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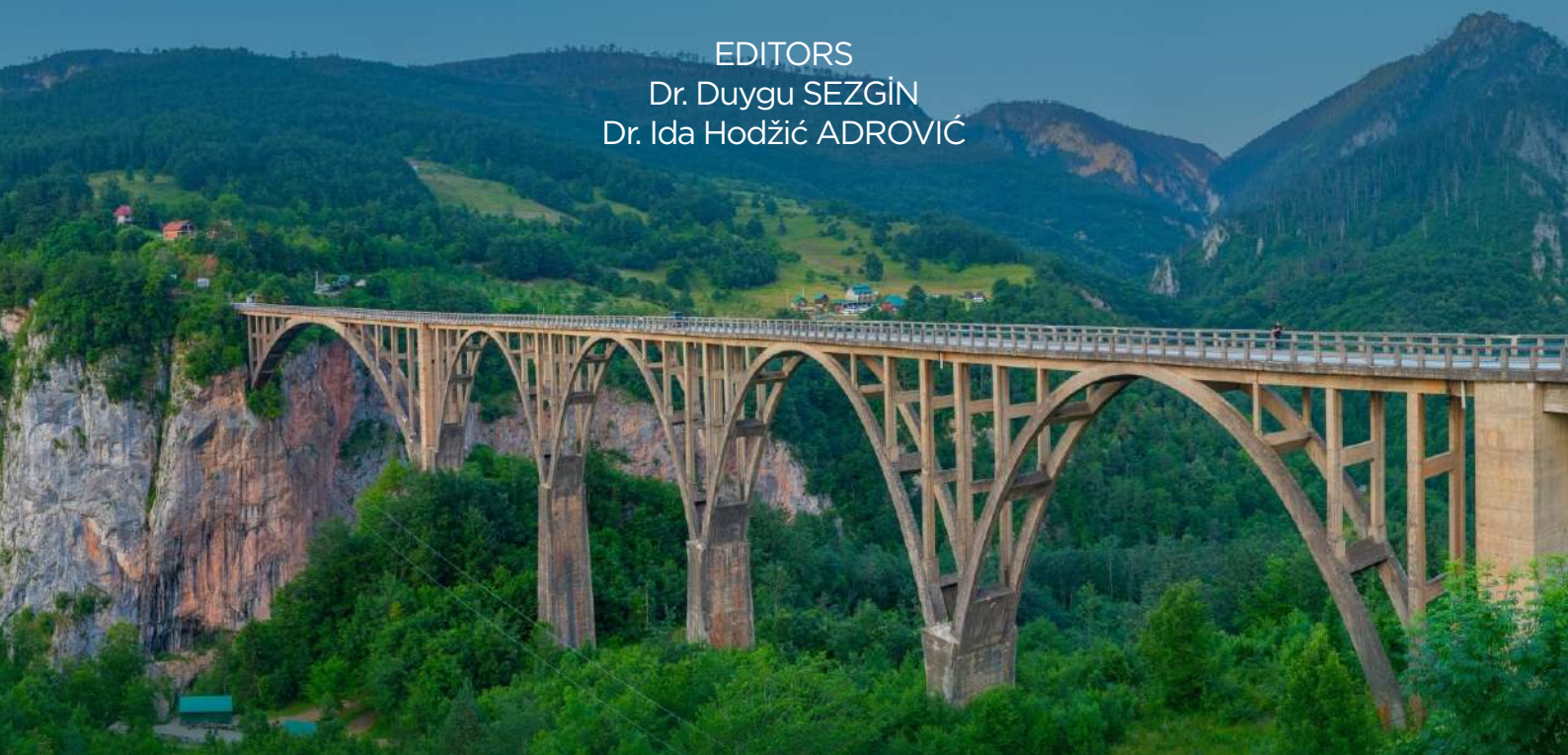
PROCEEDINGS BOOK

August 21-25, 2026
Podgarica / MONTENEGRO

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EDITORS
Dr. Duygu SEZGİN
Dr. Ida Hodžić ADROVIĆ



