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Psychological correlates of mindful eating: the role of mindfulness and eating behaviors among health sciences students

Tuğba Sarı^{1*} , İrem Çağla Özel² and Hatice Pars³

Abstract

Objective This study aimed to examine the associations between psychological factors, eating attitudes, and mindful eating among undergraduate health sciences students.

Methods A cross-sectional correlational design was employed with 468 university students. Data were collected using validated self-report instruments, including the Mindful Attention Awareness Scale, Mindful Eating Questionnaire, Rosenberg Self-Esteem Scale, and Psychological Well-Being Scale–Short Form. Descriptive statistics, Spearman correlation analyses, and multiple linear regression analyses were conducted using SPSS 25.0.

Results Significant positive correlations were found between mindful eating and psychological well-being ($r = .298, p < .001$) and mindfulness ($r = .266, p < .001$). Mindfulness was also positively associated with psychological well-being ($r = .283, p < .001$). A strong negative correlation was observed between psychological well-being and self-esteem ($r = -.795, p < .001$), while weak negative correlations were identified between self-esteem and both mindful eating ($r = -.219, p < .001$) and mindfulness ($r = -.252, p < .001$). In regression analyses, the overall model was statistically significant and explained a small but meaningful proportion of the variance in mindful eating ($R^2 = 0.104, p < .001$). Emotional eating related variables and body perception accounted for additional variance in mindful eating ($R^2 = 0.047, p < .001$).

Conclusion Mindfulness and psychological well-being were significantly associated with mindful eating, whereas self-esteem was not independently associated with mindful eating in the regression model. These findings suggest the potential importance of incorporating mindfulness- and emotion-focused components into interventions targeting eating behaviors among health sciences students.

Keywords Mindfulness, Mindful eating, Self-esteem, Psychological well-being, Emotional eating

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Introduction

Mindful eating has received increasing attention for its potential benefits for both mental and physical health [1]. Defined as the practice of giving full attention to the eating experience, mindful eating encourages individuals to attend to their sensory experiences during meals and to eat in response to physiological hunger signals rather than emotional triggers [2]. A broader psychological construct, mindfulness, involves being present in the moment without judgment and allows individuals to observe their thoughts, emotions, and physical sensations [3]. Integrating mindfulness into eating behaviors has been associated with improvements in emotional regulation and eating patterns; however, findings remain inconsistent, and these relationships may vary depending on contextual and individual factors [1]. Understanding the role of mindfulness in eating behaviors is therefore important for promoting healthy habits [2].

Mindfulness has been shown to improve psychological well-being by enhancing emotional regulation, reducing stress, and promoting resilience. Research indicates that mindfulness-based interventions can reduce anxiety, depression, and other forms of psychological distress [1, 4, 5]. Mindfulness practice can also support a positive body image and higher self-esteem, both of which are essential for developing healthy relationships with food [6, 7].

Self-esteem, another psychological factor, plays a role in shaping eating behaviors. Defined as an individual's subjective evaluation of their own worth, self-esteem is closely linked to emotional health and may influence eating behaviors [8, 9]. Research suggests that individuals with higher self-esteem tend to exhibit healthier eating behaviors, whereas lower self-esteem has been associated with maladaptive patterns such as emotional eating and overeating [9, 10]. This relationship may be explained by the tendency of individuals with lower self-esteem to use food as a coping strategy for negative emotions or stress [11]. Conversely, higher self-esteem may be associated with more adaptive and balanced eating behaviors; however, this relationship appears to be influenced by individual characteristics and contextual factors [12].

From a conceptual perspective, mindful eating may be influenced by multiple interrelated psychological factors [3, 13]. Mindfulness can enhance present-moment awareness during eating, thereby supporting more conscious and regulated eating behaviors. Psychological well-being may further contribute to mindful eating by promoting emotional balance and adaptive coping strategies in daily life [13, 14]. Although self-esteem has been suggested to be associated with eating behaviors, its role appears to be more indirect and less consistent, potentially operating through emotional and cognitive processes. Therefore, examining these psychological factors within a integrated

model may provide a more comprehensive understanding of mindful eating behaviors among university students.

