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Intuitive Eating and Eating Disorders Among Adults: A Relationship Analysis

Yetişkinlerde Sezgisel Yeme ve Yeme Bozuklukları: Bir İlişki Analizi

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ABSTRACT

Aim: *We aimed to investigate the relationship between eating disorders (EDs) and intuitive eating (IE) in adults.*

Material and Method: *In this cross-sectional study, a total of 200 adults aged 25-55 years were randomly selected. The Eating Attitude Test 40 (EAT 40) and the Intuitive Eating Scale-2 (IES-2) were used to evaluate eating attitudes and IE, respectively. Sociodemographic characteristics were also recorded.*

Results: *We found 38 participants with EDs and 162 participants without EDs. The IES-2 and its sub-dimensions scores did not differ significantly between participants with and without EDs. No significant correlation was observed between EAT-40 and IES-2 scores or IES-2 sub-dimensions scores. However, a significant negative correlation was found between Unconditional Permission to Eat (UPE) scores and age ($r=-0.170$, $p<0.05$).*

Conclusion: *The study suggests that EDs are not a cause or effect of IE. Participants with EDs did not tend towards IE, and IE scores were not lower in individuals prone to EDs. The lack of significant differences in IE and its sub-dimensions between the two groups suggests that IE may be a promising approach for individuals with or without EDs to improve their eating attitudes and behaviors.*

Keywords: *Body mass index, Eating disorders, Intuitive eating*

ÖZET

Amaç: *Bu çalışmanın amacı yetişkinlerde yeme bozukluğu (YB) ve sezgisel yeme (SY) arasındaki ilişkinin saptanmasıdır.*

Gereç ve Yöntem*: Bu kesitsel çalışmada, 25-55 yaş arası 200 yetişkin rastgele seçildi. Yeme tutumlarını ve sezgisel yeme durumlarını değerlendirmek için Yeme Tutum Testi-40 (YTT-40) ve Sezgisel Yeme Ölçeği-2 (SYÖ-2) kullanıldı. Sosyodemografik özellikler de kaydedildi.*

Bulgular*: YB olan 38 katılımcı ve YB olmayan 162 katılımcı vardı. SYÖ-2 ve alt boyutları puanları, YB olan ve olmayan katılımcılar arasında anlamlı farklılık göstermedi. YTT-40 ve SYÖ-2 puanları veya SYÖ-2 alt boyutları puanları arasında anlamlı bir ilişki gözlenmedi. Bununla birlikte, Yemeğe Şartsız İzin Verme puanları ile yaş arasında anlamlı negatif bir ilişki bulundu ($r=-0.170$, $p<0.05$).*

Sonuç*: Çalışma, YB'nin SY'nin nedeni veya sonucu olmadığını öne sürmektedir. YB olan katılımcılar SY'ye eğilimli değildi ve SY puanları YB eğilimli bireylerde düşük değildi. İki grup arasındaki SY ve alt boyutlarındaki anlamlı farklılıkların olmaması, SY'nin, YB'si olan veya olmayan bireylerin yeme tutumlarını ve davranışlarını iyileştirmek için umut verici bir yaklaşım olabileceğini düşündürmektedir.*

