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Examination of Obesity Awareness Levels of University Students in Terms of Different Variables

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Abstract

The purpose of this study is to examine the obesity awareness levels of university students in terms of sport and different variables. The research was carried out on a total of 310 students, 107 male and 203 female, studying at Erzurum Atatürk University Kazım Karabekir Faculty of Education in the 2021/2022 academic year. Research data were collected by the obesity awareness scale developed by Allen (2011) and adapted into Turkish by Kafkas and Özen (2014) and a demographic information form prepared by the researchers. Frequency distribution was used to determine the demographic characteristics of the students. "T-test for Independent Samples" was used to examine the differentiation between two independent variables and obesity awareness scale sub-dimensions, "One-Way Analysis of Variance" was used to examine the differentiation between more than two variables and obesity awareness scale sub-dimensions, Pearson correlation analyzes were applied to determine the relationship between students' ages and obesity awareness scale sub-dimensions. All these tests were analyzed in the SPSS 21 package program and the significance level was taken as $p<.05$. As a result of the analyzes, it was determined that there was a significant difference between the students' personal monthly income and sports activity status and the obesity awareness scale sub-dimensions. It was found that the obesity awareness levels of the students who do sports activities are higher than those who do not.

Keywords: Obesity Awareness, University Students and Obesity, Sports and Obesity

1. Introduction

Obesity is a chronic disease state characterized by an increase in body fat mass compared to lean body mass, resulting from the fact that the energy taken into the body with food is more than the energy consumed. Obesity is an important health problem that can cause various disorders and even death by affecting all organs and systems of the body, especially cardiovascular and endocrine systems. Obesity, which is accepted as one of the 10 most risky diseases by the World Health Organization (WHO), has also been determined to be closely related to cancer in the latest studies conducted by the same organization (Altunkaynak & Özbek, 2006, WHO, 1997). Obesity,

which has become a global problem, affects not only adults but also children negatively. In addition, the prevalence of obesity in children has reached the level of obesity in adults (Parlak & Çetinkaya, 2007).

Today, the insufficient level of knowledge of the society on physical activity, the insufficient understanding of the importance of physical activity for health, and the adoption of an increasingly sedentary lifestyle have become one of the important reasons that increase the incidence of chronic diseases such as obesity, cardiovascular diseases, hypertension, diabetes, and osteoporosis. Baltacı & Treatment 2008). It is known that due to technological developments, people move less, their physical activity levels decrease, and in parallel, public health is endangered in various ways (Şanlı, 2008). Studies on obesity have generally focused on the physiological aspect of obesity, and psychosocial factors have been ignored (Alçam et al., 2013).

Personal preferences (for example: eating habits, physical activity) that will affect the health of individuals, especially in childhood and adolescence, may affect the state of obesity. It is known that the aims of sports are to improve the physical and mental health of people, to provide self-confidence, socialization and mutual solidarity. This shows that sport is an effective way of physical health (Morgan & Goldstone 1987, Bayraktar, G., Tozoğlu, E. & Acar, K. 2014). The purpose and effort of contributing to the studies carried out on the examination of the data collected in our research and the results of the statistical analysis obtained, especially between the obesity awareness levels of students and among different variables, to bring a perspective to the subject and to provide important contributions to science in terms of information and resources, is the reason for this study.

2. Method

2.1. Model of the Research

In this study, the relational survey model, one of the research models, was used. According to Karasar (2007), the relational survey model is defined as "a research model that aims to determine the existence and/or degree of co-variance between two or more variables."

2.2. Research Group

The research group consists of a total of 310 individuals, 107 male and 203 male, studying at Erzurum Atatürk University Kazım Karabekir Education Faculty in the 2021-2022 academic year. In the study, data were collected from the students through face-to-face questionnaires, and the data were collected on a voluntary basis by informing the explanations that the information they provided would not be used outside of the study.

2.3. Data Collection Tools

In this study, demographic information form prepared by the researchers and obesity awareness scale developed by Allen (2011) and adapted into Turkish by Kafkas and Özen (2014) was used for data collection purposes.

2.4. Demographic Information Form

It was developed by the researcher in order to determine the variables and demographic information (gender, age, family structure, personal monthly income, sportive activity status, sportive activity type and duration of sportive activity) to be used in the research.