Additionally, body image, which reflects individuals' perceptions and feelings about their body shape and size, is associated with eating behaviors and psychological well-being. Individuals dissatisfied with their body image may exhibit disordered eating behaviors or develop unhealthy attitudes toward food, which may exacerbate emotional distress and lower self-esteem [15]. In contrast, a positive body image is associated with healthier eating behaviors and better psychological well-being [16]. Therefore, understanding the role of body image in the context of mindful eating is important for addressing issues such as body dissatisfaction and improving overall well-being.

Recent studies suggest that higher psychological well-being is associated with healthier lifestyle behaviors, including more balanced eating and greater mindfulness [17, 18]. This highlights the importance of supporting psychological well-being as a way to promote mindful eating and other health-enhancing behaviors [13, 18]. Health sciences students hold particular importance as they are future healthcare professionals who will guide individuals in adopting healthy lifestyle behaviors. Their own eating behaviors and levels of psychological well-being may influence not only their personal health but also the quality of care they will provide and their approaches to patient education in the future. Moreover, health sciences students are exposed to multiple stressors, including intensive academic demands, clinical practice pressures, and emotional challenges, which place them at increased risk for emotional eating and irregular dietary patterns. Therefore, examining mindful eating behaviors among health sciences students is of critical importance in terms of both individual health outcomes and future professional practice.

Although growing evidence suggests that mindfulness, psychological well-being, self-esteem, and eating behaviors are interrelated, previous studies have examined these constructs separately or in limited combinations, resulting in fragmented findings. Moreover, most existing research has been conducted in Western populations, while cultural, educational, and lifestyle factors in countries such as Türkiye may influence both psychological processes and eating behaviors differently. In addition, the simultaneous examination of mindfulness, psychological well-being, self-esteem, and mindful eating within a single integrated model remains limited. Given the increasing academic and psychosocial pressures experienced by university students in health sciences programs, understanding how these psychological factors interact in this population is particularly important.

Research questions

1. What are the relationships between mindfulness, psychological well-being, self-esteem, and mindful eating among university students?
2. To what extent do mindfulness, psychological well-being, and self-esteem predict mindful eating in a multivariate model?
3. Which psychological factor has the strongest association with mindful eating among university students?

By addressing these questions, this study aims to contribute to the literature by examining mindfulness, psychological well-being, and self-esteem within a single integrated model in relation to mindful eating among university students. In doing so, it seeks to provide a more comprehensive understanding of the psychological mechanisms underlying mindful eating behaviors. The findings may offer practical implications for developing targeted interventions aimed at promoting mindful eating and enhancing psychological well-being, particularly among health sciences students, ultimately supporting healthier lifestyle behaviors and improved mental health outcomes.

Methods

Research design

This study was conducted among students at a Health Sciences Faculty at a university in Turkey using a descriptive correlational research design. This design, a frequently used approach in quantitative studies, aims to examine the relationships between variables in their natural settings, without any manipulation. A cross-sectional approach was adopted, and data were collected at a single time point using a self-report questionnaire. Therefore, the findings reflect the concurrent relationships among participants' mindfulness, mindful eating, self-esteem, and psychological well-being. No experimental intervention was employed; the study focused on observing the current conditions and analyzing the variable relationships using statistical techniques.

Participants

The study population consisted of a total of 526 students from the Department of Nutrition and Dietetics ($n = 133$), Department of Child Development ($n = 109$), Department of Physiotherapy and Rehabilitation ($n = 134$), Department of Nursing ($n = 90$), and Department of Audiology ($n = 60$) of the Faculty of Health Sciences. A priori power analysis using G*Power version 3.1.9.2 showed that a minimum of 284 participants were required, with an alpha level of 0.05, effect size of 0.30, and statistical power of 0.80. An attempt was made to reach the entire population without

selecting a sample. Data were entered from 478 students, but 10 students with incomplete data were excluded from the study. 468 students were included in the study. Participants ranged in age from 18 to 25 (21.6 ± 1.6), 85.7% were female and 14.3% were male. Data were collected via a face-to-face survey. Participation was entirely voluntary. Informed consent was obtained from all participants before data collection, and all responses were anonymized to ensure confidentiality.

