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Research Article

The Evaluation of Obesity Prejudices among Adolescents

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Abstract

Aim: Stigma and discrimination toward obese persons are pervasive and give rise to numerous consequences for their psychological and physical health. The aim of this study was to determine the nutritional status and the obesity prejudices of adolescents.

Methods: A total of 341 volunteer adolescents participated in this study (149 boys, 192 girls). A questionnaire which consisted of anthropometric measurements and demographic features was used. Adolescents with obesity prejudice scale score greater than 85 were considered as prejudiced.

Results: The mean age of the boys and the girls were 15.9 ± 1.14 and 15.6 ± 1.02 years, respectively. The percentages of the boys and the girls with BMI standard deviation score (SDS) >+2 kg/m^2 were 0.7% and 1.1%, respectively. The percentages of the boys and the girls with BMI SDS < -2 kg/m^2 were 3.4% and 10.2%, respectively. The majority of the adolescents (66.3%) were found to have a BMI SDS ranging between +1 and +2. As BMI increased, obesity prejudice was found to increase in both genders; however, obesity prejudice was determined to decrease as age increased only in boys, which wasn't statistically significant.

Conclusion: The study concluded that obesity prejudice increased as BMI increased. On the other hand, increasing age was found to decrease obesity prejudice in male adolescents.

Keywords: Obesity Prejudice; Anthropometric Measurements; Obesity Stigma; Adolescents

Introduction

Obesity is not only the cause of many metabolic diseases but also psychological and social disorders. In recent years, social aspects of obesity have attracted considerable attention because of the discriminative attitudes and behaviors of society against obesity [1].

Obesity prejudice is one of the most prevalent social problems across the world. This situation affects obese individuals negatively almost in every area of social life, including education, employment, and health. Obesity prejudice has risen to 66% in the USA and Europe Union countries in the last 10 years, but there is not any statistical data for Turkey, yet [2].

The public health implications of weight stigma are widely ignored. Instead, obese persons are blamed for their weight, with common perceptions that weight stigmatization is justifiable and may motivate individuals to adopt healthier behaviors [3].

Weight stigma is not a beneficial public health tool for reducing obesity or improving health. Rather, stigmatization of obese individuals poses serious risks to their psychological and physical health, generates health disparities, and interferes with implementation of effective obesity prevention efforts. Obese persons are stigmatized because their weight is perceived to be caused by factors within personal control [4]. Therefore, this study aimed to determine obesity prejudices of adolescents using GAMS-27 obesity prejudice scale.

Methods

Subjects

This cross-sectional study was conducted on 341 adolescents (149 boys, 192 girls) aged between 14-18 years who volunteered to participate in the study between February and June 2017.

Questionnaire

A questionnaire which consisted of demographic features was administered by face to face interviews. GAMS-27 obesity prejudice scale was used for determining obesity bias. This scale was developed by Ercan et al. in Turkey [2]. The scale has a 5-point Likert type structure with options "absolutely agree", "agree", "undecided", "disagree", and "absolutely disagree". Positive items are scored from 5 to 1 starting with "absolutely agree" option, while negative items are scored from 1 to 5 starting with "absolutely agree" option. The lowest score that can be obtained from the Obesity Prejudice Scale is 27 and the highest score is 135. The reliability coefficient (Cronbach's alpha) of the scale is 0.862, which indicates that the developed version of the scale has high reliability. According to the analysis of the percentages of the scores, the 5th point corresponds to 58, the 25th percentile is 68 points, the 50th percentile is 76 points, the 75th percentile is 84 points, and the 95th percentile is 96 points. The obesity prejudice scale was designed as a five-point Likert type scale. Scores lower than 68 are interpreted as unprejudiced (< 25th percentile); between 68.01 and 84.99 as predisposed to prejudice (25th -75th percentile); and greater than 85 (>75th percentile) as prejudiced. Low total scores obtained from the scale indicate that the individual has no prejudice against obesity, whereas high scores show the individual has prejudiced ideas against obesity.

Anthropometric measurements

Body weight and height were measured and Body Mass Index was calculated [(BMI=weight (kg)/height (m)^2]. BMI was categorized according to WHO classifications [5].

The individuals were grouped into five categories including severe thinness, underweight, normal-weight, overweight, and obese in accordance with standard deviation score cut-off points <-2, -2 to -1, -1 to +1, +1 to +2, and ≥+2, respectively.

