Fazla kilolu ve obez bireylerin yeme tutumlarının incelenmesi

Examining the eating attitudes of overweight and obese individuals

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ABSTRACT

Aim: This study aimed to determine the eating attitudes of overweight and obese individuals and to investigate whether eating attitudes differ by age, gender, and Body Mass Index (BMI).

Materials and Methods: The study was conducted between June 2019 and October 2024 with 111 participants who applied to a private clinic in Ankara. Individuals with a BMI of 25 or above were included in the study. Data were collected using a survey method through face-to-face interviews with the participants. Eating attitudes were measured using the Eating Attitudes Test-40 (EAT-40), developed by Garner and Garfinkel and adapted into Turkish by Savaşır and Erol. Data analysis was performed using SPSS 23.0 statistical software. Descriptive statistics and Pearson's chi-square test were used for data analysis, with a significance level set at p<0.05.

Results: The participants' mean age was 37.08±9.77 years, and 77.5% (n=86) were women. Among the participants, 65.8% (n=73) were classified as obese, and 34.2% (n=38) as overweight. A history of dieting was found in 79.3% (n=88) of the participants, 29.7% (n=33) reported binge eating, 9% (n=10) had bulimia nervosa, and 33.3% (n=37) engaged in regular exercise. Additionally, 23.4% (n=26) had comorbidities, with polycystic ovary syndrome and hyperlipidemia being the most common (17.1%; n=6). Childhood was identified as the most frequent onset period for obesity (33.3%; n=37). The mean EAT-40 score was 24.3±12.7.

Conclusion: According to EAT-40 results, 73% of the participants were found to be at risk of disordered eating behaviors. No statistically significant differences were found in eating attitudes across age, gender, or BMI groups (p>0.05). It is recommended that individual treatments and interventions for obesity adopt a broader perspective, addressing not only metabolic factors but also disordered eating patterns. Furthermore, the high risk of eating disorders highlights the importance of targeted and preventive interventions for obese individuals.

ÖZ

Amaç: Bu çalışmada fazla kilolu ve obez bireylerin yeme tutumlarının belirlenmesi, yaş, cinsiyet ve Beden Kitle İndeksi (BKİ)'ne göre yeme tutumlarının farklılık gösterip göstermediğinin incelenmesi amaçlanmıştır.

Gereç ve Yöntem: Çalışma, Haziran 2019-Ekim 2024 tarihleri arasında Ankara'da özel bir kliniğe başvuran 111 katılımcı ile gerçekleştirilmiştir. BKİ'si 25 ve üzeri olan bireyler araştırmaya dahil edilmiştir. Araştırmada veri toplamak için anket yöntemi kullanılmıştır. Veriler, katılımcılarla yüz yüze görüşme yoluyla toplanmıştır. Yeme tutumlarını ölçmek için Garner ve Garfinkel tarafından geliştirilen ve Savaşır ve Erol tarafından Türkçe'ye uyarlanan Yeme Tutum Testi-40 (YTT-40) kullanılmıştır. Araştırma verilerinin analizi SPSS 23.0 istatistik programı ile yapılmıştır. Veriler sıklık ve Pearson ki-kare testleriyle analiz edilmiştir. İstatistiksel olarak p<0.05 değeri anlamlı olarak kabul edilmiştir.

Bulgular: Katılımcıların yaş ortalaması 37,08±9,77 olup, %77,5'i (n=86) kadınlardan oluşmaktadır. Araştırmaya katılanların %65,8'i (n=73) obez, %34,2'si (n=38) fazla kilolu olarak bulunmuştur. Katılımcıların %79,3'ünde (n=88) diyet geçmişinin olduğu, %29,7'sinde (n=33) binge eating, %9'unda (n=10) bulimia nevroza olduğu, %33,3'ünün (n=37) egzersiz yaptığı, %23,4'ünde (n=26) eşlik eden başka bir hastalık olduğu saptanmıştır. Polikistik over sendromu ve hiperlipidemi eşlik eden en sık (%17,1; n=6) hastalıklardır. Obezite başlangıç dönemi incelendiğinde en sık çocukluk döneminde (%33,3; n=37) başladığı belirlenmiştir. YTT-40 puan ortalaması 24,3±12,7 olarak bulunmuştur.

