Healthy lifestyle behaviors of university students and related factors

Comportamentos de estilo de vida saudável de estudantes universitários e fatores relacionados

Comportamientos de estilo de vida saludable de estudiantes universitarios y factores relacionados

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Abstract

Objective: This study was conducted to determine healthy lifestyle behaviors of university students and related factors.

Methods: Designed to use the descriptive and stratified sampling method, the study included 2100 students studying in the departments of Health Sciences, Science, Social Sciences, and Educational Sciences at Sakarya University, Turkey. The study was conducted between May 2015 and December 2015. Data including socio-demographic characteristics and Health-Promoting Lifestyle Profile II (HPLP II) were collected. The Mann Whitney U test, Kruskal-Wallis test, and Spearman's rank correlation were used for data analysis.

Results: The median score of the students on the HLBS II was 2.42 and for the sub-dimensions, the median score was 2.22 for the health responsibility (HR), 2.12 for physical activity (PA), 2.22 for nutrition (N), 2.77 for spiritual development (SD), 2.77 for interpersonal relationships (IR), and 2.37 for stress management (SM). It was observed that gender, age, income, grade level, smoking, nutritional habits, body mass index, attending courses related to health effect healthy lifestyle behaviors.

Conclusion: It was observed that students showed the least responsible behaviors with regards to physical activity, health responsibility, and nutritional habits. In order to protect and improve the health of students, it may be useful to make health promotion courses compulsory in the curriculum of all departments in the university.

Resumo

Objetivo: Determinar comportamentos saudáveis de estilo de vida de estudantes universitários e fatores relacionados.

Métodos: Projetado para usar o método de amostragem descritivo e estratificado, o estudo incluiu 2.100 estudantes nos departamentos de Ciências da Saúde, Ciências, Ciências Sociais e Ciências da Educação da *Sakarya University*, Turquia. O estudo foi realizado entre maio e dezembro de 2015. Foram coletados dados que incluem características sociodemográficas e *Health-Promoting Lifestyle Profile* II (HPLP II). O teste U de Mann Whitney, o teste de Kruskal-Wallis e a correlação de classificação de Spearman foram utilizados para a análise dos dados.

Resultados: O escore mediano dos alunos do HLBS II foi de 2,42 e, para as subdimensões, o escore mediano foi de 2,22 para a responsabilidade em saúde (RS), 2,12 para atividade física (AF), 2,22 para nutrição (N), 2,77 para desenvolvimento espiritual (DE), 2,77 para relacionamento interpessoal (RI) e 2,37 para gerenciamento de estresse (GE). Observou-se que sexo, idade, renda, escolaridade, tabagismo, hábitos nutricionais, índice de massa corporal, participação em cursos relacionados à saúde afetam comportamentos de estilo de vida saudáveis.

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Conflicts to interest: none to declare.

Conclusão: Observou-se que os alunos apresentaram comportamentos menos responsáveis em relação à atividade física, responsabilidade à saúde e hábitos nutricionais. Para proteger e melhorar a saúde dos alunos, pode ser útil tornar obrigatórios os cursos de promoção da saúde no currículo de todos os departamentos da universidade.

Resumen

Objetivo: Determinar comportamientos saludables de estilo de vida de estudiantes universitarios y factores relacionados.

Métodos: El estudio, diseñado para usar el método de muestreo descriptivo y estratificado, incluyó 2.100 estudiantes de los departamentos de Ciencias de la Salud, Ciencias, Ciencias Sociales y Ciencias de la Educación de la *Sakarya University,* Turquía. El estudio fue realizado entre mayo y diciembre de 2015. Se recolectaron datos que incluyeron características sociodemográficas y *Health-Promoting Lifestyle Profile* II (HPLP II). Para el análisis de datos, se utilizó la prueba U de Mann-Whitney, la prueba de Kruskal-Wallis y la correlación de clasificación de Spearman.

Resultados: La puntuación mediana de los alumnos en el HLBS II fue 2,42 y, en las subdimensiones, la puntuación mediana fue 2,22 en responsabilidad en salud (RS), 2,12 en actividad física (AF), 2,22 en nutrición (N), 2,77 en desarrollo espiritual (DE), 2,77 en relaciones interpersonales (IR) y 2,37 en manejo del estrés (ME). Se observó que el sexo, la edad, los ingresos, la escolaridad, el tabaquismo, los hábitos nutricionales, el índice de masa corporal y la participación en cursos relacionados con la salud afectan comportamientos saludables de estilo de vida.