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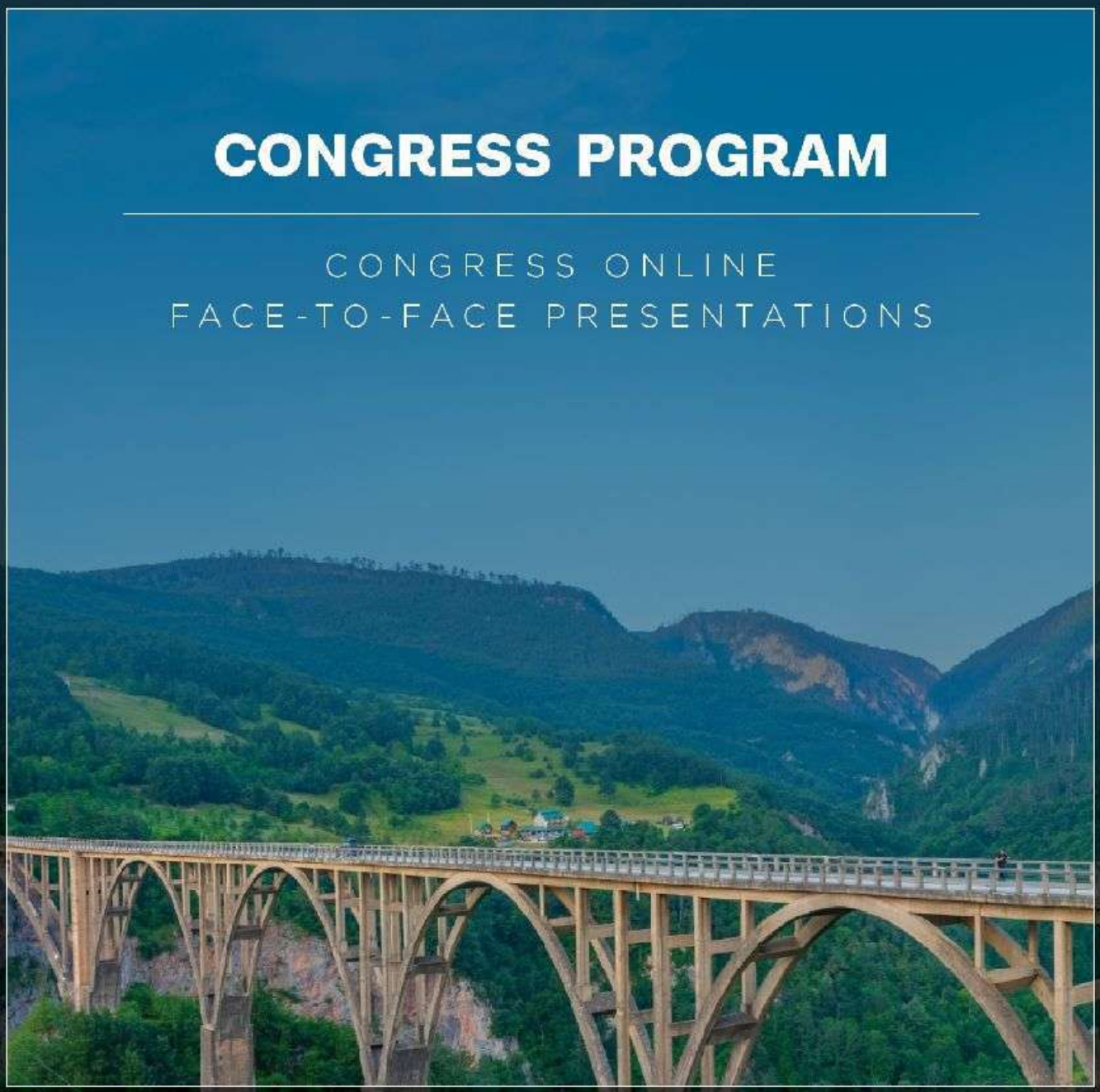
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ABOUT THE CONGRESS

The International European Science Congress is an international scientific event dedicated to the dissemination and exchange of current, original, and high-quality academic research conducted across a wide range of disciplines. The congress aims to bring together research from diverse academic fields, including the social sciences, natural sciences, engineering, health sciences, education, and cultural studies, on a common international scientific platform.