2.5. Obesity Awareness Scale

The Obesity Awareness Scale used in the study was developed by Allen (2011). It consists of three sub-dimensions and 23 items. Scale; obesity awareness dimension (8 items), nutrition dimension (7 items) and physical activity sub-dimensions (8 items). The scale has a 4-point Likert structure and goes from positive to negative. The internal consistency coefficient of the scale was reported as α=.80. The scale was adapted into Turkish by Kafkas and Özen (2014) and has 21 items and 3 sub-dimensions. The item loads range from 0.42 to 0.72 and the total variance is

44.66%. The overall internal consistency Cronbach α value of the scale is 0.87. In our study, Cronbach α internal consistency coefficients were examined and the total value for the obesity awareness scale was found to be 0.797.

2.6. Analysis of Data

Before proceeding to the statistical analysis, assumptions such as normality, homogeneity, stationarity, linearity, if any, related to these analyzes should be checked and statistical information should be given about which assumptions are provided. In the light of this information, the researcher should justify which analysis techniques he prefers and which he does not prefer (Tozoğlu & Dursun, 2020).

In the research, studies on data processing were carried out before the data obtained through scales could be analyzed. For this, the demographic information form filled by the students and the "Obesity Awareness Scale" was checked in detail. Incomplete or incorrectly filled questionnaires were not taken into consideration. Then, the scales suitable for the research were transferred to the computer and evaluated in the analysis of the data. SPSS 21.00 package program was used in the analysis of the data. While analyzing the data, primarily descriptive analysis (frequency, arithmetic mean, standard deviation, percentile distribution) techniques were used. These are frequency, arithmetic mean, standard deviation, and percentile distribution. "T-test for Independent Samples" was performed to determine the differentiation between two different independent variables and obesity awareness scale sub-dimensions, from parametric tests in normally distributed data. "One-Way Analysis of Variance" test was performed to determine the differentiation between more than two different variables and obesity awareness scale sub-dimensions. Pearson correlation analyzes were conducted to determine the relationship between students' ages and obesity awareness scale sub-dimensions. The results were evaluated according to the p<.05 significance level.

3. Findings

In this section, the general purpose of the research and the findings obtained from the analysis of the sub-problems created for this purpose is given.

Table 1: Descriptive Statistics Distribution

	Obesity Awareness	Nutrition	Physical Activity
N	310	310	310
Mean	27,2516	19,3581	15,5387
Median	27,0000	19,0000	15,0000
Mode	26,00	18,00	15,00
Std. Deviation	4,05399	2,67268	2,47514
Skewness	*-,488*	*-,639*	*-,344*
Std. Error of Skewness	,138	,138	,138
Kurtosis	*,592*	*1,494*	*,204*
Std. Error of Kurtosis	,276	,276	,276
Range	23,00	18,00	13,00
Minimum	13,00	6,00	7,00
Maximum	36,00	24,00	20,00
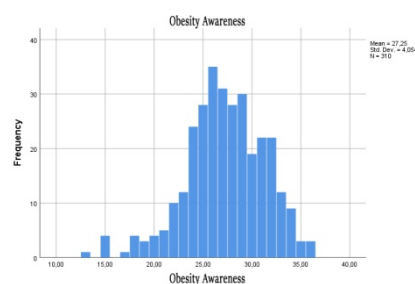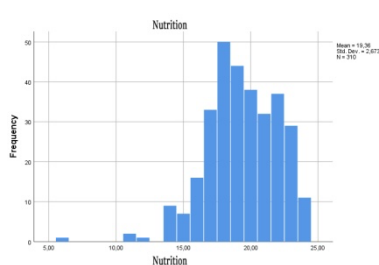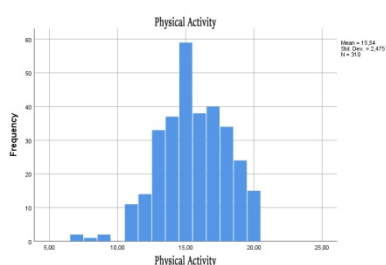
Frequency distributions are given for categorical variables in the analysis of the data. n addition, mode, median and arithmetic mean values, skewness and kurtosis coefficients were taken into account in order to look at the condition that the data have a normal distribution. Obesity awareness sub-dimension Skewness -.488 and Kurtosis 592, nutrition sub-dimension Skewness -.639 and Kurtosis 1.494, and physical activity sub-dimension Skewness -.344 and Kurtosis .204, of the obesity awareness scale seen in the table. Mode, median, arithmetic mean, skewness and kurtosis values of obesity awareness scale sub-dimensions are close to each other, within the limits specified by Büyüköztürk (2012), Tabachnik and Fidell (2015), and George and Mallery (2010) (-1 to +1; -1.5 to +1.5; -2.0 to +2.0) data set has a normal distribution. Parametric tests were used because it showed a normal distribution.

