The Effects of university students' daily eating habits and physical activities on obesity incidence

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Abstract

The aim of this study was to determine the effect of daily eating habits and physical activity status of 327 (237 women, 90 men) volunteer students at Dumlupınar University Altıntaş Vocational School on obesity. A questionnaire was used as a data collection tool. Body mass index (BMI) was calculated according to height-weight status of students considering gender differences and these results were compared with socio-demographic characteristics, feeding habits, physical activity status. According to the findings, body mass index value of 69,6% of the female students was "normal", while 13,9% were "overweight" and 3,3% were "obese" (2,9% was obesity class I and 0,4% was obesity class II). BMI value of 71,1% of the male students was "normal", 24,4% were "overweight" and 2,2% were "obese" (whole of this was obesity calss I). It was found that 87,7% of the overweight, obesity class I and obesity class II students skipped meals. There was a statistically significant relationship between skipping meals and being overweight. The aim of this study was to increase the awareness of students about obesity. At the same time, considering that one out of every 5 university students was overweight and a significant majority of them do not have regular eating and sports habits, it was aimed to draw attention to the importance of trainings to increase regular nutrition and physical activity in schools.

Key words: Nutrition, obesity, eating habits, physical activity.

INTRODUCTION

Obesity is increasing rapidly in all over the world and in our country. The World Health Organization (WHO) has defined obesity as "abnormal or increased fat accumulation that threatens health in the body" (Yücel and Toprak 2016). International research findings showed that eating habits, physical activity, and sedentary life is the important risk factors for overweight youth.

Genetic structure, environmental factors, age, gender, psychological factors, socio-cultural and economic level, birth weight, shortage of breastfeeding, medical diseases, drugs, peer problems, depression or other psychological problems and negative relationships within the family are effective in the occurrence of obesity (Babaoğlu and Hatun 2002; Akbulut et al. 2007).

However, the most important factors are changes in dietary and activity habits such as wrong eating habits, eating more than body needs, sedentary life, consuming high-calorie foods and drinks (Popkin 2001; Akbulut et al 2007; Tedik 2017; Taveras et al. 2013; Kelishadi and Poursafa 2014).

As in other countries of the world, the prevalence of obesity increases in our country day by day. According to Turkish Statistical Institute (TUIK) data, the obesity rate, which was 15,2% in 2008, increased by 31,1% in 2014 and reached 21,1% in 2019 (https://tuikweb.tuik.gov.tr/).

In the literature, it was reported that nutritional health problems generally occur in adulthood, but their foundations were laid during childhood and adolescence (Garibağaoğlu et al. 2006; Özdoğan et al. 2012a). University students are one of the most common age groups with nutritional problems.

METHODS

The sample of this research was 327 (72,5% female, 27,5% male) students, 237 female and 90 male students studying at Kütahya Dumlupınar University Altıntaş Vocational School. In the research, a questionnaire form was used as a data collection tool. In the questionnaire, 4 groups of questions were asked to the students regarding socio-demographic characteristics, meal consumption conditions during the day, daily physical activity situations, and smoking and alcohol consumption habits.

Body Mass Index, body weight and height length measurements were taken to determine obesity and were calculated with the following formula:

BMI= Weight / Length^2 (kg / m2) (https://www.euro.who.int/)

In this study, considering the international obesity classification of the World Health Organization, BMI values of underweight (<18.50), normal weight ($18,00 – 24,99$), overweight (> 30), obesity class I ($30,00 - 34,99$) and obesity class II ($35,00 – 39,99$) classes were taken as basis.

The aim of this study was to determine the effects of daily eating habits and physical activity status of students studying at Kütahya Dumlupınar University Altıntaş Vocational School on obesity. In this way, it is aimed to raise awareness among students.

The data obtained were evaluated by SPSS program by taking percentages and frequencies. Chi-square and ANOVA significance tests were used to compare study data. Significance was evaluated at $p <0.05$ level.

Results

237 (72,5 %) of the 327 students who made up the sample were female and 90 were male (27,5 %). Looking at age of students, it was seen that 154 (47,0%) were between 18-20, 147 (45,0%) were between 21-23 and 26 (8,0%) were over 24 years old.

