

Unhealthy Body Perception among Turkish Youths: Socioeconomic Status and Social Comparisons

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ABSTRACT

The purpose of this study was to determine the effect of socioeconomic status (SES) and social comparisons on body perception, and to identify their relationship to unhealthy behaviours and changing body structures, by assessing body perception in youths. A questionnaire was administered to 640 university students. The topics covered included SES, body definitions, behaviours related to body weight (such as exercise, dieting, starving, using diet foods, drug use, and bingeing and purging) and a social comparison scale. The prevalence of heavy exercise (42.9%) among male students was significantly higher in the low-income group ($p < 0.01$), whereas it was significantly higher (61.7%) among female students in the high-income group ($p < 0.001$). Behaviours such as dieting and starving for more than 24 hours were more common among female students in the high-income group ($p < 0.01$). The average social comparison scores were significantly lower among students with a higher body mass index. The social attractiveness subscale scores were significantly lower ($p < 0.05$) among students with unhealthy body definitions. The components of attractiveness showed a clear correlation among students with unhealthy body definitions. As well as the increasing prevalence of obesity in developing countries, unnecessary body-measurement controls and »ideal« body images are affecting the behaviour of youths. Gender is related to most of these behaviours. Understanding the relationship between social comparisons and body appearance in adolescent females and males can be facilitated by examining certain features of attractiveness.

Key words: body perception, body weight, social comparisons, socioeconomic factors, youths

Introduction

Although body perception is a multi-dimensional concept, it can be loosely defined as an individual's satisfaction with their present physical shape (that is, their body, figure and general appearance)¹. Body perception has three components: perceptivity (that is, an individual's body image), conductivity (that is, the opinions and feelings of a person about their own body, and their ideal body image) and behaviour (such as restricted eating, bingeing and vomiting, heavy exercise or dieting)². The importance of body perception is evident from its association with the risks of eating disorders³, depression and low self-confidence⁴⁻⁸.

Emerging adulthood is a significant life stage that is characterized by physical, emotional, psychological and social changes. The physical changes that manifest during this period can cause appearance-based problems in both males and females. Males typically have positive

feelings about the changes in their bodies, such as increased muscle mass, which can be socially beneficial⁹. However, after adolescence, young girls often begin to feel uneasy about their body fat, which does not conform to the »social ideal« in a »thin body culture«¹⁰. Too much weight can have a negative effect on the happiness of adolescent girls¹¹.

Festinger emphasized that social comparison is the major variable in social relationships, and developed the first comprehensive theory of social comparison¹². Social comparison is an important factor that contributes to »body perception«⁸.

Festinger suggested that, while opinions are easily changed, non-social constraints can lead to different processes when social comparisons of ability are made. Furthermore, Festinger suggested that self-evaluation drives

individuals to choose situations that allow them to minimize the differences between themselves and those they are comparing themselves with. In the absence of such opportunities, individuals will avoid making comparisons¹³. Festinger hypothesized that people are motivated to develop accurate assessments of their abilities and beliefs, although he noted that there are rarely objective standards with which individuals can compare themselves; hence, they resort to comparing themselves with others^{13,14}.

Festinger suggested that, as people tend to strive to improve themselves, they tend to compare themselves with others who are similar but slightly more skilled¹³. However, Wills suggested that, because individuals are motivated to enhance their self-esteem, they also engage in downward comparisons, particularly when under threat¹⁵. In a comprehensive review, Buunk and Ybema further refined this theory by suggesting the identification-contrast model, in which individuals prefer to identify upwards and to contrast downwards. Buunk and Ybema suggested that upwards comparisons are performed only if there is opportunity for self-improvement and the situation is controllable. In particular, upwards comparisons are predicted to assist individuals in problem-focused coping, while downwards comparisons might allow individuals to engage in emotion-focused coping¹⁶.

The results of these investigations support the relationship between social comparison and body perception. However, there are some important restrictions. First, although there is clear evidence of the use of social comparison among adolescents to evaluate their academic performance relative to that of their contemporaries, little is known about social comparisons that are related to body appearance during adolescence¹⁷. Understanding physical changes and the importance of body appearance for self-confidence might provide useful information about social comparisons in both sexes, and could help to understand the dynamics of these changes and adolescents' expectations about their body appearance⁸. Because of increasing anxieties about the body perception of male adolescents, recent investigations have begun to examine the similarities and differences with gender in social comparisons^{18,19}.

