



Assessment of Picky Eating, Emotional Eating and Body Perception in Healthy Individuals

Sağlıklı Bireylerde Seçici Yeme, Duygusal Yeme ve Beden Algısının Değerlendirilmesi

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ABSTRACT

Aim: This study investigated the association between choosy eating, emotional eating, and body image in healthy individuals.

Materials and methods: This study was conducted with 639 people [385(60.3%) women and 254 (39.7%) men] aged 18–60 years through online surveys. The Stunkard Figure Rating Scale assessed how people see their bodies. Adult Picky Eating Questionnaire (APEQ) was used to determine picky eating behaviors and attitudes. The Emotional Eater Scale was also used to assess eating behaviors. Anthropometric measurements of body weight and height were taken on a self-reported basis. One-way ANOVA was used to analyze the differences between the groups.

Results: While 23.8% of the participants were satisfied with their body image, 76.2% were unsatisfied with their body image (61.5% wanted to lose body weight, 14.7% wanted to gain body weight). Body image dissatisfaction was found to be associated with emotional eating and its sub-dimensions ($p<0.05$). According to the body mass index (BMI) classification, a statistically significant difference was discovered between the total score of picky eating and the total score of emotional eating between underweight and obese people ($p<0.05$).

Conclusion: Picky eating is associated with emotional eating, body weight, and body perception. It is thought that there is a need to evaluate depression, anxiety, stress, and quality of life parameters in future face-to-face studies.

Keywords: picky eating; emotional eating; body image

ÖZET

Amaç: Bu çalışmanın amacı, sağlıklı bireylerde beden imajı, duygusal yeme ve seçici yeme arasındaki ilişkinin incelenmesidir.

Materyal ve Metot: Bu çalışma, 18–60 yaş aralığındaki 639 kişiyle [385(%60,3) kadın ve 254 (%39,7) erkek] çevrimiçi anket yoluyla gerçekleştirilmiştir. Beden imajı algısı Stunkard Beden İmajı Derecelendirme Ölçeği ile değerlendirildi. Seçici yeme davranış ve tutumlarını değerlendirmek için Yetişkin Seçici Yeme Anketi (APEQ) kullanıldı. Yeme davranışlarını değerlendirmek için Duygusal Yeme Ölçeği de kullanıldı. Vücut ağırlığı ve boy uzunluğuna ilişkin antropometrik ölçümler kişisel bildirim esasına göre alınmıştır. Gruplar arasındaki farkı analiz etmek için tek yönlü ANOVA testi kullanılmıştır.

Bulgular: Katılımcıların %23,8'i beden imajından memnun iken, %76,2'si beden imajından memnun değildi (%61,5'i kilo vermek, %14,7'si kilo almak istiyordu). Beden imajından memnuniyetsizliğin duygusal yeme ve alt boyutlarıyla ilişkili olduğu belirlenmiştir ($p<0,05$). Beden kitle endeksi (BMI) sınıflamasına göre zayıf ve obez olanlar arasında seçici yeme toplam puanı ile duygusal yeme toplam puanı arasında istatistiksel olarak anlamlı fark bulunmuştur ($p<0,05$).

Sonuç: Seçici duygusal yeme, vücut ağırlığı ve beden algısı ile ilişkilidir. Gelecekte yapılacak yüz yüze çalışmalarda depresyon, anksiyete, stres ve yaşam kalitesi parametrelerinin değerlendirilmesine ihtiyaç olduğu düşünülmektedir.

Anahtar kelimeler: seçici yeme; duygusal yeme; beden imajı algısı

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Introduction

Healthy eating is one of the most essential health-related behavioral factors targeted by many interventions in public health and health promotion. Unhealthy eating habits can increase the risk of many chronic diseases, particularly cardiovascular disease, diabetes, and cancer¹. Eating behaviors such as emotional eating (EA) and picky eating (PY) are among the conditions that are effective in the emergence of inappropriate eating habits². Picky eating is an eating attitude characterized by consuming a specific variety of foods to avoid or completely oppose the consumption of known and previously un-tasted foods³. Estimates for the prevalence of picky eating in children and adults range from 15 to 45%⁴. A severe picky diet is associated with poor nutritional intake, such as insufficient vitamins E and C.