Anahtar Kelimeler*: Beden kütle indeksi, Yeme bozuklukları, Sezgisel yeme*

INTRODUCTION

Intuitive eating (IE) is characterized by a reliance on physical cues to guide eating behavior, including when, what, and how much to eat. It entails fostering a healthy relationship between food, cognition, and the body, where individuals actively attend to the sensations and enjoyment derived from their meals. Intuitive eaters possess an innate skill of tuning into their body's signals and making food choices based on internal cues, prioritizing their physiological needs and preferences. (Barraclough, Hay-Smith, Boucher, Tylka, & Horwath, 2019). Maintaining mindfulness in eating habits and proactively managing one's health are vital considerations. By being mindful, individuals can develop a heightened awareness of their eating behavior, enabling them to make conscious choices that support their overall health and well-being. Taking proactive action empowers individuals to actively engage in behaviors that contribute to the management and improvement of their health (Bray, Frühbeck, Ryan, & Wilding, 2016). Intuitive eating is a philosophy that promotes the practice of attuning to the body's natural hunger and fullness cues when making food choices. Instead of rigid rules or strict guidelines, intuitive eaters develop trust in their bodies to guide them toward nourishing foods that support their overall health. Central to intuitive eating is the recognition and response to physical sensations of hunger and fullness, achieved by attentively listening to the body's signals while disregarding external cues like time or portion size that may override these cues. Another significant aspect involves cultivating a positive relationship with food, releasing feelings of guilt and shame often associated with eating. Intuitive eaters embrace all types of food without judgment, focusing on the pleasure and satisfaction that comes from nourishing themselves. Ultimately, intuitive eating encompasses a holistic approach to well-being, prioritizing the nourishment of the body, mind, and spirit through food and self-care practices. (Van Dyke & Drinkwater, 2014). The principle of unconditional permission to eat promotes the idea that individuals should honor their body's physical cues of hunger and food cravings. It encourages people to grant themselves permission to enjoy the foods they desire in the present moment, without imposing judgment or restrictions. By embracing unconditional permission to eat, individuals can foster a healthier relationship with food, allowing themselves to fully satisfy their cravings and nourish their bodies without feelings of guilt or deprivation. This principle emphasizes the importance of trusting one's internal cues and honoring their body's unique needs and preferences when it comes to eating. (Keirns & Hawkins, 2019). According to research, individuals who engage in food restriction tend to exhibit heightened sensitivity to food-related stimuli, such as smell and taste. This increased sensitivity can result in a greater desire for and consumption of food. In essence, when people limit their food intake, they become more attuned to cues associated with food, potentially leading to overeating and a loss of control around food. This phenomenon highlights the potential unintended consequences of restrictive eating behaviors, as it can trigger a heightened focus on and preoccupation with food, ultimately undermining efforts to maintain a balanced and healthy approach to eating. (Reichenberger, Schnepper, Arend, & Blechert, 2020). Dietary restriction further increases the nutritional effort. This is because people who limit their food intake consume more food than people who are unconditionally allowed to eat (Brytek-Matera, Czepczor-Bernat, Jurzak, Kornacka, & Kołodziejczyk, 2019). Eating disorders (EDs) can impact individuals of all ages, ethnic backgrounds, body weights, and genders. These disorders are characterized by a complex interplay of psychological, emotional, and social factors. People with eating disorders often utilize food and control overeating as a coping mechanism to deal with emotions and various situations in their lives. The three most prevalent types of eating disorders are anorexia nervosa, bulimia nervosa, and binge eating disorder. Anorexia nervosa is characterized by severe food restriction and an intense fear of gaining weight. Bulimia nervosa involves episodes of binge eating followed by compensatory behaviors such as purging or excessive exercise. Binge eating disorder entails recurring episodes of consuming large quantities of food accompanied by a sense of loss of control. It is important to recognize that eating disorders can have serious physical and psychological consequences, requiring comprehensive treatment and support for individuals affected by these conditions. (Park & Kim, 2022).

The objective of this study was to assess the connections between intuitive eating (IE) and eating disorders (EDs) in relation to participants' sociodemographic characteristics. We formulated the hypothesis that there would be no significant

association between IE and eating disorders. Conversely, we anticipated that eating disorders would be correlated with body mass index (BMI), physical activity levels, and daily water consumption. The study aimed to explore these relationships and shed light on the potential interplay between IE, EDs, and various sociodemographic factors. Moreover, this study's importance for Turkey lies in its exploration of the connections between intuitive eating, eating disorders, and sociodemographic factors. And the academic importance of this study for Turkey lies in its contribution to filling the knowledge gap, which may help its implications for policy and interventions, its support for health promotion efforts, and its advancement of the academic field of eating behavior research.

MATERIAL AND METHOD

Research Type

To gather data, this study employed an observational, cross-sectional research design. Face-to-face interviews were conducted with participants over a specified timeframe, which spanned from April to June 2021. The use of face-to-face interviews allowed for direct interaction and engagement with participants, facilitating a more in-depth exploration of the research topic. The cross-sectional design enabled the collection of data at a single point in time, providing a snapshot of the participants' characteristics, behaviors, and perceptions during the specific period of the study.

Study Population and Sample

This study was conducted on individuals who received by a dietitian or did not receive any regular nutritional counselling in Bayrampaşa Municipality Health Affairs Directorate. The study in question determined a minimum sample size of 170 participants, calculated to achieve 90% statistical power at a significance level of α=0.05. Eligibility criteria for participation required individuals to be between the ages of 25-55 and to not have alcohol/drug dependence or a mental disorder. Exclusion criteria were (1) less than 25 years old, older than 55 years; (2) being addicted to alcohol; (3) having a mental disorder that prevents them from completing the questionnaire. The study enrolled a total of 200 eligible participants, surpassing the minimum sample size requirement.

Data Collection Tools

The information form utilized three instruments, including the Intuitive Eating Scale-2 (IES-2), the Eating Attitude Test 40 (EAT-40), and anthropometric measurements to assess the study participants. In addition to these instruments, participants' sociodemographic characteristics were also recorded. Specifically, data were collected on age, gender, marital status, occupation status, education level, and other relevant sociodemographic factors.

Anthropometric measurements: Anthropometric measurements, including body height, body weight, waist circumference, and hip circumference, were collected by the researcher following standardized procedures. Subsequently, the body mass index (BMI) [body weight (kg) / body height* body height (m2)] and waist-to-hip ratio were calculated based on the criteria established by the World Health Organization (WHO) (Casadei & Kiel, 2022). These anthropometric measurements and derived indices provide objective indicators of body composition and distribution, which are crucial in assessing and analyzing participants' physical characteristics within the research context.