The results of the students participating in the study regarding their eating habits, daily physical activity status and smoking and alcohol consumption habits were given in Table 1-4.

While the BMI value of 69,6% of the female students was "normal", 13,9% of them were found as "overweight" and 3,3% of them were "obese". 71,1% of the male students had "normal", 24,4% had "overweight" and 2,2% had "obese" BMI.

Table 1. BMI values according to students' gender.

BMI (kg/m^2)	Female (n=237, %72,5)		Male (n=90, %27,5)		Total (n=327)	
	n	%	n	%	n	%
Underweight ($< 18,50$)	31	13,0	2	2,2	33	10,1
Normal weight ($18,50 – 24,99$)	165	69,6	64	71,1	229	70,0
Overweight ($> 30,00$)	33	13,9	22	24,4	55	16,8
Obesity class I	7	2,9	2	2,2	9	2,8
Obesity class II	1	0,4	0	0	1	0,3

According to the results of the study, it was found that 87,7% of 65 students whit overweight and obese BMI values answered "yes" to the question "Do you skip meal?". A statistically significant relationship was found between skipping meals and being overweight. However, it was observed that there was no significant relationship between the number of daily meals and eating habit before bedtime and being overweight.

It was determined that 62,2% of 262 underweight and normal weight student, and 66,2% of 65 overweight and obese students consumed one or more fast-foods per week. There was no significant relationship between overweight and fast-food consumption.

According to the study, 43,1% of 65 overweight and obese students smoked cigarettes and 15.2% of them consumed alcohol.

It was determined that 26.6% of 262 students who were underweight and normal weight smoked cigarette and 14.9%

consumed alcohol. There was no statistically significant relationship between smoking/alcohol consumption and being overweight.

It was observed that 41,5 % of overweight and obese students participating in the study do sports and 70,8 % stay at computer or phone more than three hours a day. This value was 51,1 % and 75,9 %, respectively, in underweight and normal weight ones.

According to these results, no significant relationship was found between physical activity status and being overweight in our student group.

Table 2. Daily meal consumption status according to BMI.

	Underweight (n=33)		Normal weight (n=229)		Overweight (n=55)		Obesity class I (n=9)		Obesity class II (n=1)	
	n	%	n	%	n	%	n	%	n	%
Do you skip meal?										
Yes (n=258, 78,6 %)	25	75,8	176	76,9	49	89,1	7	77,8	1	100
No (n=69, 21,4 %)	8	24,2	53	23,1	6	10,9	2	22,2	-	-
The number of meals during the day										
2 (n=142, 43,40 %)	15	45,5	106	46,3	18	32,7	2	22,2	1	100
3 (n=138, 42,20 %)	14	42,4	94	41,0	25	45,5	5	55,6	-	-
4 + (n=47, 14,40 %)	4	12,1	29	12,7	12	21,8	2	22,2	-	-
Do you have a habit of eating before bed?										
Yes (n=196, 59,9 %)	20	60,6	134	58,5	30	54,5	7	77,8	1	100
No (n=131, 40,1 %)	12	39,4	94	41,5	23	45,5	2	22,2	-	-
Fast-food consumption frequency										
No consumption (n=25, 7,60 %)	3	9,1	18	7,9	3	5,5	1	11,1	-	-
Once a month (n=83, 25,40 %)	5	15,2	60	26,2	17	30,9	1	11,1	-	-
Once a week (n=110, 33, 60 %)	13	29,3	72	31,4	22	40,0	3	33,3	-	-
More than once a week (n=109, 33,30 %)	12	36,4	79	34,5	13	23,6	4	44,5	1	100

Table 3. Cigarette and alcohol consumption according to BMI

	Underweight (n=33)		Normal weight (n=229)		Overweight (n=55)		Obesity class I (n=9)		Obesity class II (n=1)	
	n	%	n	%	n	%	n	%	n	%
Do you smoke?										
Yes (n=124, 37,9 %)	10	30,3	86	37,5	24	43,6	3	33,3	1	100
No (n=193, 59,0 %)	22	66,7	135	59,0	30	54,6	6	66,7	-	-
I stopped (n=10, 3,1 %)	1	3,0	8	3,5	1	1,8	-	-	-	-
Do you drink alcohol?										
Yes (n=49, 14,9 %)	3	9,1	36	15,7	9	16,4	1	11,1	-	-
No (n=278, 85,1 %)	30	90,9	193	84,3	46	83,6	8	88,9	1	100

Table 4. According to BMI, daily physical activity status and the time spent on the computer, phone or game starts daily.