Contemporaries are the most important components of adolescents' lives, and play an increasingly important role in defining social expectations, forming identifications and making self-evaluations⁸. Feeling accepted in the classroom and being supported by friends are some of the most important concerns for adolescents²⁰. In terms of social comparisons, evaluations of contemporaries among university students are effective²¹.

The aim of this questionnaire-based cross-sectional study was to determine the relationship between the body perceptions of youths and the socioeconomic status (SES) of their families based on a social comparison scale.

Materials and Methods

Subjects

A total of 650 students at Baskent University in Ankara, Turkey, were selected by stratified sampling. Students who were undertaking a preparatory year (studying English language) or in one of the four university years were selected from 39 different departments using a systematic circular method. All participants were asked to fill out a questionnaire in order to determine their body perceptions and social comparison conditions, which included a Turkish version of the social comparison scale.

Questionnaire

The section about body perception included questions on self-description, plans concerning body weight, dieting and exercising behaviours, use of drugs without physician control, and bingeing and vomiting behaviours.

The requested data on socioeconomic conditions included living status (that is, »with family« or »alone«), parental education levels (that is, »did not graduate from high school«, »graduated from high school« or »graduated from university«), parental occupations and annual family income. Annual income portions ranked from minimum to maximum²².

The questions about body perception were adapted from The Youth Risk Behaviour Survey of The Centers for Disease Control and Prevention (CDC). Queries about unhealthy body weight were grouped under six headings (heavy exercise, diet, no eating during 24 hours, using dietary products, using drugs, eat-purge). Lack of physician control for all of the behaviours was determined as a prior condition. As described in the CDC, heavy exercising was defined as physical movements that lasted for at least 20 minutes accompanied by an increased breathing rate, extreme sweating and stretching of the body muscles. Dieting was defined as reducing the calorie intake by limiting daily food intake, skipping meals or using diet products (that is, sources of nutrients defined as diet, diabetic, calorie-reduced, and/or those sweetened by saccharin and/or aspartam). Starvation was described as not eating for more than 24 hours. Uncontrolled use of laxatives and/or diuretics to lose weight was addressed in the drug-use section. Bingeing and vomiting behaviour was addressed in questions about bulimic behaviours. The questions related to SES were composed by the investigators.

To ensure the reliability and validity of the questionnaire, a pilot study was performed with a separate group of 56 students. The Kappa statistics were in the range of 0.91 to 1.0 in the pilot study for the reliability of the questionnaire²³.

Body Mass Index

Based on the calculated body mass index (BMI) values, the study group was divided into two groups: an overweight group and a normal/underweight group. This classification was based on the hypothesis that the BMI

method of determining fat tissue has reliability and validity in both adolescent and young populations, and tends to produce more accurate obesity measurements²⁴.

Youths with a BMI of 25 or above are classified as overweight, while those with a BMI of less than 25 are underweight or normal²⁵. Among the study group, 548 individuals (86%) were underweight (BMI <20) or normal (BMI 20–25) and 88 individuals (14%) were overweight (BMI >25).

Turkish version of the social comparison scale

The social comparison scale designed by Gilbert and Trent, which included five items, has been modified by adding further items to produce the Turkish version, which includes 18 items²⁶. This version of the scale is scored, like a Likert scale, between 1 and 6; high scores indicate the positive-self side of the scheme, while low scores indicate the negative-self side of the scheme. The Cronbach alpha reliability coefficient of the scale is 0.79²⁶.

Before the main study, a validity and reliability analysis of the Turkish version of the social comparison scale was performed with a separate group of 56 university students. In order to determine the structural validity of the six-point Likert-type dimension scale, an analysis including 18 items was performed using SPSS[®] version 11.5 with no limitations on the number of factors. The results showed that three factors explained 66.3% of the

total variance. After examining the variant percentages, we found that the 18 items in the scale could be divided into three factors. A varimax rotation showed that these three factors explained 56.7% of the variance. When the items related to these factors were examined, the first factor was defined as 'social class components', the second factor was defined as 'attractiveness components' and the third factor was defined as 'social merits'; the subscales were also classified in this way. The scale included 10 items after excluding those with low correlations: the social class components were »inadequately/adequately-highly qualified«, »capable/incapable« and »with self-esteem/without self-esteem«; the attractiveness components were »not liked/liked«, »alone/not alone«, »excluded/accepted« and »antipathetic/sympathetic«; and the social merit components were »impatient/patient«, »intolerant/tolerant« and »untidy/tidy«. The correlation between the items forming the scale and the total score ranged from 0.43 to 0.78, the Cronbach alpha value for the total score was 0.893, the test-retest reliability was 0.918 and the internal consistency value was 0.878. The Spearman-Brown split half value was 0.892 ($p < 0.0001$)²⁷.