Additionally, different levels of picky eating severity must be measured⁵. Despite not being classified as an eating disorder, EA is linked to anxiety and eating-related psychosocial impairment⁶. This situation negatively affects the quality of life and health of individuals⁷. Picky eating is reported to be one of the restrictive eating patterns that can lead to symptoms of Avoidant/Restrictive Food Intake Disorder (ARFID) in DSM-V. All ages can be affected by ARFID, which can result in insufficient caloric intake and/or dietary variety, body weight loss, nutrient deficiencies, dependency on nutritional supplements, and/or psychological damage⁸. The term “emotional eating” refers to the propensity to eat excessive amounts of food even when not hungry as an instinctual reaction to unpleasant feelings^{9,10}. This type of food consumption habit is also reported to be associated with anxiety and depression for all age groups¹¹. Emotional situations affect the quantity and quality of food consumption. Negative Emotional situations such as stress and depression are more often associated with increased food intake but less commonly with a complete loss of appetite^{12,13}. Generally, it is emphasized that individuals tend to consume more high-fat and high-carbohydrate foods to cope with negative emotional states such as anxiety¹⁴. Such habitual eating habits lead to the emergence of obesity, which is the precursor of many chronic diseases¹⁵. Obesity can also result in body image dissatisfaction¹⁶. Obese people experience unfavorable clinical effects from body image dissatisfaction, which have an impact on their behavior, quality of life, and mental health. In various psychological dimensions, mainly concerning body image dissatisfaction, overweight and obese people report lower than average quality of life and poor perceived health status^{17,18}.

Eating behavior disorders may be a risk factor for obesity and may also lead to malnutrition. In this context, SY, which is one of the eating behavior disorders classified as part of the spectrum of nutritional difficulties and affects food preferences, is a multidimensional phenomenon that is behaviorally and etiologically different from other types of eating disorders¹⁹. Studies evaluating the relationship between picky eating, emotional eating and body image disturbance are limited in the literature. This study assesses the connection between picky eating, emotional eating, and disturbed body image in healthy individuals.

Materials and Methods

This study was conducted on 639 individuals, 385 (60.3%) women and 254 (39.7%) men, aged between 18–60 years. The study was conducted online between November 2022 and February 2023 among adults aged 18. The sample size was determined by snowball sampling, where the future sample was recruited by linking the current sample. Data were collected via online Google Forms, socio-demographic characteristics (demographic characteristics such as age, education level, gender, and health information about their health status and general eating habits), Stunkard Figure Rating Scale, Adult Picky Eating Scale, and Emotional Eater Questionnaire. At the beginning of the form, the acceptance of participation in the study was questioned, and the form was opened to the individuals who accepted.

Stunkard Figure Rating Scale

The Stunkard Scale for body image perception was developed by Stunkard et al.²⁰ in 1983. The scale comprises male and female silhouettes ranging from very thin to extremely obese. The respondents were asked if the numbered silhouette was most similar to their body size and if they would like to look like the silhouette in the number. The body satisfaction of the participants was found by evaluating the difference between the number they indicated and the number they wanted to be. The difference between the two states expresses the body satisfaction of the individuals. If the difference is positive, individuals want to gain body weight; if the difference is negative, they want to lose body weight; if the difference is zero, they are satisfied with their bodies²⁰. If the score difference between the pictures is positive, it indicates that they would like to gain body weight, if the difference is negative, they would like to

gain body weight; and if the difference is zero, they are satisfied with their bodies.

Adult Picky Eating Questionnaire

The Adult Picky Eating Questionnaire (APEQ) was developed by Ellis et al. in 2017 to assess picky eating attitudes and behaviors in adults⁶. Turkish validity and reliability were conducted by Ayyildiz et al.²¹.

Although the APEQ, developed for adult individuals, initially consists of 16 questions⁶, the Turkish version consists of 14. Meal Presentation, Food Variety, Meal Disengagement, and Taste Aversion are the four sub-dimensions. Each question is graded using a 5-point Likert-type scale, with 1 being “Never” and 5 being “Always.” Picky eating behavior and attitude were linked to higher total scores on the questionnaire.

Emotional Eater Questionnaire

The questionnaire was developed by Garaulet et al. to assess emotional eating behaviors²². The Emotional Eater Questionnaire consists of 10 items and three sub-dimensions. Disinhibition, type of food, and guilt are the three subscales that comprise the questionnaire’s 10 items. A 4-point Likert-type scale is used to evaluate the questionnaire. (“0” Never, “1” On occasion, “2” Typically, and “3” Continually). “0” represents the lowest score, and “30” represents the highest. High scores on the scale indicate a high level of emotional eating habits. The scale’s internal consistency coefficient, or Cronbach’s alpha, was calculated to be 0.84²².

The validity study of the scale was conducted by Arslantaş et al. in Türkiye. The Turkish translation of the Emotional Eater Questionnaire is considered a valid and reliable measurement tool. With these features, it is appropriate to use the EES in research. In addition, it is also relevant to apply the validity and reliability study of the scale in special conditions such as obesity, depression, stress, and anxiety²³.

