

DETERMINATION OF OBESITY, PERCEIVED SOCIAL SUPPORT AND HEALTHY LIFESTYLE BEHAVIOURS AMONG UNIVERSITY STUDENTS

DETERMINAREA OBEZITĂȚII, A SUPTULUI SOCIAL ȘI A COMPORTAMENTELOR DE VIAȚĂ SĂNĂTOASE LA STUDENȚI

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Abstract:

Aim: This current study aimed to determine obesity, perceived social support and healthy lifestyle behaviors in university students.

Method: The population for this study consisted of all the students enrolled in the faculties of a public university. A number of 5 faculties constituted the sample group and their students were identified by simple random sampling method. For data collection 3 business days were allocated for each faculty. In total, 2158 students who agreed to participate in the research were included to the study.

Results: The mean age of the students surveyed was 21.23 ± 11.56 . The mean HLBS II score of university students was determined by the educational status of the students' parents', their living environment, gain weight after starting university, waist to hip ratio, the mean HLBS II and MSPSS scores of diabetes risk assessment.

Conclusion: Predisposition to obesity can be seen at higher rates in university students due to a decrease in perceived social support and a negative influence on healthy lifestyle behaviors.

Rezumat*:

Scop: Acest studiu a avut ca obiectiv determinarea obezității, a suportului social și a comportamentelor de viață sănătoase la studenți.

Metodă: Studiul a fost efectuat pe studenții înscriși la 5 facultăți a unei universități publice, iar studenții lor au fost identificați printr-o metodă simplă de eșantionare aleatorie. Pentru colectarea datelor au fost alocate 3 zile lucrătoare pentru fiecare facultate. În total, 2.158 de studenți care au acceptat să participe la cercetare au fost incluși în studiu.

Rezultate: Vârsta medie a studenților chestionați a fost de $21,23 \pm 11,56$. Media scorului HLBS II a studenților a fost determinată de starea educațională a părinților studenților, de mediul lor de viață, de creșterea în greutate după începerea universității, de raportul între talie și șold, media scorurilor HLBS II și MSPSS de evaluare a riscului de diabet.

Concluzie: Predispoziția la obezitate poate fi observată în proporție mai mare la studenți datorită modului redus cum percep suportul social și a unei influențe negative asupra comportamentelor de viață sănătoase.

Key-words: *Obesity, perceived social support, healthy lifestyle behaviors, university students*

Cuvinte cheie: *Obezitate, sprijin social, comportamente de viață sănătoase, studenți*

Introduction

From all across the World, chronic disease groups that carry more deadly risks have substituted the acute medical conditions in adulthood is known. Starting from early ages, key risk factors that may cause these diseases should be scrutinized and protective measures should be taken (Draper CE et al, 2015; Plumb J

et al, 2012; Kelly T et al, 2008). Furthermore it has been shown that developing protective behaviors against these risks reduces the risk of many chronic diseases such as cardiovascular diseases, diabetes, and hypertension (Dogan B et al, 2017). Among the main risk factors of chronic diseases particularly died/ obesity, lack of physical activity, the existence of sedentary

lifestyle are emphasized. But the data that are summarizing the effect of social norms and social support which form basis for these risks in a comprehensible manner are very scarce USA has allocated more than 3/+ of health expenses to chronic disease method. Obesity and the cost linked to obesity were declared about being 147 billion dollars. Data are in the furtherance of nutritional disorders and obesity's being a situation that affects personal health, community health, labor and the economy severely (Özkahraman Ş Kişioğlu A N & Öztürk M., 2007; Satman İ et al, 2017.). According to the data of 2016, it was stated that in the population over the age of 18, there were approximately 650 million obese and supposedly 3 times of this pre-obese individuals in the World. It is expected that if adequate precautions are not taken this ratio will become approximately 2 times more and world population's 20% will become obese and 38% will become pre-obese (Kelly T et al; 2008). Based on all this data at university period great importance of having proper nutrition was expressed in terms of individual's continuing his life healthy, school success and prevention of chronic diseases that they may have in later years (Güleç M et al, 2008; Özkahraman Ş et al, 2011). In the definition of social support which is discussed as a multidimensional concept, it is mentioned that social support is not just giving advice but also in the case of requirement of the individual, it includes emotional, social, informational and instrumental assistance (Cohen S, 2004; Wilson DK et al, 2017). Although, the area defined for social support is very wide, from the first years of life the most important area that individual's physical and psychological needs developed by is his family the effects and the presence of the family that provides the most basic support maintain. Its importance at university period but with the effect of distance; rupturing or moving away from family support can be seen (Mersin S & Öksüz E, 2014; Tang KH et al, 2010; Utley JM et al, 2016).