Process

This study was executed with the students' permission and was approved by the Institutional Review Board of Baskent University. All analyses were performed using

TABLE 1
DISTRIBUTION OF BODY MASS INDEX AND DEMOGRAPHIC FEATURES OF PARTICIPANTS ACCORDING TO GENDER AND YEARS

Characteristics	Gender						Years								Total (X±SD)	
	Male n=313 (X±SD)		Female n=327 (X±SD)		Prep. n=122 (X±SD)		1 n=158 (X±SD)		2 n=132 (X±SD)		3 n=138 (X±SD)		4 n=90 (X±SD)			
Age	21.6±2.0		21.2±2.0***		20.6±1.6		20.3±1.9		21.6±2.0		22.2±1.7		23.1±1.5†		21.4±2.0	
BMI	23.2±3.6		20.3±3.4†		21.2±4.3		21.1±2.3		22.2±3.5		22.4±4.9††		21.7±3.3		21.7±3.8	
Income Groups*	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
First 20%	49	16.7	69	23.3	38	36.5†	32	21.6	26	21.3	14	10.6	8	9.5	118	20.0
Second 20%	27	9.2	43	14.5	8	7.7	22	14.9	14	11.5	16	12.1	10	11.9	70	11.9
Third 20%	114	38.8	82	27.7	34	32.7	44	29.7	32	26.2	54	40.9	32	38.1	196	33.2
Fourth 20%	63	21.4	55	18.6	8	7.7	22	14.9	36	29.5†	26	19.7	26	31.0	118	20.0
Fifth 20%	41	13.9	47	15.9	16	15.4	28	18.9	14	11.5	22	16.7	8	9.5	88	14.9
Mother Education																
<High school	43	13.7	73†	22.3	28	23.0	28	17.7	32	24.2	18	13.0	10	11.1	116	18.1
High school	111	35.5	149†	45.6	56	45.9	60	38.0	50	37.9	54	39.1	40	44.4	260	40.6
>High school	159	50.8	105†	32.1	38	31.1	70	44.3	50	37.9	66	47.8	40	44.4	264	41.3
Father Education**																
<High school	30	9.6	46††	14.1	14	11.7	24	15.2	16	12.1	12	8.7	10	11.1	76	11.9
High school	65	20.8	91††	27.8	42	35.0	38	24.1	34	25.8	30	21.7	12	13.3	156	24.5
>High school	218	69.6	190††	58.1	64	53.3	96	60.8	82	62.1	96	69.6	68	75.6†	406	63.6

* Unknown=50, ** Unknown=2, Significant at *** $p < 0.05$, † $p < 0.001$, †† $p < 0.01$, Prep – students at this university undergo a preparatory year of English language study, BMI – body mass index

SPSS® version 11.5. χ^2 statistics were used to investigate the relationships between body perception, SES and the social comparison scale. The logistic regression method was used to determine the relationship between individual risk behaviours and gender, age, year of study, parental education level, living with parents, parental occupation and annual family income.

Results

Of the 650 selected students, 10 (1.5%) did not participate in the study. A total of 313 of the 640 students who took part were male (48.9%) and 327 were female (51.1%). The average age was 21.4 years (SD=2.0). The average age of the females was 21.2 years (SD=2.0), while that of the males was 21.6 years (SD=2.0). (Table 1)

The demographic features of the participants, according to gender and year of study, and the average BMI and age are shown in Table 1. The average age of the males was significantly higher than that of the females. Among the females, the rates of the mother being a high school graduate and the father being a university graduate were significantly higher than those among the males. The average BMI was 20.3 (SD=3.4) for females (30.2 for overweight females and 19.9 for normal/underweight females). The average BMI was 23.2 (SD=3.6) for males (27.6 for overweight males and 21.8 for normal/underweight males). When the demographic features according to year of study were examined, the rate of the father being a university graduate was significantly higher among first and third year students. The average BMI was higher in the more senior students (22.2 (SD=3.4) in second year students versus 22.4 (SD=4.9) in third year stu-

dents). Considering the income-group distribution, the first 20% contained more preparatory year students, the fourth 20% contained more second year students (29.5–36.5%), and the third 20% contained more students from the other years.