The studies presented at the congress are discussed through both in-person and online sessions, providing participants with opportunities to engage in academic exchange with experts in their respective fields and to receive valuable feedback. In this respect, the congress serves not only as a platform for academic presentations but also as a dynamic environment for knowledge sharing and academic development.

All papers submitted to the congress have been evaluated through a double-blind peer-review process in accordance with international academic publishing standards and the principles of scientific ethics. During the evaluation process, the originality, methodological rigor, contribution to the existing literature, and overall scientific quality of each study were carefully examined. Following this comprehensive academic evaluation process, a total of 142 papers from 28 different countries, including 53 papers from Türkiye, were accepted.

The accepted papers will be included in the conference proceedings book, which will be published with ISBN and DOI numbers. In this way, the studies will become internationally accessible, permanently archived, and citable academic resources.

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Aug 21, 2026 SESSION1 | HALL4

ANKARA TIME
09:30 - 11:30

ONLINE PRESENTATIONS

HEAD OF SESSION:

Prof. Dr. Ayşe ÇEVİRME

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Assoc. Prof. Hilal YILDIRIM Lisansüstü Öğrenci Melisa ÖNER Assist. Prof. Dr. Charlene Esteban Ronquillo	Inonu University (Türkiye) University of British Columbia Okanagan (Canada)	OLDER ADULTS' PERCEPTIONS OF USABILITY AND ACCEPTABILITY OF REMOTE MONITORING SYSTEMS TO MANAGE BLOOD PRESSURE: INVESTIGATION OF POST-EARTHQUAKE TEMPORARY LIVING CENTERS
Prof. Dr. Zeynep Güngörmüş Prof. Dr. Ayşe Çevirme	Gaziantep Islamic Science and Technology University (Türkiye) Sakarya University (Türkiye)	NURSING APPROACHES TO BUILDING DISASTER-RESILIENT COMMUNITIES
Prof. Dr. Zeynep GÜNGÖRMÜŞ Prof. Dr. Ayşe ÇEVİRME	Gaziantep Islam Science and Technology University (Türkiye) Sakarya University (Türkiye)	THE TRANSFORMATIVE ROLE OF PUBLIC HEALTH NURSING IN COMMUNITY-BASED DISASTER MANAGEMENT
MSc İlayda AKKAYA Dr. Şeyma SÜNBÜL Prof. Dr. Alev KESER	Ankara University (Türkiye)	DIET QUALITY AND ADEQUACY OF NUTRIENT INTAKES RELATIVE TO REFERENCE VALUES AMONG WOMEN IN THE THIRD TRIMESTER OF PREGNANCY
Dr. Şeyma SÜNBÜL MSc İlayda AKKAYA Prof. Dr. Alev KESER	Ankara University (Türkiye)	THE ASSOCIATION OF EMOTIONAL EATING DIMENSIONS WITH HEDONIC HUNGER AND BODY MASS INDEX AMONG UNIVERSITY STUDENTS
Dr. Zehra Meliha TENGİZ	Yozgat Bozok University (Türkiye)	STRUCTURAL CHANGE IN WOMEN'S EMPLOYMENT IN AGRICULTURE IN TÜRKİYE

