# Relationship Between Body Image Perception and Stress Towards Eating Behaviour Among IIUM Students

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**ABSTRACT**

**Background:** University students, facing academic and personal challenges, often experience stress that can worsen body image concerns, leading to unhealthy eating patterns like overeating, restrictive eating, or disordered eating. Therefore, the main objective of this research is to assess the relationship between body image perception and stress towards eating behaviour among students at the International Islamic University Malaysia (IIUM). **Methods:** The study used a cross-sectional design, in which samples were obtained using a convenient sampling, with a total of 384 students. Data was collected using the Perceived Stress Scale (PSS), the Body Image Scale for Youth (BISY), and the Dutch Eating Behaviour Questionnaire (DEBQ). **Results:** Stress is significantly associated with emotional eating ($r = 0.142$, $p < 0.01$). Body image perception also showed a significant relationship with restraint ($r = 0.301$, $p < 0.01$), emotional ($r = 0.197$, $p < 0.01$), and external eating behaviours ($r = 0.155$, $p < 0.01$). Cultural values ($r = 0.167$, $p < 0.01$) and social support ($r = 0.122$, $p < 0.01$) weakly correlate with external eating. Negative associations exist between body evaluation and both restraint ($r = -0.129$, $p < 0.05$) and emotional eating ($r = -0.122$, $p < 0.05$). Health and spirituality priorities negatively related to restraint ($r = -0.186$, $p < 0.01$) and emotional eating ($r = -0.144$, $p < 0.01$). Multiple regression analysis showed dimension body image perception (emotion and behaviour) predicts restraint and emotional eating behaviour. Results also showed that dimension emotion and behaviour, perceived social support and perceived cultural values are significant predictors of external eating behaviour. **Conclusion:** These findings underscore the complex interplay between stress, body image perception, and eating behaviours among IIUM students, highlighting the need for comprehensive support systems to address these interrelated issues.

## INTRODUCTION

As people age, their eating behaviours change, influenced by physiological, psychological, social, and genetic factors (Osorio et al., 2002; Grimm & Steinle, 2011). Life transitions can significantly disrupt eating patterns, often leading to weight gain and an increased risk of obesity later in life (El Ansari et al., 2012; Gordon-Larsen et al., 2004). University students frequently rely on fast food and simple meals due to time restrictions and a lack of cooking facilities, thus endangering the healthy diet that is necessary to sustain their health and intellectual achievement (Morse & Driskell, 2009; Florence et al., 2008).

Body image perception and stress also play a crucial role in shaping eating behaviours. Body image is defined as how individuals view their appearance based on societal standards that can negatively impact their self-esteem and lead to disordered eating (Cash & Pruzinsky, 1990; Glashouwer et al., 2019). When students struggle with body dissatisfaction, they become more susceptible to mental health issues, including anxiety and eating disorders, which can persist into adulthood (Perkins & Brausch, 2019). Stress is another critical factor, often triggered by academic pressures, personal challenges, and social expectations. Studies have shown that stress influences eating behaviours, with students engaging in emotional eating or unhealthy eating patterns as a coping mechanism (Torres & Nowson, 2007; Papier et al., 2015).

This study aims to explore the relationship between stress, body image perception, and eating behaviours among IIUM students. University students are particularly vulnerable to stress, which, combined with a negative body image, can lead to poor eating habits, affecting both their physical and mental well-being. Understanding these

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interconnected factors is essential for developing effective strategies to promote healthy eating behaviours, enhance mental health, and support students' overall well-being. This research offers insights that can inform the development of focused treatments to promote better eating habits and enhance students' academic and personal outcomes.

## MATERIALS AND METHODS

### Study Participants

This study adopted a quantitative, cross-sectional study to investigate the relationships between stress, body image perception, and eating behaviour among International Islamic University Malaysia (IIUM) students. The quantitative approach allowed for the collection of measurable data that could be statistically analysed, providing focused insights into these issues. The research was conducted online and included students from IIUM's four main campuses: Gombak (19,382 students), Kuantan (3,566 students), Pagoh (1,634 students), and the Centre for Foundation Studies in Gambang (3,600 students). In total, 28,182 students were enrolled across these campuses at the time of the study.