Conclusión: Se observó que los alumnos presentan comportamientos menos responsables con relación a la actividad física, la responsabilidad en salud y los hábitos nutricionales. Para proteger y mejorar la salud de los alumnos, puede ser útil hacer obligatorios los cursos de promoción de la salud en el diseño curricular de todos los departamentos de la universidad.

Introduction

The World Health Organization has defined health as a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.[1] With respect to the emergence of a state of complete well-being, individuals in society need to take responsibility for protecting, developing, and managing their own health. Healthy lifestyle is defined as controlling all the behaviors that can affect the health of the individual and organizing their daily activities by choosing the behaviors that are appropriate for their own health.[2,3] It is stated that a healthy lifestyle is a component of health promotion. Healthy lifestyle should include not only protecting from diseases, but also demonstrating behaviors that increase the level of well-being throughout life. These behaviors are self-fulfilling behaviors that increase the level of well-being of the individual; balanced and adequate nutrition, stress management, adequate and regular exercise, non-smoking, health responsibility. In order to prevent diseases caused by lifestyle and deaths due to these diseases, individuals should take responsibility in terms of healthy lifestyle behaviors.[2-4] University life is a period during which new responsibilities arise as a result of being away from the family. Significant changes are experienced, which require students to take a more active role in decision-making related to themselves.[4] Furthermore, this is also a time when spiritual development, in-terpersonal relationships, and stress management begin to develop.[4-6] University life is a very important and productive time in terms of determining students' behaviors for protecting and developing their health, changing their wrong behaviors, ensuring the continuation of their good behaviors, and gaining healthy lifestyle behaviors.[3] Since health responsibility, physical activity, nutritional habits, spiritual development, interpersonal relationships, and stress management, which constitute healthy lifestyle behaviors, generally begin to shape during the university years, studies reported in the literature on these topics are usually carried out in the field of health sciences, and there are currently no studies involving all university departments. This study was conducted to determine healthy lifestyle behaviors of students and related factors.

Methods

The study was approved by the ethical board of the institution (Dean of Medicine Faculty of Sakarya University) and performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards. In addition, informed consent was obtained from all individual participants in the study. The study was carried out using a descriptive and stratified sampling method with students studying in the departments of Health

Sciences, Science, Social Sciences, and Educational Sciences of Sakarya University. The university provides associate degree and undergraduate education to the student who volunteered to participate in the study. The study population consisted of 55732 people studying at Sakarya University between May 2015 and December 2015; whereas, the sample of the study comprised 2100 students who voluntarily agreed to participate in the study, and who had no communication difficulties. The number of students constituting the sample was calculated by multiplying the number of items (52) of Health-Promoting Lifestyle Profile II, which has the highest number of items, by 35 (52×35=1820). In order for the sample to represent the society, the students in the university were selected using the faculty-based stratified random sampling method. The layer weight was calculated by dividing the obtained number of 1820 into 55732 students studying in the university (1820/55732=0,03) Each sample size was calculated by multiplying the number of students in each sub-stratum by the stratum weight. All participants that completed the questionnaire and Health-Promoting Lifestyle Profile II were included. Developed in light of the literature by the researchers to determine the socio-demographic and lifestyle characteristics of students, Health-Promoting Lifestyle Profile II was used to collect the data. The questionnaire and scale were completed in around 20 minutes by each participant. While collecting the data, an appointment was made for the day when the manager of each unit was available, and the questionnaires were distributed at times when the lecturers and students were available considering the syllabus for that day. The students were informed about the study and their consent was obtained before completing the questionnaire. Then, they were asked to fill in the questionnaire by themselves. The anthropometric measurements of the students were taken by the researcher. The general questionnaire was composed of 15 questions on gender, age, income level, class, smoking, nutrition style, body mass index (BMI), and if the students were receiving lessons about health promotion. The HPLP II, developed by Walker et al., is a 4-points Likert-type scale consisting of 52 items including

