

Determining University Students' Energy Drink Use Habits

Üniversite Öğrencilerinin Enerji İçeceği Kullanım Alışkanlıklarının Belirlenmesi

Suzan Havlioglu¹, Mustafa Begenc Tascanov²

¹ Harran Üniversitesi, Sağlık Hizmetleri Meslek Yüksekokulu, Şanlıurfa, Türkiye

² Harran Üniversitesi, Tıp Fakültesi, Kardiyoloji Anabilim Dalı, Şanlıurfa, Türkiye

Corresponding Author : Dr. Öğretim Üyesi, Suzan Havlioglu,

Sağlık Hizmetleri Meslek Yüksekokulu, Harran Üniversitesi, Şanlıurfa, Türkiye

e-mail : suzanhavlioglu@hotmail.com

Received : 29 .08.2021

Accepted: 01.10.2021

Pulisehd: 08.10.2021

Orcid no:0000-0001-5593-5688

This study was presented as an oral presentation at the 5th Gevher Nesibe Health Sciences Congress-2020.

Abstract

Background: The use of energy drinks has increased among young people in recent years. While these drinks may initially increase physical and mental performance, they also have many negative effects, such as causing heart rhythm disorders, migraine, anxiety disorders, insomnia, interactions with other drugs, and addiction. This study determined the knowledge of university students about energy drinks and their usage habits.

Method: This descriptive study targeted 2400 students studying at the Vocational School of Health Services. No sampling method was used and 435 students agreed to participate in the study.

Results: Of the students, 10.8% used energy drinks, 50.6% knew about energy drinks, 30.3% used the internet, and 29.8% thought that they posed a danger to cardiac health. Of the users, 42.6% loved the taste and 54.5% used them because they provided energy.

Conclusions: There were significant differences in the students' consumption of energy drinks by gender and smoking status ($p<0.05$). It is necessary to increase the awareness of students about the effects of energy drinks using both through written-visual-social media and in schools.

Keywords: University students, energy drink, habit

Öz

Amaç: Son yıllarda genç nüfus arasında artış gösteren enerji içeceklerinin kullanımı, başlangıçta fiziksel ve mental performansı artırabilir ancak kalp ritim bozukluğu, migren, kaygı bozukluğu, uykusuzluk, diğer ilaçlar ile etkileşim ve bağımlılık oluşturma gibi birçok olumsuz etkisi de bulunmaktadır. Bu çalışmanın amacı üniversite öğrencilerinin enerji içecekleri hakkında bilgi düzeylerini ve kullanım alışkanlıklarını belirlemektir.

Materyal ve Metod: Tanımlayıcı tipte bir araştırma olarak planlanan çalışmanın evrenini Sağlık Hizmetleri Meslek Yüksekokulunda öğrenim gören 2400 öğrenci oluşturmuştur. Çalışmada örneklem yöntemine gidilmemiş ve evrenin hepsine ulaşılması hedeflenmiştir. Araştırmaya çalışmaya katılmayı kabul eden 435 öğrenci dahil edilmiştir.

Bulgular: Öğrencilerin %10,8'inin enerji içeceği kullandığı, %50,6'sının enerji içeceği hakkında bilgisinin olduğu, %30,3'ünün bilgiyi internet aldığı, %42,6'sının tadını sevdiği için, %29,8'inin enerji verdiği için kullandığı ve %54,5'inin kalp sağlığı için tehlike oluşturduğunu düşündükleri tespit edilmiştir.

Sonuç ve Öneriler: Öğrencilerin enerji içeceği tüketme durumları ile cinsiyet ve sigara içme durumları arasında istatistiksel olarak anlamlı bir fark saptanmıştır ($p<0.05$). Öğrencilerin enerji içeceği tüketimi ve etkileri konusunda hem yazılı-görsel-sosyal medya aracılığı ile hem de okullarda bilgi ve bilinç düzeyinin artırılması gerekmektedir.

Anahtar Kelimeler: Üniversite öğrencileri, enerji içeceği, alışkanlık

INTRODUCTION

Energy drinks are defined in the Turkish Food Codex Regulation, Energy Drinks Communiqué as follows: "Energy drink refers to a flavored non-alcoholic beverage containing caffeine, taurine, glucuronolactone, inositol, carbohydrates, amino acids, vitamins, minerals and other food and components." (1).

In recent years, consumption of energy drinks has been increasing among the young in our country as well as all over the world. It draws attention as a product preferred by students, athletes and individuals between the ages of 21-35 (2-3).

