



## Investigation of Prejudice against Obesity in Students of Sports Sciences

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### ABSTRACT

The aim of this study is to reveal prejudice against obesity in students who study sports sciences at the university level in Turkey in terms of different variables. The sample group of the study included 387 randomly chosen students of sports sciences from Bingöl University, Fırat University, Sütçü İmam University and Düzce University. To collect data from the sample, the "Obesity Prejudice Scale" was used. For the data collected, the normality test was conducted to determine whether the "Obesity Prejudice Scale" provided the normality assumption. "Independent Samples t-test", a parametric test, was conducted to evaluate the level of differentiation in gender, an independent variable. To determine differentiation in variables of grade, university and monthly income, "ANOVA" tests were conducted. The level of statistical significance ( $\alpha$  error level) was regarded as  $p < 0.05$ . It was determined that the sports sciences students' perceptions of obesity prejudice demonstrated statistically significant differences in terms of the universities ( $p < 0.05$ ). It was also determined that the obesity prejudice of the students did not differ significantly according to their gender, grade and monthly income ( $p > 0.05$ ). In conclusion, it seems impossible to eliminate prejudice against obese individuals, just like any other social problem. Therefore, it was concluded that the problems experienced by obese individuals are not their choices and should be qualified as diseases. Decision-makers can provide education in helping obese individuals by conducting awareness studies and developing social responsibility projects. Obesity can be averted by increasing studies on especially balanced nutrition and physical activity.

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Keywords:

Obesity, prejudice, sports sciences, student, university

### 1. Introduction

Obesity, which was defined by the World Health Organization in 1997 as an "epidemic" spreading throughout the world, seriously threatens public health based on increasing diabetes, hypertension and coronary heart disease. Obesity, which is called as "fatness" colloquially, is viewed as a complex and multi-factored disease characterized by chronic changes that occur as excess amounts of fat collects in the body. Obesity and excess body weight constitute problems that create growing loads on national resources and cause financial burdens. However, these conditions can be greatly avoided by appropriate lifestyle changes. These usually occur due to the combination of unhealthy nutritional behaviors and sedentary lifestyles. Storing excess energy as body fat and inconsistent energy intake and use create unbalances. In obese individuals, increases in fat are observed under the skin and around internal organs, and these increases reach levels that can increase health risks (Demiralp, 2006; Yıldırım et al., 2008). Obesity has a global prevalence due to the increase in urbanization and altered nutritional habits. At the same time, it is defined as a disease that depends on genetic, behavioral and environmental factors (Akbaş, 2002).

Recently, the diseases that developed due to obesity and result in deaths has indicated that more effective measures should be taken for obesity. The number of programs in the media and news published on fighting

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against obesity is rapidly increasing. However, the number of obese individuals in society-wide continues to increase. The fact that obesity is regarded as a disease in adults and practices are rather conducted for adults, as well as the precautions against obesity, causes the children at school ages to be kept in the background on this subject (Doğan et al., 2015)

Countries fight against obesity by taking various precautions. These include educational and informative campaigns to raise the awareness of consumers, regulations, taxes and incentives implemented to limit the advertisements of unhealthy food and nutritional programs conducted in schools (OECD, 2014).

With the incentive of the World Health Organization, especially in recent years, countries have started to use financial tools more intensely. These financial tools cover taxing of products that are believed to be unhealthy or cause obesity and implementing subvention. Especially the food and drinks with high calorie, low nutritional value and high contents of sugar, fat and salt are believed to result in excess calories and cause obesity (Malik et al., 2006). Governments have an important role to play in the fight against obesity. Governments can increase the awareness of the society by taking measures, especially about healthy nutrition and exercise. These measures can include encouraging/informative public services and advertisements. However, the accomplishment of these measures depends partly on socioeconomic and demographic factors; therefore, the policies implemented solitarily in the past turned inefficient in the fight against obesity (Bonnet, 2013).