Inclusion criteria

The inclusion criteria for participation in this study were as follows: (a) being a student at the Faculty of Health Sciences, (b) being over 18 years of age, (c) having no physical impairment that hinders communication, and (d) volunteering to participate in the research.

Data collection procedure

Data were collected from students at the Faculty of Health Sciences at a foundation university in Turkey. Participant recruitment was conducted through in-class announcements and online announcements distributed through class group platforms such as WhatsApp. Through these announcements, the researcher introduced the study, explained the aims and procedures, and invited students to volunteer without payment or incentive. Interested students were contacted in person to confirm their participation. After providing written consent and information about the data collection procedure, data were collected face-to-face using the study's data collection tools. All procedures were approved by the ethics committee of Atılım University (Approval No: 604.01-103099 Date: 10.01.2025) and conformed to the standards set by the Declaration of Helsinki. All participants provided written informed consent prior to participation. Participation was voluntary, and data were collected anonymously and confidentially in accordance with ethical guidelines.

Data collection tools

Data were collected using a structured questionnaire composed of four validated scales and a demographic information form.

Mindful attention awareness scale (MAAS)

Developed by Brown and Ryan (2003) and adapted into Turkish by Özyeşil et al. (2011), this 15-item unidimensional scale assesses individuals' general level of dispositional mindfulness. Each item is rated on a 6-point Likert scale. Higher scores indicate greater mindfulness. The Turkish version has shown adequate reliability (Cronbach's α 0.80) [19]. In this study, Cronbach's alpha coefficient was found to be 0.87.

Table 1 Regression analysis of PWB-SF, RSES and MAAS scales on MEQ-30 ($n=468$)

Model	Unstandardised Coefficients		β	t	p	Confidence Interval for B (%95)	VIF
	β	Std Error				Lower limit Upper limit	
Constant (MEQ-30)	71.954	9.292	—	7.744	< 0.001	[53.694–90.214]	—
PWB-SF	0.386	0.150	0.204	2.568	0.011	[0.091–0.682]	3.262
MAAS	0.197	0.038	0.232	5.145	< 0.001	[0.122–0.273]	1.050
RSES	0.073	0.199	0.029	0.367	0.714	[-0.318–0.464]	3.215

MEQ-30 Mindful eating questionnaire, MAAS Mindful attention awareness scale, RSES Rosenberg self-esteem scale, PWB-SF Psychological well-being scale

p value is significant at 0.05 level ($F = 18.007$; $p < 0.001$; $R^2 = 0.104$; Adjust $R^2 = 0.098$)

Table 2 Regression analysis of eating behaviors and emotional state on MEQ-30 ($n=468$)

Model	Unstandardised Coefficients		β	t	p	Confidence Interval for B (%95)	VIF
	β	Std Error				Lower limit Upper limit	
Constant (MEQ-30)	107.604	2.836	—	37.943	< 0.001	[102.031–113.177]	—
Does your emotional state affect your nutrition?	-3.107	1.299	-0.109	-2.393	0.017	[-5.659– -0.555]	1.014
Do you check for food even when you're not hungry?	1.758	0.653	0.126	2.694	0.007	[0.476–3.041]	1.068
Body weight assessment status	-2.114	0.807	-0.122	-2.620	0.009	[-3.699– -0.528]	1.055

MEQ-30 Mindful eating questionnaire

*p value is significant at 0.05 level ($F = 7.587$; $p < 0.001$; $R^2 = 0.047$; Adjust $R^2 = 0.041$)

Mindful eating questionnaire (MEQ-30)

Originally developed by Framson et al. (2009), this multidimensional tool assesses awareness during eating behaviors. The Turkish adaptation by Köse et al. (2016) includes 30 items rated on a 4-point Likert scale. Higher scores indicate higher levels of mindful eating. The internal consistency (Cronbach's α) of the Turkish version was reported as 0.73 [20]. In this study, Cronbach's alpha coefficient was found to be 0.80.

Rosenberg self-esteem scale (RSES)

A widely used 10-item self-report measure developed by Rosenberg (1965) and adapted to Turkish by Çuhadaroglu (1986). Items are rated on a 4-point Likert scale. The scale measures self-esteem, with low scores indicating high self-esteem. In Çuhadaroglu's adaptation study (1986), Cronbach's alpha was found to be 0.74 [21]. In this study, Cronbach's alpha coefficient was found to be 0.71.