The Kuantan Campus has six faculties: the Kulliyyah of Allied Health Sciences, Dentistry, Medicine, Nursing, Pharmacy, and Science. At the Gombak campus, seven faculties are established, including the Kulliyyah of Islamic Revealed Knowledge and Human Sciences, Law, Architecture and Environmental Design, Economics and Management Sciences, Education, Engineering, and Information and Communication Technology. The Pagoh campus hosts a single faculty, the Kulliyyah of Sustainable Tourism and Contemporary Languages, and includes from Gambang Campus which consists of foundation students. A sample size of 379 students was determined using Krejcie and Morgan's (1970) method, which ensures a representative sample for a population of this size. A total of 384 students from all campuses were recruited in two weeks using convenience sampling.

### Questionnaire

A set of questionnaires was developed using the adopt-and-adapt method based on prior studies by Jalali-Farahani et al. (2022), Cohen et al. (1983), and Van Strien et al. (1986). The survey, created via Google Forms, was distributed through email, WhatsApp, Telegram, and Instagram. It consisted of four sections: sociodemographic data, stress, body image perception, and eating behaviour. Body image was assessed using the Body Image Scale for Youth (BISY), which measured ten themes, including personal characteristics, health priorities, cultural values, and body evaluation. Most items used a five-point Likert scale, with scores transformed to a 0–100 range, with higher scores indicating more negative body perception.

The Perceived Stress Scale (PSS) (Cohen et al., 1983) measured stress levels, with total scores ranging from 0 to 40 and categorized as low, moderate, or high. Eating behaviours were evaluated using the Dutch Eating Behaviour Questionnaire (DEBQ) (Van Strien et al., 1986), which focuses on restrained, emotional, and external eating, with higher scores indicating stronger eating tendencies.

### Statistical Analysis

The Statistical Package for the Social Sciences version 29 was used to analyse the data. The sociodemographic data's percentage, mean, and standard deviation (SD), stress level score by PSS, body image scale score, and eating behaviour score from the DEBQ questionnaire were all analysed using descriptive analysis. Additionally, the association between eating behaviours, body image perception, and stress was examined using Pearson Correlation and multiple regression.

## RESULTS

### General Characteristics of the Participants

According to Table 1, a total of 384 students comprised 77.9% (n=299) female students and 22.1% (n=85) male students. The majority were aged 22 to 23 (40.6%), followed by 20 to 21 (31.8%). All participants identified as Malay, with undergraduates accounting for 69.0%, foundation students 19.3%, and postgraduates 11.7%. The Kuantan Campus had the highest response rate at 52.6%, followed by the Centre for Foundation Studies (19.3%) and the Gombak campus (16.9%). Most respondents were from the Kulliyyah of Allied Health Sciences (37.5%), and most participants lived on campus. Regarding body mass index (BMI), 61.2% had normal BMIs, while 17.7% were underweight, 15.9% overweight, and 5.2% obese.

Table 1: Sociodemographic Factors of Respondents (N=384)

| Characteristic | Categories | Frequency | Percentage (%) |
|---|---|---|---|
| Gender | Male | 85 | 22.1 |
| | Female | 299 | 77.9 |
| Age | 18-19 | 95 | 24.7 |
| | 20-21 | 122 | 31.8 |
| | 22-23 | 156 | 40.6 |
| | 24 & above | 11 | 2.9 |
| Campus | CFS | 74 | 19.3 |
| | Kuantan | 202 | 52.6 |
| | Gombak | 65 | 16.9 |
| | Pagoh | 43 | 11.2 |
| Kulliyyah | AHASKIRKHS | 44 | 11.5 |
| | AIKOL | 12 | 3.1 |
| | KAED | 12 | 3.1 |
| | KAHS | 144 | 37.5 |
| | KENMS | 17 | 4.4 |
| | KICT | 8 | 2.1 |
| | KOD | 2 | 0.5 |
| | KOE | 20 | 5.2 |
| | KOED | 7 | 1.8 |
| | KOM | 8 | 2.1 |
| | KON | 18 | 4.7 |
| | KOP | 11 | 2.9 |
| | KOS | 35 | 9.1 |
| | KSTCL | 46 | 12.0 |
| Body Mass Index (BMI) | Underweight | 68 | 17.7 |
| | Normal | 235 | 61.2 |
| | Overweight | 61 | 15.9 |
| | Obese | 20 | 5.2 |

**Level of Stress, Body Image Perception, and Eating Behaviour**

According to Table 2, 70.6% (n=271) of the students experienced moderate stress. There was a slight variation in prevalence between the high and low-stress categories, with 14.6% (n=56) and 14.8% (n=57), respectively. It was reported that 21.4% (n=82) students have high levels of body image perception under the dimension of emotion and behaviour while 78.6% (n=302) students have low levels of body image perception. Table 2 shows that only 0.3% (n=1) of IIUM students have a high body image perception level under the body evaluation level. In comparison, most of the students have a low level of body evaluation, which was 99.7% (n=383).

