

# Assessment of eating attitudes and body satisfaction among high school adolescents in Turkey

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**Summary.** *Background/aims:* This research aimed to investigate the relationship between eating attitudes and body satisfaction among adolescents attending high school in Ankara, the capital city of Turkey. *Methods:* The participants were 718 males and 761 females, in total 1479 adolescents aged between 13 and 18 years. The Eating Attitude Test-26 (EAT-26) and Body Cathexis Scale (BCS) were used to assess eating attitudes and body satisfaction respectively. Data from the study were evaluated statistically by chi-square test. *Results:* Our results showed that 2.93 % of males and 40.07 of females faced a high risk of having an eating disorder. Our findings confirm that females are more at risk of eating disorders. The BCS of males ( $90.8 \pm 20.8$ ) was found significantly higher than females ( $81.3 \pm 16.8$ ) ( $p < 0.001$ ), which indicates that females are less content than about their appearance. We also found that 6.3 % of males and 18.2 % of females thought that they were overweight, and 22.9% of females and 4.3 % of males perceived themselves as obese. While 58.6 % of males perceived their body image as correct, 65.8 % of females did not ( $p < 0.05$ ). *Conclusion:* Together these results confirm that female adolescents tend to be less satisfied with their weight and more likely to display disordered eating attitudes.

**Key words:** Adolescents, Eating Attitude Test-26, Body Cathexis Scale, Body Satisfaction

## Introduction

Adolescence is an important period which involves a transition from childhood to adulthood. Significant developments in physical growth, cognition, identity and sexuality occur in adolescents (1). Adolescents become increasingly concerned with body weight, shape and size when evaluating their physical appearances. Body image is also known to be an important component in the context of social interaction. Strong commercial pressure and popular cultural icons have influences in shaping adolescents' concept of ideal body weight which may cause even normal weight adolescents to misperceive themselves as overweight.

(2,3). Weight control, weight gain, and compensation behaviours are commonly seen in adolescents as they adapt to the changes in their physical appearance (4). Body dissatisfaction in adolescents is also accompanied by the risk of eating disorders which can manifest themselves anytime between the ages of 10 and 24.

Obsessive thinking about food, body image, fear of fatness are related with disordered eating attitudes observed in Turkey (5). It is also known that females in Turkey pay more attention to body shape and weight control than males (6). Many other studies report that females are more likely to have abnormal eating attitudes than males (7-11). Eating disorders are complex biopsychological disorders that usually have their

onset during adolescence (12). In a study conducted among 465 high school students aged 14–17 years, disordered eating was prevalent in 18.9% of adolescents, with higher prevalence in girls (26.4%) compared to boys (11.8 %). Here, socio-cultural factors including industrialization, urbanization, shifting of gender roles and societal norms were strongly associated with the development of these eating disorders (13).

The prevalence of eating disorders among children and adolescents is rising. Skipping meals, reducing meal portion size, leaving food behind, vomiting and exercising compulsively are the most common behaviours in adolescents. According to the literature, younger adolescents tend to present with anorexia nervosa, while older adolescents can present either anorexia nervosa or bulimia nervosa (14). Uzun et al. (2006) examined disordered eating attitudes and eating disorders among 414 female college students in Turkey. They found that 17.1% of subjects were classified as having disordered eating attitudes and the rate was 1% for eating disorders including anorexia nervosa (0.5%) and bulimia nervosa (0.5%) (15). Nishizawa et al. (2003) investigated the perception of self-physique and eating behaviour of high school students in Japan and reported that many girls were excessively preoccupied with thinness. The rate of eating problems was 11.2% for females and 2.4% for males (16).

This study aimed to evaluate the eating attitudes and body perception of high school students in Turkey.

## Methods

### *Participants*

The study population included 1479 adolescents, 718 males (mean age,  $16 \pm 2.01$  years) and 761 females (mean age,  $15 \pm 2.97$  years) from four public high schools in the capital city of Turkey, Ankara. The mean age of the study population was  $17 \pm 1.9$  years (range 13 - 18 years). This study examines adolescents of middle socioeconomic status. Adolescents were assured of the confidentiality of their responses. The study was conducted in compliance with the Helsinki Declaration. All the materials used in the study were reviewed and approved by the Executive Boards of the Schools.