The positive effect on cognitive and psychomotor functions, the effect of increasing attention in the ability to drive, the effect of reducing fatigue by increasing long-term attention, the widespread views of increasing physical performance, endurance and energy, and also the effect of some study results cause the use of energy drinks to increase (2-5).

Energy drinks have health benefits as well as harms (6). Many studies found that excessive consumption of energy drinks causes heart rhythm disorder, migraine, anxiety disorder, insomnia, interaction with other drugs and causes addiction (7-10). The use of energy drinks can reduce water consumption, resulting in decreased salivation and dental erosion. The decrease in salivary flow accelerates the formation of dental caries with the decrease in the buffering ability of saliva and the increase in dental erosion accordingly. (11)

Although energy drinks vary according to companies, they generally contain caffeine, guarana, glucuronolactone, taurine, ginseng, L-carnitine, sugar and B vitamins (12). It has been reported that substances that have an effect on the sympathetic system, such as caffeine, are associated with undesirable cardiac events (12-13). In addition, the most important effect of caffeine on the gastrointestinal system

is that it increases the acid secretion of the stomach and causes symptoms such as gastritis and reflux (14). The aim of this study is to determine the level of knowledge and usage habits of university students about energy drinks.

MATERIAL AND METHOD

The study, which was planned as a descriptive study, was carried out in Harran University, Health Services Vocational School between February and March 2020. The target population of the study consists of 2400 students studying at the Health Services Vocational School. The sampling method was not employed in the study, and the study aims to reach the entire target population. 435 students who agreed to participate in the study were included in the study.

An information form created by literature review was used to collect the data. The Information Form consists of 26 questions that include students' socio-demographic data, daily life habits, energy drink usage and energy drink knowledge levels. The data were collected by applying face-to-face interview technique after the students were informed about the study.

In order to conduct the study, permission was obtained from the participants and the Ethics Committee of Harran University, Vocational School of Health Services. SPSS 20.0 package program was used in the evaluation of the data, and descriptive statistics (number, percentage, mean) and chi-square test were performed in the analysis.

RESULTS

When Table 1 was examined, it was found that the average age of the students was 20.25 ± 1.99 , and 70.1% of them were women. Considering the education levels of the fathers, it was found that 13.5% did not receive any education; when the education levels of the mothers were examined, 48.5% did not receive any education; 48.2% of the students stays in the dormitory, 12% works, and 31.7% have a family income less than their expenditure.

Table 1. Percentage distribution of university students socio-demographic characteristics

| Variable | | |
|------------------------------------|------------------------------------|------------|
| Gender | Male (%) | 129 (29.9) |
| | Female (%) | 306 (70.1) |
| Father's education status | illiterate (%) | 24(5.5) |
| | Literate (%) | 35(8.0) |
| | Primary school (%) | 150(34.5) |
| | Middle School (%) | 115 (26.4) |
| | High school (%) | 74 (17.0) |
| Mother's Educational Status | University (%) | 37 (8.5) |
| | Illiterate (%) | 151 (34.7) |
| | Literate (%) | 60(13.8) |
| | Primary school (%) | 131 (30.1) |
| | Middle School (%) | 56(12.9) |
| Income status | High school (%) | 26(6.0) |
| | University (%) | 9 (2.1) |
| | Income less than expenses (%) | 138(31.7) |
| | Income equal to expenses (%) | 260 (59.8) |
| Working Status | Income more than expenses (%) | 37 (8.5) |
| | Yes (%) | 52 (12.0) |
| | No (%) | 383 (88.0) |
| Shelter | Credit dormitories institution (%) | 175 (40.2) |
| | Private dormitory (%) | 35 (8.0) |
| | home with friends (%) | 43 (9.9) |
| | with family (%) | 151 (34.7) |
| | Alone (%) | 8 (1.8) |
| | Other (%) | 23 (5.3) |

When Table 2 was examined, it was found that 13.8% of the students smoke, 84.6% consumes coffee, and 75.4% exercises occasionally.

Table 2. Percentage distribution of university students about their daily living habits

| | | |
|---------------------------|--------------------------|------------|
| Smoking | Yes (%) | 60 (13.8) |
| | No (%) | 375 (86.2) |
| Alcohol Use Status | Yes (%) | 13 (3) |
| | No (%) | 422 (97) |
| Coffee Consumption status | Yes(%) | 368 (84.6) |
| | No (%) | 64 (14.79) |
| Do you sport activite? | Everyday (%) | 28 (6.4) |
| | Several times a week (%) | 79 (18.2) |
| | Sometimes (%) | 328 (75.4) |

When Table 3 is examined, it has been found that 10.8% of the students drink energy drinks; 42.6% of those drink it as they like the taste; 29.8% drink it as it gives energy. It was found that 50.6% of the students had knowledge about energy drinks, 30.3% of them got the information from the internet and 54.5% of them thought that it was dangerous for their heart health.