Although obesity was regarded as a disease in adults in the past, in recent years, it has increased in prevalence in children at the school age. Obesity leads to distortions in body, individualism, image and perception in children. Intensely, it causes children to be viewed as lazy, indifferent, low in self-confidence and asocial. The most significant reasons for the increase of obesity in children at the school age are unhealthy nutrition and irregular nutritional habits. Children, who spent at least 8 hours a day at school, need food consumption. Recently, previously built cafeterias have been removed to increase the number of classrooms and nutrition is left to canteens in schools that provide full-day education. Most of the students have their breakfast and lunch at the canteens with foods, such as French fries, hamburgers, toasts, biscuits and candies, and every type of fizzy drink. Thus, fruit and vegetable consumption of children decreases and unhealthy eating habits are formed. Cafeteria services are conducted by tender contracts and usually practiced by non-professional personnel. Reasons, such as insufficient care in kitchen hygiene, repetition of unchanged food material and menu, failure in meeting the expected quality of service, cause children not to prefer the food presented to them and therefore, they avoid meals by eating junk food (Cengiz, 2013). Briefly, insufficient physical activity and insensible nutrition are regarded as significant reasons for the development of obesity. Additionally, numerous reasons, such as environmental, genetic, neurological, physiological, sociocultural and psychological reasons, can lead to obesity interdependently. Risk factors of obesity include education level, gender, age, marriage, number of births and period between births, nutritional habits, smoking and drinking habits, and sociocultural and socioeconomic status. In this study, it was aimed to reveal the prejudice against obesity in students who study sports sciences at the university level in Turkey. Additionally, it is believed that the perceptions of individuals who study sports sciences are rather important, thus, it was also aimed to reveal whether their perceptions differ in terms of several variables. Overall, it is believed that the study has an importance in terms of revealing the perceptions of individuals in terms of prejudices against obese individuals and the concept of obesity, which is regarded as an epidemic disease and one of the most crucial problems of societies in our age. Accordingly, the following research questions were investigated:

1. What are the participants' perceptions towards the prejudice against obesity?
2. Is there any differences in the participants' prejudice against obesity according to gender?
3. Is there any differences in the participants' prejudice against obesity according to grade of education?
4. Is there any differences in the participants' prejudice against obesity according to university of education?
5. Is there any differences in the participants' prejudice against obesity according to income levels?

## 2. Method

In this study, it was aimed to investigate the concept of prejudice against obesity in university students who studied on the subject of sports. Accordingly, the study was designed as a quantitative research study and the relational survey model was adopted.

### 2.1. Participants

The sample group of the study included 387 randomly chosen students of sports sciences from Bingöl University (N=78), Firat University (N=115), Sütçü İmam University (N=108) and Düzce University (N=86). The reason for forming the sample group from these universities is due to the convenience.

### 2.2. Data Collection Tools

To collect the data from the sample group, the "Obesity Prejudice Scale," which was developed and studied for reliability and validity by Ercan et al. (2015), was used. The scale developed by Ercan et al., (2015) was reported to have a reliability coefficient (Cronbach alpha) of 0.847, which indicates that the scale has high reliability. To investigate the construct validity of the scale, factor analysis was conducted and the items included in the scale were collected in a single factor. In the confirmatory and exploratory factor analyses, it was determined that the scale had a single-factor structure and this single-factor structure explained 44.263% of the total variance. It is sufficient for a newly developed scale to have this rate higher than 30%. The fact that the explained variance is high is an indicator that the related concept or structure is successfully measured at that level. In the confirmatory factor analysis, it was confirmed that the scale had a single factor. All of the results obtained from this analysis ( $\chi^2/df=2.49$ ; NNFI=0.92; CFI=0.97; RMSEA=0.08) proved that the scale had a single factor. The reliability analysis of the scale was investigated by the item analysis method. Cronbach alpha and the Spearman-Brown reliability coefficients were determined as 0.845 and 0.838, respectively. These values indicated that the scale had high reliability. As a result of expert opinion, reliability and validity analyses, a total of 27 items were included in the obesity prejudice scale.

### 2.3. Data Analysis

In this study, according to the quantitative research design, the statistical analyses were conducted by using the SPSS 23 statistics software. For the data obtained from 387 students, the normality test was first conducted to determine whether the "Obesity Prejudice Scale" provided a normality assumption. As it is presented in Table 1, it was determined that the skewness and kurtosis values of the "Obesity Prejudice Scale" were calculated to be between +1.5 and -1.5. Thus, it was observed that the normality assumption was provided. This is because Tabachnick and Fidell (2007) determined that skewness and kurtosis values between +1.5 and -1.5 can be interpreted as a normal distribution.