Data analysis

Continuous variables were presented as means and standard deviations (SD) and categorical variables as frequencies and percentages. Variables were examined for normality distribution (Kolmogorov–Smirnov). Chi-square test was used for the comparison of categorical variables. Pearson's correlation was utilized to determine correlation values between variables. Data analysis was conducted using the statistical software package IBM SPSS Statistics Version 22. The level of statistical significance was considered to be $p<0.05$.

Results

This study was conducted on 341 adolescents (149 males, 192 females). The average age of the individuals was 15.7 ± 1.08 years. According to the BMI classification of WHO, 7.2% of individuals were underweight (<-2 SDS) and 0.9% of them were obese (>+2 SDS) (Table 1).

	Boys		Girls		Total	
	n	%	n	%	n	%
Gender	149	43.7	192	56.33	341	100.0
	$\overline{X}$	SS	$\overline{X}$	SS	$\overline{X}$	SS
Age, year	15.9	1.14	15.6	1.02	15.7	1.08
Body weight, kg	67.8	12.15	55.4	8.32	60.8	11.9
Height, cm	176.6	7.02	165.3	5.9	170.3	8.54
BMI, kg/m^2	21.6	3.24	20.3	2.81	20.8	3.08
BMI group, kg/m^2	n	%	n	%	n	%
SDS <-2	5	3.4	19	10.2	24	7.2
SDS -2 to -1	23	15.4	28	15.1	51	15.2
SDS -1 to +1	96	64.4	126	67.7	222	66.3
SDS +1 to +2	24	16.1	11	5.9	35	10.4
SDS ≥+2	1	0.7	2	1.1	3	0.9

Table 1: The demographic and anthropometric features of the individuals.

*SDS: standard deviation score; BMI: body mass index.

The mean obesity prejudice score of the adolescents was 78.7. 38.9% of the boys and 40.6% of the girls were found to be prejudiced. 45.6% of the boys and 48.4% of the girls were determined to be prejudice-prone against obesity. The girls were determined to be more prejudiced against obesity in comparison to the boys, but there was no statistically significant difference between obesity bias levels and scores according to gender (Table 2).

	Boys		Girls		Total	
	n	%	n	%	n	%
<68 (unprejudiced)	23	15.5	21	10.9	44	12.9
68.01-84.99 (prejudice-prone)	68	45.6	93	48.5	161	47.2
>85 (prejudiced)	58	38.9	78	40.6	136	39.9
$X^2 = 0.469$						
	$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD
Prejudice scores	81.3	14.57	81.9	11.55	81.6	12.94

Table 2: Distribution of obesity prejudice scores of individuals according to gender.

As is seen in Table 3, obesity prejudice was determined to increase as BMI increased in both genders, whereas obesity prejudice was found to decrease as age increased only in males. This age-related decrease in obesity bias was not found to be statistically significant.

The analysis of the relationship between the attitudes of the adolescents towards obese individuals and the levels of obesity prejudice laid out that 46.7% of those who stated they were unprejudiced against obesity were prone to be prejudiced and 46.3% were prejudiced against obesity. 43.9% of the adolescents who defined themselves as normal body weight according to their body image were determined to be prejudice-prone and 42.6% prejudiced against obesity.

	Boys		Girls		Total	
	Prejudice scores					
	r	p	r	p	r	p
BMI, kg/m^2	0.072	0.386	0.003	0.966	0.033	0.550
Age, years	-0.014	0.868	0.073	0.315	0.025	0.643

Table 3: Correlation between prejudice scores and anthropometric measurements according to gender.

The majority of adolescents who defined themselves as underweight (55.6%) were found to have a tendency to be prejudiced against obesity. A statistically significant difference was found between the attitudes of adolescents against obesity and their body perceptions in terms of prejudice levels (p=0.000) (Table 4).

	Unprejudiced		Tend to prejudice		Prejudice	
	n	%	n	%	n	%
Attitude toward obesity						
Prejudiced	14	73.6	4	21.1	1	5.3
Unprejudiced	19	7.0	127	46.7	126	46.3
Undecided	11	22.0	30	60.0	9	18.0
How to define yourself						
Underweight	6	9.5	35	55.6	22	34.9
Normal weight	32	13.5	104	43.9	101	42.6
Overweight	6	14.6	22	53.7	13	31.7

Table 4: Distribution of adolescents' own body perceptions and attitudes towards obesity according to levels of obesity prejudice. McNemar-Bowker test p=0.000.