Being a university student is hard and university life can give anxiety and stress to the student. In the young people away from their family the effort of being a member of a group, having a career, adapting to a foreign environment, a new city, a new school, affects negatively many students mentally when they

came to university (Gill M et al, 2018; Yılmaz E, Yılmaz E & Karaca F., 2008; Ünsar S et al, 2008; Temel BA & Çuhadar D., 2007). The current study aimed to determine obesity, the behavior of healthy lifestyle and perceived social support in university students.

Methods

Study Design:

In this study, obesity, healthy lifestyle behaviors and perceived social support were defined as descriptive.

Population and Sample:

The population for this study included all the faculties of a public university [n=15]. Faculties listed and they were selected by simple random sampling method. 5 faculties that make up the sample group have been identified by this method. For data collection 3 business days were allocated for each faculty in total 2158 students who agree to participate in research were included in the study. In the collection of data, questionnaires applied to students, furthermore anthropometric measurements such as height, body weight, body mass index, waist circumference were taken. Waist – to- hip ratio and body mass index were also calculated by considering these measurements.

Anthropometric Measurements:

- Height measurement; subject was in upright position, bare foot heels' of feet touching each other, upright head and eyes were at the position of looking ahead straight, measured in CM With straddometer with precision of 0.01m.
- Body weight measurement; Calibrated scales whose subject body weight parameter is ± 0.1 kg were used. Subject's body weight was measured as Kg when they have thin clothes; they are in bare food and in an anatomical heel position.
- Waist circumference measurement; it was measured when subjects had t-shirt, they were in bare foot at an anatomical heel position, between arkus kostarum and processes spina iliac anterior superior with a narrowest diameter tape measure and indicated as cm.

- Hip circumference measurement; it was measured when subjects wear shorts/ tight pants, they were in bare foot and in anatomical heel position, from prominent place of gluteus maximus and at the line of the symphysis pubis from the front with a widest diameter tape measure, indicated as cm. Waist to hip ratio was calculated as $[WHR] = \text{Waist circumference} / \text{hip circumference} [\text{cm}/\text{cm}]$ as a result of the researcher's measurement.

BMI was calculated as $\text{BMI} = \text{Weight}/\text{Height}^2 [\text{kg}/\text{m}^2]$ as a result of the measurements of the researcher. According to WHO in international classification of obesity, it was evaluated that those whose BMI categories are under 18.5 are 'weak', those between 18.5-24.9 are 'normal', those between 25.0-25.9 are 'overweight', those over 30.0 are 'obese' (WHO, 2008 (Available from 2019)).

Participants blood glucose levels were determined by a same brand machine whose capillary blood calibration was made. In order to use in diabetes risk assessment, participants' blood pressure was measured from their right arm after resting 10-15 minutes; while they are in a seated position, their back supported, feet are flat on the floor. A second blood pressure measurement of the people whose measured blood pressure value was determined over 140/90 mm/Hg was done after resting 15 more minutes.