HALL4 – CONTINUED ON THE NEXT PAGE

THE ASSOCIATION OF EMOTIONAL EATING DIMENSIONS WITH HEDONIC HUNGER AND BODY MASS INDEX AMONG UNIVERSITY STUDENTS

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ABSTRACT

Emotional eating is a multidimensional eating behavior that may occur in response to emotional states in the absence of physiological hunger. Hedonic hunger is characterized by the desire to consume food for its rewarding properties rather than to meet physiological energy needs. This study aimed to examine the associations of different dimensions of emotional eating with hedonic hunger and body mass index (BMI) among university students. This cross-sectional study included 309 university students aged 18–25 years with no diagnosed medical conditions. Emotional eating was assessed using the Emotional Eating Scale (EES), and hedonic hunger was assessed using the Power of Food Scale–Turkish Version (PFS-TR). Descriptive statistics and multiple linear regression analyses were performed, with statistical significance set at $p<0.05$. The mean BMI of the participants was 22.54±3.43 kg/m². Regression analyses showed that hedonic hunger and BMI were positively associated with all dimensions of emotional eating. Hedonic hunger showed the strongest association with Eating When Nervous ($\beta=0.521$; $p<0.001$), followed by Eating to Cope with Negative Emotions ($\beta=0.465$; $p<0.001$), Self-Control ($\beta=0.301$; $p<0.001$), and Control Against Stimuli ($\beta=0.295$; $p<0.001$). BMI showed the strongest association with Control Against Stimuli ($\beta=0.282$; $p<0.001$) and was also significantly associated with the other dimensions of emotional eating ($p<0.05$). The stronger associations of hedonic hunger with Eating When Nervous and Eating to Cope with Negative Emotions suggest that reward-driven eating may be particularly relevant to the emotion-related dimensions of emotional eating. The stronger association of BMI with Control Against Stimuli further underscores the importance of considering emotional eating as a multidimensional construct rather than evaluating it solely as a single overall construct.

Keywords: Emotional eating, hedonic hunger, body mass index, eating behavior, university students

INTRODUCTION

Emotional eating is defined as the tendency to eat in response to emotional states, independent of physiological hunger. Negative emotions such as stress, tension, sadness, and anxiety have been reported to increase the desire to eat in some individuals, and food consumption may be used as a strategy to cope with these emotions (Dakanalis et al., 2023; Arexis et al., 2023). Difficulties in emotion regulation are considered one of the key psychological processes underlying emotional eating; in particular, difficulties in identifying, accepting, and effectively regulating negative emotions have been suggested to be associated with a greater tendency toward emotional eating (Arexis et al., 2023). Indeed, a recent meta-analysis involving adolescents and young adults reported a moderate positive association between emotion regulation difficulties and emotional eating (Zhou et al., 2025). These findings suggest that emotional eating should be conceptualized not merely as a behavior related to food consumption, but as a multidimensional eating behavior associated with responses to emotional stimuli and emotion regulation processes.

Emotional eating is not solely a response aimed at coping with negative emotions but is also associated with processes related to the rewarding properties of food and the control of eating behavior. In particular, an environment rich in palatable foods has been reported to increase motivation toward food independently of homeostatic needs (Lowe et al., 2009). In this context, hedonic hunger refers to the desire to eat triggered by the presence or availability of palatable foods, independent of energy requirements (Lowe et al., 2009). Evidence demonstrating a positive association of reward sensitivity with emotional eating and responses to food cues suggests that reward-related processes may also play a role in emotional eating behavior (Weydmann et al., 2022). However, in addition to reward-related processes, the regulation of eating behavior also involves the ability to control responses to food cues and maintain self-control (Arexis et al., 2023; Mann & Ward, 2025). Therefore, evaluating the relationship between hedonic hunger and different dimensions of emotional eating may contribute to a more comprehensive understanding of how emotional eating is linked to reward- and control-related processes.

Emotional eating and hedonic hunger have been reported to be associated with body weight. Recent meta-analytic evidence indicates that the tendency to eat in response to negative emotions, in particular, is associated with a higher body mass index (BMI). Indeed, a systematic review and meta-analysis of 43 studies found a positive association between eating in response to negative emotions and BMI, with the magnitude of the associations between BMI and eating in response to sadness, anger, and anxiety varying according to the specific emotional state (Nolan et al., 2025). However, the relationship between emotional eating and weight status may vary across life stages, with a more pronounced association reported in adults and a weaker association in younger populations (Lederman & Rigal, 2026). Similarly, a systematic review and meta-analysis examining the relationship between hedonic hunger and BMI demonstrated that greater hedonic hunger was positively associated with higher BMI (Karamizadeh et al., 2024). Although these findings indicate that both emotional eating and hedonic hunger are associated with BMI, it remains unclear whether different dimensions of emotional eating are associated with BMI to the same extent.

