Adolescents' perceptions about their weight and practices to lose weight

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KEY WORDS

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ABSTRACT

Purpose
This descriptive study aimed to determine perceptions of adolescents about their weight and practices to lose weight.

Methods
A convenience sample of adolescents (n=703) in grades 9 through 12 completed a questionnaire assessing demographic characteristics, perceptions about their weight, practices to lose weight and their information sources for losing weight. These students were then weighed and had their height measured. Body mass index (BMI) was calculated.

Results
According to the measured BMIs, 11.2% of students were underweight, 74.1% were a healthy weight, 6.4% were overweight and 8.2% were obese. Of the adolescents, 13.1% perceived themselves as underweight, 65.0% perceived themselves as having a healthy weight, 19.7% perceived themselves as overweight, and 2.2 % perceived themselves as obese. There was poor agreement between measured BMI and adolescents' perceptions ($p < .05$). Of the adolescents, 33% had tried/were trying to lose weight.

Conclusion
The study determined that there are differences between the real weights and self-perceived weights of adolescents. School training programs should include information on proper body weight and form, and healthy methods of weight loss.

INTRODUCTION

People's perceptions of their own weight can change. While some perceive their weight correctly, others do not. Among the misperceptions there are those who perceive their weight as normal although they are under the weight they really should be, and others who perceive their weight to be normal although they are overweight. This perception is determined by individuals' nutritional habits and physical exercise (Brownie 2006; Brener et al 2004; Desmond et al 1986). The greatest variations in weight perception are found among adolescents (Güneş and Altınok 2010; Cheung et al 2007; Desmond et al 1986).

Weight perception is one of the motivating factors for weight control behaviours and it is a better predictor than actual weight for adolescents to diet or exercise (Cheung et al 2007; Brener et al 2004). Several studies determined that individuals who perceive themselves as fat exhibit more behaviours intended to lose weight (Güneş and Altınok 2010; Brener et al 2004; Desmond et al 1986). Weight behaviours are multifaceted and complex, and their etiology is multi-factorial. Some behaviours are causative for overweight or obesity, some develop as a response, and some are associations. These behaviours vary from healthy practices to extreme forms of self-medication with diet pills, laxatives, diuretics, herbal therapy or purging. In the study conducted by Günes and Altinok (2010), 81.5% of the participating students stated that they exercise for weight control, while 53.2% stated that they diet. It was determined that 29.6% of the male students and 19.3% of the female students tried unhealthy and even dangerous weight control behaviours, such as diuretics, laxatives, weight-loss pills, powders and teas, and intentional vomiting.

Some research has been carried out on the perceptions of adolescents of their own weight (Rhoades et al 2011; Cheung et al 2007; Brener et al 2004; Barton et al 2004; Desmond et al 1986). However, research examining both the perceptions and the methods used to lose weight among adolescents is limited (Güneş and Altınok, 2010). So, in this descriptive study, the aim was to determine adolescents' perceptions about their weight and also their practices to lose weight.

METHODS

Study design

There are eighty-one public high schools in the Ankara District in Turkey. For this study, one public high school was selected randomly from Ankara. In this high school, grades 9–12 included 29 classes and comprised the setting for the study. All adolescents who agreed to participate in the study were enrolled in the study sample.

There was a total enrolment of 895 students in the school. Two students left the school, and one student had a chronic illness, so, 892 students made up the study sample. Three students did not want to participate in the study, and 41 students were absent from school during the study. For this reason, data were collected from 848 students. One hundred and forty-five of the 848 students had missing data, so the data from 703 students were evaluated (participation rate was 78.8%).

Data Forms

The data were collected using a single form. The form was developed by researchers based on the available literature (Güneş and Altınok 2010; Cheung et al 2007; He and Beyhon 2006; Brener et al 2004; Desmond et al 1986). The form consisted of 15 questions and collected the sociodemographic characteristics of the adolescents (age, gender, education level), their perceptions about their weight, practices used to lose weight and information sources about losing weight. The weight perceptions of adolescents were elicited with the sentence "I believe that my weight is . . .". Four options were given: Less than healthy weight (underweight), healthy, more than healthy weight (overweight) and much more than healthy weight (obese). Three questions were asked to determine the practices used to control weight. The first gave three options: Do they want to

lose weight, gain weight or maintain their weight? The second gave two options: Have they tried or/are trying to lose weight (yes or no)? The third question asked: What methods have you used to control your weight? Also, 'other' option was added at the end of each question. The form was given to the adolescents before the anthropometric measurements were taken.