The rates of perceptive, conductive and behavioural conditions of young people relating to their bodies, according to gender and year of study, are shown in Table 2. The body-appearance evaluations were coded as »healthy« or »unhealthy« for BMI by comparing the expressions that the youths used to describe their bodies (that is, »thin«, »normal« or »overweight«) with the calculated BMI results. An unhealthy body definition, according to these criteria, was seen at high rates among male third year students and female fourth year students. Behaviours such as heavy exercising without physician control, dieting, starving for more than 24 hours, using diet products, drug use, and bingeing and purging were investigated according to the conductive and behavioural components of the body perceptions of young people.

The rate of heavy exercising was significantly increased among first year males and second year females. In both sexes, dieting behaviour had an increased prevalence among first year students. Although behaviours such as starving for long periods and drug use were observed as lower rates than other behaviours, the former was significantly more prevalent among fourth year males and first year females. Drug use was recorded among second year students of both sexes. Although eating diet foods was most common among first year males and second year females, it decreased during the following years. Bulimic behaviour was observed among second year males. Relatively high rates of bulimic behaviour were found in

TABLE 2
RATES OF UNIVERSITY STUDENTS' PERCEPTIVE, CONDUCTIVE AND BEHAVIOURAL CONDITIONS RELATED WITH THEIR BODIES ACCORDING TO GENDER AND YEARS.

Characteristics	Unhealthy body image	Heavy exercise	Diet	No eating during 24 hours	Using dietary products	Using drugs	Eat-purge
Males (n=313)							
Years							
Prep	21.3	42.6	27.7	4.3	10.6	–	–
1	11.4	34.1	11.4	NA	NA	–	–
2	23.5	29.4	29.4	2.9	8.8	2.9	2.9
3	24.2	27.3	27.3	3.0	9.1	–	–
4	22.7	18.2	13.6	4.5	4.5	–	–
p-value	<0.01	<0.05	<0.001	<0.01	<0.001	<0.01	<0.001
Females							
Years							
Prep	24.0	45.3	38.7	2.7	25.3	–	2.7
1	22.9	42.9	48.6	5.7	20.0	–	2.9
2	25.0	53.1	40.6	3.1	28.1	3.1	9.4
3	25.0	38.9	41.7	2.8	27.8	–	–
4	26.1	26.1	34.8	4.3	17.4	–	–
p-value	<0.001	<0.05	<0.01	<0.001	<0.001	<0.001	<0.01

Prep – Students at this university undergo a preparatory year of English language study

TABLE 3
RATES OF STUDENTS' PERCEPTIVE, CONDUCTIVE AND BEHAVIOURAL CONDITIONS RELATED WITH THEIR BODIES
ACCORDING TO SOCIOECONOMIC FACTORS

Components	Mother Graduate			Father Graduate			Groups of Income (20%)				
	High School						1st	2nd	3rd	4th	5th
	Under	Yes	Above	Under	Yes	Above					
Males											
Unhealthy Body Image	30.2	18.9	17.6	26.7	21.5	18.3	8.2	37.0	21.1	15.9	24.4
Heavy exercise	25.6	25.2	35.8	20.0	33.8	31.2	42.9*	29.6	25.4	25.4	22.0
Diet	20.9	21.6	21.4	20.0	23.1	21.1	16.3	22.2	19.3	20.6	22.0
No eating during 24 hours	–	1.8	3.8	–	3.1	2.8	–	–	3.5	3.2	4.9
Using Dietary products	7.0	9.9	3.1	16.7	3.1	5.5	2.0	14.8	6.1	6.3	7.3
Using Drugs	–	1.8	–	–	3.1	–	–	–	–	3.2	–
Eat-purge	–	1.8	1.3	–	3.1	0.9	–	–	1.8	3.2	–
Females											
Unhealthy Body Image	34.2	16.8	28.6	34.8	22.0	23.2	23.2	27.9	26.8	25.5	17.0
Heavy exercise	47.9*	43.0	37.1	52.2	30.8	45.3	30.4	27.9	42.7	36.4	61.7**
Diet	53.4	30.9	47.6	56.5	29.7	43.2	37.7	32.6	26.8	41.8	70.2*
No eating during 24 hours	2.7	4.0	3.8	–	4.4	4.2	–	–	4.9	3.6	12.8*
Using Dietary products	23.3	23.5	25.7	28.3	19.8	25.3	24.6	14.0	18.3	25.5	31.9
Using Drugs	–	1.3	–	–	2.2	–	–	4.7	–	–	–
Eat-purge	–	5.4	1.9	–	2.2	4.2	–	4.7	–	3.6	4.3

Significant at * $p < 0.01$, ** $p < 0.001$

females during the first three years, with the maximum rate being seen in the second year female students.