	Underweight (n=33)		Normal weight (n=229)		Overweight (n=55)		Obesity class I (n=9)		Obesity class II (n=1)	
	n	%	n	%	n	%	n	%	n	%
Do you do sports?										
Yes (n=124, 37,9 %)	14	42,4	120	52,4	22	40,0	4	44,5	1	100
No (n=193, 62,1 %)	19	57,6	109	47,6	33	60,0	5	55,5	-	-
How much time do you spend a day in front ofthe computer, phone or game?										
Never (n=11, 3,4 %)	2	6,1	6	2,6	3	5,4	-	-	-	-
1-2 h (n=69, 21,1 %)	6	18,2	49	21,4	13	5,7	1	11,1	-	-
3-4 h (n=138, 42,2 %)	15	45,4	95	41,5	27	11,8	1	11,1	-	-
5-6 h (n=68, 20,8 %)	4	12,1	51	22,3	9	3,8	4	44,5	-	-
7+ h (n=41, 12,5 %)	6	18,2	28	12,2	3	1,3	3	33,3	1	100

DISCUSSION

In Turkey, several studies have been conducted to determine the nutritional habits of students and have established that they don't pay attention to regular meal times, they prefer the fast-food, and they don't exhibit a physically active life during the day.

An analysis of studies conducted in Turkey and the world shows that obesity has increased in all age groups. While investigating the etiology of obesity, it will be more appropriate to divide the participants into specific groups according to their similar features because the living conditions and life styles of people with common characteristics are similar. University students, who usually live away from their families and live with their own means, are an important group that should be examined in determining the nutritional habits of young people.

In this study, nutritional and physical activity habits and obesity status of a group of students studying at Dumlupınar University were investigated. Accordingly, when the BMI values of the students participating in the study were analysed, it was determined that 70% of them were normal weight, 16,8% were overweight and 0,3% were obese. Tözün et al.

found that 86,6% of the students surveyed in a university in the west of Turkey were normal weight, more than 13,4% were overweight and obese (Tözün et al. 2017), while Avşar et al. determined that 17,7% of the students were overweight and obese (Avşar et al. 2016). In another study, Saygın et al. found in a sample composed of students at Süleyman Demirel University that 67,39% of the female students participating in the study were normal weight, 15% were overweight and obese, while 31,25% of the male students were overweight and 18,74% were overweight and obese (Avşar et al. 2016). In their study, Dülger and Mayda found that 69,7% of the students at Bartın University Vocational School of Health Services were normal weight, 18,8% were overweight and 6,6% were obese (Dülger and Mayda 2016). Özdoğan et al. reported that 74,5% of the female university students living at student dormitory were normal and 12,3% were overweight, while 73% of the male students were normal and 23,8% were overweight (Özdoğan et al. 2012a). Again, in their study to determine the food habits of university students, Zileli et al. stated that 66,4% of the participating students were normal weight, 22% were overweight and 6,3% were obese (Zileli et al. 2016), while Akça and Selen found that 16% of female and 17% of male students at Hitit University School of Health who participated in their study were obese (Akça and Selen 2015). When other studies were compared with our study, it was seen that close results were obtained in terms of BMI values.

It is recommended to consume at least three meals a day for adequate and balanced nutrition and the time between meals should be at least 4-5 hours. It is stated that the most important meal of the day is breakfast. However, in our study, in parallel with the previous studies, skipping meals as a wrong eating habit was common (78,6%) and especially breakfast was the most frequently skipped meal (51,6%). In the literature, Özdoğan et al. stated 84,5% of students (Özdoğan et al. 2012b), Önay stated 62% of students (55% breakfast) (Önay 2011), Ayhan et al. stated 81,7% (Ayhan et al. 2012) of students, Zileli et al. stated 85,1% of students (44,9% breakfast, 35,4% lunch) skipped meals (Zileli et al. 2016). Akça et al. Akça et al. reported that 68% of the students who participated in their study skipped meals and found that their meal skipping status was statistically significant according to the BMI classification (Akça and Selen 2015). In their study at Ege University, Oluk et al. 44% of the students skipped breakfast, 41% skipped lunch and 2% skipped dinner (Oluk et al. 2011), while Dülger et al. found that 20% of the students at Bartın University skipped breakfast, 35,5% skipped lunch and 5,2% skipped dinner (Dülger and Mayda 2016). Looking at the research data, it was seen that skipping meals was a common nutritional deficiency among university students.