Sonuç: YTT-40 sonuçlarına göre, katılımcıların %73'ünün yeme davranışı bozukluğuna yatkın olduğu belirlenmiştir. Yaş, cinsiyet ve BKİ grupları arasında yeme tutumları açısından istatistiksel olarak anlamlı bir fark bulunmamıştır (p>0,05). Obeziteye yönelik bireysel tedavi ve müdahalelerin daha geniş bir perspektiften ele alınması ve metabolik sebeplerin yanında yeme tutumu bozukluğunun da değerlendirilmesi önerilmektedir. Ayrıca, yeme bozukluğu riskinin yüksek olması, obez bireylere yönelik önleyici ve hedeflenmiş müdahalelerin önemini ortaya koymaktadır.

INTRODUCTION

Obesity is a global public health issue that is rapidly increasing in both developed and developing countries, negatively affecting individuals' physical, psychological, and social well-being (1,2). The World Health Organization (WHO) defines obesity as an excessive accumulation of body fat to an extent that may impair health (3). According to the WHO classification, individuals with a body mass index (BMI) of <18.5 kg/m² are classified as underweight, those with a BMI of 18.5−24.99 kg/m² as normal weight, those with a BMI of 25.0−29.99 kg/m² as overweight, and those with a BMI of ≥30 kg/m² as obese (4). A 2022 WHO report indicates that the global prevalence of obesity has tripled over the past 50 years, with more than 25% of the adult population in Europe and North America classified as obese (3). In Turkey, findings from the Turkey Nutrition and Health Survey (TBSA, 2019) revealed that the obesity rate among adults was 32.1% (5).

The increasing prevalence of obesity in recent years can be largely attributed to changes in modern lifestyles, the widespread adoption of sedentary behaviors, and unhealthy dietary habits. In particular, the increased consumption of processed foods has led to excessive caloric intake, while declining levels of daily physical activity have contributed to energy imbalances (6,7). Additionally, the growing influence of digitalization has shifted social and recreational activities toward screen-based engagements, further reducing individuals' physical activity levels (8). This trend not only affects individual health but also places a significant burden on healthcare systems by contributing to the prevalence of obesity-related diseases (9).

Obesity is not only associated with physical health problems but also has profound effects on individuals' eating attitudes and behaviors. Eating attitudes encompass a multidimensional concept that includes individuals' thoughts, emotions, and behaviors related to food. These attitudes play a crucial role in both the development and treatment of obesity (10). The literature highlights key concepts such as eating disorders, emotional eating, external eating, and restrictive eating as being closely linked to obesity (11). Therefore, examining eating attitudes in individuals with overweight and obesity is essential for understanding the condition and developing appropriate intervention strategies.

This study aims to investigate the eating attitudes of overweight and obese individuals. The findings are expected to contribute to the development of new approaches to obesity management and enhance the understanding of eating behaviors among affected individuals.

MATERIALS AND METHODS

Aim of the Study

This study aims to determine the eating attitudes of overweight and obese individuals and to examine whether these attitudes differ based on age, gender, and Body Mass Index (BMI).

Study Sample

The study was conducted with 111 participants who applied to a private clinic in Ankara between June 2019 and October

2024. BMI values were classified according to the WHO classification: individuals with a BMI of <18.5 kg/m² were classified as underweight, those with a BMI of 18.5−24.99 kg/m² as normal weight, those with a BMI of 25.0−29.99 kg/m² as overweight, and those with a BMI of ≥30 kg/m² as obese (4). Only individuals with a BMI of 25 or higher were included in the study. Participation was voluntary.