The rates of perceptive, conductive and behavioural conditions of students related to their bodies, according to their socioeconomic factors, are shown in Table 3. The rate of heavy exercising was highest in the lowest income group. The rates of perceptive, conductive and behavioural conditions of female students related to their bodies, according to their socioeconomic factors. Heavy exercising was correlated with a low educational level of the mother. In high-income group females, the rate of heavy exercising without physician control was significantly increased. Rates of behaviours like dieting without physician control and starving for more than 24 hours were also significantly higher among high-income group females.

Table 4 shows the odds ratios and 95% confidence intervals, which were calculated using regression analysis in order to determine the relationships between perceptive, conductive and behavioural situations related to the body and SES in both sexes. According to these data, unhealthy body definition was related to heavy exercising, dieting, eating diet foods and gender. Among youths, being normal/underweight according to BMI was associated with unhealthy body definition and dieting, as well as using diet products without physician control. Being in the first year of university was linked with heavy exercising; the latter was also associated with being in the medium-income group or below. Dieting was present at a

higher rate in medium-income groups and this behaviour was strongly correlated with this factor.

The average Turkish social comparison scale scores and the average subscale scores, according to the socioeconomic features, and with their correlations perceptive and conductive risk behaviours related to the body are shown in Table 5. The scale that had been tested before the study was re-analyzed and the subscales were re-determined as »social class« and »social attractiveness«. These domains were used in relation to SES and body perception. The results showed that the social comparison scores ranged from 6 to 36 (minimum to maximum), the social attractiveness scores ranged from 4 to 24, and the social class scores ranged from 3 to 18. Analysis of variance (ANOVA) revealed that the social comparison scores of young people considered overweight according to their BMI were lower (low self-esteem scheme). The social attractiveness subscale scores were higher for students in the high-income group. Similarly, an increased rate of parents being high school graduates was found in those groups with high social attractiveness scores. The total social comparison scores and subscale scores were higher among fourth year students. The scores for the attractiveness items of the social comparisons among students with unhealthy body definition were significantly lower (mean 20.4 ± 3.4) than those of students with healthy body definitions. There was a clear correlation between the attractiveness items among students with unhealthy body definitions.

TABLE 4
ODDS RATIOS (95% CONFIDENCE INTERVAL) OF UNIVERSITY STUDENTS' PERCEPTIVE, CONDUCTIVE AND BEHAVIOURAL CONDITIONS RELATED WITH THEIR BODIES ACCORDING TO BOTH SEXES