Before the study, the forms were given to 10 adolescents from another high school in Ankara, Turkey to evaluate the clarity of the questions. According to the pre-evaluation of the questions, no alterations were required. Those adolescents' data were not included in this study.

Written informed consent was given by the adolescents. Students who did not want to participate in the research were excluded from the study. The study was approved by the review board of the Ministry of Education. Data collection was performed in November 2012.

Data Collection

Anthropometric Measurements: Anthropometric measurements were done by researchers. Before the measurements, adolescents were asked to take off their shoes, coats or heavy belongings. Weight was measured with a portable scale, and the obtained value was rounded to the nearest 0.1 kilogram (kg). Height measurements were done with students standing in an upright position next to the stadiometer. When measuring the adolescents' height, the obtained value was rounded to the nearest 0.1 centimetre (cm).

Body mass indexes were calculated as weight in kilograms divided by the square of height in meters. Considering the age and gender, students' BMIs were assessed according to percentile curves which Neyzi and his colleagues (2008) developed for Turkey. In the BMI percentile curve, it was assumed that those who were:

a) more than the 94th percentile were obese;
b) between the 85th and 94th percentiles were overweight;
c: between 5th and 84th percentiles were a healthy weight; and
d) less than 5th percentile were underweight (CDC, 2013).

Statistical analysis

The data were evaluated using the SPSS 12.0 program (Statistical Package for Social Science; Chicago, IL, USA). Frequency and percentage distributions related to the data were given. The relation between variables measured categorically was examined via the Chi-square test. For comparisons between groups, the Mann-Whitney U test for two groups, and the Kruskall-Wallis H test for three or more groups, were used for continuous variables. Cohen's Kappa test was used to analyse the inter-rater agreement. Kappa values over .75 were considered as excellent, .40 to .75 as fair to good, and below .40 as poor. A p value of < 0.05 was considered statistically significant.

RESULTS

Table 1 shows the descriptive characteristics of adolescents in the study. The average age of the students was 15.9 ± 1.17 years, and the majority of these were female (56.8%) (table 1).

According to measured BMIs, it was found that 11.2% (n=79) of students were underweight, 74.1% (n=521) were a healthy weight, 6.4% (n=45) were overweight, and 8.2% (n=58) were obese. According to the perceptions of the adolescents, it was found that 13.1% (n=92) of the adolescents considered themselves to be underweight, 65% (n=447) of adolescents considered their weight to be healthy, and 19.7% (n=139) of adolescents considered themselves to be overweight.

Table 1: Characteristics of the adolescents (*n*=703)

Characteristics	*n*	%
Adolescent age M (SD)	703	15,9±1,17
Adolescent gender		
Female	399	56,8
Male	304	43,2
Measured BMIs of adolescents		
Underweight	79	11,2
Healthy weight	521	74,2
Overweight	45	6,4
Obese	58	8,2
Perceptions about their weight		
Underweight	92	13,1
Healthy weight	457	65,0
Overweight	139	19,7
Obese	15	2,2

Table 2: Comparison of BMIs of adolescents and weight control measures (*n*=703)

	Measured BMIs of adolescents				
	n (%)	*Mean±SD*	*Min.- Max. Score*	*Test**	*p value*
Tried/trying lose weight					
Tried/trying	232 (33,0)	23,42±2,95	15,3-37,0	25545	0,000 [α]
Not tried/ trying	471 (77,0)	20,44±3,5	13,7-34,2		
Preference about their weight					
Gain weight	172 (24,4)	19,1±2,3	13,7-32,8	220,61	0,000 [α]
Lose weight	242 (34,4)	23,8±3,7	15,3-37,0		
Maintain weight	289 (41,2)	20,7±2,3	14,8-30,9		
Information sources to control weight					
Adults					
Yes	144 (20,4)	23,3±3,9	15,35-35,8	24976,5	0,000 [α]
No	559 (79,6)	20,9±3,1	13,72-37,02		
TV/internet					
Yes	102 (14,5)	22,97±4,1	15,35-35,80	22881,0	0,000 [α]
No	601 (85,5)	21,15±3,2	13,72-37,02		
Peers					
Yes	69 (9,8)	22,9±3,6	15,81-32,65	15448,0	0,000 [α]
No	634 (90,2)	21,2±3,3	13,72-37,02		
Journals/books/written materials					
Yes	63 (8,9)	22,40±3,7	15,35-35,80	16393,0	0,014 [α]
No	640 (91,1)	21,32±3,4	13,72-37,02		
Health Professionals					
Yes	61 (8,6)	23,15±4,6	15,35-37,02	14818,8	0,002 [α]
No	642 (91,4)	21,25±3,2	13,72-35,80		

*Group comparisons Mann Whitney-U test for two groups and Kruskall-Wallis H test for three groups.