**Table 1.** Normality test results of the obesity prejudice scale

Scale	N	$\bar{X}$	Sd	Skewness	Kurtosis
Obesity Prejudice Scale	387	3.116	0.405	[-0.457; 0.124]	[1.216; 0.247]

Then, frequency and percentage calculations were conducted to reveal the distributions of the sample group according to individual variables. For the independent variables, "Independent samples t-test", one of the parametric tests, was conducted to reveal the differentiation in gender. To determine the differentiation in grade, university and monthly income variables, "ANOVA (F test)", which is one of the parametric tests, was used. The level of statistical significance ( $\alpha$  error level) was regarded as  $p < 0.05$ .

### 3. Results

In this section, the findings obtained from the perceptions of students, who received sports education, were presented according to the aims of the study.

**Table 2.** Mean scores of the sample group's perceptions in the obesity prejudice scale

No	Items	$\bar{X}$	Sd
1	Obese individuals are selfish.	2.170	1.228
2	Obese individuals have beautiful faces.	3.281	1.060
3	Obese individuals are not aesthetical.	3.074	1.260
4	Obese individuals are cheerful.	3.400	1.044

5	Obese individuals are irresolute.	2.687	1.322
6	Obese individuals are prone to sicknesses.	3.718	1.217
7	Obese individuals are happy.	2.733	1.009
8	Obese individuals do not like eating in society.	2.633	1.138
9	Obese individuals are fainthearted.	2.485	1.120
10	Obese individuals are hospitable.	3.196	0.950
11	Obese individuals are attractive.	2.664	1.099
12	Obese individuals have limited mobility.	3.770	1.207
13	Obese individuals stink of sweat.	3.051	1.228
14	Obese individuals are sympathetic.	3.232	1.039
15	Obese individuals look healthy.	2.330	1.242
16	Obese individuals do not like moving.	3.390	1.180
17	Obese individuals are self-confident.	2.772	1.025
18	Obese individuals have a low quality of life.	3.173	1.225
19	Obese individuals look older than they are.	3.033	1.122
20	Obese individuals have strong social relationships.	2.969	1.030
21	Obese individuals get tired quickly.	4.020	1.020
22	Obese individuals are great listeners.	3.178	0.966
23	Obese individuals are slow in their movements.	3.948	1.039
24	Obese individuals are lazy.	3.416	1.204
25	Obese individuals are good at cooking.	3.188	1.024
26	Obese individuals are not preferred in emotional relationships due to their looks.	3.170	1.170
27	Obese individuals are friendly.	3.439	1.012

In the investigation of the first research questions, as can be seen in Table 2, when the mean scores of the participants' perceptions in the obesity prejudice scale, it was determined that item 23, "Obese individuals are slow in their movements", had the highest mean score ( $\bar{X}=3.948$ ). It was also observed that the item with the lowest mean score was item 1, "Obese individuals are selfish." ( $\bar{X}=2.170$ ).

**Table 3.** T-test results of the sample group according to gender

Scale	Gender	N	$\bar{X}$	Sd	t-value	p-value
Obesity Prejudice Scale	Male	253	3.124	0.373	-0.582	0.561
	Female	134	3.099	0.461		

\*p>0.05

In the investigation of the second research question, as can be seen in Table 3, it was determined that the perceptions of the students, who received sports education, on prejudice against obesity did not differ significantly according to their gender ( $p>0.05$ ). When the mean scores were evaluated, it was observed that male students had higher levels of perceptions of prejudice against obesity compared to female students (Table 3).

**Table 4.** ANOVA analysis results of the sample group according to their grade levels of education

Scale	Grade	N	$\bar{X}$	Sd	F	p-value
Obesity Prejudice Scale	(a) 1 <sup>st</sup> Grade	110	3.051	0.423	1.432	0.233
	(b) 2 <sup>nd</sup> Grade	121	3.153	0.396		
	(c) 3 <sup>rd</sup> Grade	116	3.141	0.385		
	(d) 4 <sup>th</sup> Grade	40	3.104	0.430		

\*p>0.05

In the investigation of the third research question, as can be seen in Table 4, It was observed that the prejudice perceptions of students, who received sports education, against obesity did not differ according to their grade level of education ( $p>0.05$ ). When the mean scores were evaluated, it was determined that the students who received education at the 2<sup>nd</sup> grade had higher levels of prejudice against obesity compared to students who studied at other grade levels (Table 4).