Assessment of Anthropometric Measurements

The participant’s body weight (kg) and height (cm) values were recorded based on the individuals’ declarations. The participant’s body weight and height were used to calculate their BMI. The formula “BMI=Body weight (kg)/Height (m²)” was used to make the determination. Underweight people were those who weighed less than 18.50 kg/m², normal people were those who weighed between 18.50 and 24.99 kg/m²,

overweight people were those who weighed between 25.0 and 29.99 kg/m², and obese people were those who weighed more than 30 kg/m²²⁴.

Statistical Analysis

For the study’s statistical analysis, IBM Statistical Package for Social Sciences (SPSS) program version 25 was employed. Kolmogorov-Smirnov / Shapiro-Wilk tests, normal q-q plot graphs, and histogram graphs were used to assess whether the variables were compatible with a normal distribution. Quantitative factors were summarized as mean and standard deviation, whereas qualitative variables were summarized as number (n) and percentage (%). One-way ANOVA analysis was utilized since the dependent variables used in the study had features of a normal distribution. The 5% level of statistical significance was chosen.

Results

With a total of 639 participants, the study was completed. Table 1 lists the general characteristics of the participants. The average age of the participants was 30.81±10.9 years; 60.3% were female, and 39.7% were male. According to BMI classification, 4.9% were underweight, 55.1% were normal, 27.7% were pre-obese, and 12.4% were obese. The total emotional eating scores of the participants were 10.8±5.61, picky eating total score was 36.6±7.1 and meal presentation, food variety, meal disengagement, and taste aversion scores were 19.2±4.17, 7.3±2.43, 5.4±1.53 and 4.6±1.73, respectively.

Table 2 analyzes the total and subscale scores of the picky eating questionnaire scores for adults and the emotional eater questionnaire scores of the research participants according to BMI classification. The overall score of the emotional eater questionnaire, the difference in the total score and subscale scores of the adult picky eating scale, and the taste aversion all showed statistically significant differences based on BMI categorization. Pre-obese and obese people have higher APEQ total scores than healthy people (p<0.05).

While 23.8% of the participants were satisfied with their body image, 76.2% were unsatisfied with their body image (61.5% wanted to lose body weight, while 14.7% wanted to gain body weight). The total and subscale scores of the adult picky eating questionnaire and emotional eater questionnaire scores in adults according to the body image perception of the individuals

Table 1. General Characteristics of Participants (n: 639)

	n	%
Sex		
Women	385	60.3
Men	254	39.7
Marital status		
Married	223	34.9
Single	416	65.1
Education status		
Primary school	17	2.6
Middle school	32	5
High school	63	9.9
University	448	70.1
Postgraduate	79	12.4
Smoking		
Yes	153	23.9
No	486	76.1
Alcohol		
Yes	94	14.7
No	545	85.3
Body Mass Index (BMI) Classification		
Weak (<18.5)	31	4.9
Normal (18.5–24.9)	352	55.1
Pre-obese (25.0–29.9)	177	27.7
Obese (≥30.0)	79	12.4
Body Image Perception		
Those who want body weight gain	94	14.7
Those who are satisfied with their body image	152	23.8
Those who want body weight loss	393	61.5
	$\bar{X} \pm SS$	Min-Max
BMI (kg/m ²)	24.4±4.33	15.4–41.4
Age (years)	30.8±10.98	20.0–60.0
Emotional eater questionnaire (Total)	10.8±5.61	0.0–30.0
Disinhibition	6.2±3.65	0–6.0
Type of food	2.7±1.36	0–6.0
Guilt	1.9±1.44	0–18.0
Adult picky eating questionnaire (Total)	36.6±7.1	14.0–68.0
Meal presentation	19.2±4.17	7.0–33.0
Food variety	7.3±2.43	3.0–15.0
Meal disengagement	5.4±1.53	2.0–8.0
Taste aversion	4.6±1.73	2.0–10.0

n: Number of participants

Table 2. Evaluation of total and subscale scores of the Adult Picky Eating Questionnaire and Emotional Eater Questionnaire scores according to BMI classification of participants