Data Collection Method

Data were collected using a survey method. The researcher conducted face-to-face interviews with the participants. The survey consisted of two sections. The first section included the Sociodemographic Characteristics Form, which comprised 11 questions regarding age, gender, BMI, dietary history, binge eating, bulimia, night eating, exercise habits, comorbid conditions, and the onset of obesity. Additionally, anthropometric measurements such as body weight (kg) and height (cm) were taken. Body weight was measured using a digital scale without shoes, and height measurements were taken while ensuring that the head was in the Frankfurt plane. BMI was calculated using the formula: body weight (kg) / height (m²).

The second section included the Eating Attitudes Test (EAT-40). The EAT-40, developed by Garner and Garfinkel in 1979 (12), is a widely used instrument to assess disordered eating behaviors. It was adapted into Turkish and validated by Savaşır and Erol in 1989 (13). The EAT-40 is a self-reported scale consisting of 40 items rated on a six-point Likert scale (Always, Very Often, Often, Sometimes, Rarely, Never). A total score above 30 indicates abnormal eating behaviors. Items 1, 18, 19, 23, 27, and 39 are scored differently, where Sometimes = 1 point, Rarely = 2 points, and Never = 3 points, while all other responses receive 0 points. For the remaining items, Always = 3 points, Very Often = 2 points, and Often = 1 point, with other responses scored as 0. The total EAT-40 score is obtained by summing the points from all items.

Statistical Analysis

Data analysis was performed using SPSS 23.0 statistical software. The normality of the data was assessed using the Kolmogorov-Smirnov test. Descriptive statistics and Pearson's chi-square test were used for data analysis. A p-value of <0.05 was considered statistically significant.

Ethical Considerations

The study was conducted after obtaining approval from the relevant ethics committee and was carried out in accordance with the principles of the Helsinki Declaration. Participation was voluntary.

RESULTS

The sociodemographic characteristics of the participants are presented in Table 1. The participants' age range was 18−69 years, with a mean age of 37.08 ± 9.77 years. The majority of the participants were female (77.5%, n = 86). The BMI ranged between 25 and 44 kg/m², with a mean BMI of 32.4 ± 4.31. Among the participants, 34.2% (n = 38) were classified as overweight, while 65.8% (n = 73) were classified as obese.

Regarding dietary history, 79.3% (n = 88) of

Table 1. Sociodemographic characteristics of the participants

Sociodemographic characteristics		n	%
Age (year)	18-32	33	29.7
	33-42	51	46.0
	43-69	27	24.3
Gender	Female	86	77.5
	Male	25	22.5
BMI	25-29.99	38	34.2
	30 and above	73	65.8
Diet history	No	23	20.7
	Yes	88	79.3
Binge eating	No	78	70.3
	Yes	33	29.7
Bulimia nervosa	No	101	91.0
	Yes	10	9.0
Night eating	No	84	75.7
	Yes	27	24.3
Regular exercise	No	74	66.7
	Yes	37	33.3
Comorbid conditions	No	85	76.7
	Yes;*	26	23.4
	Polycystic ovary syndrome	6	17.1
	Hypothyroidism	2	5.7
	Hypertension	6	17.1
	Asthma	3	8.5
	Hyperlipidemia	6	17.1
	Psychiatric diseases	4	11.4
	Arrhythmia	1	2.8
	Diabetes Mellitus	4	11.4
	Migraine	1	2.8
	Ulcerative colitis	1	2.8
	Lupus	1	2.8
Onset of obesity	Childhood	37	33.3
	Youth	32	28.8
	Adulthood	20	18.0
	Postpartum	19	17.1
	Menopause	3	2.7

*Participants were allowed to select multiple options.

the participants reported having previously attempted a diet. Additionally, 29.7% (n = 33) exhibited binge eating behavior, while 9% (n = 10) met the criteria for bulimia nervosa. Regular exercise was reported by 33.3% (n = 37) of the participants. The presence of

comorbid conditions was identified in 23.4% (n = 26) of the sample, with polycystic ovary syndrome and hyperlipidemia being the most common comorbidities (17.1%, n = 6). Analysis of obesity onset revealed that the most common period for obesity development was childhood (33.3%, n = 37).