[α] Significant at p < 0·05

Table 2 shows a comparison of adolescent BMIs and weight controls. It was found that 33% (n=232) of adolescents had tried/were trying to lose weight. Average BMI values were significantly higher in adolescents who tried to lose weight than in ones who did not try (U=25545; p=0.000). Two hundred and eighty nine (41.2%) adolescents preferred to maintain their weight. Average BMI values were found to be more elevated in adolescents who wanted to lose weight than in those who wanted to maintain or gain weight (H=220,61; p=0.000).

It was found that adolescents preferred adults (parents, family members, and teachers) and the TV/internet rather than health professionals as information sources for losing weight. Average BMI values were found to be higher in adolescents who received information from adults, TV/internet, peers, written material and health professionals (36.8% medical doctor, 27.3% dietician, 20% nurse, 15.7% pharmacist) than in those who did not (p<0.05).

It is not shown in table 2, but the number of adolescents who tried to lose weight was found to be statistically higher in girls than in boys (χ^2=34,586; p=.000). Adolescent age and socioeconomic level was not found to be statistically related with attempts to lose weight (p>0.05).

Table 3: Adolescents' measured BMIs and weight perceptions

	Measured BMI					
	Underweight	***Healthy weight***	***Overweight***	***Obese***	***Cohen's Kappa***	
Perception of BMI by adolescents	*n* (%)	*n* (%)	*n* (%)	*n* (%)	Kappa	*p*
Underweight	36 (45,5)	55 (10,5)	0 (0,0)	1 (1,8)	0,279	0,031[σ]
Healthy weight	42 (53,2)	385 (73,9)	19 (42,2)	11 (18,9)		
Overweight	1 (1,3)	76 (14,6)	25 (55,5)	37 (63,7)		
Obese	0 (0,0)	5 (1,0)	1 (2,3)	9 (15,6)		
Total	79 (100,0)	521 (100,0)	45 (100,0)	58 (100,0)		

σ Significant at p < 0·05

Table 3 shows that there was poor agreement between measured BMI and adolescents' perceptions (p<.05). In the study, 42 of 79 students who were underweight (53.2%) considered their weight to be healthy. Nineteen of 45 adolescents who were overweight (42.2%) considered themselves to be of a healthy weight, and 63.7% of obese adolescents perceived themselves as overweight (χ^2 = 268,894; p = .000). Four hundred and fifty-five of 703 adolescents (64.7%) classified their weight status accurately.

Table 4 presents a comparison of BMIs and methods used by adolescents to lose weight. Average BMIs were found to be statistically higher in adolescents who used physical activity, diet, herbal therapy and vomiting to lose weight than in those who did not use such methods (p<0.05). Use of medication to lose weight did not cause significant differentiation in BMIs of adolescents (p>0.05). However, statistically this was not found to be important: BMIs of adolescents who used medications were higher than BMIs of those who did not use medications.

It is not shown in table 4 but physical activity (χ^2 = 214,4; p=.000), diet (χ^2=182,568; p=.000) and herbal therapy (χ^2=22,566; p=.000) methods were used more in adolescents who wanted to lose weight than in adolescents wanting to maintain or gain weight.

Table 4: Comparison of BMIs and methods used to lose weight (*n*=703)

Methods used to lose weight	n (%)	Mean±SD	Min.- Max. Score	Mann Whitney U Test	*p* value
Physical activity					
Yes	169 (24,0)	23,4±3,7	15,3-37,0		
No	534 (76,0)	20,8±3,1	13,7-34,2	24900,0	0,000
Diet					
Yes	140 (19,9)	23,9±3,9	15,3-37,0		
No	563 (80,1)	20,8±3,0	13,7-35,8	19911,5	0,000
Herbal					
Yes	17 (2,4)	24,6±4,7	17,7-35,8		
No	686 (97,6)	21,3±3,4	13,7-37,0	3364,0	0,003
Throwing up					
Yes	13 (1,8)	23,6±3,7	17,2-29,7		
No	690 (98,2)	21,4±3,4	13,7-37,0	2793,0	0,020
Medication					
Yes	10 (1,4)	22,0±2,9	19,4-29,4		
No	693 (98,6)	21,4±3,5	13,7-37,0	3068,0	0,538

