between mindful eating and various aspects of well-being, encompassing physical health, mental health, and lifestyle status. The findings indicate that promoting mindful eating could be an effective approach to foster healthier dietary behaviours, and enhance overall health outcomes. The incorporation of mindful eating principles into nutrition education and public health initiatives may facilitate the establishment of sustainable eating habits among

Malaysia's diverse adult population.

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