Table 1: Average Ages of the Students Participating in the Study

Age	
N	310
Mean	20,8000
Median	21,0000
Mode	21,00
Std. Deviation	2,07746
Range	17,00
Minimum	17,00
Maximum	34,00

It was determined that the average age of the students participating in the study was 20.80±2.07.

Table 2: Gender, Family Structure and Personal Income Levels of the Students Participating in the Research

Variable		n	%
Gender	Male	107	34,5
	Female	203	65,5
	Total	310	100,0
Family structure	Core Family	252	81,3
	Extended family	51	16,5
	Broken Family	7	2,3
Personal Income	750 TL and below	149	48,1
	Between 751-1500 TL	98	31,6
	Between 1501-2000 TL	23	7,4
	2001 TL and above	40	12,9

The research was conducted on a total of 310 students, 107 male and 203 female. Among the students participating in the research, it was seen that 252 students were in core family, 51 students were in extended family, and 7 students were in a broken family structure. In addition, it has been determined that 149 students have an income level of 750 TL or less, 98 students have an income level of 751-1500 TL, 23 students have an income level of 1501-2000 TL and 40 students have an income level of 20001 TL and above.

Table 3: Sportive Activity Status and Type of Sportive Activity and Duration of Sportive Activity of the Students Participating in the Research

Variable		n	%
Sports Activity Status	Yes	149	48,1
	No	161	51,9
	Total	310	100,0
Sporting Activity Type	Not Doing	161	51,9
	Individual Sports	91	29,4
	Team Sport	38	12,3

	Both of them	20	6,5
Sports Activity Duration (Weekly Total)	Not Doing	161	51,9
	2 hours and less	62	20,0
	3-5 hours	62	20,0
	6 hours or more	25	8,1

149 of the students participating in the research stated that they do sports activities and 161 of them do not do sports activities. While 91 of the students who do sports activities do individual sports, 38 do team sports, 20 do both sports. When the duration of the sportive activity of the students who do sportive activity is examined, it is observed that 62 of them do sportive activity between 2 hours and 3-5 hours, and 25 of them do sportive activities for 6 hours or more.

Table 4: T-Test Results of the Levels of the Obesity Awareness Scale Sub-Dimensions of the Students Participating in the Study by Gender

Obesity Awareness Sub-Dimensions	Gender	n	x	s	t	p	x variation
Obesity Awareness	Male	107	26,7196	4,48434	-1,682	,094	-,81239
	Female	203	27,5320	3,78934			
Nutrition	Male	107	19,0841	3,01293	-1,234	,219	-,41835
	Female	203	19,5025	2,47037			
Physical Activity	Male	107	15,2523	2,74066	-1,482	,139	-,43732
	Female	203	15,6897	2,31595			

After the t-test analysis between the genders of the students and the sub-dimensions of the obesity awareness scale, it was determined that there was no significant difference between the genders in all sub-dimensions at the $p<.05$ level. In addition, it was found that the awareness level of female students was higher than that of male students in these three dimensions, where there was no significant difference.

Table 5: Results of Correlation Analysis of the Ages of the Students Participating in the Study and the Sub-Dimensions of the Obesity Awareness Scale

		Obesity Awareness	Nutrition	Physical Activity
Age	Pearson Correlation	-,090	,046	,032
	Sig. (2-tailed)	,113	,418	,578
	N	310	310	310

When the results of the correlation analysis conducted to determine the relationship between the age of the students participating in the study and the obesity awareness scale sub-dimensions were examined, it was determined that there was no significant relationship at the $p<.05$ level between the age of the students and the obesity awareness scale sub-dimensions.

Table 6: Variance Analysis Test Results of the Obesity Awareness Scale Sub-Dimensions of the Students Participating in the Study According to the Family Structure Variable

Obesity Awareness Sub-Dimensions	Family structure	n	x	s	f	p
Obesity Awareness	Core Family	252	27,3929	4,01893	1,472	,231
	Extended family	51	26,8627	3,99009		
	Broken Family	7	25,0000	5,47723		
	Total	310	27,2516	4,05399		
Nutrition	Core Family	252	19,4563	2,68871	1,953	,144

	Extended family	51	19,1176	2,61264		
	Broken Family	7	17,5714	1,98806		
	Total	310	19,3581	2,67268		
Physical Activity	Core Family	252	15,6468	2,37145		
	Extended family	51	15,1569	2,83106	1,557	,212
	Broken Family	7	14,4286	3,20713		
	Total	310	15,5387	2,47514		

After the variance analysis test performed between the family structures of the students and the obesity awareness scale sub-dimensions, it was determined that there was no significant difference at the p<.05 level.