Questionnaires	Body mass index (BMI) classification	$\bar{X} \pm SS$	Statistical analysis	
			F	p
Adult picky eating questionnaire (Total)	Weak ^{a,b}	35.2±8.47	4.461	0.004
	Normal ^a	35.9±6.85		
	Pre-obese ^b	37.7±6.73		
	Obese ^b	38.3±8.17		
Meal presentation	Weak	18.6±4.31	2.539	0.060
	Normal	18.9±3.82		
	Pre-obese	19.7±4.23		
	Obese	20.2±5.17		
Food variety	Weak	6.9±3.42	2.338	0.077
	Normal	7.1±2.42		
	Pre-obese	7.6±2.22		
	Obese	7.7±2.36		
Meal disengagement	Weak	5.6±1.86	0.386	0.763
	Normal	5.4±1.56		
	Pre-obese	5.4±1.46		
	Obese	5.5±1.40		
Taste aversion	Weak ^a	3.9±1.50	5.822	0.001
	Normal ^{b,c}	4.4±1.78		
	Pre-obese ^b	4.9±1.69		
	Obese ^{b,c}	4.9±1.51		
Emotional eater questionnaire (Total)	Weak ^a	8.5±4.53	2.859	0.036
	Normal ^{a,b}	11.6±6.45		
	Pre-obese ^b	11.3±5.62		
	Obese ^b	11.5±6.49		
Disinhibition	Weak ^a	4.7±2.95	6.464	0.003
	Normal ^{a,b}	5.9±3.55		
	Pre-obese ^b	6.6±6.64		
	Obese ^b	7.1±4.12		
Type of food	Weak	2.5±1.20	0.888	0.447
	Normal	2.8±1.37		
	Pre-obese	2.7±1.36		
	Obese	2.7±1.36		
Guilt	Weak	1.4±1.29	2.068	0.103
	Normal	1.8±1.43		
	Pre-obese	2.0±1.38		
	Obese	1.9±1.66		

As a result of the homogeneity evaluation, The Tukey HSD test was used to determine the difference between homogeneous groups, and the Tamhane T2 test was used in non-homogeneous groups.
* Different letters indicate the statistical difference.

participating in the study are given in Table 3. The total score of the emotional eater questionnaire was higher in those who wanted body weight loss than in those who wanted weight gain ($p < 0.05$).

Discussion

Picky eating behavior has recently increased in prevalence, and nutrient deficiencies⁵, body weight, mood disorders^{5,25}, and diminishing quality of life⁷ are associated with these disorders. Adult picky eaters are more

likely to score in the clinical range for depression and OCD than their non-picky colleagues do, according to recent studies^{7,26,27}. However, the mechanism of this relationship is not clear²⁵. These mood disturbances may affect individuals' emotional eating and body image. This study examined the association between picky eating, emotional eating, and problems with body image in healthy persons.

Table 3. Evaluation of total and subscale scores of the Adult Picky Eating Questionnaire and Emotional Eater Questionnaire scores according to body image perception of participants

Questionnaires	Classification according to body image perception		Statistical Analysis	
		$\bar{X} \pm SS$	F	p
Total Scores for Picky Eating	1	37.7±6.86	0.607	0.545
	0	36.4±8.12		
	-1	36.5±6.8		
Meal Presentation	1	19.2±3.95	0.093	0.911
	0	19.4±4.42		
	-1	19.2±4.12		
Food Variety	1	7.7±2.45	1.186	0.306
	0	7.1±2.62		
	-1	7.3±2.3		
Meal Disengagement	1 ^a	5.9±1.65	7.660	0.001
	0 ^b	5.9±1.59		
	-1 ^b	5.4±1.59		
Taste Aversion	1	4.5±1.72	0.150	0.860
	0	4.5±1.92		
	-1	4.6±1.66		
Emotional Eater Questionnaire (Total)	1 ^a	8.3±4.89	33.844	<0.01
	0 ^b	12.2±4.61		
	-1 ^b	12.1±5.7		
Disinhibition	1 ^a	4.6±3.21	32.091	<0.01
	0 ^b	4.9±3.10		
	-1 ^b	7.1±3.69		
Type of food	1 ^a	2.4±1.26	10.077	<0.01
	0 ^b	2.4±1.25		
	-1 ^b	2.9±1.39		
Guilt	1 ^a	1.3±1.25	25.966	<0.01
	0 ^b	1.4±1.14		
	-1 ^b	2.2±1.45		

The Welch F test was calculated for groups without homogeneity. As a result of the homogeneity assessment, the Tukey HSD test was used to determine the difference between homogeneous groups, and the Tamhane T2 test was used in non-homogeneous groups.

1: Who wants body weight gain; 0: Who is satisfied with their body image; -1: Who wants body weight loss.

*Different letters indicate statistical differences.