Table 3. Energy drink consumption habits of university students and their level of knowledge about energy drinks

| | | |
|--|--|------------|
| Do you consume energy drinks? | Yes (%) | 47 (10.8) |
| | No (%) | 388 (89.2) |
| Do you know about energy drink? | Yes (%) | 220 (50.6) |
| | No (%) | 215 (49.4) |
| Where did you get the information? | School (%) | 9 (5.1) |
| | Newspaper, television (%) | 68(15.6) |
| | Friend (%) | 29 (6.7) |
| | Internet (%) | 132(30.3) |
| Are energy drinks harmful? | Yes (%) | 203(46.7) |
| | No (%) | 24 (5.5) |
| | No idea (%) | 298 (47.8) |
| What is the effect of energy drink on health? | Dangerous for the heart (%) | 237 (54.5) |
| | Awake(%) | 131(30.1) |
| | Provides energy (%) | 189 (43.4) |
| | Source of vitamins (%) | 21(4.8) |
| | No health benefit (%) | 206 (47.4) |
| What is your reason for consuming energy drinks? | I like the taste (%) | 20 (42.6) |
| | To feel energetic (%) | 14 (29.8) |
| | Because it improves exercise performance (%) | 5 (10.6) |
| | When I need to be sleep deprived (%) | 7 (14.9) |
| | To increase attention (%) | 5 (10.6) |

When Table 4 was examined, a statistically significant difference was found between the energy drink consumption of the students and their gender and smoking habit (p<0.05).

Table 4. Comparison of students' use of energy drinks according to their characteristics

| Variables | Energy drink use status | | | | X ² | p |
|-----------|-------------------------|-----------|------------|-------|----------------|---|
| | | Yes | No | | | |
| Gender | Male (%) | 24 (51.1) | 105 (81.4) | 11.49 | 0.001 | |
| | Female (%) | 23 (7.5) | 282 (92.5) | | | |
| Smoking | Yes (%) | 15 (25.0) | 45 (75.0) | 14.55 | 0.001 | |
| | No (%) | 32 (8.5) | 343 (91.5) | | | |

DISCUSSION

The use of energy drinks has been increasing constantly around the world. This study was conducted to determine the level of knowledge and usage habits of university students about energy drinks.

When education level of the fathers of the students who participated in the study was examined, it was found that

13.5% did not receive education; when education level of the mothers' was examined, 48.5% did not receive any education. The study found that 12% of the students are working and 31.7% of them have a family income less than their expenditures.

The study found that 48.2% of the students participating in the study stay in the dormitory, 34.7% lives with their

families and 9.9% lives at home with their friends. In a study conducted on university students, it was found that 20% of the students stay with their families, 27% in the dormitory, and 30% with friends (15); in another study, it was found that 31% of the students stay with their families, 22% in the dormitory, and 44% at home with friends (16). In this study, it is assumed that the large amount of students living in the dormitory is due to their economic status.

When Table 2 was examined, it was found that 13.8% of the students smoke; 84.6% consumes coffee and 75.4% exercises occasionally. In different studies on students, cigarette consumption varies between 37-48%. (15-16-17). Exercise status also varies between 51-65%. (15-17). It was found that 10.8% of the students participating in the study use energy drinks. In studies conducted on university students in literature, the rates of energy drink usage vary between 17.5% and 55%. (15, 18, 19).

It was found that 10.8% of the students participating in the study use energy drinks. In studies conducted on university students in literature, the rates of energy drink usage vary between 17.5% and 55% (15, 18, 19). It is assumed that these differences are due to the fact that the groups participating in the study have different cultural characteristics, different economic levels and living in different geographical conditions.

It was found that the 30% of the students participating in the study received information and were affected from internet; 6% from friends, and 15% from television-newspaper. In a study, it was found that 32.2% of students consuming energy drinks were influenced by their friends; 27.5% by advertisements, and 40.3% by other sources (17). These results clearly show that students are influenced by the internet and advertisements.

When the students participating in the study were asked about the effects of energy drinks on health, 54% answered that it is dangerous for the heart, 30% answered that they keep awake; 43% answered that they provide energy; 47% answered that they have no health benefits. In a study, 62% of the students stated that energy drinks are dangerous for the heart; 46% stated that they reduce sleep time; 26% stated that they have a negative effect on the kidneys. (15) On the other hand, the most reported side effect was palpitations in another study (20). Consistent with our study, these results show that students know the effects of energy drinks on heart health. In addition, the effects of energy drink on the heart range from simple palpitations to myocardial infarction and sudden cardiac arrest. It exerts a positive inotropic effect on heart function causing an increase in heart rate, cardiac output, contractility, and arterial blood pressure on the heart. In addition, it has been reported to cause myocardial infarction as a result of affecting platelet aggregation and endothelial function in the early period in healthy young adults (21-22).