In addition, it is observed that the awareness level of the students in the core family structure is higher than the students in the other family structure in these three dimensions, where there is no significant difference.

Table 7: Variance Analysis Test Results of Obesity Awareness Scale Sub-Dimensions According to Personal Income Variable of Students Participating in the Research

Obesity Awareness Sub-Dimensions	Personal Income	n	x	s	f	p	difference
Obesity Awareness	Under 750 TL (1)	149	27,0067	3,53075			
	Between 751-1500 TL (2)	98	27,8061	4,06559			
	Between 1501-2000 TL (3)	23	25,5652	6,04398	2,373	,070	----
	Over 20001 TL (4)	40	27,7750	4,26968			
	Total	310	27,2516	4,05399			
Nutrition	Under 750 TL (1)	149	18,8993	2,38448			
	Between 751-1500 TL (2)	98	19,8163	2,76706			
	Between 1501-2000 TL (3)	23	19,4783	2,87417	2,995	*,040*	*1<2*
	Over 20001 TL (4)	40	19,8750	3,11479			
	Total	310	19,3581	2,67268			
Physical Activity	Under 750 TL (1)	149	15,1477	2,32604			
	Between 751-1500 TL (2)	98	16,1224	2,36933			
	Between 1501-2000 TL (3)	23	15,5652	1,61881	3,121	*,013*	*1<2*
	Over 20001 TL (4)	40	15,5500	3,33551			
	Total	310	15,5387	2,47514			

After the variance analysis test conducted between students' personal income levels and obesity awareness scale sub-dimensions, it was determined that there was a significant difference in nutrition and physical activity sub-dimensions at p<.05 level. It has been determined that the awareness level of students with a personal income level of 750 TL and below is lower than that of students with a personal income level of 751-1500 TL.

In the obesity awareness sub-dimension, there was no significant difference between personal income levels.

Table 8: The t-Test Results of the Levels Between the Obesity Awareness Scale Sub-Dimensions of the Students Participating in the Study According to the Sub-Dimension of Doing Sports

Obesity Awareness Sub-Dimensions	Doing Sports Activity	n	x	s	t	p	x difference
Doing Sports Activity	Yes	149	27,8255	4,06656	*2,416*	*,016*	*1,10501*
	No	161	26,7205	3,98154			
Nutrition	Yes	149	19,8993	2,69821	*3,492*	*,001*	*1,04219*
	No	161	18,8571	2,55650			
Physical Activity	Yes	149	15,8054	2,57503	1,832	,068	,51344
	No	161	15,2919	2,36019			

After the t-test analysis between the students' sports activities and the obesity awareness scale sub-dimensions, it was determined that there was a significant difference at the $p<.05$ level in the obesity awareness and nutrition sub-dimensions. In the sub-dimensions of obesity awareness and nutrition, it was found that the awareness level of the students who did sports activities was higher than the students who did not do sports.

In the physical sub-dimension, it was determined that there was no significant difference between family structures.

Table 9: Variance Analysis Test Results According to the Variable of Sports Activity Type of Obesity Awareness Scale Sub-Dimensions of the Students Participating in the Research

Obesity Awareness Sub-Dimensions	Sporting Activity Type	n	x	s	f	p
Obesity Awareness	Individual Sports	91	27,6923	4,19177	,815	,445
	Team Sport	38	27,5789	4,24029		
	Both	20	28,9000	3,02446		
	Total	149	27,8255	4,06656		
Nutrition	Individual Sports	91	19,9341	2,77610	1,564	,213
	Team Sport	38	19,3947	2,69674		
	Both	20	20,7000	2,20287		
	Total	149	19,8993	2,69821		
Physical Activity	Individual Sports	91	16,0000	2,42670	1,655	,195
	Team Sport	38	15,1579	3,05381		
	Both	20	16,1500	2,10950		
	Total	149	15,8054	2,57503		

It was determined that there was no significant difference at the $p<.05$ level after the variance analysis test performed between the type of sportive activity that the students were doing and the obesity awareness scale sub-dimensions.

In addition, it is observed that the awareness levels of the students who do both sports in these three dimensions, where there is no significant difference, are higher than the students who do individual and team sports.