The multidimensional nature of emotional eating has been assessed using various measurement instruments. The Emotional Eating Scale developed by Bilgen (2018) evaluates emotional eating across four subdimensions: eating when nervous, eating to cope with negative emotions, self-control, and control against stimuli. These subdimensions enable the assessment of eating tendencies related to negative affect and coping, as well as processes involved in the regulation of eating behavior and control in response to food-related stimuli. Although existing evidence indicates that emotion regulation difficulties, reward sensitivity, hedonic hunger, and BMI are associated with emotional eating (Weydmann et al., 2022; Karamizadeh et al., 2024; Zhou et al., 2025), evidence examining the relationships of hedonic hunger and BMI with different subdimensions of emotional eating within the same framework remains limited. Investigating these relationships specifically among university students may contribute to a more detailed understanding of the emotional, reward-related, and behavioral control components of emotional eating. Accordingly, this study aimed to evaluate the

relationships between the subdimensions of emotional eating and hedonic hunger and BMI among university students.

METHODOLOGY

This cross-sectional study was conducted to evaluate the relationships between the subdimensions of emotional eating and hedonic hunger and body mass index (BMI) among university students. The study included 309 university students aged 18–25 years with no diagnosed medical conditions.

Prior to data collection, ethical approval was obtained from the Ankara University Ethics Committee (decision no. 20/202, dated December 1, 2025), along with the necessary institutional permissions. Written informed consent was obtained from all participants who agreed to participate in the study. Data were collected through face-to-face interviews using a structured questionnaire administered by the researchers.

Data Collection Instruments

The Emotional Eating Scale (EES) was used to assess emotional eating behavior, while the Power of Food Scale–Turkish Version (PFS-TR) was used to assess hedonic hunger. Participants' anthropometric measurements were obtained in accordance with standardized protocols, and BMI was calculated as body weight (kg) divided by height squared (m^2).

Power of Food Scale–Turkish Version (PFS-TR): Hedonic hunger was assessed using the PFS-TR, originally developed by Lowe et al. (2009) and validated for the Turkish population by Ülker et al. (2021). Items are rated on a five-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (5). The scale score is calculated as the arithmetic mean of the item responses, with higher scores indicating greater levels of hedonic hunger.

Emotional Eating Scale (EES): Emotional eating behavior was assessed using the EES developed by Bilgen (2018). The scale consists of 30 items across four subdimensions: eating when nervous, eating to cope with negative emotions, self-control, and control against stimuli. Items are rated on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree), with items 26, 28, and 29 reverse-scored. The total score ranges from 30 to 150, with higher scores indicating a greater tendency toward emotional eating. In the present study, the primary analyses were conducted using the four subdimension scores rather than the EES total score.

Statistical Analysis

Statistical analyses were performed using IBM SPSS Statistics version 24.0. The normality of continuous variables was assessed by examining histograms, Q–Q plots, and skewness and kurtosis values. Continuous variables are presented as mean ± standard deviation, while categorical variables are presented as number (n) and percentage (%). The relationships among the emotional eating subdimensions, hedonic hunger, and BMI were evaluated using Pearson correlation analysis.

To evaluate the independent associations of hedonic hunger and BMI with the different subdimensions of emotional eating, four separate multiple linear regression models were constructed. In each model, the corresponding EES subdimension score was entered as the dependent variable, while the PFS-TR score and BMI were entered as independent variables. The results of the regression analyses are reported as unstandardized regression coefficients (B), standard errors (SE), standardized regression coefficients (β), 95% confidence intervals (CI), and p-values. Statistical significance was set at $p<0.05$.