Data collection tools:

In the first section of the questionnaire socio-demographic data form prepared by making literature survey was used. In the second section of it; diabetes risk test, healthy lifestyle behaviors scale II [HLBSII], multidimensional scale of perceived social support [MSPSS] were used to determine the risk of diabetes. Diabetes risk survey developed by Lindström and Tuomilehto in 2003 was used (Lindström J, & Tuomilehto J, 2003;). In this test, 8 parameters were examined in total. These parameters were respectively; age, BMI, waist circumference, Daily physical activity status, Daily fruit and vegetable consumption, family history, presence of hypertension, whether or not detecting blood glucose level high before randomly. As a result of the responses given to

these parameters, risk score of people's developing type 2 diabetes within 10 years was obtained by adding received scores. As a result of the survey, minimum 0 and maximum 26 points were taken as a diabetes risk score. If the received total score was below 7, it was determined that the risk was 'very low'; between 7-11 was 'low', between 12-14 points was 'medium level', between 15-20 was 'high risk' and over 20 points was 'very high risk'.

The first version of HLBS was developed by Walker and his friends in 1987 (Walker SN et al, 1987). The scale was revised in 1996 and named as 'Healthy Lifestyle Behaviors Scale II'. The scale consists of 52 items. The value of Cronbach Alpha of the scale is 0.94. The minimum total score for the scale is 52, the maximum score is 208 (Walker SN, Hill-Polerecky DM, 1996). Reliability and validity of the scale in Turkey was done by Esin [1997] and Akça [1998]. The value of Cronbach Alpha was respectively found as 0.90 (Esin N., 1997; Akca S., 1998).

Multidimensional Scale of Perceived Social Support [MSPSS] was developed by Zimet et al. in 1988. Scale's reliability and validity study in Turkey was done by Eker and Akar (Eker D, Arkar H., 1995). However, it was revised in 2001 (Eker D, Arkar H & Yaldız H., 2001). In this current study revised form was used. Scale is a Likert-type scale, which consist of 12 items. The minimum total score that can be obtained from the scale is 12, the maximum score is 84. Highness of obtained score shows the highness of perceived social support. The reliability coefficient of the scale was found between 0.80-0.95 at the study of Eker and Akar.

Statistical analysis: Data were analyzed using SPSS 20.0 program by transferring to a computer. At the analysis; number, percentage, average calculation, variance analysis, t-tests were used.

Results

The mean age of the students surveyed was 21.23 ± 11.56 and it was found that most they were single, for the longest time they lived in the city (51.81%) and they had a middle-income level (49.33%). The distribution of

demographic characteristics of the students was shown in Table 1. It was determined that most of their father was high-school graduates (44.95%). It was understood that they perceive their physical health (49.95%), their mental health (39.48%) at a moderate level and it was determined that their fasting blood glucose level was at normal limits.

Sociodemographic Characteristic	Number	%
She/he lives with parents		
City/ Province	1118	51.81
District/ Sub province	629	31.93
Town /Village	351	16.26
How Does She / He Feel Physical Health		
Good	984	45.60
Medium	1078	49.95
Bad	96	4.45
How Does She / He Feel Mentally		

Good	829	38.42
Medium	852	39.48
Bad	472	22.10
Fasting blood glucose [mg/dl]	97.32±25.73	

Table 1. The distribution of sociodemographic characteristics of university students [n=2158]

The mean HLBS-II score of university students was found as 168±34.25 the mean score at MSPSS was 62.12±13.11. According to the identifier properties of the students, the distribution of HLBS-II and MSPSS mean scores were shown in Table 2. A statistically significant correlation was found between gender, students' parents' educational status, income status, the place where they stay at university gaining weight after starting university, BMI, waist to hip ratio, the HLBS-II and MSPSS mean scores of diabetes risk assessment [p<0.05].