DISCUSSION

In terms of weight control, individuals' self-perception of their bodies is important, and especially so for adolescents. Due to the period they are in, adolescents are more concerned with their bodies and appearance, and their perceptions and attitudes in this regard affect their nutritional habits and physical activities (Erkan 2011; Story et al 2002; Neumark-Sztainer and Hannan 2000; Cash and Pruzinsky 1990; Kaplan et al 1988).

Perception of weight is how an individual feels about their weight. So, perceptions of weight will vary among people (Güneş and Altınok 2010; Cheung et al 2007; Brener et al 2004; Neumark-Sztainer and Hannan 2000; Desmond et al 1986). In the study carried out by Brener et al (2004), it was reported that while 42.9% of adolescents perceived their weights correctly, more than half had misperceptions. While approximately three-quarters of the adolescents participating to our study had healthy weights, based on their BMI, only just over half of the adolescents perceived their weights as being healthy. This revealed the differences between the measured body mass indexes of the adolescents and their perceptions about their weight (table 3). According to Brener et al (2004), this is due to the tendency of adolescents to perceive their weights as either below or above a normal weight. Many other studies also support our study findings on this point (Güneş and Altınok 2010; Cheung et al 2007; Brener et al 2004).

While most adolescents are over-sensitive about their physical appearance and body weight, in general, females want to lose weight, while males want more muscle, and therefore want to gain weight. Skipping meals, using diet pills, laxatives, diuretics and going on strict and starvation diets in order to control body weight, or lose weight, negatively affect both growth and health (Manal et al 2010). In the present study, the weight reduction efforts of the adolescents with high BMIs were found to be statistically higher than those of the adolescents with low BMIs (table 2). In the study conducted by Güneş and Altinok (2010), it was stated that individuals describing themselves as overweight made an effort to lose weight. In our study, it was determined that adolescents perform physical activities, diet, use herbal remedies, throw up and use medication in order lose weight (table 4). Güneş and Altinok's (2010) study supported our findings. The adolescents participating in our study indicated that exercising is the method they used the most for weight control.

Adolescents' healthy-life behaviours are strongly influenced by their social environments, which include family, friends, and peer networks. Interpersonal processes and relationships within the family and with friends, neighbours, and acquaintances, all have a substantial impact on food choices, eating behaviours and a sedentary life-style. Interpersonal influences can affect healthy-life behaviours through mechanisms such as modelling, reinforcement, social support, and perceived norms (Manal et al 2010; Story and Neumark-Sztiiner 2002). In our study the sources of information on weight control were put in the order of adults, TV/internet, peers, books/magazines and health professionals, an order that was found to be statistically significant (table 2). Health professionals, such as doctors, nurses and dieticians, have important roles in initiating protective work in this area, encouraging individuals to adopt positive life behaviours, enabling weight loss in a safe and effective way, and acting as consultants in weight management programs (Fabricatore and Wadden 2003). In our study, the least utilised source of information was found to be the health professionals, and health professionals were not even included as a source of information. This suggests that health professionals need to be more knowledgeable and sensitive on this matter.

Nurses have important roles to play in starting health promotion activities, in encouraging positive life behaviours, in consulting and advocating for weight management programs (AMA 2014; Toruner and Savaser 2010; Murray et al 2010 Yurt 2008). On the other hand, school health nurses could give correct messages to children and adolescents by conducting healthy life programs in schools, and by collaborating with the family and school (Murray et al 2010).

CONCLUSION

In conclusion, the study determined that there are differences between the measured weights and self-perceived weights of adolescents. Based on these results, the participating adolescents were informed of their correct BMI value, and trained in the importance of healthy-life behaviours, and in the health problems that can be caused by eating disorders, together with the solutions. Counsellors of students who were determined to be significantly over or underweight, according to the BMI percentile values calculated from the anthropometric measurements, were contacted so that they could inform the students' parents. In addition, the staff of the community health centre, of which the school is a member, were informed regarding the findings of the study. School training programs should include information on correct body weight and form, and healthy methods of weight loss.

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