Furthermore, more than half of the students had high personal characteristics and strategies scores under the body image perception level of 64.8% (n=249) while 35.3% (n=135) had low levels of personal characteristics and strategy. It also revealed that more than half of the students, precisely 57.3% (n=220), scored high in personal characteristics and strategy within the context of body image perception. In contrast, 42.7% (n=164) of the

students had low levels in these areas. Moreover, a significant majority of the students, accounting for 55.5% (n=213), exhibited high scores in perceived social support within the context of body image perception. A smaller proportion, 44.5%, demonstrated low levels in these aspects. 6.5% (n=23) of students have low priority of health and spirituality and 94.0% (n=361) have high levels of body image perception in this dimension. According to the data in the Table 1, 13.5% of the students, corresponding to 52 individuals, reported having low perceived cultural values. In contrast, a substantial majority, 86.5%, equating to 332 students, exhibited high levels of body image perception within this dimension.

For the eating behaviour level, 64.3% (n=247) of IIUM students have a higher level of restrained eating behaviour while 35.7% (n=137) students have a low level. The study results show that 249 (64.8%) students have higher levels of eating behaviour under the context of emotions. Meanwhile, 135 (35.2%) IIUM students have low levels of emotional eating behaviour. Table 2 shows results from the study that the majority of the IIUM students 98.2% (n=377) have higher levels of external eating behaviour while only 1.8% (n=7) reported having a low level of eating behaviour under the context of external.

Table 2: Level of stress, Body Image Perception and Eating Behaviour

| Variables | Level | n | % |
|---|---|---|---|
| Stress | High | 56 | 14.6 |
| | Moderate | 271 | 70.6 |
| | Low | 57 | 14.8 |
| Body image perception | | | |
| Emotion & behaviour | High | 82 | 21.4 |
| | Low | 302 | 78.6 |
| Body evaluation | High | 1 | 0.3 |
| | Low | 383 | 99.7 |
| Personal characteristics & strategies | High | 249 | 64.8 |
| | Low | 135 | 35.2 |
| Social models | High | 220 | 57.3 |
| | Low | 164 | 42.7 |
| Perceived social support | High | 213 | 55.5 |
| | Low | 171 | 44.5 |
| Priority of health and spirituality | High | 361 | 94.0 |
| | Low | 23 | 6.0 |
| Perceived cultural values | High | 332 | 86.5 |
| | Low | 52 | 13.5 |
| Emotional eating behaviour | High | 249 | 64.8 |
| | Low | 135 | 35.2 |
| External eating behaviour | High | 377 | 98.2 |
| | Low | 7 | 1.8 |
| Restrained eating behaviour | High | 247 | 64.3 |
| | Low | 137 | 35.7 |

## Correlation Among Variables

Table 3 shows the findings of the Pearson Correlation analysis among IIUM students associated with stress, seven dimensions of body image perception, and three types of eating behaviour (restrained, emotional, and external). The study found a strong correlation between stress and emotional eating (r = 0.142, p < 0.01), yet no relationship with restrained or external eating behaviour.

Body image perception has a significant association with restricted, emotional, and external eating behaviours (r = 0.301, p < 0.01, r = 0.197, p > 0.01, and r = 0.155, p < 0.01). On the other hand, a correlational analysis found a significant association between perceived cultural values and external eating (r = 0.167, p < 0.01), as well as the perceived social support dimension of body image perception (r = 0.122, p < 0.01).