FINDINGS

Descriptive statistics for the participants' characteristics are presented in Table 1. Of the 309 university students included in the study, 78.3% were female and 21.7% were male. The mean age was 20.90 ± 1.62 years, and the mean BMI was 22.54 ± 3.43 kg/m^2. The mean PFS-TR score was 3.30 ± 0.68. Regarding the EES subdimensions, the mean scores were 27.29 ± 8.74 for eating when nervous, 15.17 ± 5.53 for eating to cope with negative emotions, 10.63 ± 3.04 for self-control, and 7.72 ± 2.10 for control against stimuli.

Table 1. Descriptive Characteristics of the Participants (n = 309)

Variable	n (%) / Mean ± SD	Min–Max
Sex		
Female	242 (78.3)	—
Male	67 (21.7)	—
Age (years)	20.90 ± 1.62	18.00–25.00
BMI (kg/m²)	22.54 ± 3.43	15.30–41.10
PFS-TR	3.30 ± 0.68	1.31–5.00
EES Subdimensions		
Eating when nervous	27.29 ± 8.74	11.00–55.00
Eating to cope with negative emotions	15.17 ± 5.53	7.00–35.00
Self-control	10.63 ± 3.04	4.00–20.00
Control against stimuli	7.72 ± 2.10	3.00–14.00

BMI: Body Mass Index; PFS-TR: Power of Food Scale–Turkish Version; EES: Emotional Eating Scale.
Data are presented as n (%) for categorical variables and mean ± standard deviation (SD) for continuous variables.

The relationships between the emotional eating subdimensions and hedonic hunger and BMI are presented in Table 2. Pearson correlation analysis showed that all subdimensions of emotional eating were positively associated with both hedonic hunger and BMI (all $p<0.001$). The strongest correlation with hedonic hunger was observed for eating when nervous ($r=0.549$), followed by eating to cope with negative emotions ($r=0.488$), control against stimuli ($r=0.332$), and self-control ($r=0.324$). The strongest correlation with BMI was observed for control against stimuli ($r=0.321$). BMI was also positively correlated with eating when nervous ($r=0.278$), eating to cope with negative emotions ($r=0.235$), and self-control ($r=0.212$) (all $p<0.001$).

Table 2. Relationships Between Emotional Eating Scale Subdimensions, Hedonic Hunger, and Body Mass Index

EES Subdimensions	PFS-TR, *r*	*p*	BMI, *r*	*p*
Eating when nervous	0.549	<0.001	0.278	<0.001
Eating to cope with negative emotions	0.488	<0.001	0.235	<0.001
Self-control	0.324	<0.001	0.212	<0.001
Control against stimuli	0.332	<0.001	0.321	<0.001

EES: Emotional Eating Scale; PFS-TR: Power of Food Scale–Turkish Version; BMI: Body Mass Index.
Data are presented as Pearson correlation coefficients (r)

The results of the multiple linear regression models constructed to evaluate the independent associations of hedonic hunger and BMI with the emotional eating subdimensions are presented in Table 3. All regression models were statistically significant (all $p<0.001$).

The model for eating when nervous explained 34.4% of the total variance ($R^2=0.344$). Hedonic hunger ($\beta=0.521$; $p<0.001$) and BMI ($\beta=0.209$; $p<0.001$) were positively associated with eating when nervous. The model for eating to cope with negative emotions explained 26.8% of the total variance ($R^2=0.268$). Hedonic hunger ($\beta=0.465$; $p<0.001$) and BMI ($\beta=0.173$; $p=0.001$) were positively associated with this subdimension. The model for self-control explained 13.4% of the total variance ($R^2=0.134$). Hedonic hunger ($\beta=0.301$; $p<0.001$) and BMI ($\beta=0.172$; $p=0.002$) were positively associated with the self-control subdimension. The model for control against stimuli explained 18.9% of the total variance ($R^2=0.189$). Hedonic hunger ($\beta=0.295$; $p<0.001$) and BMI ($\beta=0.282$; $p<0.001$) were positively associated with the control against stimuli subdimension.

Comparison of the standardized regression coefficients showed that the strongest association with hedonic hunger was observed for eating when nervous ($\beta=0.521$), whereas the strongest association with BMI was observed for control against stimuli ($\beta=0.282$).