Body image perception reflects how the individual wants to see themselves in their mind. In cases where there is dissatisfaction with body image, eating behavior disorders are reported to occur in individuals²⁸. A study emphasized that body image satisfaction decreased as weight increased, and individuals with unhealthy diets were less satisfied with their bodies²⁹. In another study, it has been reported that individuals with high body weight tend to have more negative emotional intensity and more emotional eating compared to individuals with normal and low body weight³⁰. In the present study, the rate of those who were satisfied with their body image was 23.8%. In this study, the total score of the emotional eating scale was higher in those who wanted to lose body weight than those who tried to gain weight. This may be due to the relationship between the reason for weight gain and food choice; it has been reported that individuals consume more high-fat and high-carbohydrate foods

to cope with their emotional state¹². This relationship between body perception and picky eating may be associated with individuals' eating behavior. In this study, no difference was observed in the APEQ total score and subgroups except for the subscale of mealtime avoidance of APEQ according to body perception. Although PE and disordered eating outcomes are positively related³¹, childhood PE is associated with a lower frequency of intake of a variety of healthy foods among young adults³² but may not be related to body perception.

Picky eating behavior is a behavior that can lead to symptoms of the eating disorder ARFID and has been reported to cause body weight loss⁶. The relationship between PE and body weight is not clear in the literature. While PE was associated with being underweight in some studies^{32,33}, Finistrella et al.³⁴ in the present study, it was associated with being overweight. In this study, picky eating scores were higher in pre-obese and

obese individuals compared to those with normal body weight. This suggests that the increase in PE behavior is associated with a decrease in fruit and vegetable consumption^{35,36} and may be due to a negative impact on psychosocial and emotional states such as depression and stress^{26,27,31}. This suggests that there may be an increase in picky eating behavior in obese people because changes in mood trigger emotional eating, and emotional eating behavior is often associated with obesity^{7,8}.

It is reported that emotional eating is an essential factor in body weight gain, and 60% or more of obese individuals are emotional eaters³⁷. Emotional eaters are less aware of intrinsic hunger and satiety cues. This is thought to be partly because emotional eating is associated with stress that alters awareness of these internal cues³⁸. More than 40% of the participants had a BMI above 25, and 76.2% were dissatisfied with their body image. Similarly, in this study, emotional eating was higher in pre-obese and obese individuals than in lean individuals ($p < 0.05$). It is thought that the evaluation of picky eating behavior, emotional eating behavior, and psychological conditions such as depression, stress and anxiety together will contribute to the literature.

To our knowledge, this is the first investigation into how emotional eating, picky eating, and body image are related. Body image dissatisfaction and emotional eating are reported to be associated with various eating behavior disorders such as bulimia, binge eating, and compulsive eating³⁹. To deal with body dissatisfaction, intuitive eating is advised. This is described as having a deep connection with one's internal hunger and satiety signals and eating in response to these signals⁴⁰. However, reduction of emotional eating symptoms has been suggested to address body image dissatisfaction⁴¹.

Conclusion

This study linked emotional eating and body image assessment, whereas picky eating and emotional eating were not. Data on the relationship between body image perception, emotional eating, and picky eating are limited. This study examined the relationship between body image perception, emotional eating, and picky eating in individuals without chronic diseases. It was found that body image dissatisfaction was associated with emotional eating and its sub-dimensions. Considering that body image dissatisfaction may cause many eating behavior disorders, it is thought that regulation of body perception will contribute to the prevention of eating behavior disorders.

Although picky eating behavior is thought to occur mostly in children, it is increasingly prevalent in adults. In addition, picky eating behavior is associated with body weight, quality of life, and mood disorders such as depression, anxiety, and stress. Evaluation of PE status in individuals during childhood may prevent PE in adulthood positively.

In conclusion, PE is associated with emotional eating, body weight, and body perception. It is thought that there is a need to evaluate depression, anxiety, stress, and quality of life parameters in future face-to-face studies.

Limitations

This is the first study to evaluate the relationship between body image perception, emotional eating, and picky eating. In addition, the fact that the participants were conducted with healthy individuals is among its strengths to avoid any other confounding factor. Nevertheless, the study has a few limitations. Firstly, evaluating depression, anxiety, and stress in the study with data assessing the emotional states of the participants could have had a positive effect in terms of determining the emotional states of the participants. Secondly, examining the quality of life in the study could have been associated with picky eating behavior. Finally, the study's limitations include that body weight and height were taken to identify the individuals in the study.

Ethics Approval

The Social and Human Sciences Research Ethics Committee of Tokat Gaziosmanpaşa University granted clearance for the study in session number 15 and decision number 01-56 on 07/12/2022.

Conflict of Interests

There are no conflicts of interest between the writers.

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