	Unhealthy Body Perception	Heavy Exercise	Diet	No eating during 24 hours	Using dietary products	Using drugs	Eat-purge
Gender							
Male	2.066 (1.268–3.367)**	1.883 (1.282v2.766)**	4.449 (2.798v7.073)***	1.624 (0.605v4.360)	5.692 (2.980–10.873)***	0.529 (0.023–12.220)	1.241 (0.268v5.747)
Age							
Age	1.120 (0.981–1.279)	0.944 (0.854v1.042)	1.054 (0.942v1.178)	1.136 (0.796v1.621)	1.047 (0.906–1.210)	1.938 (0.517–7.259)	1.688 (0.950v2.999)
Body Mass Index							
Normal/low	6.775 (3.730–12.307)***	1.175 (0.671v2.057)	6.197 (3.366v11.409)***	1.012 (0.254v4.038)	3.458 (1.602–7.463)**	0.775 (0.015–39.071)	0.874 (0.077v9.939)
Years							
1	1.533 (0.670–3.504)	0.338 (0.161v0.712)**	0.565 (0.255v1.249)	1.338 (0.253v7.093)	0.677 (0.261–1.753)	N/A	1.859 (0.000–)
2	1.864 (0.828–4.197)	0.277 (0.135v0.568)***	0.589 (0.271v1.281)	2.408 (0.358v16.203)	1.182 (0.435–3.215)	N/A	0.000
3	1.280 (0.615–2.663)	0.332 (0.166v0.663)**	0.532 (0.259v1.094)	1.665 (0.317v8.758)	0.733 (0.301–1.785)	N/A	0.000
4	1.373 (0.691–2.727)	0.519 (0.265v1.017)	0.573 (0.287v1.142)	1.891 (0.432v8.272)	0.667 (0.287–1.552)	N/A	0.000
Income Groups							
1st 20%	0.991 (0.450–2.184)	1.520 (0.824v2.803)	2.003 (1.036v3.876)*	N/A	1.495 (0.662v3.378)	N/A	N/A
2nd 20%	0.426 (0.195–0.931)	2.115 (1.059v4.226)*	2.375 (1.162v4.857)*	N/A	1.439 (0.590v3.509)	N/A	0.478 (0.055v4.194)
3rd 20%	0.699 (0.358–1.364)	1.455 (0.852v2.484)	3.097 (1.714v5.598)***	2.416 (0.842v6.932)	1.662 (0.800v3.453)	N/A	1.464 (0.170v12.628)
4th 20%	0.850 (0.400–1.805)	1.627 (0.886v2.985)	1.936 (1.020v3.674)*	3.118 (0.849v11.446)	1.156 (0.525v2.547)	N/A	0.592 (0.093v3.766)
Parents' Education							
Mother education	1.019 (0.688–1.510)	1.065 (0.769v1.475)	0.957 (0.665v1.376)	0.955 (0.409v2.226)	0.953 (0.601v1.511)	N/A	0.746 (0.174v3.191)
Father education	1.299 (0.872–1.937)	0.791 (0.559v1.119)	0.921 (0.632v1.343)	0.764 (0.274v2.132)	1.347 (0.854v2.127)	N/A	1.638 (0.343v7.822)

N/A – Not available, Significant at * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Discussion

In this study, the percentage of overweight individuals was 14% among Turkish students, compared with reported rates of 11–24% in America, 16% in Thailand, 9–21% in Brazil, 9–18% in Chile, 1–3% in Ireland, 13% in Italy, 8–10% in Holland, 4% in China and 2% in Senegal²⁸. Kaplan et al. demonstrated in a study of adolescents that BMI and body appearance measurements were not representative of the body alone²⁹. Among young people, believing oneself to be normal weight while actually being overweight and *vice versa* can also influence body perception and emotional status.

Few studies in the literature have investigated body perception with respect to psychosocial factors related to family, school, community and BMI¹¹. In this study, young people's body perception (psychological variable) was evaluated according to their calculated BMI (biological variable). A similar method was used by McLaughlin³⁰. BMI, which is a reliable and valid measurement, was compared with the terms that young people used to describe their own bodies, and the results were checked to determine whether they were consistent. The perceptive and conductive behaviours of young people relating to their bodies (such as dieting) were reflected by their body appearance perception and not their actual body weight. The study tested the hypothesis that young people be-

TABLE 5
 AVERAGE SCORES OF SOCIAL COMPARISON SCALE AND ITS SUBSCALES ACCORDING TO SOCIOECONOMIC FEATURES AND AVERAGE SCORES AND CORRELATIONS WITH PERCEPTIVE AND CONDUCTIVE RISKY BEHAVIOURS RELATED WITH BODY IN YOUTHS