Intuitive Eating Scale -2: The Intuitive Eating Scale -2 was adapted into Turkish which was developed by Tylka and Kroon Van Diest (Bas et al., 2017; Tracy L Tylka & Kroon Van Diest, 2013), it consists of twenty-three questions and examines intuitive eating in four sub-dimensions. The first subdimension is unconditional permission to eat (UPE). It has 6 items; (items one, three, four, nine, sixteen, and seventeen). 2. Eating for Physical Rather Than Emotional Reasons (EPR): Eight items in the sub-dimension of food related to physical rather than emotional reasons; Under this factor; Items two, five, ten, eleven, twelve, thirteen, fourteen, and fifteen are evaluated. 3. Reliance on Hunger and Satiety Cues (RHSC): Six items in the sub-dimension of consumption based on hunger and satiety signals; Under this factor; Items six, seven, eight, twenty-one, twenty-two, and twenty-three are evaluated. 4. Body-Food Choice Congruence (B-FCC): Three items in the body-food choice compatibility sub-dimension; Under this factor; Items eighteen, nineteen, and twenty are being evaluated.

The IES 2 is evaluated due to a five-point Likert scale. To evaluate the responses provided to the questions, a Likert scale was utilized, wherein participants rated their agreement or disagreement

on a scale of one to five. Specifically, the rating options were as follows: one denoted "I do not agree," two represented "I am undecided," three indicated "I agree," and four signified "I strongly agree." For the purpose of analysis, seven items, namely item one, two, three, seven, eight, nine, and ten, were reverse coded, where higher scores indicated stronger disagreement.

The median value of the individuals' intuitive eating total score was taken as a basis to sort them as intuitive eaters and non-intuitive eaters. Those with values higher than the median and median were evaluated as intuitive eaters and those with values below the median were evaluated as individuals who did not eat intuitively. This method was applied to other sub-dimensions of the IES 2 scale (Hawks, Merrill, & Madanat, 2004). In this particular research study, the participant's scores on the IES-2 were used to classify them as either intuitive eaters or non-intuitive eaters. The median score on the IES-2 was used as a cut-off point to make this classification. Participants with scores above the median were categorized as intuitive eaters, while those with scores below the median were categorized as non-intuitive eaters. This approach allowed the researchers to divide the participants into two groups based on their level of adherence to the principles of intuitive eating, and to compare the outcomes between these groups (Hawks et al., 2004). In the Turkish version of the study, the Cronbach's alpha was 0.81. In comparison, the original version of the scale had Cronbach's coefficient alphas were 0.87 for the total 23-item (Bas et al., 2017; Tracy L Tylka & Kroon Van Diest, 2013). We found Cronbach alphas coefficient for the IES-2s as 0.81. The median of the IES-2 was found to be 3.48.

Eating Attitude Test 40 (EAT-40): The Eating Attitude Test (EAT-40) is a self-report questionnaire developed to assess symptoms and attitudes related to anorexia nervosa (Garner & Garfinkel, 1979). It consists of forty items that are rated on a six-point Likert-type scale, with higher scores indicating more severe eating-related pathology. The original version of the EAT-40 has a cut-off score of 30 points, which is used to indicate the presence of significant eating disorder symptoms. The EAT-40 has been translated and adapted into several languages, including Turkish (Savaşır & Testi, 1989). The Turkish version of the EAT-40 is a widely used tool for assessing eating disorder symptoms and attitudes among Turkish populations. By adapting the EAT-40 to Turkish, researchers and clinicians can better assess the prevalence and severity of eating disorders in Turkish communities and develop targeted interventions to address these issues. The EAT-40 consists of forty items, with different scoring options depending on the item. For items 1, 18, 19, 23, 27, and 39, participants can receive one point for sometimes exhibiting a particular behavior or thought, two points for rarely exhibiting the behavior or thought, and zero points for never exhibiting it. For the other items on the scale, participants receive three points for always exhibiting a particular behavior or thought, two points for very often exhibiting it, one point for often exhibiting it, and zero points for not exhibiting it. To determine the overall score on the EAT-40, the scores for each item are added up. In the evaluation scale used in the study, participants who scored thirty or higher on the EAT-40 were considered to be at risk for disordered eating behavior. This cut-off score is commonly used in clinical and research settings to identify individuals who may need further evaluation and treatment for eating disorder symptoms. The Turkish version of the EAT-40 Cronbach's alpha was 0.70 (Savaşır & Testi, 1989). However, in our study, we calculated the Cronbach's alpha to be 0.78, indicating a higher level of internal consistency.

Research Process

The research process for this study lunched by clearly defining the research objective and formulating research questions that will guide the study. This was followed by a thorough review of existing literature and studies related to the research topic, which helps to identify the current knowledge and gaps in the field. Based on this understanding, we developed a set of hypotheses to provide a framework for the study. The next step involved designing the survey instrument, carefully selecting appropriate survey items or questions that align with the research objectives and hypotheses. Necessary approvals and permissions, such as ethical clearance, were obtained. After collecting and compiling the survey data, we used appropriate statistical techniques to test hypotheses, and derive meaningful insights. We interpreted the findings in relation to the research objectives and existing literature, and conclusions are drawn based on the data analysis.

Ethical Consideration

This study was performed in line with the

principles of the Declaration of Helsinki. Approval was granted by the Ethics Committee of the University of Yeditepe University Ethics Committee (Date: July 05, 2020 and Approval no: 1218).