**Table 3**: Correlation between stress, body image perception and eating behaviour

| Variables | 1 | 2a | 2b | 2c | 2d | 2e | 2f | 2g | 3 | 4 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. Stress | - | | | | | | | | | |
| 2. Body image perception | | | | | | | | | | |
| a. Emotion & Behaviour | .437** | - | | | | | | | | |
| b. Body evaluation | -.396** | -.560** | - | | | | | | | |
| c. Personal characteristics & strategies | -.295** | -.460** | .605** | - | | | | | | |
| d. Social model | -.216** | -.272** | .469** | .366** | - | | | | | |
| e. Perceived social support | -.160** | -.208** | .356** | .291** | .293** | - | | | | |
| f. Priority of health & spirituality | -.206** | -.296** | .323** | .280** | .145** | .238** | - | | | |
| g. Perceived cultural values | .149** | .182** | -.045 | .021 | -.081 | .036 | .127* | - | | |
| 3. Restrained eating behaviour | .086 | .301** | -.129* | -.048 | -.001 | -.008 | -.186** | .024 | - | |
| 4. Emotional eating behaviour | .142** | .197** | -.122* | .010 | -.013 | -.043 | -.144** | .059 | .191** | - |
| 5. External eating behaviour | .042 | .153** | -.034 | -.036 | .050 | .122* | .092 | .167** | -.111* | .353** |

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

## Multiple Regression Among Variables

Table 4 indicates that the variables significantly predicted restrained eating behaviour, with an R-value of 0.325 and an R² value of 0.106, explaining 10.6% of the variance. The F-value demonstrated a significant relationship among the variables (F (2, 384) = 14.981, p < 0.05), suggesting they contribute to restrained eating behaviour among IIUM students.

Additionally, the emotional and behavioural dimensions significantly predicted restrained eating behaviour (b = 0.314, p < 0.05), as did the priority of health and spirituality (b = -0.120, p < 0.05). No significant differences were found between body evaluation dimensions and restrained eating behaviour.

**Table 4**: Regression analysis between body image perception (emotion and behaviours, body evaluation, and priority of health and spirituality) and restrained eating behaviour

| Model | B | SE | Std B | t | Sig. |
|---|---|---|---|---|---|
| 1. Emotion and behaviour | .009 | .002 | .314 | 5.30 | .000 |
| 2. Body Evaluation | .007 | .005 | .086 | 1.44 | .152 |
| 3. Priority of Health and Spirituality | -.024 | .010 | -.120 | -2.33 | .021 |
| **Model summary** | $R$ = .325 | | | | |
| | $R^2$ = .106 | | | | |
| | Adj. $R^2$ = .099 | | | | |
| | SE = 8.70 | | | | |
| | $F$(2, 384) = 14.981, $p$ < .001 | | | | |

Table 5 shows an R-value of 0.224 and an R² value of 0.050, indicating a 5% variance among the variables. The results were statistically significant (F (2, 384) = 5.013, p < 0.05), confirming that these variables collectively predicted emotional eating behaviour.

Moreover, as per Table 5, the emotion and behaviour dimension of body image perception significantly predicted emotional eating behaviour (b = 0.153, p < 0.05). No significant predictive differences were found for stress, body evaluation, or the priority of health and spirituality regarding restrained eating behaviour.

**Table 5**: Regression analysis between stress, body image perception (emotion and behaviour, body evaluation, priority of health and spirituality), and emotional eating behaviour

| Model | B | SE | Std B | t | Sig. |
|---|---|---|---|---|---|
| 1. Stress | .123 | .109 | .064 | 1.130 | .261 |
| 2. Emotion and Behaviour | .006 | .002 | .153 | 2.400 | .017 |
| 3. Body Evaluation | .002 | .006 | .019 | .299 | .765 |
| 4. Priority of Health and Spirituality | -.024 | .014 | -.092 | -1.720 | .087 |
| **Model summary** | R = .224 R² = .050 Adj. R² = .040 SE = 11.60 F(2, 384) = 5.013, p < .001 | | | | |

Table 6 indicates an R-value of 0.255 and an R² value of 0.065, reflecting a 6.5% variance among the variables. The analysis demonstrated that these variables significantly predicted external eating behaviour (F (2, 384) = 8.835, p < 0.05). According to Table 6, emotion and behaviour (b = 0.161, p < 0.05), perceived social support (b = 0.151, p < 0.05), and perceived cultural values (b = 0.132, p < 0.05) significantly predicted external eating behaviour among IIUM students.