**Table 5.** ANOVA analysis results of the sample group according to the universities where they studied

Scale	University	N	$\bar{X}$	Sd	F	p-value	LSD
<b>Obesity Prejudice Scale</b>	(a) Bingöl University	78	3.169	0.354	5.038	<b>0.002*</b>	a, c b, c c, d
	(b) Fırat University	115	3.173	0.389			
	(c) Sütçü İmam University	108	2.990	0.459			
	(d) Düzce University	86	3.149	0.367			

\* $p<0.05$

In the investigation of the fourth research question, as can be seen in Table 5, it was determined that the perceptions of the students, who received sports education, constituted statistically significant differences according to the universities where they studied ( $p<0.05$ ). When the mean scores were evaluated, it was determined that the students of Sütçü İmam University had lower perceptions of prejudice against obesity compared to the students of other universities (Table 5).

**Table 6.** ANOVA analysis results of the sample group according to the monthly income of the family

Scale	Monthly	N	$\bar{X}$	Sd	F	p-value
<b>Obesity Prejudice Scale</b>	(a) 0-1500 TL	117	3.062	0.406	2.238	0.083
	(b) 1501-3000 TL	176	3.105	0.410		
	(c) 3001-5000 TL	56	3.191	0.413		
	(d) 5001 TL and above	38	3.220	0.339		

\* $p>0.05$

In the investigation of the fifth research question, as can be seen in Table 6, when the perceptions of students, who received sports education, on prejudice against obesity were evaluated, it was observed that the perceptions did not differ significantly according to the monthly incomes of the families ( $p>0.05$ ).

#### 4. Discussion and Conclusion.

(In the "Global Action Plan for the Prevention and Control of Noncommunicable diseases" of the World Health Organization, obesity, mentioned as a disease that needs to be stopped, is emphasized in terms of psychological and social problems it causes, which is also supported by scientific studies conducted in the last decade, and it is noted that obesity paves the way for psychological problems such as prejudice, stigmatization and discrimination based on body weight (Puhl et al., 2013; Djalalinia et al., 2015).

When the perceptions of the sample group towards prejudice against obesity were compared according to gender, it was determined that there were no statistically significant differences (Table 3). This finding is believed to be due to the fact that the prejudices of female and male students against obesity are at the same level. This result is also supported by the findings of Uluöz (2016), Karaçay et al. (2019) and Altun (2015). In the study conducted by Sikorski et al. (2013), it was reported that females usually had greater fears of gaining weight in societies and they had a more dominant fear of losing their beauty and attractiveness in case they gained weight compared to males. Similarly, Hansson and Rasmussen (2014) reported that females had more

negative attitudes towards overweight and obese individuals compared to males while females complained more about their body weight regardless of their status of body weight compared to males.

It was observed that the prejudice perceptions of students, who received sports education, against obesity did not differ according to their grade level of education (Table 4). In the study conducted by Altun (2015), similar results were reported. Contrary to these results, in the study conducted by Uluöz (2016), it was determined that the variable of grade affected the levels of prejudice against obese individuals. It was discovered that the students studying in the 4<sup>th</sup> grade had higher levels of prejudice against obese individuals.

It was observed that the perceptions of prejudice against obesity in the sample group constituted a statistically significant difference in terms of the universities where the studied. The students of Sütçü İmam University had lower perceptions of prejudice against obesity compared to the students of other universities (Table 5). The reason for this significant difference was interpreted to be due to regional differences, education programs in which the students receive their sports education and nutritional habits.

When the sample group's perceptions of prejudice against obesity were evaluated, it was determined that there were no statistically significant differences according to the monthly income levels of families (Table 6). In this study, it was assumed that obesity was not related to the income level of the family.

Just as like any other social problem, it is not possible to eliminate attitudes towards obese individuals. According to the results obtained in this study, the main conclusion of the study is that the problems experienced by obese individuals are not their choices and should be qualified as diseases. Within this scope, this study recommends to increase public service broadcasts in societies. It is also suggested that decision-makers provide education in helping obese individuals by conducting awareness studies and developing social responsibility projects. Obesity can be averted by increasing studies on especially balanced nutrition and physical activity. It should not be forgotten that education is an invaluable tool of prevention and regulations should be implemented to include children at the school age should in activities of raising awareness and to avoid keeping them in the background.

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