Psychological well-being scale (PWB-SF)

Based on Ryff's (1989) model and adapted into Turkish by Telef (2013), this short form contains 8 items measuring psychological well-being. Responses are rated on a 6-point Likert scale. Higher scores represent greater psychological well-being. A reliability study found a Cronbach's alpha coefficient of 0.80 [22]. In this study, Cronbach's alpha coefficient was found to be 0.94.

Data analysis

Data were analyzed using SPSS 25.0. Before analysis, the dataset was screened for missing values, and 10 cases with missing entries were excluded. Assessing the

normality assumption throughout the analysis process determines the distributional properties of the data and contributes to the selection of appropriate statistical tests and the reliability of the results [22]. Descriptive statistics were calculated, and normality assumptions were assessed using skewness, kurtosis, histograms, graphical examination, and the Kolmogorov-Smirnov test. Bivariate relationships were assessed using Spearman correlation coefficients based on the distributional properties of each variable. Variables included mindfulness, mindful eating, self-esteem, and psychological well-being. Correlation coefficients (r) indicated the direction and strength of these relationships.

Two multiple linear regression analyses were conducted:

Model 1 – Psychological Determinants and Mindful Eating: Mindful eating was used as the dependent variable, and MAAS, RSES, and PWB-SF were used as independent variables (Table 1).

Model 2: Mindful eating was the dependent variable and eating attitudes and body perception variables were included as predictors (Table 2).

The significance level was set at $\alpha = 0.05$. Regression diagnostics (e.g., multicollinearity, normality of residuals) were evaluated and assumptions were met. Results were reported with correlation matrices and regression tables, including β coefficients, t-values, and R^2 values, and interpreted in relation to existing literature.

Results

Descriptive statistics

Among the students, 85.7% were female and 14.3% were male. The mean age was 21.6 ± 1.6 years. Regarding departments, 27.1% were enrolled in Physiotherapy and Rehabilitation, 24.4% in Nutrition and Dietetics, 22.2% in Nursing, 19.4% in Child Development, and 6.8% in Audiology. A total of 59.6% of the students reported smoking, while 33.5% were non-smokers. Based on BMI categories, 73.9% of the students were of normal weight, 13.0% were overweight, 10.3% underweight and 2.6% obese.

Emotional and eating behaviors

When students were asked how feeling stressed affected their eating behaviors, 62% reported craving sweet snacks, 30.6% reported craving salty snacks, and 22.2% reported experiencing a loss of appetite. When asked to describe the emotions that most increase the desire to eat, 51.4% responded stress, 40.2% happiness, and 20.7% excitement.

When the scale scores were compared according to participants' views on their eating habits and body perception, no statistically significant differences were found in MEQ-30, MAAS, RSES, or PWB-SF scores between individuals who reported having a generally adequate and balanced diet and those who did not ($p > .05$). Participants

who reported that their emotional state affects their eating habits showed a statistically significant difference in MEQ-30 scores ($p = .035$); however, no significant differences were observed in MAAS, RSES, or PWB-SF scores for the same variable ($p > .05$). In comparisons based on perceived body weight, significant differences were found across groups for MEQ-30 ($p = .014$) and RSES ($p = .041$) scores, whereas no significant differences were identified for MAAS or PWB-SF scores ($p > .05$). No statistically significant differences were found in any of the scale scores according to satisfaction with current body weight ($p > .05$). Similarly, perceiving body weight as affecting mood was not associated with significant differences in any of the scale scores ($p > .05$). However, a statistically significant difference was found in MEQ-30 scores based on whether participants felt that food controlled them even when they were not hungry ($p = .019$), while no significant differences were observed in MAAS, RSES and PWB-SF scores ($p > .05$). Overall, these findings suggest that perceptions and experiences related to eating behavior are primarily associated with mindful eating levels (Table 3).