**Table 6**: Regression analysis between body image perception (emotion and behaviour, perceived social support, and perceived cultural values) and external eating behaviour

| Model | B | SE | Std B | t | Sig. |
|---|---|---|---|---|---|
| 1. Emotion and Behaviour | .003 | .001 | .161 | 3.11 | .002 |
| 2. Perceived Social Support | .013 | .005 | .151 | 2.97 | .003 |
| 3. Perceived Cultural Values | .014 | .005 | .132 | 2.61 | .009 |
| **Model summary** | R = .255 R² = .065 Adj. R² = .058 SE = 5.96 F(2, 384) = 8.835, p < .001 | | | | |

## DISCUSSION

Stress is prevalent among university students, often described as feeling overwhelmed, anxious, or exhausted. This study conducted at IIUM found that 70.6% of students experience moderate stress levels, which aligns with similar findings from Yikealo et al. (2018), who reported that 71% of students in Eritrea also experienced moderate stress. In contrast, a study in Selangor found that 44.6% of university students reported moderate to high stress levels (Wong et al., 2023). Additionally, research from Sultan Qaboos University in Oman showed that 75.1% of students reported moderate stress, reinforcing that stress is common across various academic settings. These findings highlight the significant emotional burden university students face, particularly as they navigate the challenges of higher education.

Numerous factors contribute to stress among university students, with academic performance being a primary concern. According to AlJaber et al. (2019), first-year students in Riyadh experience more stress than their senior counterparts. The heightened demands placed on students often increase stress levels, especially during examinations, with preclinical students reporting more extreme stress than their peers (AlJaber et al., 2019). Similar findings from Sultan Qaboos University suggested that impending exams may have influenced reported stress levels, with many students expressing heightened anxiety in preparation for assessments (Alkhawaldeh et al., 2023). Cumulatively findings suggest that academic pressures, alongside personal circumstances and social expectations, play a critical role in elevating stress levels among students, leading to a detrimental impact on their overall well-being.

Concerns about body image perception have also emerged, particularly regarding the influence of social media on emotional well-being. The results from the IIUM study indicated that many students reported dissatisfaction with their body image, with five out of seven dimensions reflecting high levels of concern. This mirrors findings from Divecha et al. (2022), which indicated that only 66% of medical students in Oman had an accurate body image perception. Similarly, a study conducted by Manar et al. (2019) found that only 30.75% of students were satisfied with their body image, emphasizing that societal pressures and media portrayals significantly impact students' perceptions of themselves. The desire to conform to certain body ideals often leads to feelings of inadequacy and dissatisfaction, contributing to an unhealthy body image among university students, regardless of gender.

The relationship between stress and eating behaviour is significant, with many IIUM students exhibiting high levels of restrained, emotional, and external eating behaviours. Research indicates that stress often leads to unhealthy eating patterns, including overeating and skipping meals (Choi, 2020). Kowalkowska & Poínhos (2021) found that women displayed higher levels of emotional eating, while men tended to exhibit uncontrolled eating behaviours. This suggests that gender may influence how students cope with stress concerning their eating habits. Overall, this study concludes that stress has a significant correlation with emotional eating behaviours, indicating that increased stress levels can exacerbate unhealthy eating patterns among university students. However, it is essential to note that this research has limitations, including a narrow focus on a single university, which may not represent broader student experiences. Additionally, the existing literature on body image perceptions influencing eating behaviour is limited, suggesting a need for further exploration in this area to understand better the complexities of stress, body image, and eating behaviours among university populations.

## CONCLUSION

This study revealed that most students experienced moderate stress levels. There are significant relationships between body image perception and eating behaviours, with regression analysis identifying body evaluation and the prioritization of health and spirituality as predictors of restrained eating, and stress and body image perception influencing emotional eating. These findings underscore the intricate relationship between stress, body image, and eating behaviours among university students. Stress was found to play a crucial role in driving emotional eating, while body evaluation and personal health priorities were closely linked to restrained eating behaviours. Addressing the interrelated challenges of stress, body image, and eating behaviours demands a holistic approach. By promoting mental well-being, positive self-perception, and healthy behaviours, universities can foster an environment that supports students personal and academic success.

## RECOMMENDATIONS

To improve the current study, future research could refine methodologies and explore additional factors affecting stress and eating behaviours in students. Future research should consider mix method design to provide detailed explanation on how the variables are correlated to each other. This approach can also provide clues to the thought process that linked the variables. Additional factors such as coping mechanism, mood, and mental illnesses should be explored its effect towards stress and eating behaviours.

Awareness campaigns and educational programs are also recommended to teach students effective stress management strategies and foster positive body image perceptions.. Additionally, future studies could broaden the scope to investigate other variables such as sleep quality, social media usage, and academic performance that may impact students' eating behaviours.

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