health responsibility (HR), physical activity (PA), nutritional habit (N), spiritual development (SD), interpersonal relationships (IR), and stress management (SM), and 6 sub-dimensions. An increase in the scores obtained in the scale indicate that individuals apply healthy lifestyle behaviors better.[7-9] The Turkish validity and reliability study of the HPLP II was performed, with two separate studies carried out in different years. In both the validity and reliability studies performed in 2008 and 2009, the Cronbach's Alpha coefficient of the scale was found to be 0.92 based on the whole scale.[7,8] In the present study, it was determined that the Cronbach's Alpha coefficient across the scale was 0.88 and that the Cronbach's Alpha coefficient ranged from 0.61 to 0.79 in the sub-dimensions of the scale. The normality test was performed to determine the tests to be used in evaluating the collected data. As the normality test result determined that the scores HPLP II did not meet the normal distribution, the nonparametric tests, Mann Whitney U, and Kruskal Wallis H test, were used to analyze the data. In addition, we also used the Pearson correlation analysis to investigate the association between HPLP II and its sub-dimensions.

Results

The average age of the students participating in the study was 20.69±2.48-. A total of 50.3% of the students were male (n=1044), 72% of them had a middle income level (1512), 49.2% of them were studying in departments in the social sciences institute (1033), and 35% of them were studying in the second grade (734). A total of 53% of the students had never smoked (1108), 55% of them ate homemade foods (1155), 19.1% usually consumed fast food (401), 68.62% were normal weight individuals (1441), and 79% had or were attending a course related to health promotion (430). The students' median HPLP II score was 2.42, and for the sub-dimensions, the median score was 2.22 for HR, 2.12 for PA, 2.22 for N, 2.77 for SD, 2.77 for IR, and 2.37 for SM. It was observed that students obtained the highest median score for the SD and IR

sub-dimensions and the lowest median score for the PA sub-dimension. When healthy lifestyle behaviors were evaluated as a whole, it was determined that the gender variable did not affect the students' HPLP II ($p>0.05$) (Table 1). While it was observed that females showed more desirable behaviors than males in the HR and PA areas of the HPLP II HPLP II sub-dimensions, males were found to be better in the IR sub-dimension ($p<0.05$) (Table 1). According to Spearman's correlation, there was a very high level of positive ($r=0.077$, $p=0.000$), significant relationships between the students' ages and the HR sub-dimension. Their health responsibility level increased as the age increased (not presented in the table). A negative moderately significant relationship was found between the IR sub-dimension and age ($r=-0.050$, $p=0.022$) (not presented in the table). Income status was determined to statistically significantly affect the overall HPLP II, N, and HR sub-dimensions. It was also observed that the nutritional habits ($p=0.022$) and overall healthy lifestyle behaviors ($p=0.039$) of those with low income status were poorer compared to those with high income status. In the HR sub-dimension of the HPLP II, it was found that HR was statistically significantly better for those with high income status compared to those with low income status (0.011) and middle income status (0.05). A significant difference was found between grade level and HR sub-dimension ($p<0.05$). In a further analysis performed to determine the group that caused the significant difference, it was determined that the behaviors related to the HR of third-grade students were statistically significantly better than the first-grade students ($p=0.001$) ($p<0.05$). Regarding smoking and healthy lifestyle behaviors, the smoking variable significantly affected the overall healthy lifestyle behaviors and all sub-dimensions apart from PA and N ($p<0.05$) (Table 1). It was also determined that everyday smokers showed statistically significantly more negative behaviors in the SD ($p=0.015$), IR ($p=0.001$), SM ($p=0.002$) sub-dimensions, and the overall HPLP II ($p=0.007$), compared to non-smokers. A statistically significant difference was found between students' nutritional habits, total score of the HPLP II, and HR, PA,

N, and SM sub-dimensions ($p<0.05$). It was also observed that students who ate homemade foods better applied the healthy lifestyle behaviors compared to students who ate fast food ($p=0.000$) and dormitory/university foods ($p=0.039$). It was also determined that students who ate homemade foods had better HR scores ($p=0.001$), SD (0.023) and IR ($p=0.028$) sub-dimensions compared to those consuming fast food. In addition, the N and SM behaviors of the students who preferred homemade foods were better compared to those consuming fast food ($p=0.000$, $p=0.000$, respectively) and dormitory/university foods ($p=0.000$, $p=0.000$, respectively). The PA behaviors of those with fast food style nutrition were significantly less compared to those consuming homemade foods ($p=0.001$) and dormitory/university foods ($p=0.001$). A statistically significant difference was found between body mass index and spiritual development and PA sub-dimensions ($p<0.05$) (Table 1). According to the results of the analysis performed to determine the group that caused significance, it was determined that the physical activity level of weak students was significantly less ($p = 0.005$) compared to normal weight individuals. Overweight/obese students had worse SD compared to normal weight individuals ($p=0.036$). The results also show that those attending courses related to health practiced more positive behaviors in all sub-dimensions and overall HLBS compared to those who were not attending courses related to health ($p<0.05$) (Table 1).