Data analysis

We analysed the data in the SPSS package program and tested the data normalization by Kolmogorov-Smirnov analysis. For the non-parametric data, we gave the median and interquartile range [IQR]. When data showed normal distribution, we used parametric tests and mean ± standard deviation. Descriptive statistics of data were given. And we performed Mann Whitney U, Kruskal Wallis, and Spearman correlation. P value <0.05 was considered statistically significant.

RESULTS

Table 1 presents the sociodemographic and anthropometric characteristics of the study participants, encompassing variables such as gender, marital status, working status, education level, body weight, height, waist circumference, and hip circumference. Body mass index (BMI) was calculated using the formula weight (kg) / height (m)2. Out of the 200 participants enrolled in the study, 139 (69.5%) were identified as female, while 61 (30.5%) were male. The mean age of the participants was 34.24 ± 11.03 years. The participants' BMI measurements ranged from 16.0 to 43.1 kg/m2. In terms of marital status, more than half of the participants (107 individuals, accounting for 53.5%) reported being unmarried. Furthermore, 129 participants (64.5%) were employed based on their working status.

Table 2 displays the correlations between various variables, including age, BMI, W/H ratio, EAT-40, IES-2, EPR, UPE, RHSC, and B-FCC. The correlation analyses revealed several significant findings. Firstly, there was a weak but significant positive correlation between age and BMI ($r = 0.105$, $p < 0.05$), as well as age and W/H ratio ($r = 0.118$, $p < 0.05$). Additionally, there was a moderate positive correlation between BMI and W/H ratio ($r = 0.472$, $p < 0.01$). Furthermore, IES-2 demonstrated a high positive correlation with RHSC ($r = 0.675$, $p < 0.01$), a moderate positive correlation with UPE ($r = 0.597$, $p < 0.01$), and B-FCC ($r = 0.413$, $p < 0.01$), and a weak positive correlation with EPR ($r = 0.196$, $p < 0.01$). RHSC exhibited a moderate positive correlation with B-FCC ($r= 0.416$, $p<0.01$), while UPE demonstrated a moderate positive correlation with RHSC ($r = 0.400$, $p < 0.01$). These findings indicate the relationships between different variables within the study, highlighting the strengths and directions of their associations.

Table 1. Characteristics and Anthropometric Measurements of Participants (n=200)

Variable	**n**	**%**
Gender		
Male	61	30.5
Female	139	69.5
Marital status		
Single	107	53.5
Married	93	46.5
Working Status		
Yes	129	64.5
No	71	35.5
Education Status		
≤12 years	173	86.5
12 years <	27	13.5
Total	200	100
Variable	**x̄ ± SD**	**Min - Max**
Weight (kg)	69.77 ± 16.54	41.0 - 132.0
Height (m)	1.66 ± 0.09	1.47 - 1.88
BMI (kg/m^2)	25.2 ± 4.9	16.0 - 43.1
WC (cm)	82.3 ± 16.5	50 - 133
HC (cm)	96.2 ± 10.5	60 - 130
W/C ratio	0.9 ± 0.1	0.60 - 1.5

BMI**:** Body Mass Index; WC: Waist circumference, HC: Hip circumference, W/C ratio: Waist / Hip ratio

In our study, out of the total participants, 38 individuals were identified as being prone to eating disorders (EDs), while 162 participants were not prone to EDs. We found that there was no significant difference in the total scores of IES-2, EPR, UPE, RHSC, and B-FCC between participants who were prone to EDs and those who were not ($p > 0.05$). Factors such as education level, BMI, income, presence of medical disorders, meal skipping status, daily water intake, and physical activity level did not have a significant impact on participants EAT-40 scores ($p > 0.05$).

However, we did observe that participants with an education level of over 12 years had higher UPE scores ($p = 0.021$). Additionally, participants who reported not engaging in physical activity or performing physical activity once or twice a week had higher EPR scores compared to those who engaged in physical activity every day or three to four times a week ($p < 0.05$).

Table 2. The Correlations Between Age, BMI, W/H Ratio, EAT-40, IES-2, and Sub-Dimensions Of IES-2

Variables		Age	BMI	W/H	EAT-40	IES-2	EPR	UPE	RHSC	B-FCC
Age	r	-								
BMI	r	0.105*	-							
W/H	r	0.118*	0.472**	-						
EAT-40	r	- 0.028	- 0.033	- 0.074	-					
IES-2	r	0.002	0.046	0.064	- 0,020	-				
EPR	r	- 0.089	- 0.058	- 0.069	0.045	0.196**	-			
UPE	r	0.021	0.056	0.063	- 0.036	0.597**	- 0,081	-		
RHSC	r	0.043	0.083	0.082	0.004	0.675**	0.006	0.400**	-	
B-FCC	r	0.047	- 0,021	0.049	- 0.038	0.413**	- 0.144**	0.257**	0.416**	-

Kendall's Tau b correlation coefficient *p<0.05, **p<0.01; BMI: Body Mass Index; W/C: Waist / Hip ratio

Daily water intake had an effect on participants who were not prone to EDs. Higher EPR scores were observed among participants who consumed 2400 ml or more of water daily compared to those who consumed 401-1000 ml (p = 0.012). Similarly, participants with a daily water intake of 2400 ml or more had lower B-FCC scores compared to those consuming 401-1000 ml (p = 0.009). Additionally, participants with a daily water intake of 2400 ml or more had higher B-FCC scores compared to those consuming less than 400 ml (p = 0.048).