Some of the identifier properties	Nr	%	HLBS-II	MSPSS
Gender				
Female	1292	59.88	152.21±14.37	59.15 ± 12.32
Male	866	40.12	128.35±17.21	57.12 ± 14.11
t			106.538	30.369
p			0.00	0.65
Mother Educational Status				
Literate	446	20.67	124.01±11.08	58.61 ± 12.12
Primary-Secondary school Graduates	688	31.88	131.7±17.65	57.21 ± 13.43
High School Graduate	765	35.45	158.9±12.81	65.14±14.71
University Graduate	259	12.00	157.6±16.42	64.13±13.22
F			19,432	21,354
p			0,00	0,00
Income status				
Good	475	22.01	154.12±10.12	53.51±13.12
Middle	1065	49.35	122.51±18.66	52.24±14.21
Bad	618	28.64	129.19±13.71	51.25±15.34
F			17,425	19,253
p			0,00	0,61
The place where he stays				
Family	293	13.58	137.21±14.21	52.21±14.16
Dorm	936	43.37	135.61±15.34	45.23±14.31
With friends	847	39.25	118.72±14.31	44.16±15.21
Alone at home	82	3.80	117.64±15.32	42.18±16.25
F			15,372	18,264
p			0,00	0,00
Did she/he gain weight after starting university?				
Yes	753	34.89	112.41±17.22	53.21±14.34
No	1405	65.11	128.14±12.74	67.61±13.32
t			106.538	112.412
p			0.00	0.00

BMI				
Weak<18.5	104	4.82	134.12±14.18	68.61±12.31
Normal 18.5-24.9	1119	51.85	145.15±13.14	67.23±14.23
Overweight 25.0-29.9	796	36.89	135.14±18.25	55.15±14.21
Obese >30.0	139	6.44	137.42±13.32	44.17±15.22
F			13,236	17,324
p			0,00	0,00
Waist-to-hip ratio				
Female <0.85	903	69.89	147.21±14.21	51.21±14.12
≥0.85	389	30.11	121.32±13.23	47.13±15.22
Male <0.90	763	88.11	139.62±15.31	52.17±15.24
≥0.90	103	11.89	122.44±13.22	45.18±14.23
F			21,532	28,342
p			0,00	0,00
Diabetes risk assessment				
Very low risk	1185	54.91	139.31±13.22	65.22±15.13
Low risk	740	34.29	140.51±13.24	67.23±13.21
Orta risk	124	5.75	125.32±12.24	64.25±13.25
Moderate risk	96	4.45	128.34±14.23	55.28±12.22
Very high risk	13	0.60	118.24±15.52	54.27±14.24
F			16,412	23,238
p			0,00	0,00

Table 2. The distribution of HLBS-II and MSPSS mean scores based on identifier properties of university students

The distribution of health and nutrition behaviors of university students was shown in Table 3. It was found that 74.96% of students were in a sufficient level to Access an exercise area and however 63.44% of them had a positive attitude towards physical activity, 57.28% of them did exercise once a week or never. From students' negative eating behaviors, it was found that 55.75% of the students fed on sugary drinks, 92.11% of the students fed on sweet and bakery products, 96.80% of the students fed on take home foods and fast food and 83.27% of them fed on nuts more than 3 times a week.

Smoking status	Number	%
Yes	328	15.20
No	1317	61.03
Sometimes	513	23.77
Alcohol intake status		
Yes	17	0.79
No	1872	86.75
Sometimes	269	12.46
Do you try to lose weight?		
Yes	216	10.01
No	1942	89.99
Access to exercise area		
Adequate	1553	74.96
Inadequate	605	28.04

Attitude towards physical activity		
Positive	1369	63.44
Negative	789	36.56
Exercise		
Never- Once a week	1236	57.28
Twice-3 times a week	561	25.99
More than 3 times a week	361	16.73
Sugary drinks Consumption		
Never- Once a week	268	12.42
Twicw-3 times a week	687	31.83
More than 3 times a week	1203	55.75
Fruit Consumption		
Never- Once a week	59	2.73
Twice-3 times a week	1354	62.74
More than 3 times a week	745	34.53
Vegetables Consumption		
Never- Once a week	72	3.34
Twice-3 times a week	1832	84.89
More than 3 times a week	254	11.77
Meat and Meat Products		
Never- Once a week	16	0.74
Twice-3 times a week	1303	60.38
More than 3 times a week	839	38.88
Sweet and Bakery Products		
Never- Once a week	19	0.88
Twice-3 times a week	134	6.21
More than 3 times a week	2005	92.91
Take-home food and fast food		
Never- Once a week	4	0.19