Table 10: Variance Analysis Test Results of the Obesity Awareness Scale Sub-Dimensions of the Students Participating in the Study According to the Variable of Sporting Activity Type and Duration

Obesity Awareness Sub-Dimensions	Sporting Activity Period (Weekly)	n	x	s	f	p	difference
Obesity Awareness	2 hours and under (1)	62	26,8226	4,32501	3,409	,033	1<2
	3-5 hours (2)	62	28,6452	3,68469			
	6 hours or more (3)	25	28,2800	3,92131			
	Total	149	27,8255	4,06656			
Nutrition	2 hours and under (1)	62	19,4194	3,04366	1,758	,176	----
	3-5 hours (2)	62	20,1774	2,35758			
	6 hours or more (3)	25	20,4000	2,48328			
	Total	149	19,8993	2,69821			
Physical Activity	2 hours and under (1)	62	15,5000	2,58463	1,059	,350	----
	3-5 hours (2)	62	16,1613	2,69300			
	6 hours or more (3)	25	15,6800	2,21209			
	Total	149	15,8054	2,57503			

After the variance analysis test performed between the students' duration of doing sportive activities and the obesity awareness scale sub-dimensions, it was determined that there was a significant difference in the obesity awareness sub-dimension at $p < .05$ level. It has been found that the awareness level of the students who do sportive activities for 2 hours or less is lower than the students who are between 3-5 hours.

No significant difference was found between the duration of doing sports activities in nutrition and physical sub-dimensions.

4. Discussion and Conclusion

In our study, no significant difference was found between genders in all sub-dimensions of the students participating in the research. Alasmari et al. (2017) on obesity on university students, no statistically significant relationship was found between gender. In the study of Misiroglu et al. (2007) found no difference between obesity and gender in their study. Pala et al. (2003) found no significant difference in terms of gender in children aged 6-10 years in their study. Results of similar studies support our study.

It was determined that there was no significant difference between the ages of the students and the obesity awareness scale sub-dimensions. Çınar (2013) did not find a statistically significant difference between the age of the students and the incidence of obesity in his master's thesis. In his doctoral thesis, Acaroğlu (2020) concluded that there is no statistical difference between the ages of the participants and obesity. On the other hand In the study conducted by Çayır et al. (2009) when the relationship between obesity and age was evaluated, it was determined that the obesity rate was higher in those aged 61 years and older than those at lower ages. The results of the studies are consistent with the results we found.

It was determined that there was no significant difference between the family structures of the students and the sub-dimensions of the obesity awareness scale. Kaya (2008) reached a conclusion in parallel with our study in his study, and no significant result was reached between family structure and obesity. Aslan et al. (2003) reached the same conclusion as we did in their study. Tezcan et al. (2005) did not find a relationship between gender and family type in the study they conducted on the same field. The results found in other studies examined showed parallelism with our study.

It was found that there was a significant difference between the students' personal income levels and the obesity awareness scale nutrition and physical activity sub-dimensions. t has been concluded that the awareness level of students with a personal income level of 750 TL and below is lower than that of students with a personal income level of 751-1500 TL. Cayir et al. (2009), it was determined that the obesity rate increased as the income level decreased. Özilbey (2013), in his study to determine the obesity frequency of 6-11 age group students and its relationship with their eating habits, found that obesity increases as the income level increases. They prove that there is a significant difference between income level and obesity, as in the result we found in other studies.

It was found that there was a significant difference between students' sports activities and obesity awareness scale awareness and nutrition sub-dimensions. It has been concluded that the awareness level of the students who do sports activities in the obesity awareness and nutrition sub-dimensions is higher than the students who do not do sports activities. A significant difference was found in body mass index according to the sportive activity status of the participants in a study conducted by Sevimli (2008) on 412 people. Karacan et al. (2004) found in their study that regular exercise has a reducing effect on body mass index. Okyay et al. (2002) did not find a significant relationship between obesity and doing sports. The results found in the studies are in line with the results of our study.

It was determined that there was no significant difference between the type of sportive activity that the students were doing and the sub-dimensions of the obesity awareness scale. Spendlove et al. (2012) found that there were no significant differences in nutritional knowledge between those who do team sports and those who do individual sports. In a study by Bozkurt and Nizamlıoğlu (2005), it was found that the level of nutrition knowledge of the athletes who do individual sports is higher than those who do team sports.

It was determined that there was a significant difference in the obesity awareness sub-dimension between the duration of the students' doing sports activities and the obesity awareness scale sub-dimensions. It has been found that the awareness level of the students who do sportive activities for 2 hours or less is lower than the students who have 3-5 hours. No significant difference was found between the duration of doing sports activities in nutrition and physical sub-dimensions. Hassapidou et al. (2013), in a study they conducted in Greece, they found that those who do sports less than four hours a week in women are associated with obesity. Zorba et al. (2000) obtained positive results in the study they conducted on middle-aged sedentary women for 8 weeks, provided that it was 3 days a week. Amano et al. (2001) in their study, they reached a conclusion that was parallel to our study. It has been observed that other studies are in line with our study.

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