DISCUSSION

Existing studies have consistently shown a negative relationship between body mass index (BMI) and intuitive eating (Herbert, Blechert, Hautzinger, Matthias, & Herbert, 2013; T. L. Tylka, Calogero, & Daníelsdóttir, 2015). The negative relationship between BMI and intuitive eating can be attributed, in part, to the rejection of dieting and the adoption of unconditional permission to eat. Intuitive eating involves honouring the body's hunger and fullness cues and allowing oneself to eat all types of food without judgment or restriction. This stands in contrast to traditional diets that impose strict rules and limitations on food intake. When individuals embrace intuitive eating, they may initially experience an increase in food consumption as they learn to trust and respond to their body's signals. This can result in temporary weight gain, especially for those who have previously engaged in food restriction or followed strict diets. However, over the long term, intuitive eating has been associated with more stable and healthy weight outcomes. By fostering a positive and balanced relationship with food and their bodies, intuitive eating helps individuals develop sustainable habits that support overall well-being. As mentioned earlier, the power of diets as predictors of weight gain has been well-documented. This further highlights the importance of shifting focus towards intuitive eating as a beneficial approach for promoting positive eating behaviors and maintaining a healthy weight (Keirns & Hawkins, 2019).

It was stated that the restrictive eating attitude that did not allow food similarly causes weight gain (van Strien, Herman, & Verheijden, 2014). The intuitive eating model, which focuses on rejecting diet culture and encouraging individuals to listen to their bodies hunger and fullness cues, has been associated with positive outcomes in weight management. This approach helps individuals develop a healthier relationship with food and their bodies, which can lead to more sustainable, long-term weight management. In contrast, eating without consciousness, or mindless eating, can lead to overeating and weight gain. Existing studies have reported a negative correlation between the increase in IES-2 scores and BMI, indicating that higher IES scores are associated with a decrease in BMI (Van Dyke & Drinkwater, 2014; Gast, 2015). However, the relationship between BMI and intuitive eating may vary based on gender. A study indicated that there was no relationship discovered between BMI and intuitive eating in young adult women (Horwath, Hagmann, & Hartmann, 2019). On the other hand, a study had found no significant relationship between BMI and IES-2 scores in males, unlike in females (Özkan & Bilici, 2021). This may be due to differences in social and cultural expectations around body size and eating behaviors for men and women. Further research is needed to fully understand the relationship between gender and intuitive eating outcomes. Nonetheless, intuitive eating is generally recognized as a positive

Table 3. The Relationship Between the Characteristic and EAT-40, IES-2, and IES-2 Sub-Dimensions