Discussion

Within the scope of this study, the students' median HPLP II score was 2.42. Similar results to those obtained in the present study were also found in the studies by Beşer et al. 2007,[7] Malakouti et al. 2017,[10] Yüksel Kaçan and Örsal 2019,[11] and Al Khawaldeh 2014.[12] Unlike the results of the present study, however, different results were obtained in the studies by Montazeri et al. 2017[13] and Thacker et al. 2016.[14]

According to the results obtained in the present study, students showed good levels for SD and

Table 1. Healthy life style attitudes of students about descriptive characteristics (n=2100) (n=2100)

Characteristics	HPLP II Median (IQR)	HR Median (IQR)	PA Median (IQR)	N Median (IQR)	SG Median (IQR)	IR Median (IQR)	SM Median (IQR)
				HPLP II SUBSCALE			
Gender							
Female (1044)	2.42 (0.46)	2.22 (0.67)	2.25 (0.75)	2.22 (0.56)	2.77 (0.56)	2.66 (0.78)	2.37 (0.63)
Male (1056)	2.42 (0.48)	2.22 (0.56)	2.00 (0.88)	2.22 (0.56)	2.77 (0.56)	2.77 (0.67)	2.37 (0.75)
	z=-0.122 p=0.90	z=-2.641 p=0.008**	z=-8.437 p=0.000***	z=-0.049 p=0.961	z=-1.764 p=0.078	z=-5.217 p=0.000***	z=-0.262 p=0.794
Income level							
Good(463)	2.46 (0.48)	2.22 (0.67)	2.25 (0.88)	2.33 (0.56)	2.88 (0.67)	2.77 (0.78)	2.37 (0.63)
Middle(1512)	2.42 (0.46)	2.22 (0.67)	2.12 (0.88)	2.22 (0.56)	2.77 (0.56)	2.77 (0.67)	2.37 (0.63)
Bad (125)	2.38 (0.51)	2.11 (0.67)	2.25 (0.88)	2.11(0.88)	2.77 (0.67)	2.77 (0.72)	2.25 (0.63)
	x^2=7.755 p=0.021*	x^2=10.262 p=0.006**	x^2=5.127 p=0.077	x^2=7.592 p=0.022*	x^2=5.315 p=0.070	x^2=5.382 p=0.068	x^2=3.796 p=0.150
Class							
First (710)	2.42 (0.51)	2.11 (0.67)	2.25 (0.88)	2.22 (0.56)	2.88 (0.56)	2.78 (0.67)	2.37 (0.75)
Second (734)	2.42 (0.44)	2.22 (0.67)	2.12 (0.75)	2.22 (0.56)	2.78 (0.56)	2.78 (0.67)	2.37 (0.63)
Third (317)	2.42 (0.46)	2.22 (0.78)	2.25 (0.75)	2.33 (0.56)	2.78 (0.67)	2.67 (0.67)	2.25 (0.63)
Fourth (339)	2.42 (0.44)	2.22 (0.67)	2.12 (0.81)	2.22 (0.56)	2.78 (0.44)	2.67 (0.67)	2.37 (0.63)
	x^2=0.109 p=0.99	x^2=14.354 p=0.002**	x^2=3.893 p=0.27	x^2=1.981 p=0.580	x^2=4.626 p=0.201	x^2=7.349 p=0.062	x^2=0.279 p=0.970
Smoking							
I have never used (1108)	2.44 (0.46)	2.22 (0.67)	2.12 (0.88)	2.22(0.56)	2.89(0.56)	2.78(0.67)	2.37(0.63)
I smoke every day (647)	2.40 (0.78)	2.22 (0.78)	2.25 (0.78)	2.22 (0.67)	2.78 (0.67)	2.67(0.78)	2.25(0.63)
I use occasionally (273)	2.40 (0.78)	2.22 (0.78)	2.12 (0.88)	2.22 (0.56)	2.78(0.56)	2.78 (0.67)	2.37(0.63)
I quit smoking (72)	2.46 (0.56)	2.17 (0.56)	2.31 (0.88)	2.22 (0.75)	2.78(0.44)	2.78 (0.75)	2.44(0.72)
	x^2=11.010 p=0.012*	x^2=9.003 p=0.059*	x^2=5.850 p=0.119	x^2=5.165 p=0.160	x^2=9.946 p=0.019*	x^2=14.542 p=0.002**	x^2=14.089 p=0.003**
Nutrition style							
Generally Fasfood (401)	2.35 (0.48)	2.11(0.67)	2.12 (0.75)	2.11 (0.56)	2.78 (0.67)	2.78 (0.78)	2.25 (0.63)