Twice-3 times a week	65	3.01
More than 3 times a week	2089	96.80
Milk and Dairy products		
Never- Once a week	36	1.67
Twice-3 times a week	129	5.98
More than 3 times a week	1993	92.35
Nuts		
Never- Once a week	46	2.13
Twice-3 times a week	315	14.60
More than 3 times a week	1797	83.27

Table 3. The distribution of health and nutrition behaviors of university students [n=2158]

Discussion

With globalization, the prevalence of obesity, which has become an epidemic, is increasing. Diseases caused by overweight and obesity in developed and developing countries are taking the place of nutritional deficiencies caused by famine and infectious diseases in undeveloped countries. Among the studies on eating habits, any study that evaluates the relationship between the resources of nutritional awareness of individuals and the prevalence of obesity hasn't been found. The ratio of the students who said that they have nutrition awareness that occur with the information received from their family were higher (Tambağ H., 2011). Therefore it can be expressed that family acquired habits are effecting predisposition to obesity. Also, within the study, habits of university students and factors that may lead to obesity were examined. Nutritional behaviors acquired throughout university education which covers the end of adolescence and the beginning of the adulthood process is important in behalf of obesity control as it is expected to continue in subsequent years. According to data's of Turkish Statistical Institute; while obesity rate in 2008 was 15.2%, in 2004 it reached to 19.9% by increasing 31.1%. It observed that increasing rate in women was 32.3% and 24.0% in men (Türkiye İstatistik Kurumu, 2014). At the research that was made by calculating body mass index, the overweight ratio of university students was found over 20%. This current study also showed that 34.89% of the students had tendency of gaining weight after starting university and 36.89% of them were overweight. Mothers' educational status affects HLBS-II score and accordingly the risk of diabetes.

Many studies have emphasized that the concept of fast food products is very wide, and they associate the increase in fast food consumption with hypertension and other chronic disease (Özkahraman Ş, Yıldırım B & Şahin Altun Ö., 2011; Dingman DA et al, 2014; Zhao Y et al, 2017; Mohammadbeigi A et al. 2018). In another study the prevalence of obesity was found higher in students who consume fast food twice or more than the students who consume fast food twice or more than the students who consume less than 2 (Acar Ö, 2015). In another study it was found that 34.41% of participants consumed more than once in a week (Kahraman, Ç., 2018). In this current study it was found 96.80% of them had consumption of home take food and fast food more than 3 times in a week. In this current study it was interpreted that the reasons for this high value were making explanation about the concept while asking questions that were associated with fast food, not being at a family place in university, having to eat with friends due to the lack of desire to eat alone. In this studies it was found that there is an association between the presence of sugary drinks, fruit and vegetables, their intake levels and obesity rates (Bauer KW et al, 2011; Larson NI et al, 2013). In a study it was shown that alcohol consumption caused extra caloric intake in high amounts and extra calories taken with alcohol contributed to obesity depending on the type and the amount of the beverage they drank (Battista K, Leatherdale ST, 2017). This studies data of the nutritional properties showed parallelism with other studies. In the study it was emphasized that regular physical activity supports the healthy development of an individual. However, a significant number of young people were unable to fill the time of recommended daily physical activity. Centers of Disease Control and Prevention [CDC] (Aarts H, Paulussen T & Schaalma H., 1997) indicates that this situation contributes to increase in obesity and in parallel, it increases the risk of chronic illness and co morbidities during life time (Gill M et al, 2018, Peltzer K et al, 2014). Similar to this current study in studies conducted, it was found that family support and social support had supportive effect on physical activity (Gill M et al, 2018; Khan ZN et al,

2016; Bauer KW et al, 2011; Baskin ML et al, 2013; Wilson DK et al; 2011); and it was found that the factors such as the transportation challenges of the supports field social problems of the environment they live in were inversely proportional with physical activity status (Wilson DK et al, 2011; Molnar BE et al, 2004). In this current study it was found that increase of MSPSS scores and HLBS II scores were parallel and they supported the necessity of increasing levels of activity. In several studies conducted in Turkey, the scores of healthy lifestyle behaviors scale of the students and factors affecting it were compared. It was determined that in general female students pay more attention to nutrition responsibility in the data (Tambağ H., 2011; İlhan NB, 2010). The results were compatible with this current study but HLBS scores were found higher. The reasons for this situation were working with bigger sample group, socio-economical level, increase of public awareness.