	≥30 Yes (n=38)						<30 No (n=162)						
Variables	**EAT-40[1] (n=38) Prone to EDs**	**IES-2 M [IQR] 3.48 [0.70]**	**EPR M [IQR] 3.00 [1.17]**	**UPE M [IQR] 3.38 [1.13]**	**RHSC M [IQR] 3.83 [1.00]**	**B-FCC M [IQR] 3.67 [1.33]**	**EAT-40[1] (n=162)**	**IES-2 M [IQR] 3.48 [0.70]**	**EPR M [IQR] 3.00 [1.17]**	**UPE M [IQR] 3.38 [1.13]**	**RHSC M [IQR] 3.83 [1.00]**	**B-FCC M [IQR] 3.67 [1.33]**	***p[1] value***
Total	37.00 [13]	3.39 [0.58]	3.08 [1.09]	3.38 [1.25]	3.75 [0.83]	3.67 [1.41]	17.00 [10]	3.48 [0.71]	3.00 [1.00]	3.44 [1.13]	3.83 [1.00]	3.83 [1.33]	***0.001****
Education													
< 12 years (n=173)	37.00 [15]	3.39 [0.48]	3.00 [0.92]	3.25 [1.01]	3.67 [0.83]	3.67 [1.50]	17.00 [10]	3.48 [0.68]	3.00 [1.13]	3.50 [1.00]	3.83 [0.96]	3.83 [1.33]	***0.001****
>12years (n=27)	41.00 [25]	3.70 [1.02]	3.33 [2.26]	4.00 [0.69]	3.83 [2.00]	3.67 [1.67]	16.5 [8.75]	3.39 [1.21]	3.17 [0.71]	3.13 [1.43]	3.83 [2.13]	3.83 [1.42]	***0.001****
p-value	*0.218**	*0.187**	*0.738**	***0.021****	*0.933**	*0.867**	*0.294**	*0.874**	*0.810**	*0.523**	*0.774**	*0.969**	
BMI (kg/m^2)													
<18.5 (n=8)	44.5 [-]	4.00 [-]	-	4.06 [-]	4.41 [-]	4.50 [-]	13 [4]	3.06 [1.65]	2.50 [0.84]	3.44 [1.69]	3.08 [1.92]	3.66 [1.92]	*0.071**
18.5-24.99 (n=103)	37.00 [9]	3.30 [0.61]	3.25 [1.25]	3.25 [0.96]	3.66 [0.96]	3.67 [1.42]	17 [9]	3.43 [0.70]	3.17 [1.00]	3.25 [1.25]	3.83 [1.17]	4.00 [1.17]	***0.001****
25.0-29.9 (n=57)	36.00 [16]	3.45 [0.54]	2.66 [1.42]	3.38 [1.19]	3.58 [0.79]	3.83 [1.08]	18 [12]	3.43 [0.74]	3.00 [1.00]	3.38 [1.13]	3.83 [0.83]	3.67 [1.0]	***0.001****
≥30.0 (n=32)	42.00 [21]	3.11 [1.30]	3.16 [1.71]	3.25 [1.65]	3.16 [2.05]	3.00 [2.17]	15.5 [11]	3.67 [0.43]	3.00 [1.29]	3.75 [0.72]	4.00 [0.79]	4.00 [1.25]	***0.001****
p-value	*0.621***	*0.298***	*0.457***	*0.437***	*0.393***	*0.235***	*0.089***	*0.062***	*0.205***	*0.078***	*0.041***	0.0853***	
Income Status													
Low (n=19)	31 [-]	-	-	-	-	-	18 [9]	3.34 [0.80]	3.33 [0.54]	2.94 [0.84]	3.58 [1.25]	3.66 [1.42]	*0.105**
Middle (n=161)	37 [14]	3.43 [0.57]	3.33 [1.42]	3.38 [1.25]	4.00 [1.16]	3.67 [0.84]	17 [17]	3.48 [0.70]	3.00 [1.17]	3.50 [1.00]	3.83 [1.00]	3.67 [1.33]	***0.001****
High (n=20)	36 [11]	3.02 [1.22]	2.47 [1.29]	3.44 [1.38]	3.41 [1.96]	3.33 [1.66]	9.5 [10]	3.59 [0.77]	3.00 [0.46]	3.88 [0.91]	3.75 [2.17]	4.00 [1.92]	***0.001****
p-value	*0.338***	*0.169***	*0.337***	*0.961***	*0.128***	*0.545***	*0.065***	*0.587***	*0.369***	*0.040***	*0.634***	0.697***	
Medical Disorder													
No (n=156)	37 [14]	3.39 [0.52]	3.00 [1.67]	3.38 [0.87]	3.67 [0.83]	3.67 [1.33]	17 [10]	3.48 [0.79]	3.00 [1.09]	3.50 [1.07]	3.83 [1.09]	3.67 [1.33]	***0.001****