### *Procedure and assessment*

The present study was conducted between September and December 2014. Before starting the study, informed consent was obtained from the headmasters of all schools and the parents of the students. The questionnaires were administered to the students during class hours. Researchers explained the nature of the study to all students and showed them how to complete the questionnaires. With the assistance of the teachers, students were invited to participate in the study and asked to fill out the questionnaires as honestly and accurately as possible. Students were assured of the confidentiality of their responses.

Body Mass Index (BMI) was calculated as weight (kg) / height (m)<sup>2</sup>. Students were classified according to their BMI into three groups as underweight (BMI < 18.5 kg/m<sup>2</sup>), normal weight ( $18.5 \leq \text{BMI} \leq 24.9$  kg/m<sup>2</sup>), overweight (BMI  $\geq 25.0$  kg/m<sup>2</sup>) and obese (BMI  $\geq 30$  kg/m<sup>2</sup>) (17).

The Eating Attitudes Test (EAT-26) is widely used to assess self-reported symptoms and has been shown to be a valid and reliable measure for eating disorders. The EAT-26 is an abbreviated 26-item version of the EAT-40 (18). It has also been used in non-clinical samples as a general screening measure for disordered eating attitudes. EAT-40 was adapted to Turkish by Savasir and Erol in 1989 (19). EAT-26 is highly correlated with the original 40-item version. In EAT-26 each item is answered on a six-point Likert scale, ranging from 1 to 6. A higher score is representative of more problematic eating attitudes and a cut-off of 20 is indicative of the risk of an eating disorder pathology. Higher scores mean higher levels of negative eating attitudes.

Body Cathexis Scale (BCS) is an assessment tool for measuring individuals' degree of satisfaction with their body functions and was developed by Secord and Jourard in 1953 (20). The participants rated their dissatisfaction with each body aspect on a five point Likert-type scale "1 = very dissatisfied" to "5 = very satisfied". The lowest score is 40 and the highest is 200. Higher scores reflected higher level of satisfaction. The scale was adapted to Turkish by Hovardaoglu in 1993 (21).

### Statistical analysis

The data obtained were evaluated by using the Statistical Packages for Social Sciences (SPSS) program for Windows (version 15.0; SPSS, Inc., Chicago). The descriptive statistics of continuous variables were expressed as the mean  $\pm$  standard deviation (S.D.). Chi-square test was used to analyze the differences between males and females for body weight perception, BMI and EAT-26.

### Results

In Table 1, the mean BMI values were found to be  $23.1 \pm 5.91$  for males and  $23.9 \pm 6.50$  for females. As shown in Table 2, 78.55 % of males and 76.09 % of females were of normal weight, 8.50 % of males and 11.03% females were overweight, while 2.92 % of males and 4.07 % of females were obese.

According to Table 3, the mean EAT-26 score was  $10.9 \pm 9.1$ . For males and females EAT-26 scores were  $10.7 \pm 9.8$  and  $11.1 \pm 8.8$  respectively. Females had higher score than males on EAT-26 but this was not significant statistically ( $\chi^2=0.46$   $p>0.05$ ). In total, 2.93

% of males and 40.07 % of females faced a high risk of having an eating disorder. BCS score was  $85.2 \pm 19.8$  in total. BCS score for males ( $90.8 \pm 20.8$ ) was significantly higher than females ( $81.3 \pm 16.8$ ) ( $\chi^2=2.927$ ,  $p<0.001$ ).

Table 4 shows that 81.5 % of males and 54.8 % of females perceived their body weight as normal. However 6.3% of males and 18.2% of females thought that they were overweight. In total, 22.9% of females and 4.3% of males perceived themselves as obese ( $\chi^2=160.7$   $p<0.01$ ).

Table 5 shows that 58.6 % of males perceived their body image as correct according to BMI, while in females this was only 34.2% ( $p<0.05$ ).