Home food (1155)	2.46 (0.46)	2.22 (0.67)	2.25 (0.75)	2.33 (0.56)	2.89 (0.56)	2.78 (0.67)	2.37 (0.63)
Meals prepared in university/ dormitory (544)	2.46 (0.46)	2.22 (0.67)	2.25 (0.84)	2.22 (0.67)	2.78 (0.56)	2.78 (0.78)	2.37 (0.63)
	x^2=33.782 p=0.000***	x^2=12.810 p=0.002**	x^2=17.624 p=0.000***	x^2=56.795 p=0.000***	x^2=7.567 p=0.023*	x^2=6.895 p=0.032*	x^2=16.530 p=0.001**
BKI							
Underweight(257)	2.42 (0.47)	2.22 (0.67)	2.12 (0.88)	2.22 (0.67)	2.78 (0.56)	2.78 (0.67)	2.37 (0.75)
Normal (1441)	2.42 (0.46)	2.22 (0.67)	2.25 (0.75)	2.22 (0.56)	2.78 (0.56)	2.78 (0.67)	2.37 (0.75)
Overweight/obese (402)	2.40 (0.44)	2.22 (0.67)	2.22 (0.56)	2.22 (0.56)	2.78 (0.56)	2.67 (0.78)	2.31 (0.63)
	x^2=4.614 p=0.202	x^2=5.325 p=0.150	x^2=10.006 p=0.007	x^2=7.842 p=0.05	x^2=6.406 p=0.041	x^2=4.266 p=0.234	x^2=1.008 p=0.799
Situation of taking lessons about health promotion							
Yes (430)	2.51(0.52)	2.33(0.67)	2.37(0.75)	2.33(0.67)	2.88(0.67)	2.88(0.78)	2.50(0.63)
No (1670)	2.40 (0.46)	2.22 (0.78)	2.12(0.88)	2.22(0.56)	2.77(0.56)	2.66(0.78)	2.37(0.63)
	z=-6.32 p=0.000	z=-5.73 p=0.000	z=-5.49 p=0.000	z=-3.55 p=0.000	z=-4.065 p=0.000	z=-4.21 p=0.000	z=-4.58 p=0.000

IQR - interquarter Range, z: Man Whitney U, x^2:Kruskall Wallis H testi *p<0,05

IR and were inadequate in performing PA. Similar results were found in various other studies.[4,5,15-19] In our study, the reason why university students had good spiritual development and interpersonal relationships may be the fact that the social interactions of students increase during university life, and accordingly interpersonal relationships gain more importance.[20] The reason for a low level of physical activity may be the fact that university students consider that physical activity should be usually applied for weight loss or due to chronic illness, and not to protect and improve their health.[21,22]

In the present study, it was observed that females' HR and PA levels were better than males. Males' IR levels were better than females. Unlike our study, it was determined in a study by Karadamar et al. 2014[23] that males attached more importance to PA compared to females, and in a study by Sen et al. 2017,[5] it was determined that males attached more importance to both PA and IR compared to

females. In different studies, no significant difference was observed in IR according to the gender variable.[17,23] When studies supporting the results of the present study are also taken into account, we think that females had a high HR due to the role of women in Turkish culture and the fact that they exhibit more protective and caring attitudes towards both their own health and the environment due to this role.[11,19]