Yes (n=44)	36 [14]	3.39 [0.96]	3.17 [0.50]	3.25 [1.63]	4.00 [0.83]	4.00 [2.0]	14 [11]	3.84 [0.59]	3.17 [1.25]	3.13 [1.25]	3.83 [0.83]	4.00 [1.00]	***0.001****
p-value	*0.446**	*0.949**	*0.775**	*0.568**	*0.924**	*0.308**	*0.073**	*0.816**	*0.184**	*0.467**	*0.844**	*0.931**	
Meal Skipped Status													
No (n=43)	38 [23]	3.52 [0.83]	2.83 [2.0]	3.75 [0.87]	3.50 [1.33]	3.67 [1.0]	15 [14]	3.54 [0.81]	3.17 [1.25]	3.56 [1.16]	3.83 [0.83]	4.0 [1.34]	***0.001****
Yes (n=157)	37 [13]	3.39 [0.52]	3.17 [1.0]	3.25 [0.88]	3.83 [0.83]	3.67 [1.66]	17 [10]	3.48 [0.75]	3.00 [1.0]	3.38 [1.13]	3.83 [1.04]	3.67 [1.33]	***0.001****
p-value	*0.124**	0.568*	*0.590**	*0.251**	*0.568**	*0.775**	*0.338**	*0.583**	*0.564**	*0.719**	*0.936**	***0.321****	
Daily Water Intake (ml)													
400 ↓ (n=13)	36.5 [-]	3.19 [-]	3.08 [-]	3.19 [-]	3.41 [-]	3.00 [-]	16 [8]	3.52 [0.31]	3.67 [1.17]	3.75 [0.75]	3.67 [1.83]	3.33 [1.34]	***0.026****
401-1000 (n=54)	36 [4]	3.13 [0.61]	3.33 [1.34]	3.25 [1.38]	3.33 [1.33]	3.00 [1.33]	18 [9]	3.23 [0.74]	3.33 [1.00]	3.13 [1.00]	3.33 [1.00]	3.33 [1.00]	***0.001****
1001-1800 (n=50)	41 [33]	3.50 [0.41]	3.33 [1.00]	3.31 [0.97]	3.91 [1.08]	3.50 [0.59]	17 [9]	3.48 [0.80]	3.00 [1.17]	3.38 [1.13]	3.83 [1.66]	4.00 [1.00]	***0.001****
1801-2400 (n=51)	38 [20]	3.54 [0.80]	3.00 [1.17]	3.87 [1.03]	3.83 [1.08]	4.33 [2.42]	15 [12]	3.52 [0.61]	3.00 [0.83]	3.25 [1.07]	4.00 [0.84]	4.00 [1.50]	***0.001****
2400 ↑ (n=32)	36 [17]	3.17 [0.35]	2.17 [0.67]	3.38 [0.94]	4.00 [0.50]	4.00 [0.67]	23 [12]	3.65 [0.92]	2.67 [1.00]	3.63 [1.00]	4.00 [2.00]	4.00 [1.00]	***0.001****
p-value	*0.457***	*0.463***	*0.141***	*0.549***	*0.920***	*0.142***	*0.099***	*0.530***	***0.012****	*0.139***	*0.197***	***0.002****	
Physical Activity													
I don't do (n=81)	37.5 [16]	3.39 [1.00]	3.25 [0.75] [a]	3.25 [1.56]	3.25 [1.29]	3.16 [1.17]	16 [10]	3.48 [0.79]	3.17 [1.17]	3.50 [1.13]	3.83 [0.83]	3.67 [1.00]	***0.001****
1-2/week (n=71)	37 [13]	3.52 [0.73]	3.33 [1.30] [a]	3.31 [1.28]	4.00 [0.79]	3.67 [1.50]	18 [10]	3.52 [0.80]	3.17 [0.92]	3.25 [1.31]	3.83 [1.34]	4.00 [1.50]	***0.001****
3-4/week (n=30)	35 [18]	3.13 [0.23]	2.16 [1.13] [b]	3.38 [0.62]	3.41 [1.04]	3.83 [1.42]	17 [11]	3.61 [0.85]	2.75 [0.83]	3.62 [1.07]	3.91 [1.75]	4.00 [1.33]	***0.001****
Every day (n=18)	36.5 [22]	3.30 [0.30]	2.08 [0.67] [b]	3.31 [0.66]	4.16 [0.95]	4.00 [0.50]	16.5 [14]	3.24 [0.49]	2.58 [0.83]	3.31 [0.63]	3.50 [1.13]	4.16 [1.17]	***0.001****
p-value	*0.846***	*0.220***	***0.008****	*0.905***	*0.285***	*0.345***	*0.743***	*0.244***	***0.001****	*0.499***	*0.378***	0.065***	