When the diabetes risk assessment data was examined, within next decade, the probability of getting diabetes was very high at 0.60% and it was identified that 4.45% had moderate risk. The ratio was at very high risk level for the age group that consist working group. Based on data, it was considered that social, legal, administrative measures should be taken as soon as possible. In parallel with this work, in the studies done in Jordan and Brazil, factors such as diabetes risk and obesity, lack of physical movement, dietary disorder were associated (Al-Shudifat AE et al, 2017; Utley JM et al, 2016; Lima AC et al, 2014; Gökler ME et al, 2015).

Conclusion and Recommendations

Obesity affects the public health, workforce and the economy. Predisposition to obesity is more likely to be seen particularly in university students because of low social support and healthy lifestyle behaviors' being effected negatively. Especially in this period, it is important to draw students' attention to personal preventive health services at protection of obesity. Also, qualitative studies on the subject can help to search more about the changes in eating behaviors. Such information is necessary to determine the health promotion

strategies that provide health nutrition at university period.

Limitations of the study

The results obtained in this study can be generalized only to its sample and are limited by the scope of the scales used.

References:

- [1] Aarts H, Paulussen T, Schaalma H. Physical exercise habit: on the conceptualization and formation of habitual health behaviours. *Health Educ Res.* 1997; 12[3]:363-74.
- [2] Acar Ö. Üniversite Öğrencilerinde Obezite Ve Yaşam Davranışları. Ondokuz Mayıs Üniversitesi Tıp Fakültesi Halk Sağlığı Anabilim Dalı, Uzmanlık Tezi 2015.
- [3] Akca S. Üniversite Öğretim Elemanlarının Sağlığı Gelistirme Davranışları ve Bunu Etkileyen Etmenlerin Değerlendirilmesi. Bilim Uzmanlığı Tezi, İzmir, Ege Üniversitesi. 1998.
- [4] Al-Shudifat AE, Al-Shdaifat A, Al-Abdoh AA, Aburoman MI, Otoum SM, Sweedan AG, et al. Diabetes Risk Score in a Young Student Population in Jordan: A Cross-Sectional Study. *J Diabetes Res.* 2017; 2017: 8290710.
- [5] Baskin ML, Thind H, Affuso O, Gary LC, LaGory M, Hwang SS. Predictors of moderate-to-vigorous physical activity [MVPA] in African American young adolescents. *Ann Behav Med.* 2013; 45 Suppl 1:S142-50.
- [6] Battista K, Leatherdale ST. Estimating how extra calories from alcohol consumption are likely an overlooked contributor to youth obesity. *Health Promot Chronic Dis Prev Can.* 2017; 37[6]:194-200.
- [7] Bauer KW, Neumark-Sztainer D, Fulkerson JA, Hannan PJ, Story M. Familial correlates of adolescent girls' physical activity, television use, dietary intake, weight, and body composition. *Int J Behav Nutr Phys Act.* 2011; 8:25.
- [8] Cohen S. Social relationships and health. *Am Psychol.* 2004;59[8]:676-84.
- [9] Dingman DA, Schulz MR, Wyrick DL, Bibeau DL, Gupta SN. Factors related to the number of fast food meals obtained by college meal plan students. *J Am Coll Health.* 2014;62[8]:562-9.
- [10] Doğan B, Yörük N, Öner C, Yavuz G, Oğuz A. Üniversite öğrenci ve çalışanlarının diyabet riski ve beslenme alışkanlıklarının