Correlation analysis

When Table 4 is examined, the mean scale scores of the participants were 102.29 ± 11.8 for MEQ-30, 46.61 ± 6.2

Table 3 Comparison of scale scores with students' emotional states and eating behaviors ($n = 468$)

	<i>n</i> (%)	MEQ-30	MAAS	RSES	PWB-SF
Do you think you generally have an adequate and balanced diet?					
Yes	254(54.3)	24877.000* $p = .114$	26580.500* $p = .681$	26343.000* $p = .563$	26524.500* $p = .652$
Does your emotional state affect your eating habits?					
Yes	363(77.6)	16493.000* $p = .035$	18355.000* $p = .564$	18800.000* $p = .831$	17939.000* $p = .357$
How do you perceive your body weight?					
Underweight	30(6.5)				
Normal weight	310(66.2)	10.675* $p = .014$	5.509* $p = .138$	8.235* $p = .041$	5.130* $p = .163$
Overweight	96(20.5)				
Obese	32(6.8)				
Are you satisfied with your current body weight?					
Yes	323(69.0)	23232.500* $p = .891$	22662.000* $p = .576$	23333.500* $p = .950$	22671.000* $p = .579$
Do you think your body weight affects your mood?					
Yes	387(82.7)	15530.000* $p = .897$	13969.500* $p = .123$	15280.000* $p = .719$	15547.000* $p = .909$
Do you feel that food controls you even when you're not hungry?					
Yes	203(43.5)				
Unsure	122(26.1)	7.8821* $p = .019$	2.175* $p = .337$	4.006 $p = .135$	5.612 $p = .060$
No	142(30.4)				

MEQ-30 Mindful eating questionnaire, MAAS Mindful attention awareness scale, RSES Rosenberg self-esteem scale, PWB-SF Psychological well-being scale

*: Kruskal Wallis Test

*: Mann Whitney U Test

Table 4 Correlation between scale scores ($n=468$)

		M ± SD	MEQ-30	WB-SF	MAAS	RSES
MEQ-30	r	102.29 ± 11.8	1	0.298($p < 0.001$)	0.266($p < 0.001$)	-0.219($p < 0.001$)
PWB-SF	r	46.61 ± 6.2		1	0.283($p < 0.001$)	-0.795($p < 0.001$)
MAAS	r	57.80 ± 13.8			1	-0.252($p < 0.001$)
RSES	r	12.75 ± 4.6				1

MEQ-30 Mindful eating questionnaire, MAAS Mindful attention awareness scale, RSES Rosenberg self-esteem scale, PWB-SF Psychological well-being scale, r Spearman correlation coefficient

for PWB-SF, 57.80 ± 13.8 for MAAS and 12.75 ± 4.6 for RSES. According to the results of the Spearman correlation analysis, there were positive, weak, and statistically significant relationships between MEQ-30 and PWB-SF ($r = .298$; $p < .001$) and between MEQ-30 and MAAS ($r = .266$; $p < .001$). These findings indicate that as MEQ-30 scores increase, PWB-SF and MAAS scores also tend to increase. In contrast, a negative, weak, and statistically significant relationship was found between MEQ-30 and RSES ($r = -.219$; $p < .001$). A positive, weak, and statistically significant relationship was also identified between PWB-SF and MAAS ($r = .283$; $p < .001$). Furthermore, a negative and strong statistically significant relationship was observed between PWB-SF and RSES ($r = -.795$; $p < .001$). Similarly, a negative, weak, and statistically significant relationship was found between MAAS and RSES ($r = -.252$; $p < .001$). Since higher scores on the RSES indicate lower self-esteem, these negative correlations suggest that individuals with higher MEQ-30, PWB-SF, and MAAS scores tend to have higher RSES scores, reflecting lower levels of self-esteem.

Regression analysis

Table 1 presents the results of the multiple linear regression analysis conducted to examine the predictive effects of PWB-SF, RSES, and MAAS on MEQ-30 scores. The overall model was found to be statistically significant ($F = 18.007$, $p < .001$), explaining 10.4% of the variance in MEQ-30 scores ($R^2 = 0.104$, Adjusted $R^2 = 0.098$). This indicates that the model has a statistically significant but low explanatory power. According to the regression analysis, psychological well-being (PWB-SF) ($\beta = 0.204$, $t = 2.568$, $p = .011$) and mindful attention awareness (MAAS) ($\beta = 0.232$, $t = 5.145$, $p < .001$) were positive predictors of MEQ-30 scores. In contrast, self-esteem (RSES) was not found to be a significant predictor of MEQ-30 ($\beta = 0.029$, $t = 0.367$, $p = .714$).