The mean score of the EAT-40 in the study was 24.3 ± 12.7. The Cronbach's alpha reliability coefficient for the scale was determined to be 0.769 (Table 2).

5. According to the results, there was no statistically significant difference between BMI and eating attitudes (p = 0.56).

DISCUSSION

Eating attitude disorders are a significant public health issue that negatively impact individuals' dietary habits and can lead to severe physical and psychological consequences (14). Individuals with both obesity and concurrent eating disorders are at a higher risk compared to those with only one

Table 2. Descriptive statistics and reliability coefficient of the EAT-40

Scale	Items No.	Mean	SD	CA
EAT-40	40	24.3	12.7	0.769

EAT-40: Eating Attitudes Test, SD: Standard deviation, CA: Cronbach's Alpha coefficient

The relationship between participants' gender and eating attitudes is presented in Table 3. According to the results, there was no statistically significant difference between gender and eating attitudes (p = 0.69).

of these conditions. Moreover, obesity can contribute to the development and severity of disordered eating behaviors (15). A study conducted in Australia between 1995 and 2015 with a representative sample of 9,053

Table 3. Analysis of participants' eating attitudes according to their gender

Variable		Gender				Total		p
		Female		Male				
		n	%	n	%	n	%	
EAT-40 Points	≥30	62	76.5	19	23.5	81	73.0	
	<30	24	80.0	6	20.0	30	27.0	0.69
Total		86	77.5	25	22.5	111	100	

EAT-40: Eating Attitudes Test

The relationship between participants' age and eating attitudes is presented in Table 4. According to the results, there was no statistically significant difference between age groups and eating attitudes (p = 0.89).

The relationship between participants' BMI and eating attitudes is presented in Table

individuals observed significant independent increases in the prevalence of both obesity and disordered eating behaviors. However, the most pronounced increases were seen in individuals with both obesity and binge eating disorder (7.3-fold increase) or those following strict dieting (11.5-fold increase).

Table 4. Analysis of participants' eating attitudes according to their ages

Variable		Age groups						Total		p
		18-32		33-42		43-69				
		n	%	n	%	n	%	n	%	
E A T - 4 0 Points	≥30	25	30.9	37	45.6	19	23.5	81	73.0	0.89
	<30	8	26.7	14	46.7	8	26.7	30	27.0	
Total		33	29.7	51	46.0	27	24.3	111	100	

EAT-40: Eating Attitudes Test

Table 5. Analysis of participants' eating attitudes according to BMI

Variable		BMI				Total		p
		25-29.99		30 and above				
		n	%	n	%	n	%	
EAT-40 Points	≥30	29	35.8	52	64.2	81	73.0	0.56
	<30	9	30.0	21	70.0	30	27.0	
Total		38	34.2	73	65.8	111	100	

EAT-40: Eating Attitudes Test

These increases are thought to be associated with the potential effects of binge eating on obesity and the societal pressures on obese individuals to lose weight (15). The rising prevalence of individuals with both obesity and disordered eating behaviors highlights an increased medical and psychosocial risk to their health (16). Therefore, research focusing on the observation of eating attitudes in overweight and obese individuals and the development of policy measures is needed. This study aimed to examine the eating attitudes of overweight and obese individuals.

In our research, the EAT-40 was utilized. The Cronbach's alpha reliability coefficient for this questionnaire was found to be 0.79 in Garner and Garfinkel's study and 0.65 in the study by Savaşır and Erol (12,13). In our study, the Cronbach's alpha value was determined to be 0.76, indicating the reliability of the EAT-40 questionnaire.