Table 3. Multiple Linear Regression Analysis of the Associations of Hedonic Hunger and BMI with Emotional Eating Subdimensions

Dependent Variable / Independent Variable	B	SE	β	95% CI	p
Eating when nervous					
Hedonic hunger (PFS-TR)	6.691	0.600	0.521	5.511–7.871	<0.001
BMI	0.533	0.119	0.209	0.298–0.767	<0.001
Eating to cope with negative emotions					
Hedonic hunger (PFS-TR)	3.777	0.401	0.465	2.988–4.565	<0.001
BMI	0.279	0.080	0.173	0.122–0.436	0.001
Self-control					
Hedonic hunger (PFS-TR)	1.344	0.240	0.301	0.872–1.816	<0.001
BMI	0.153	0.048	0.172	0.059–0.247	0.002
Control against stimuli					
Hedonic hunger (PFS-TR)	0.910	0.160	0.295	0.594–1.225	<0.001
BMI	0.173	0.032	0.282	0.111–0.236	<0.001

B: unstandardized regression coefficient; SE: standard error; β: standardized regression coefficient; CI: confidence interval; BMI: body mass index; PFS-TR: Power of Food Scale–Turkish Version.

DISCUSSION

In this study, hedonic hunger and BMI were positively associated with all four subdimensions of emotional eating among university students. The findings showed that both hedonic hunger and BMI were positively associated with all four subdimensions of emotional eating; however, the magnitude of these associations varied across subdimensions. The strongest association with hedonic hunger was observed for eating when nervous, followed by eating to cope with negative emotions, whereas the strongest association with BMI was observed for control against stimuli. This pattern supports the importance of distinguishing among components of emotional eating related to emotional responses, reward-driven eating motivation, and the control of eating behavior. The findings further suggest that hedonic hunger and BMI may not be associated with different components of emotional eating to the same extent.

The positive associations between hedonic hunger and all subdimensions of emotional eating suggest that motivation toward the rewarding properties of food may be relevant to different components of emotional eating. The particularly strong association with eating when nervous suggests that reward-related eating processes may become more prominent under conditions of stress and negative affect. Recent evidence indicates that negative affect and acute stress may increase attention to food cues and the salience of immediate food rewards in some individuals while reducing self-control over food choices (Fu et al., 2026). However, the effects of stress and negative affect on eating behavior have been reported to vary across individuals. Ecological momentary assessment studies in young adults have shown that momentary stress and negative affect do not directly influence subsequent eating behavior (Pannicke et al., 2021). In contrast, negative affect has been found to be more strongly associated with food approach bias on days characterized by high food craving, with this pattern being more pronounced among individuals who tend to eat more in response to negative emotions (Röttger et al., 2026). Taken together, these findings suggest that the tendency to eat in response to tension may be shaped not only by negative affect but also by motivation toward the rewarding properties of food and individual eating tendencies.

Another subdimension that showed a strong association with hedonic hunger was eating to cope with negative emotions. This finding suggests that motivation toward the rewarding properties of food may be associated with the tendency to engage in eating as a means of managing negative emotions. Studies conducted among university students have shown that emotional eating is closely related to stress coping, eating self-regulation, and emotion regulation processes. Ertem and Karakaş (2021) reported that tendencies to eat in response to anxiety and negative mood were negatively associated with a self-confident coping approach. Similarly, the relationship between perceived stress and emotional eating has been shown to be partially explained by eating self-regulation (Ling & Zahry, 2021). Yang et al. (2023)

reported that difficulties in emotion regulation were associated with greater emotional eating among university students and that impulsivity and depressive symptoms may play a role in this relationship. These findings indicate that turning to eating in response to negative emotions may be related not only to the presence of negative emotional states but also to an individual's capacity to cope with these emotions and regulate eating behavior. In the present study, the strong positive association observed between hedonic hunger and eating to cope with negative emotions suggests that hedonic motivation toward food may be linked to these processes. However, because coping strategies and emotion regulation processes were not directly assessed, it cannot be concluded that these mechanisms underlie the observed association.