Our results show that the students' HR increased as their age rose. In other studies, however, it was observed that age did not affect HR.[7,24,25] Unlike these other studies, the present study was carried out not only in health-related departments, but also in all other departments. Education on the protection and development of health are received from the first grade in health-related departments. At our university, students can choose common elective university courses in the third and fourth grades in non-health-related departments. The students can choose courses related to health or further participate in health-related activities through this application, which allows them to attend courses outside of their own fields. All of these factors may explain why health responsibility increases with age. It was observed that students with low income status paid less attention to healthy lifestyle behaviors and N compared to those with high income status. In this regard, our study findings are consistent with the literature.[7,16,19]

The results of the present study show that students in the third grade had higher HR compared to those studying in the first grade. In a study by Yetgin and Agopya 2017,[4] similar results were obtained to those in our study. However, unlike our study, in study by Karaahmetoğlu et al. 2014,[17] no change was seen in terms of health responsibility among the grades. We think the reason why first grade students had less HR than the third-grade students in our study is because first grade students go through a challenging exam period before stepping into university life. In addition, they are inactive in this process, have more stress, and do not pay the necessary attention to their health.[26,27]

Students who ate homemade foods better applied the HLBS compared to those consuming fast food and eating dormitory/university foods. Moreover, students who usually consume fast food performed less physical activity compared to those eating homemade foods and dormitory/university foods. It was also observed that those eating homemade foods managed stress better than those eating dormitory/university foods. No studies discussing healthy lifestyle behaviors and nutritional style together were found. However, we identified that homemade foods were better than all other nutritional styles in the study because homemade foods are more natural. In addition, the students eating in this way prefer more healthy and natural foods that contain less oil than foods made outside the home. Students who do not prefer homemade foods may have more stress since they do not know the contents of the food they eat or how it has been prepared. Furthermore, students consuming homemade foods may have experienced less stress due to the warmth and confidence in the home and family environment.

Our study showed that the students who smoked every day had more negative HPLP II and worse SD, IR, and SM compared to non-smokers. In a study by Tsai et al. 2016,[24] which includes similar results to the present study, it was determined that non-smokers further adapted to HLBS and had better N compared to smokers. Similarly, in the studies by Bostan and Beşer 2016,[2] it was observed that students had better N. The fact is that individuals who avoid bad habits that negatively affect health, such as smoking, are also conscious of other behaviors that will protect and improve their health.[22,25] We observed that those students attending health-related courses applied the HPLP II better, had more HR and PA and better N, higher level of SD, good IR, and managed their stress better compared to those who were not attending health-related courses. In the study by Yetgin and Agopyan 2017,[4] it was stated that the PA levels of the students attending health-related courses were better. The reason for this result may be the fact that the courses are provided to protect and improve public health, leading to positive behavioral changes in students.

In the present study, it was observed that the BMI did not affect the overall HPLP II; however, when sub-dimensions were evaluated, the overweight/obese students had better PA levels and lower SD levels. Similar to this study, many other studies show that BMI did not affect the overall HPLP II. In a study by Tedik and Hacıalioğlu 2017,[25] unlike the results of the present study, it was observed that students performed less PA as their BMI increased. The reason for this difference may be the fact that the sample group and sample size in our study were different and that overweight/obese students increased their physical activities in order to lose weight.[28,29]

The participants of the present study were composed solely of Sakarya University students, therefore we consider that our study findings cannot be generalized to all universities.

Conclusion

In conclusion, it was observed that students showed the least responsible behaviors with regards to physical activity, health responsibility, and nutritional habits. It is determined that gender, income level, grade level, smoking, nutrition style, BKI, situation of taking lessons about health promotion affects healthy lifestyle behaviors. The students with low income status, students who had just started university, students who smoke, students not eating homemade foods, students whose body mass index was outside the normal range, and students who were not attending courses related to health constituted the groups that could benefit from healthy lifestyle interventions. In order to protect and improve the health of students, it may be useful to make health promotion courses compulsory in the curriculum of all departments in the university. In addition, it is recommended to increase the number of restaurants serving homemade foods in and around the university and to ensure that they provide cost-effective services to students. Finally, opening smoking cessation clinics within the health institutions in the university may also be beneficial.

Collaborations

All authors, Çetinkaya S, Sert H, declare that they contributed to the study design, data analysis and interpretation, article writing and approval of the final version to be published.

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