In our study, 73% of participants scored 30 or above on the EAT-40, indicating a predisposition to disordered eating behaviors. This rate is significantly higher than those reported in both national and international literature. For instance, international studies report prevalence rates of 10−15% (17,18), while national studies indicate rates of 9−11% (19,20). This discrepancy is likely due to the characteristics of our sample, which consisted solely of overweight and obese individuals. Additionally, the higher risk of disordered eating behaviors among obese individuals underscores the importance of targeted interventions for this group (21).

Our study found no statistically significant differences in eating attitudes based on age, gender, or BMI among participants. This finding aligns with some results reported in both national and international literature. For instance, previous studies conducted in Turkey have suggested that eating attitudes are independent of BMI and that psychological factors have a more pronounced effect on these attitudes (19,22,23). However, other

studies have reported different findings, indicating that as BMI increases, EAT-40 scores also increase, and that the risk of eating disorders is twice as high in overweight/obese individuals compared to those within the normal BMI range (24,25). Similarly, some studies have found that eating attitudes do not significantly differ by gender (20,23) and are instead more influenced by individuals' perceived body image and stress levels (26), while others suggest that women have a higher prevalence of disordered eating behaviors than men (27,28).

International literature also supports the notion that eating attitudes are not solely determined by age, gender, or BMI. Hruby and Hu emphasized that eating behaviors are more strongly influenced by cultural norms and environmental factors (7). Malik et al. found that genetic factors have a limited effect on eating attitudes, whereas social environments play a more significant role (9). Moreover, Ng et al.'s global obesity analysis revealed that eating attitudes are more closely linked to energy imbalance and sedentary lifestyles (6).

More advanced studies have shown that eating attitudes are influenced not only by physical factors but also by psychological conditions, media exposure, and health awareness. For instance, Strien et al. demonstrated that emotional eating behaviors are directly correlated with stress and anxiety levels, making them independent of BMI (29). Similarly, Razzoli and Bartolomucci suggested that hormonal changes induced by stress can indirectly affect individuals' eating habits (30).

In conclusion, the findings of our study align with the literature suggesting that eating attitudes are more strongly associated with psychosocial and environmental factors rather than demographic characteristics. However, the presence of conflicting results in the literature highlights the need for larger sample sizes and interdisciplinary research approaches in future studies. When planning obesity treatment, it is recommended that both metabolic factors and disordered eating behaviors be considered simultaneously. The development and testing of innovative medical, psychological, and nutritional treatment options that address both obesity and concurrent eating disorders are deemed crucial.

REFERENCES

1. World Health Organization (WHO). Obesity: preventing and managing the global epidemic: report of a WHO consultation. Geneva: WHO; 2000.

2. Centers for Disease Control and Prevention (CDC). Overweight and Obesity [Internet]. Atlanta: CDC. Available from: https://www.cdc.gov. Accessed Jan 05, 2025.

3. World Health Organization (WHO). Obesity and overweight [Internet]. Geneva: WHO; 2022 [cited 2025 Jan 5]. Available from: https://www.who.int

4. World Health Organization, Obesity and Overweight. 2024. Available from: https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight. Accessed Jan 07, 2025.

5. Turkey Nutrition and Health Survey (TBSA). Nutrition and Health Survey in Turkey: General Results Report. Ankara: Republic of Turkey Ministry of Health Publications; 2019.

6. Ng M, Fleming T, Robinson M, Thomson

B, Graetz N, Margono C, et al. Global, regional, and national prevalence of overweight and obesity in children and adults during 1980–2013: a systematic analysis for the Global Burden of Disease Study 2013. Lancet. 2014;384(9945):766-781.

7. Hruby A, Hu FB. The epidemiology of obesity: A big picture. *PharmacoEconomics*. 2015;33(7):673-689.

8. World Health Organization (WHO). Obesity and overweight. Geneva: WHO; 2021. Available from: https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight

9. Malik VS, Willett WC, Hu FB. Global obesity: trends, risk factors and policy implications. Nat Rev Endocrinol. 2013;9(1):13-27.