The positive association between hedonic hunger and the self-control subdimension suggests that motivation toward the rewarding properties of food may also be related to the self-control-related component of emotional eating. Consistent with this finding, a study conducted in a large adult sample reported that hedonic hunger and lower self-control were associated with more frequent overeating, snacking, and consumption of palatable foods, and that self-control moderated the associations between hedonic hunger and these eating behaviors (Horwath et al., 2020). Furthermore, a prospective study among university students showed that higher hedonic hunger was associated with the onset and maintenance of loss-of-control eating (Lowe et al., 2016). Taken together, these findings suggest that hedonic hunger may be linked to self-control processes involved in the regulation of eating behavior.

The positive association between hedonic hunger and the control against stimuli subdimension suggests that external food cues may be relevant to control-related aspects of emotional eating. Visual and olfactory food cues, as well as environmental stimuli that have become associated with food consumption through learning, have been reported to elicit appetite-related cognitive and behavioral responses independently of physiological energy requirements (Kanoski & Boutelle, 2022). This finding is also consistent with the conceptual framework of hedonic hunger; the Power of Food Scale assesses not only responses related to the consumption of palatable foods but also the motivation elicited by their presence and availability in the environment (Espel-Huynh et al., 2018). Within this framework, the observed association between hedonic hunger and control against stimuli suggests that sensitivity to external food cues may be related to the control-related component of emotional eating. However, because behavioral or physiological responses to food cues were not directly assessed, it cannot be concluded that this association reflects food cue reactivity.

The positive associations between BMI and all subdimensions of emotional eating indicate that higher BMI may be related to different components of emotional eating. This finding is consistent with recent meta-analytic evidence demonstrating a positive association between eating in response to negative emotions and BMI (Nolan et al., 2025). However, the relationship between emotional eating and weight status has been reported to vary across age groups, with a weaker association among younger individuals than among adults (Lederman & Rigal, 2026). In the present study, the strongest association with BMI was observed for the control against stimuli subdimension, suggesting that BMI may be more closely related to the component of emotional eating reflecting difficulties in controlling eating behavior in response to external food cues. Given that environmental food cues can elicit appetite-related cognitive and behavioral responses independently of physiological energy requirements (Kanoski & Boutelle, 2022), this finding points to a potential link between higher BMI and greater difficulty controlling eating in response to food cues. However, due to the cross-sectional design of the study, the temporal direction of this association cannot be determined.

This study has several limitations. First, the cross-sectional design precludes determining the temporal direction of the observed associations among hedonic hunger, BMI, and the subdimensions of emotional eating and does not allow causal inferences to be drawn. Second, because the study was conducted among university students aged 18–25 years, the generalizability of the findings to other age groups and populations may be limited. Third, the assessment of emotional eating and hedonic hunger using self-report measures may have introduced response and social desirability biases. In addition, because only a limited number of variables were included in the regression models, the potential effects of stress, emotion regulation, physical activity, and other potential confounding factors on the observed associations cannot be ruled out. Future longitudinal studies should consider these factors and examine

the temporal relationships and potential mechanisms linking hedonic hunger, body weight, and different dimensions of emotional eating.

CONCLUSION

In this study, hedonic hunger and BMI were positively associated with different subdimensions of emotional eating among university students. The stronger associations of hedonic hunger with eating when nervous and eating to cope with negative emotions suggest that reward-driven eating motivation may be particularly relevant to eating tendencies associated with emotional states. In contrast, the particularly strong association of BMI with control against stimuli suggests that BMI may be more closely related to the control-related components of emotional eating. These distinct patterns of association support the importance of evaluating the emotional, reward-related, and behavioral control dimensions of emotional eating separately rather than considering emotional eating as a single construct.

Future longitudinal studies should examine the relationships among hedonic hunger, body weight, and different dimensions of emotional eating while also considering potential mechanisms such as emotion regulation, stress, self-control, and sensitivity to food cues.

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