*Mann-Whitney U test (p<0.05), **Kruskal Wallis test (p<0.05). M: Median; IQR: Interquartile range; EAT-40: Eating attitude test-40; IES-2: Intuitive Eating Scale-2; EPR: Eating for Physical Rather Than Emotional Reasons; UPE: Unconditional permission to eat; RHSC; Reliance on Hunger and Satiety Cues; BFCC: Body-Food Choice Congruence. P[1]: Indicates the relation between EAT-40[1] (n=38) prone to EDs and EAT-40[1] (n=162)

approach to improving overall health and well-being, regardless of gender (Augustus-Horvath & Tylka, 2011; Bilici, Kocaadam-Bozkurt, Mortaş, Kucukerdonmez, & Koksal, 2018). We did not find a significant correlation between BMI and IES-2 and subdimensions. In our study, the average BMI was in the normal range so this may affect participants' nutritional habits and food preferences. Madden et al. stated that more advanced research is needed to clearly understand the relationship between intuitive eating and BMI (Madden, Leong, Gray, & Horwath, 2012).

As another variable, considering education status, significant differentiation was observed in the sub-dimensions of unconditional consent to eat. The Unconditional Permission to Eat (UPE) score was higher in participants over 12 years. It is important to emphasize the importance of education on eating attitudes, in addition to formal education, to promote healthy eating behaviors and prevent disordered eating patterns. Education on eating attitudes can include information on nutrition and the importance of a balanced diet, as well as strategies for listening to and responding to hunger and fullness cues. This type of education can be provided through a variety of channels, such as community workshops, online resources, or support groups. It is important to ensure that this education is accessible to individuals of all ages, genders, and socioeconomic backgrounds. By promoting education on eating attitudes, we can empower individuals to make informed choices about their eating behaviors and cultivate a positive relationship with food and their bodies. This, in turn, can lead to improved overall health and well-being. The current data show that awareness of intuitive eating has many benefits. Firstly, it was stated that intuitive eating training has a long-term effect on restoring physiological and psychological state over conventional weight loss aids (Gagnon-Girouard et al., 2010; Provencher et al., 2009). The intuitive eating approach has a holistic expansion in terms of promoting overall health and well-being, beyond just nutrition. By incorporating techniques that increase interoceptive sensitivity (i.e., the ability to recognize and respond to internal body signals such as hunger and fullness), individuals are better able to make informed choices about their eating behaviors and improve their overall health outcomes. In addition to reducing the risk of malnutrition, the intuitive eating approach can also improve physiological and psychological outcomes, such as reducing stress and anxiety related to food and body image. This, in turn, can help prevent the onset of chronic diet-related disorders such as obesity, diabetes, and cardiovascular disease (Cadena-Schlam & López-Guimerà, 2014). While studies had shown intuitive eating had significant positive associations with disordered eating (Lee, Madsen, Williams, Browne, & Burke, 2022; Rodgers, O'Flynn, Bourdeau, & Zimmerman, 2018), Bruce et all. (Bruce Ricciardelli, 2016) had shown that intuitive eating was inversely associated with symptoms of eating disorders and was negatively related to food occupation and binge eating behaviors. We found a negative association between IES-2 and EAT-40 scores. Differences may be caused by cultural differences. For instance, Akırmak et al. (Akırmak, Bakıner, Boratav, & Güneri, 2021) recommended that Turkish IES-2 total scores be computed without the UPE items. Would like to clarify that the statement "intuitive eating relates to eating disorders" may not be accurate. Intuitive eating is often seen as a potential treatment for disordered eating patterns, as it promotes a more balanced and positive relationship with food and the body. I need, individuals who have a history of disordered eating or are prone to eating disorders may initially struggle with adopting intuitive eating habits. This may be due to a variety of factors, including a history of dieting, body image concerns, or a lack of trust in their own hunger and fullness cues. However, with guidance and support, many individuals with a history of disordered eating have been able to successfully adopt intuitive eating habits and improve their overall health and well-being. It is important to note that intuitive eating is not a cure-all for eating disorders and that individuals with severe or chronic eating disorders may require specialized treatment from a qualified healthcare professional. In summary, while there may be some initial challenges for individuals with a history of disordered eating in adopting intuitive eating habits, it is generally seen as a positive and effective approach to promoting overall health and well-being.

Integrating intuitive eating, physical activity levels, and daily water consumption into one's lifestyle constitutes vital elements of physical self-care. Research suggests that individuals who engage in regular physical exercise tend to exhibit higher levels of total daily fluid intake and water consumption (San Mauro Martín et al., 2019).

Mindful eating, characterized by utilizing physical and emotional senses to fully experience and enjoy food choices, fosters an increased awareness of hunger and fullness, consequently promoting healthier eating habits. A structured literature review conducted by Warren (2017) revealed that mindfulness, mindful eating, and intuitive eating interventions have the potential to effectively modify eating behaviors and encourage the adoption of healthy dietary practices (Warren et al., 2017). Furthermore, our study identified a significant association between the subdimension of IES-2, specifically "Eating for Physical Rather Than Emotional Reasons," and physical activity levels. Specifically, a higher level of self-determined eating behavior was positively correlated with a greater dose of physical activity (Fernandes et al., 2023). These findings contribute to the growing body of academic knowledge, highlighting the importance of incorporating mindful and intuitive eating practices and engaging in regular physical activity for promoting healthy eating behaviors and overall well-being.

Strengths and limitations of the study

The statement effectively acknowledges both the strengths and limitations of the study. It recognizes that the predominance of female participants may restrict the generalizability of the findings, while also acknowledging that this gender bias is common in studies on eating behaviors and eating disorders. The omission of 24-hour dietary recall data is acknowledged as a limitation, as it could have provided valuable insights into participants' eating patterns and nutritional intake. However, it clarifies that intuitive eating and eating disorders cannot be adequately assessed based solely on one day of dietary data, emphasizing the need for a comprehensive approach to understanding these complex issues. Despite its limitations, the study is acknowledged for contributing to the existing literature on intuitive eating and its potential benefits for individuals with a history of disordered eating.

CONCLUSION

The present study focused exclusively on adults between the ages of 25 and 55. However, future research endeavours could encompass children and adolescents to obtain a more comprehensive understanding of the topic. Additionally, conducting additional cross-sectional and descriptive studies would be valuable in establishing causal relationships between intuitive eating behavior, eating attitudes, dieting, and anthropometric measurements. Policymakers could consider implementing holistic approaches, such as psycho-diet programs, which incorporate practices related to intuitive eating behavior and eating attitudes. These initiatives have the potential to mitigate overweight/obesity issues and support sustainable weight management. While the current study did not find any significant effects of sex on the dependent variables, it would be beneficial for future investigations to explore different sample groups to acquire comparable data and gain a deeper understanding of potential sex-related influences. It is crucial to acknowledge that the relationship between intuitive eating and eating attitudes in Turkey has not been extensively researched. Therefore, the meaningful results obtained from this study can contribute to the existing literature and hold original value in advancing our knowledge in this domain.

Ethics Committe Approval

Ethics committee approval was received for this study from the Yeditepe University Ethics Committee (Date: 27.03.2020 and No: 1218)

Author Contributions

Idea/Concept: H.D., T.N.S.; Design: H.D., T.N.S.; Supervision/Consultancy: H.D., T.N.S.; Analysis and/or Interpretation: S.Ç., H.D., T.N.S.; Literature Review: S.Ç., H.D., T.N.S.; Writing the Article: S.Ç., H.D., T.N.S.; Critical Review: S.Ç., H.D., T.N.S.

Peer-review

Externally peer-reviewed.

Conflict of Interest

The authors have no conflict of interest to declare.

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