	Social Comparison Scale (X±SD)	Attractiveness (X±SD)	Social Class (X±SD)
Gender			
Male	34.7±0.3	20.0±0.2	14.7±0.1
Female	35.2±0.3	20.5±0.2	14.7±0.1
BMI			
Normal/Low	35.2±0.2	20.4±0.1	14.8±0.1
Over-weight	33.5±0.7*	19.4±0.5**	14.1±0.3**
Income Groups			
1st 20%	34.2±0.5	19.7±0.3	14.5±0.3
2nd 20%	34.8±0.8	20.0±0.5	14.8±0.4
3rd 20%	35.5±0.3	20.5±0.2	15.0±0.1
4th 20%	34.8±0.5	20.2±0.4	14.6±0.2
5th 20%	35.9±0.6	21.2±0.3**	14.7±0.3
Mother Education			
<High school	34.0±0.5	19.5±0.4	14.5±0.2
High School	35.4±0.3	20.6±0.2**	14.8±0.2
>High School	35.0±0.4	20.2±0.2	14.8±0.2
Father Education			
<High school	34.4±0.7	19.6±0.5	14.8±0.3
High School	35.8±0.4	20.9±0.2**	14.9±0.2
>High School	34.7±0.3	20.1±0.2	14.6±0.1
Years			
Prep.	35.9±0.5	20.9±0.3	15.0±0.2
1	34.4±0.5	19.9±0.3	14.5±0.2
2	33.5±0.5	19.3±0.4	14.2±0.2
3	35.1±0.4	20.3±0.3	14.8±0.2
4	36.6±0.4**	21.2±0.3***	15.4±0.2***
Perceptive And Conductive Risky Behaviours			
Unhealthy Body Perception	34.2±6.5	14.5±2.9	19.7±4.3**
Heavy Exercise	35.2±5.5	14.8±2.6	20.4±3.4
Diet	34.7±5.7	14.6±2.7	20.1±3.5
No eating during 24 hours	35.0±6.5	14.6±3.1	20.4±3.5
Dietary Products	34.0±5.6	14.3±2.7	19.7±3.3
Use drugs	33.5±6.3	14.5±2.9	19.0±3.5
Eat-purge	35.0±4.0	15.0±1.9	20.0±2.5
Correlations			
Unhealthy Body Perception	0.93	0.70**	0.23
Heavy Exercise	-0.49	-0.33	-0.16
Diet	0.27	0.17	0.10
No eating during 24 hours	-0.50	-0.54	0.04
Dietary Products	1.10	0.66	0.45
Use drugs	1.15	0.82	0.34
Eat-purge	-0.52	0.04	-0.56

Significant at *p<0.01, **p<0.05, ***p<0.001, BMI – body mass index

have according to their perception of body weight (psychological structure) and not according to their actual body weight (biological structure). The interest in body perception was greater in females, whereas body dissatisfaction was higher in males, according to a literature search performed by Cohane and Pope on body percep-

tion in male adolescents under the age of 18 years¹⁹. However in our current study, unhealthy body definition rates were found to be higher in females. A total of 43.7% of the young people with unhealthy body definitions were males, while 56.3% were females. This difference was not statistically significant. Some prospective studies have

shown that BMI is more important to the body appearance satisfaction of males and has no effect in females³¹. The unhealthy body definition rate was 19.8% among males, 24.5% among females and 22.2% among all university students. Some studies have found the rate of body dissatisfaction in males to be between 50 and 70%, or even up to 71% in males of normal weight^{32–34}. These high rates were attributed to the perceived »ideal« body features of male students (such as no body fat, strong muscles and thick arms). In our current study, these rates were found to be relatively low among male adolescents.

According to the year of study, unhealthy body definition was seen at the highest rates among third year males and fourth year females. This condition was relatively common among students in their first year at university, but decreased rates were seen in both sexes during the second year. The rate then rose again in subsequent years. The increase observed during the later years of study could be explained as the effect of the transition from adolescence to adulthood.

Some studies have shown that heavy exercising is associated with body dissatisfaction, negative feelings related to the body and eating disorders. One of the main reasons for heavy exercising behaviour among adolescents is body dissatisfaction, and weight control is also an important factor, independent of sex³⁵. In this study, uncontrolled heavy exercising was related to low-income level in males and high-income level in females. Neumark-Sztainer et al. showed that body perception has an effect on adolescents' food choice: males prefer muscle-building foods, while females prefer foods that affect their weight³⁶. In our current study, dieting and starvation for more than 24 hours were found at significantly higher rates in females of the high-income group. Several studies have shown that obesity is more common at low socio-economic levels, and is more prevalent in females than males³⁷.

Studies have also shown that low daily food intake, use of diet products and increased physical activity in adolescents are associated with body perception.³⁸ Field et al. reported that 26% of adolescents were overweight and 17% were dieting in order to lose weight³⁹. Field et al. also showed that the dieting behaviours of adolescents (males or females) were closely related to the characteristics of their parents⁴⁰. In the current study, the rate of use of drugs to lose weight was similar in both sexes (0.6%). The rates of bulimic behaviours were 2.2% overall, 1.3% in males and 3.1% in females. The frequencies of bulimic behaviour in early adolescents during the past month were reported to be 1.9% in females and 0.8% in males³⁹. Johnson et al. showed that SES was not associated with BMI, body perception or eating disorders⁴¹. Killen et al. reported that the rate of bulimic behaviour in females was 11% in the USA⁴². Various studies have shown that, in Australia, the rate of bulimic behaviours in adolescents is 9%, the rate of use of diet drugs to lose weight is 6%, the rate of use of laxatives to lose weight is 6% and the rate of use of diuretics is 3%⁴³.