42.6% of the students who consume energy drinks stated that they like the taste; 29.8% stated that they use it because it gives energy. When different studies conducted on students were examined, it was found that 55% of the students stated that they consume energy drinks because they like the taste (15) while 43% stated that they consume it to

stay awake, 61% to make cocktails with alcohol, and 35% for their taste (16). In addition, 67% of the students indicated insufficient sleep as the most common reason for drinking energy drinks (18), while another study indicates the struggle with fatigue (20). The reasons for using energy drinks differ according to the geography where the students live.

A statistically significant difference was found between the energy drink consumption status of the students and their gender and smoking status. In other studies conducted with students, it was found that male students tend to consume energy drinks more (19-20, 23).

CONCLUSION

A statistically significant difference was found between the energy drink consumption status of the students and their gender and smoking habit. It is necessary to increase the level of knowledge and awareness of students about energy drink consumption and its effects, both through written-visual-social media and in schools.

Conflict of Interest: The authors have no conflicts of interest to declare.

References

1. Resmi Gazete (30.06.2017, Sayı: 30110) Gıda Tarım Ve Hayvancılık Bakanlığı, Türk Gıda Kodeksi Enerji İçecekleri Tebliği. Tebliğ No: 2017/4
2. Sipahi H, Sönmez İ, Aydın A. Enerji İçecekleri ve İnsan Sağlığı Üzerindeki Etkileri. *Türkiye Klinikleri J Pharm Sci* 2014;3(1):39-46.
3. Dikici S, Aydın LY, Kutlucan A, ve ark. Enerji içecekleri hakkında neler biliyoruz? *Dicle Tıp Dergisi*. 2012; 39 (4): 609-13.
4. Howard MA, Marczinski CA. Acute effects of a glucose energy drink on behavioral control. *Exp Clin Psychopharmacol* 2010;18(6):553-61.
5. Mets MA, Ketzer S, Blom C, et al. Positive effects of Red Bull® Energy Drink on driving performance during prolonged driving. *Psychopharmacology (Berl)* 2011;214(3):737-45.
6. Avcı E, Türkiye'deki Enerji İçeceği Kullanım Sıklığının Klasik ve Bayesci Meta-analiz Yöntemlerine Göre Belirlenmesi, *GÜFBED*. 2017;7 (2): 320-30
7. Menci D, Righini FM, Cameli M, et al. Acute Effects of an Energy Drink on Myocardial Function Assessed By Conventional Echo-Doppler Analysis and By Speckle Tracking Echocardiography on Young Healthy Subject, *Journal Of Amino Acids*, 2013;646-703.
8. Arria AM, O'Brien MC. The "High" Risk of Energy Drinks, *The Journal of the American Medical Association*, 2011;305(6), 600-1.
9. Har JN, Taylor ZA, Khullar V, et al. Rare cause of Acute Hepatitis: A Common Energy Drink. *British Medical Journal Case Reports*. 2016.
10. Svatikova A, Covassin N, Somers KR, et al. A Randomized Trial of Cardiovascular Response to Energy Drink Consumption in Healthy Adults. *The Journal of the American Medical Association*, 2015;314(19):2079-82.
11. Özele E, Gökçe K. Spor İçecekleri ve Dental Erozyon. *Atatürk Üniv Diş Hek Fak Derg*. 2006;14-17.

12. Higgins JP, Tuttle TD, Higgins CL. Energy beverages: content and safety. *Mayo Clin Proc* 2010;85(11):1033-41.
13. Wolk BJ, Ganetsky M, Babu KM. Toxicity of energy drinks. *Curr Opin Pediatr* 2012;24(2): 243-51.
14. International Food Information Council Foundation Caffeine & Health: Clarifying The Controversies. Washington DC. March 2008.
15. KayapınarFÇ,Özdemir İ. Öğrencilerin Enerji İçeceği Tüketim Bilincinin ve Alışkanlıklarının Araştırılmasında Bir Meslek Yüksekokulu Örneği. *Ankara Sağlık Hizmetleri Dergisi*,2016;15(1):1-12.
16. İşçioğluF, OvaG, DuyarY, et al. Üniversite Öğrencileri Arasındaki Enerji İçeceği Tüketimi ve Bilinci Arastırması. *Akademik Gıda*. 2010;8(5):6-11.