### Discussion

The present study set out to evaluate eating attitudes and body satisfaction among male and female high school adolescents in Turkey. It is known that weight control, weight gain, compensation behaviours and psychological problems are common among adolescents. During adolescence, dramatic changes occur in physical, cognitive and life domain (22). Our finding revealed that 40.07 % of females and 2.93% of males had high risk of abnormal eating attitudes according to the Eating Attitudes Test, EAT-26 scale. Females were more likely to have abnormal eating attitudes than males. This finding accords with the results of the other studies in the literature (23-26). Body pre-occupation, social pressures and the influence of the mass media, internationalisation of the thin ideal and a desire to lose weight, seem to be possible risk factors for eating disorders among female adolescents (27).

**Table 1.** Characteristics of participants categorized by gender (n=1479)

	Male n=718		Female n=761	
	$\bar{x}$	SD	$\bar{x}$	SD
Age (years)	16	2.01	15	2.97
Height (cm)	173.4	8.45	161	5.22
Weight (kg)	68.1	8.75	57.4	9.82
BMI(kg/m <sup>2</sup> )	23.1	5.91	23.9	6.50

**Table 2.** BMI of adolescents

BMI (kg/m <sup>2</sup> )	Male n=718		Female n=761		Total n=1479	
	s	%	s	%	s	%
<18.5 (underweight)	72	10.03	67	8.81	139	9.40
$\geq 18.5 < 24.9$ (normal)	564	78.55	579	76.09	1143	77.28
$\geq 25.0 < 29.9$ (overweight)	61	8.50	84	11.03	145	9.80
$\geq 30$ (obese)	21	2.92	31	4.07	52	3.52
Sum	718	100.00	761	100.00	1479	100.00

**Table 3.** EAT-26, BCS and risk estimates according to gender (n=1479)

	Male n=718	Female n=761	Total n=1479
	$\bar{x} \pm SD$	$\bar{x} \pm SD$	$\bar{x} \pm SD$
<b>Scores<sup>a</sup></b>			
EAT-26	10.7±9.8	11.1±8.8	10.9±9.1 $\chi^2=0.46$ p>0.05
Min.-Max.	0.0 – 1.02	0.0 – 98.9	0.0 – 99.0
BCS	90.8±20.8	81.3±16.8	85.2±19.8 p<0.001
Min.-Max.	21.0 – 141.1	41.2 – 161.1	21.4 – 161.1
<b>Risk Estimates<sup>b</sup></b>			
	n %	n %	
Low Risk	564 (78.55)	579 (76.08)	$\chi^2= 2.927$
Modarate Risk	133 (18.52)	151 (19.85)	p<0.01
High Risk	21 (2.93)	31 (40.07)	

<sup>a</sup> Data are mean  $\pm$ SD with minimum and maximum values given in parantheses

<sup>b</sup> Low risk, EAT-26 < 11, Modarate risk EAT-26 between 11–19, High risk EAT-26  $\geq$  20

**Table 4.** Perceived weights of males and females

	Underweight		Normal		Overweight		Obese		Total (n=1479)		p
	n	%	n	%	n	%	n	%	n	%	
Male (n=718)	57	7.9	585	81.5	45	6.3	31	4.3	718	100.00	$\chi^2=160.7$ p<0.01
Female (n=761)	31	4.1	417	54.8	139	18.2	174	22.9	761	100.00	

**Table 5.** Relationship between body image perception and BMI

	Male n=718		Female n=761		$\chi^2$	p
	n	%	n	%		
Correct	421	58.6	260	4.2	8.251	0.041*
Wrong	297	41.4	501	65.8		