- değerlendirilmesi. Türk Aile Hek Derg 2017; 21 [2]: 50-55
- [11] Draper CE, Grobler L, Micklesfield LK, Norris SA. Impact of social norms and social support on diet, physical activity and sedentary behaviour of adolescents: a scoping review. Child Care Health Dev. 2015;41[5]:654-67.
- [12] Eker D, Arkar H, Yıldız H. Çok boyutlu algılanan sosyal destek ölçeği'nin gözden geçirilmiş formunun faktör yapısı, geçerlik ve güvenilirliği. Türk Psikiyatri Dergisi. 2001;12[1]:17-25
- [13] Eker D, Arkar H. Perceived social support: psychometric properties of the MSPSS in normal and pathological groups in a developing country. Soc Psychiatry Psychiatr Epidemiol. 1995; 30[3]:121-6.
- [14] Esin N. Endüstriyel Alanda Çalışan İşçilerin Sağlık Davranışlarının Saptanması ve Gelistirilmesi. Doktora tezi, İstanbul, İstanbul Üniversitesi. 1997.
- [15] Gill M, Chan-Golston AM, Rice LN, Roth SE, Crespi CM, Cole BL, et al. Correlates of Social Support and its Association With Physical Activity Among Young Adolescents. Health Educ Behav. 2018; 45[2]:207-16.
- [16] Gökler ME, Buğrul N, Metintaş S, Kalyoncu C. Adolescent obesity and associated cardiovascular risk factors of rural and urban life [Eskisehir, Turkey]. Cent Eur J Public Health. 2015;23[1]:20-5.
- [17] Güleç M, Yabancı N, Göçgeldi E, Bakır B. Ankara'da İki Kız Öğrenci Yurdunda Kalan Öğrencilerin Beslenme Alışkanlıkları. Gülhane Tıp Dergisi. 2008; 50; 102-109.
- [18] İlhan NB, M. Akhan, LU. Healthy Lifestyle Behaviors Of University Students. Maltepe Üniversitesi Hemşirelik Bilim Ve Sanatı Dergisi. 2010;3[3].
- [19] Kahraman, Ç. Üniversite Öğrencilerinde Beslenme Alışkanlıkları Ve Obezite Riski: Tekirdağ Namık Kemal Üniversitesi Örneği. Namık Kemal Üniversitesi Sosyal Bilimler Enstitüsü Sağlık Yönetimi Anabilim Dalı Yüksek Lisans Tezi, 2018.
- [20] Kelly T, Yang W, Chen CS, Reynolds K, He J. Global burden of obesity in 2005 and projections to 2030. Int J Obes [Lond]. 2008;32[9]:1431-7.
- [21] Khan ZN, Assir MZ, Shafiq M, Chaudhary AE, Jabeen A. High prevalence of preobesity and obesity among medical students of Lahore and its relation with dietary habits and physical activity. Indian J Endocrinol Metab. 2016;20[2]:206-10.
- [22] Larson NI, Wall MM, Story MT, Neumark-Sztainer DR. Home/family, peer, school, and neighborhood correlates of obesity in adolescents. Obesity [Silver Spring]. 2013; 21[9]: 1858-69.
- [23] Lima AC, Araújo MF, Freitas RW, Zanetti ML, Almeida PC, Damasceno MM. Risk factors for type 2 diabetes mellitus in college students: association with sociodemographic variables. Rev Lat Am Enfermagem. 2014;22[3]:484-90.
- [24] Lindström J, Tuomilehto J. The diabetes risk score A practical tool to predict type 2 diabetes risk. Diabetes Care. 2003; 26[3]: 725-31.
- [25] Mersin S, Öksüz E. Üniversite öğrencilerinde aile desteğinin kaygı düzeyine etkisi. The Journal of International Social Research. 2014;7[35]:643-650.
- [26] Mohammadbeigi A, Asgarian A, Moshir E, Heidari H, Afrashteh S, Khazaei S, et al. Fast food consumption and overweight/obesity prevalence in students and its association with general and abdominal obesity. J Prev Med Hyg. 2018; 59[3]:E236-E40.
- [27] Molnar BE, Gortmaker SL, Bull FC, Buka SL. Unsafe to play? Neighborhood disorder and lack of safety predict reduced physical activity among urban children and adolescents. Am J Health Promot. 2004; 18[5]:378-86.
- [28] Özkahraman Ş, Kişioğlu A N, Öztürk M. Prevalence of Obesity in 15-49 Aged Married Woman in Health Centre Area. Sağlık toplumu. 2007;17[1]; 54-60.
- [29] Özkahraman Ş, Yıldırım B, Şahin Altun Ö. Perceived Social Support Level and Related Factors in Turkish University Students. HealthMED. 2011; 5: 1033-7.
- [30] Peltzer K, Pengpid S, Samuels TA, Özcan NK, Mantilla C, Rahamefy OH, et al. Prevalence of overweight/obesity and its associated factors among university students from 22 countries. Int J Environ Res Public Health. 2014;11[7]:7425-41.
- [31] Plumb J, Weinstein LC, Brawer R, Scott K. Community-based partnerships for improving chronic disease management. Prim Care. 2012;39[2]:433-47.
- [32] Satman İ, Yumuk V.D, Bayram F, Bahçeci M, Araz M, Sönmez A, et al. Obezite tanı ve tedavi klavuzu: Türkiye endokrinoloji ve metabolizma derneği, Ankara.2017.
- [33] Tambağ H. Hatay health school students