Table 2 presents the results of the multiple linear regression analysis conducted to examine the predictive effects of eating behaviors and emotional state variables on MEQ-30 scores. The overall model was found to be statistically significant ($F = 7.587$, $p < .001$), explaining 4.7% of the variance in MEQ-30 scores ($R^2 = 0.047$, Adjusted $R^2 = 0.041$). This indicates that the model has a statistically significant but low explanatory power.

According to the regression analysis, individuals who reported that their emotional state affects their eating habits had significantly lower MEQ-30 scores ($\beta = -0.109$, $t = -2.393$, $p = .017$). The perception of feeling controlled by food even when not hungry was identified as a significant positive predictor of MEQ-30 ($\beta = 0.126$, $t = 2.694$, $p = .007$). Similarly, body weight perception status was found to have a significant negative effect on MEQ-30 scores ($\beta = -0.122$, $t = -2.620$, $p = .009$). These findings indicate that mindful eating is significantly associated with variables related to emotional eating and body perception.

Discussion

The findings of this study provide important insights into the emotional eating behaviors of university students and their relationships with mindful eating, psychological well-being, self-esteem, and overall awareness. The results indicate several notable patterns among students regarding the psychological factors that influence their eating habits, emotional states, body image perceptions, and mindful eating behaviors.

The relationship between emotional states and eating behaviors was observed in the present study, with students reporting that emotions such as stress, happiness, and excitement increased their desire to eat. These findings are consistent with previous research indicating that emotional eating may serve as a coping mechanism for stress and other emotional states [23–25]. In particular, stress was found to increase cravings for sweet snacks, in line with studies suggesting that stress has been associated with activation of the brain's reward system, making sugary foods especially appealing [26–28]. This highlights the potential need for interventions targeting emotion regulation to mitigate stress-related eating behaviors among students.

Mindful eating has received increasing attention as a construct that enable and support healthier eating behaviors and psychological wellbeing. Individuals who practice mindful eating are more likely to make intentional food choices, manage emotional eating, and experience better psychological well-being. The present study found that emotional states influencing eating habits were significantly associated with mindful eating scores, supporting the theory that emotional awareness

and regulation can enhance mindful eating [29–31]. The negative correlation between emotional eating and mindful eating suggests that students whose eating habits are more influenced by emotions tend to have lower levels of awareness regarding their eating behaviors.

Body weight perception was also found to significantly affect students' mindful eating behaviors. Students who perceived their body weight negatively (e.g., underweight or overweight) exhibited lower mindful eating scores. This finding aligns with research suggesting that body dissatisfaction may contribute to unhealthy eating patterns, such as binge eating or restrictive dieting [30–32]. This underscores the importance of addressing body image concerns among university students to prevent mood-driven eating and promote healthier eating habits [33].

In this study, significant associations were identified among MAAS, MEQ-30, PWB-SF, and RSES in this study. The positive association between mindful eating and psychological well-being is consistent with previous literature suggesting that mindfulness-related awareness may be associated with more favorable psychological functioning and well-being outcomes [34]. Similarly, the positive relationships observed between MAAS and both MEQ-30 and PWB-SF are in line with earlier findings indicating that higher levels of dispositional mindfulness may be related to healthier eating-related awareness and better psychological functioning [35]. Considering that higher RSES scores reflect lower self-esteem, the negative correlations between RSES and MAAS, MEQ-30, and PWB-SF suggest that higher self-esteem may be associated with greater mindfulness, more mindful eating behaviors, and better psychological well-being. This finding is consistent with previous studies reporting associations between self-esteem, adaptive health-related behaviors, and psychological adjustment [36]. Taken together, these findings suggest that self-esteem may represent an important psychological correlate within the broader interplay between mindful awareness, eating behaviors, and psychological well-being.