In addition to skipping meals, eating before going to bed was also common malnutrition for university students. In our study, 58,.7% of students replied yes" to "Do you have a habit of eating before bedtime?" while 41,7% of the students in the study of Arslan et al. (Arslan et al. 2016), 50,7% of the students in the study of Özdoğan et al. 2012a, 39,6% of the students in the study of Akça et al. (Akça and Selen 2015) and 44,3% of the students in the study of Zileli et al. replied "yes" to the same question (Zileli et al. 2016).

In addition to the formation of adequate and balanced eating habits, gaining regular physical activity habit during the youth period is also important. It was noted that daily physical activity decreases in transition from childhood to youth or from youth to adulthood (Telama 2009). The findings of our study related to physical activity confirm this finding.

According to our study results, 38% of the students don't exercise regularly. Considering other studies, Tözün et al. 2017 stated that only 17,3% of students, Zileli et al. (Zileli et al. 2016) stated that 18,5% of students and Akça et al. stated that 26.4% of students did enough physical activity daily (Akça and Selen 2015). In addition, some studies emphasize that there was a negative relationship between physical activity level and BMI (Clement et al. 2004; Mestek et al. 2008). Arslan et al. determined that 91.5% of the female and 71,9% of the male students, who participated in the study, showed insufficient physical activity on a daily basis (Arslan et al. 2016), whereas Ölçücü et al. found that 51,5% of the female and 73,4% of the male students showed insufficient physical activity on a daily basis (Ölçücü et al. 2015). Studies show that the majority of university students cannot even meet the minimum physical activity level that should be done daily.

Today, technological developments in tools and equipment in transportation, automation, home, business and shopping areas have significantly reduced the need for movement and made people less active. In a study, it was shown that there was a relationship between sedentary life and obesity especially due to watching television (Janssen et al. 2004). In this study, it was observed that 42,2% of the students spent 3-4 hours a day, 33,3% spent more than four hours a day at a computer or telephone. Similar to our study, it was found in a study conducted by Zileli et al. that 42% of students say at the computer for three hours a day or more (Zileli et al. 2016).

In our study, the relationship between cigarette/alcohol consumption and BMI was also examined. According to the data of our study, 38% of the students smoked cigarettes and 15% consumed alcohol. No statistically significant relationship was found between cigarette/alcohol consumption and BMI classification. In other studies, Zileli et al. determined 33,6% smoking, 21,7% alcohol consumption (Zileli et al. 2016) and Güleç et al. determined 19% smoking, 27,3% alcohol consumption (Güleç at al. 2008) while Tanrıkulu et al. determined 32.3% smoking, 24,7% alcohol consumption (Tanrıkulu et al. 2009). In a study conducted by Ayhan et al., it was reported that 9,1% of female students smoked cigarettes, 24,2% consumed alcohol while 25.1% of male students smoked cigarettes and 27,8% consumed alcohol (Ayhan et al. 2012).

With this study we have done, we aimed to raise awareness among university students on this subject by raising their awareness level. In addition, we believe that the incidence of metabolic diseases such as obesity, hypertension and type II diabetes will decrease in the next generations and a healthier society will grow by changing the nutritional habits and grasping the necessity of physical activity throughout the society.

CONCLUSION

As a result, students should be informed about the importance of healthy nutrition and regular physical activity in preventing chronic diseases, especially obesity, and a social awareness should be created. They should be encouraged to adopt an active lifestyle with adequate and balanced nutrition. They should be made to realize that physical activity is not only sports, but also all activities (gardening, walking, etc.) that can be applied in daily life. Young people should be furnished with an active life habit.

CONFLICT OF INTEREST

The author sees no conflict of interest.

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