Discussion and Conclusion

Many factors contribute to the stigmatization of obese individuals [6]. Obesity stigma has consequences on health and social behaviors. Obese individuals are likely to be subjected to social isolation and exclusion and are less willing to engage in health-promoting activities (such as physical activities) and health care services. Also, they are more reluctant to engage in public health messages about obesity, and they experience stigma-related depression, anxiety, low self-esteem, poor body image, and psychological stress [7-11]. On the other hand, obesity stigma may be positive by motivating individuals to engage in weight loss and may be a key factor in sustaining weight loss successes [12].

This study aimed to determine obesity prejudices of adolescents using GAMS-27 obesity prejudice scale. This study was conducted on 341 adolescents (149 males, 192 females). The mean age of the participants was 15.7 ± 1.08 years. According to the WHO growth reference data, 7.2% of the adolescents were underweight (SDS<-2) and 0.9% of them were obese (SDS>+2) (Table 1).

In a study on students with a mean age of 15.68 ± 3.86 years, the participants watched a 20-minute-long video that involved interviews with obese adolescents. In the interviews, the adolescents talked about the challenges of discriminatory attitudes and about reasons for being overweight. The intervention was performed in order to raise awareness for obese people's problems and to improve attitudes towards them. Changes in attitudes were measured with a questionnaire administered before and three months after the video intervention. Although there was an increased understanding of the problems of obese people, students also showed stronger prejudice against them. Various effects were observed in terms of age, sex, and body mass index. Older female participants were found to show a more positive attitude after the intervention [13].

In the current study, mean obesity bias score of adolescents was 81.6 ± 12.94. 38.9% of the boys and 40.6% of the girls were found to be prejudiced. 45.6% of the boys and 48.4% of the girls were prone to be prejudiced against obesity. The girls were found to be more prejudiced against obesity than the boys; however, there was no statistically significant difference between obesity bias levels and scores in terms of gender (Table 2).

This study presumes that the prejudices of prejudice-prone adolescents can be changed or reduced by interventions during the education period.

The study revealed that as BMI increased, obesity prejudice increased in both genders. On the other hand, prejudice against obesity decreased as age increased only in boys; however, this wasn't statistically significant (Table3).

People who thought that weight was a controllable factor showed more negative attitudes toward obese adults than people who considered weight was not a controllable factor [14].

Concerning the weight stereotypes, children, adolescents, and adults displayed negative stereotypes toward fat people by attributing more negative traits and fewer positive traits to them than to thin and normal-weight people [15,16].

The analysis of anti-fat attitudes and weight stereotypes from infancy to adulthood in the Italian context indicated that younger children (6-8 years-old) expressed high levels of anti-fat attitudes and that the higher the levels of anti-fat attitudes the children expressed, the more they rejected to spend time and play together with overweight peers [17].

Among children and adolescents, dissatisfaction with body image was higher in those who were overweight. On the other hand, there were differences considering gender. While boys were most dissatisfied with thinness, girls were most dissatisfied with overweight [18].

Younger individuals with a higher BMI had a particularly high risk of weight/height discrimination regardless of their race, education, and weight status. Women were at greater risk for weight/height discrimination than men, especially women with a BMI of 30–35 who were three times more likely to report weight/height discrimination compared to male peers of a similar weight [19].

In the current study, the examination of the relationship between the attitudes of adolescents towards obese individuals and the levels of obesity prejudice indicated that 46.7% of the participants who defined themselves as unprejudiced had a tendency to be prejudiced towards obesity, but that 46.3% of them were prejudiced against obesity. 43.9% of the adolescents considering they had normal body weight were found to be prone to be prejudiced against obesity, while 42.6% of them were prejudiced against obesity.

The majority of adolescents who defined themselves as underweight (55.6%) were found to be prejudice-prone against obesity. This study may indicate internalized obesity prejudices of underweight adolescents. A study showed that internalized obesity prejudice is associated with impaired psychology states such as depression, impaired body sensation, and eating disorders [20].

There was a statistically significant difference between the attitudes of adolescents against obesity and their body perceptions in terms of prejudice levels (p=0.000) (Table 4).

Obesity leads to a number of complications that undermine individuals' health and life quality as it is a complex condition that is associated not only with chronic illnesses, but a number of socioeconomic and psychosocial effects such as labor and social discrimination, social isolation, and loss of self-esteem [21].

Another study reported that when the attribution of controllability was reduced, prejudice towards obesity would be reduced, too. However, this may create a dilemma. It may reduce self-efficacy in healthy weight and exercise management [22]. As a conclusion, the newly developed obesity prejudice scale has one dimension with high reliability. In future studies, it will be possible to calculate better cut-off points for ensuring a more reliable and more accurate classification of scores.

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