Potential role of mindful eating in moderating the relationship between mindfulness, psychological well-being and self-esteem was controlled with linear regression. The regression model explained 10% of the variance in mindful eating. Although this level of explained variance may appear modest, it is not unexpected given the complex and multifactorial nature of mindful eating, which supports the notion that it represents a more domain-specific construct. While mindfulness, well-being, and self-esteem were significantly associated with mindful eating, these constructs represent broader dimensions of psychological functioning and may not fully capture mindful eating behaviors [37].

Emotional eating and mindful eating also appear to be interrelated constructs, with mindful eating potentially playing a role in reducing emotional eating. Attitudes toward emotional states and body weight perception were negatively associated with mindful eating, eating without hunger positively mindful eating. These results are consistent with prior literature indicating that greater awareness of eating behaviors and positive emotional states are associated with healthier eating. Notably, students' evaluation of their body weight was negatively associated with mindful eating, highlighting the potential influence of body image on eating habits. The regression model explained only 4% of the variance in mindful eating. Considering the multifactorial nature of mindful eating and the influence of unmeasured factors, including behavioral, psychological, and habitual factors, this level reflects a limited but meaningful contribution. Nevertheless, the significant associations identified suggest that the included variables capture meaningful aspects of mindful eating behavior, in line with previous research on complex eating behaviors [33, 37, 38].

Practically, these findings support the integration of tailored mindfulness-based interventions within student health programs. Such programs should combine mindfulness practices with psychoeducation on body image, emotional coping, and nutrition literacy to holistically address the factors influencing eating behavior and psychological well-being. Health Sciences Students, who often face academic and clinical stress, may particularly benefit from these approaches.

Limitations

However, this study has several limitations. First, due to the cross-sectional design, the analyses reflect correlational relationships between variables and do not allow for causal inferences. Second, self-report measures were used to assess the different study variables, which could be subject to social desirability bias. Third, the generalisability of the findings is limited due to the gender imbalance in the sample, as the results may not fully reflect the broader population. Finally, the homogeneity of the sample primarily young adults in an academic setting along with possible unmeasured factors (e.g., body image, stress, or nutritional knowledge) may have further influenced the results. Future research should employ context-specific measures, consider mediating variables, and recruit more diverse samples to strengthen validity and generalizability. Future studies should consider longitudinal designs, more diverse populations, and the inclusion of mediating and moderating variables such as body image or emotional regulation skills.

Conclusion and recommendations

This study explored the relationships among mindfulness, mindful eating, self-esteem, and psychological well-being among students in the Faculty of Health Sciences. The findings indicated that mindful eating was positively associated with both psychological well-being and general mindfulness. In addition, emotional regulation and awareness related to food control appeared to be associated with mindful eating behaviors. Considering that many students reported emotional influences on eating behaviors, these psychosocial factors may represent relevant components to consider in student-focused health promotion approaches.

In light of these findings, mindfulness-based and holistic wellness approaches addressing emotional eating, body image concerns, and eating regulation could be considered within university health promotion initiatives. Interventions integrating nutritional education, stress management strategies, and cognitive-behavioral components may potentially contribute to students' mental and emotional well-being. To deepen understanding of these relationships, future studies should adopt longitudinal and experimental methodologies and investigate the role of mediators such as emotion regulation and body image perception. Lastly, future studies with more gender-balanced samples are warranted to confirm the present findings.

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Authors' contributions

T.S. and H.P. conceptualized and designed the study. T.S., H.P., and İ.Ç.Ö. performed the statistical analyses and prepared the initial draft. T.S., H.P., and İ.Ç.Ö. contributed to data interpretation and helped revise the manuscript. T.S., H.P., and İ.Ç.Ö. supervised the work and provided critical revisions. All authors read and approved the final draft.

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Data availability

The data sets used and/or analyzed during the current study are available from the corresponding author on reasonable request. The data are not publicly available due to privacy or ethical restrictions.

Declarations

Ethics approval and consent to participate

The study received approval from the Atılım University Ethics Committee (Approval No: 604.01-103099 Date: 10.01.2025). All participants provided written informed consent prior to participation. Participation was voluntary, and data were collected anonymously and confidentially in accordance with ethical guidelines.

Consent for publication

Not applicable. The manuscript does not contain any individual person's data in any form (including individual details, images or videos).

Competing interests

The authors declare no competing interests.

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