- healthy lifestyle behaviors and influencing factors. Sağlık Bilimleri Fakültesi Hemşirelik Dergisi. 2011;47-58.
- [34] Tang KH, Nguyen HH, Dibley MJ, Sibbritt DW, Phan NT, Tran TM. Factors associated with adolescent overweight/obesity in Ho Chi Minh city. Int J Pediatr Obes. 2010; 5[5]:396-403.
- [35] Temel BA, Çuhadar D. Öğrenci Hemşirelerin Stresle Başetme Tarzları ve Depresyon Düzeylerinin Belirlenmesi. Fırat Sağlık Hizmetleri Dergisi. 2007; 2[5]:107-18.
- [36] Türkiye İstatistik Kurumu [2014], “Türkiye Sağlık Araştırması”, Sayı:18854
- [37] Ünsar S, Kurt S, Demir M, Zafer R, Erol Ö. Üniversite öğrencilerinin sosyal destek düzeylerinin değerlendirilmesi. Dokuz Eylül Üniversitesi Hemşirelik Yüksekokulu Elektronik Dergisi 2009;1[1]:17-29.
- [38] Utley JM, Affuso O, Rucks AC. Adolescent obesity in contextual settings: a scoping study of multilevel and hierarchical examinations. Clin Obes. 2016;6[5]:296-304.
- [39] Walker SN, Hill-Polerecky DM [1996] Psychometric evaluation of the Health Promoting Lifestyle Profile II. Unpublished manuscript, University of Nebraska Medical Center
- [40] Walker SN, Sechrist KR, Pender NJ. The health-promoting lifestyle profile: development and psychometric characteristics. Nurs Res. 1987;36[2]:76-81.
- [41] Wilson DK, Lawman HG, Segal M, Chappell S. Neighborhood and parental supports for physical activity in minority adolescents. Am J Prev Med. 2011; 41[4]:399-406.
- [42] Wilson DK, Sweeney AM, Kitzman-Ulrich H, Gause H, St George SM. Promoting social nurturance and positive social environments to reduce obesity in high-risk youth. Clin Child Fam Psychol Rev. 2017; 20[1]:64-77.
- [43] World Health Organization: obesity and overweight. 2008. .Available from; [march;2019].
- [44] Yılmaz E, Yılmaz E, Karaca F. Üniversite öğrencilerinin sosyal destek ve yalnızlık düzeylerinin incelenmesi. Genel Tıp Dergisi 2008;18[2]:71-9
- [45] Zhao Y, Wang L, Xue H, Wang H, Wang Y. Fast food consumption and its associations with obesity and hypertension among children: results from the baseline data of the Childhood Obesity Study in China Mega-cities. BMC Public Health. 2017; 17[1]: 933.

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