10. Herman CP, Polivy J. External cues in the control of food intake in humans: The sensory-normative distinction. Physiol Behav. 2008;94(5):722-8.

11. Van Strien T. Causes of emotional eating and its effects on eating behavior and weight in adolescents and adults. Curr Obes Rep. 2018;7(2):193-204.

12. Garner DM, Garfinkel PE. The eating attitudes test: An index of the symptoms of anorexia nervosa. Psychol Med. 1979;9(2):273-279.

13. Savaşır I, Erol N. Yeme tutum testi: Anoreksiya nervoza belirtileri indeksi. Psikoloji Dergisi. 1989;7:19-25.

14. Mintz LB, O'Halloran MS, Mulholland AM, Schneider PA. Questionnaire for eating disorder diagnoses: Reliability and validity of operationalizing DSM-IV criteria into a self-report format. J Couns Psychol. 1997;44(1):63-79.

15. da Luz FQ, Hay P, Touyz S, Sainsbury A. Obesity with comorbid eating disorders: associated health risks and treatment approaches. Nutrients. 2018;10(7):829.

16. Raman J, Smith E, Hay P. The clinical obesity maintenance model: an integration of psychological constructs including mood, emotional regulation, disordered overeating, habitual cluster behaviours, health literacy and cognitive function. J Obes. 2013;2013:240128.

17. Lee S, Lee AM. Disordered eating in three communities of China: A comparative study of female high school students in Hong Kong, Shenzhen, and rural Hunan. Int J Eat Disord. 2000;27(3):317-27.

18. Kosko A, Doak S, Kearney JM, McCormack JM, Keaver L. Application of the eating attitudes test (EAT-26) in a cohort of higher education students. Ir Med J. 2023;116(2):739.

19. Agacdiken Alkan S, Ozdelikara A, Mumcu Boga N. Eating behaviors of nursing students. HEAD. 2016;13(3): 250-257

20. Ogur S, Aksoy A, Selen H. Predispositions of university students to eating behavior disorder: sample of Bitlis Eren University. BEU Journal of Science. 2016;5(1):14-26.

21. Makino M, Hashizume M, Yasushi T, Tsuboi K, Dennerstein L. Comparative study of attitudes to eating between male and female students in the People's Republic of China. Eat Weight Disord. 2006;11(3):111-117.

22. Bahar A, Savaş E, Bas A. Eating attitudes and body mass index among university students in Turkey. J Public Health. 2020;42(2):345–51.

23. Usta E, Sağlam E, Sen S, Aygin D, Sert H. Eating attitudes and obsessive-compulsive symptoms of nursing students. HSP.

2015;2(2):187-189.

24. Kadioglu M, Ergun A. The eating attitudes of the university students, self-efficacy and affecting factors. MÜSBED. 2015;5(2):96-104.

25. Oztayinci N, Acikgoz Pinar A, Akal Yildiz A, Gokmen Ozel H. Sociodemographic characteristics and eating attitudes among adult women with diferent body mass index levels. Bes Diy Derg 2021;49(3):48-57.

26. Evers C, Stok FM, de Ridder DT. Feeding your feelings: Emotion regulation strategies and emotional eating. Personal Soc Psychol Bull. 2010;36(6):792–804.

27. Wang Z, Byrne NM, Kenardy JA, Hills AP. Influences of ethnicity and socioeconomic status on the body dissatisfaction and eating behaviour of Australian children and adolescents. Eat Behav. 2005;6(1):23-33.

28. Lindberg L, Hjern A. Risk factors for anorexia nervosa: a national cohort study. J Eat Disord. 2003;34(4): 397-408.

29. Van Strien T, Herman CP, Verheijden MW. Eating style, overeating, and weight gain: A prospective 2-year follow-up study in a representative Dutch sample. Appetite. 2012;59(3):782–789.

30. Razzoli M, Bartolomucci A. The dichotomous effect of chronic stress on obesity. Trends Endocrinol Metab. 2016;27(7):504–515.