Regression analysis showed that body perception was related to gender. As in other studies, no relationship was found between age and behaviours such as using medicines and heavy exercising to lose weight. Heavy exercising was related to unhealthy body definition, medium-income groups or below and year of study. Behaviours such as dieting and using diet products were related to gender and normal/low BMI values. These findings show that young people diet and use diet products in order to maintain their existing weight. Dieting behaviour was also associated with income group; a strong relationship was identified between dieting behaviour and being in the above-medium-income group.

Social comparison theory suggests that individuals have an impulse to evaluate their own abilities, qualities and sufficiency according to those of other people. They compare themselves with perceived target images or with other individuals, which motivates them to reach their goal. The socio-cultural structure can create automatic comparisons for individuals by presenting ideal stereotyped images of bodies. People who compare themselves with this »ideal image« might feel inadequate and become motivated to minimize the differences between them. Social comparison theory can be used to explain the development of body perception, eating disorders and extreme exercising habits⁴⁴. Some authors have reported that low body satisfaction and low self-esteem are related, and body perception and BMI can be used to establish the prevalence of eating disorders^{45,46}.

The average social comparison scale scores, attractiveness scores and social class subscale scores were significantly lower in young people who were considered overweight according to BMI. However, only the average social attractiveness subscale score was significantly lower in young people with unhealthy body definition. This shows that low body dissatisfaction and social attractiveness scores are related to social class and social comparison features.

Conclusion

Increased rates of obesity, unnecessary body measurements and »ideal« body image all affect young people's behaviours in developing countries. Adolescents need education in order to understand weight measurements. Thus, the definition of »body appearance« should be standardized – should it be evaluated according to BMI, individual satisfaction or dissatisfaction with the body, general body appearance, specific body parts, fat levels or a combination of these components. The potential factors should be ranked and evaluated according to individual priorities, and coefficients that are determined according to such priorities should be used. The standardisation of body appearance remains lacking and requires further work.

Age was not related to eating habits or body perception, whereas gender affected most such behaviours. Low SES was found to be a risk factor for unhealthy behav-

our related to body perception in males, whereas high SES was identified as a risk factor in females.

The social attractiveness scores were low in young people considered overweight according to BMI. Thus,

understanding the differences between social comparisons and the body appearance of adolescents will be aided by investigating specific attractiveness features.

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PERCEPCIJA NEZDRAVOG TIJELA KOD TURSKE MLADEŽI: SOCIOEKONOMSKI STATUS I SOCIJALNA KOMPARIJACIJA

SAŽETAK

Cilj ove studije bio je determinirati efekte socioekonomskog statusa (SES) i socijalne komparacije na percepciju nezdravog tijela. U anketi je sudjelovalo 640 studenata. Anketa je sadržavala slijedeća pitanja: SES, definiciju tijela, ponašanje u odnosu na tjelesnu masu (kao npr. Vježbe, dijete, gladovanje, korištenje dietne prehrane, korištenje lijekova) i komparacija socialne skale. Prevalencija učestalog vježbanja (42,9%) kod muških studenata bila je značajno viša u odnosu na grupu ($p < 0,01$), te značajno viša u odnosu na žensku grupu (61,7%) ($p < 0,001$). Dijeta i gladovanje preko 24 sata bilo je više učestalo kod ženskih studenata ($p < 0,01$). Kod uobičajne socijalne komparacije, socijalna komponenta bila je značajno niža kod studenata sa višim indeksom tjelesne mase. Socijalno atraktivniji su bili oni sa nezdravom definicijom tijela ($p < 0,05$). Komponente atraktivnosti jasno su pokazale korelaciju između studenata sa nezdravom definicijom tijela. Usporedo sa povećanjem pretilosti u razvijenim zemljama, nepotrebno mjerenje tjelesne težine u odnosu na idealnu imaginaciju tjelesne težine utječu na ponašanje mladeži. Spolnost je povezana sa većinom tih ponašanja. Razumijevanje relacija između socijalnih komparacija i tjelesne pojavnosti kod ženskih i muških adolescenata može biti potvrđeno istraživanjem obilježja atraktivnosti.