\*p<0.05

Çelikel et al.(2008) conducted a study to determine the frequency and correlates of disordered eating attitudes in a university-sample female population in Turkey. They found no difference between adolescent females from low or middle/upper socioeconomic

groups in terms of measures of body image and eating behaviours. However they found that depression, obsessive-compulsive symptoms and phobic anxiety played an important role in disordered eating attitudes (28). Downs et al. (2007) examined depressive symptoms, body satisfaction and eating attitudes among overweight and non-overweight adolescents. They found that males scored higher on body satisfaction and lower on negative eating attitudes compared with females. The authors emphasized that efforts by females to maintain a thin or ideal body increases risk of body dissatisfaction and pathologic eating behaviour (39). Earlier, Johnson and Wardle (2005) used prospective data from a survey of 1,177 adolescent females to examine whether abnormal attitudes to eating and weight, low self-esteem and stress were as-

sociated with dietary restraint or body dissatisfaction. They found that body dissatisfaction was the strongest independent factor predicting eating attitudes and indicative of negative eating attitudes among adolescent females (30).

In our current study of high school students in Turkey, we found male and female BCS were  $90.8 \pm 20.8$  and  $81.3 \pm 16.8$  respectively ( $p < 0.001$ ). This is consistent with the findings of previous studies indicating that female are less content than males about their body (31,32). Canpolat et al. (2005) evaluated the relationship between dieting and body image, self-perception and BMI in high school adolescents. They saw that females were more dissatisfied with their body and frequently had a thinner body ideal in comparison to males (33). Gillen and Lefkowitz (2006) found that females are more oriented toward their appearance, evaluated their appearance less favourably, and are less satisfied with their body areas than males. Thinness is more stringent in female body ideal than in the male body ideal (34). In our study, we found that 6.3 % of males and 18.2 % of females thought that they were overweight. Moreover, 22.9% of females and 4.3% of males perceived themselves as obese. Body weight perceptions by gender were statistically significant ( $p < 0.01$ ). According to these results, female adolescents in Turkey tend to be less satisfied with their weight. Wong et al. (2014) reported that female adolescents seem to face issues with their body image to an even greater degree than their male peers. The concept of a continuing need to be slimmer may become entrenched in females' memories. Females believe that a slim body represents ideal feminine beauty (35). Fan et al. (2014) pointed out that female adolescents were more likely than male adolescents to have weight misperceptions. Factors such as BMI, school social influence, parental beliefs and peers' attitudes are the predictors of overweight misperception (36). In our study we also considered body image perception according to BMI. We found that 58.6% of males perceived their body image as correct, while 65.8% of females perceived their body image as wrong ( $p < 0.05$ ). Eidsdottir et al. (2014) indicated that higher levels of BMI were associated with higher depressive symptoms. However, this association was mediated entirely through perception of body image. The association was gender dependent, and

significantly stronger among female adolescents than male adolescents (37). Jáuregui-Lobera et al. (2013) conducted a study of 655 adolescents (mean age  $16.22 \pm 4.58$ ) and found that, with a normal BMI, 34% of females perceived themselves as overweight while in the case of males, that value was 22.40%. Overall, among those adolescents who were underweight, 63.80% perceived their weight at being normal. Misperceived body image would be a risk situation with regards to the development of eating disordered behaviours (38).

The present study has some limitations. Firstly, all outcome measures are of a self-reported nature and the data may be influenced by this assessment technique. It is possible that some students may have misreported some of the questions being asked. Secondly, the variables were assessed only from the adolescents' perspective. It is important to consider other sources of information, such as parents and peers. Thirdly, the study did not include an evaluation of lifestyle factors, family background and sociocultural influences on body dissatisfaction and disordered eating. Despite these limitations, the present study has some strengths in that it focused on a larger population of high school adolescents, and the results were obtained by using validated tools that can provide partial support to other studies of adolescents.

## Conclusion

This study confirms important information about disordered eating attitudes and body satisfaction among high school adolescents. Our results clearly indicate that special attention should be directed toward adolescent females as they are more likely to display disordered eating attitudes and less satisfied with their body. In Ankara we found sufficient evidence in high schools that nutrition education is necessary for promoting healthy eating attitudes and improving body weight and body image perception during adolescence.

Further longitudinal and experimental research on adolescents should include analysis of sociocultural variables and the influence of parents and peers. Such studies will better inform our understanding of the development of body dissatisfaction and disordered eating attitudes among adolescents.

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