RESEARCH ARTICLE

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Self-Medication Patterns among Turkish University Students

ABSTRACT

Objective: This study aims to determine the prevalence of self-medication practice among university students in Turkey and the effective factors and self-medication practices.

Methods: To conduct a descriptive cross-sectional study, this study was conducted with 494 undergraduate students selected through a stratified random weight-proportional sample. The students were asked to fill in a self-report questionnaire form including introductory characteristics and self-medication practices. Analyses were carried out using descriptive statistics and binary logistic regression.

Results: The prevalence of self-medication at any time was determined to be 81.6% (n=403). The prevalence of self-medication was 84.9% in females and 75.6% in males (OR 2.0, 95% CI 1.2-3.3, p=0.005). Of the participants, 27.5% (n=111) bought the medication by their own preferences and experiences. The most common self-medication symptoms of the participants were headache (90.8%). Self-medication drug groups were in the form of analgesics in 95.9% (n=259) of females and 93.2% (n=123) of males. The prevalence of antibiotic self-medication was 9.5% in the self-medication group and 7.7% for all participants. Due to self-medication, 8.2% (n=33) of the students experienced an adverse effect at any time. The students in the self-medication group believed that there would not be serious adverse effects caused by the OTC drugs even if they caused adverse effects (30.5%) or that they would not cause any adverse effects (3.8%).

Conclusions: Self-medication is a common behavior among university students, with higher rates in females. Students practice this largely by relying on their previous experiences. They mostly prefer medicines previously given by their physicians for similar conditions.

Keywords: Self-Medication, Over-the-Counter Drugs, Youth, Self-Care.

Üniversite Öğrencilerinde Kendi Kendine İlaç Kullanımı

ÖZET

Amaç: Bu çalışmada Türkiye'de üniversite öğrencilerinde sıklığının ve etkili olan faktörlerin belirlenmesi amaçlanmıştır.

Gereç ve Yöntem: Kesitsel tanımlayıcı çalışma için tabakalı rastlantısal ağırlık orantılı örneklem ile seçilen 494 lisans öğrencisinin katılımıyla çalışma yürütülmüştür. Öğrencilere kendi-kendine cevaplayacakları tanıtıcı özellikler ve kendi-kendine tedavi uygulamalarını kapsayan bir soru formu uygulanmıştır. Tanımlayıcı istatistikler ve ikili lojistik regresyon kullanılarak analizler yapılmıştır.

Bulgular: Herhangi bir zamanda kendi-kendine tedavi sıklığı %81,6 (n=403) olarak tespit edilmiştir. Kendi-kendine tedavi sıklığı kadınlarda %84,9 ve erkeklerde %75,6 (OR 2,0, %95 GA 1,2-3,3, p=0,005) olarak bulunmuştur. Katılımcıların %27,5'i (n=111) kendi tercih ve tecrübeleri ile ilaçları satın almıştır. Katılımcıların ilaç aldıkları semptomları en sık baş ağrısı (%90,8) olmuştur. Kendi-kendine tedavi ilaç grupları kadınların %95,9'unda (n=259), erkeklerin %93,2'sinde (n=123) analjezikler şeklinde olmuştur. Antibiyotik kullanımı; kendi-kendine tedavi grubunda %9,5 ve tüm katılımcılar için %7,7 olarak bulunmuştur. Kendi-kendine tedavi nedeniyle %8,2 (n=33) öğrenci herhangi bir zamanda bir yan etki tecrübe etmiştir. Kendi-kendine tedavi grubundaki öğrenciler tezgâh üstü ilaç grubu (OTC) ile yan etki olsa da ciddi yan etkiler olmayacağını (%30,5) veya herhangi bir yan etki olmayacağını (%3,8) düşünmektedir.

Sonuç: Üniversite öğrencileri arasında kendi-kendine tedavi kadınlarda daha yüksek olmak üzere yaygın bir davranıştır. Öğrenciler, büyük ölçüde daha önceki kendi tecrübelerine güvenerek bu uygulamayı yapmaktadır. Ağırlıklı olarak daha önce benzer durumlar için hekimleri tarafından verilmiş ilaçları tercih etmektedirler.

Anahtar Kelimeler: Kendi-Kendine Tedavi, Tezgah Üstü İlaçlar, Gençlik, Özbakım.

INTRODUCTION

The World Health Organization (WHO) defines self-medication as the selection and use of drugs by individuals themselves to treat diseases or symptoms known to them (1, 2). Self-medication is a part of self-care and is a practice where patients take a pro-active role in their health-related decisions (1-5). Purchasing drugs without a prescription, sharing drugs with the members of a social circle, or using leftover drugs at home are all considered self-medication. Individuals knowing their responsibilities for their own health and being aware that professional health care is often unnecessary for simple diseases have contributed to the concept of self-medication (6, 7).

It is believed that self-medication reduces the burden of health services, saves the time spent waiting for a doctor's examination and provides significant cost savings in the use of health resources (2, 4). Although self-medication is an ordinary but important part of the patient behavior in coping with the disease, it may also lead to inappropriate results in some cases (3, 8-13). Safe self-medication refers to as appropriate and conscious use of drugs that are required in some limited situations, such as non-prescription/over-the-counter (OTC) drugs (4, 5, 9, 11, 14). Safe self-medication requires a certain level of knowledge of the drug, in addition to being aware of self-care (9, 11, 15).

An appropriate and responsible self-medication can be economical for both the individual and the healthcare system. College youth, who are in the group that will be affected by the changes in drug use in the medium and long-term, can be considered to have a relatively higher level of education compared to other segments of the society. With these qualities, it is important to understand the views and practices of the university youth on the subject.

This study aims to determine the prevalence of self-medication practice among university students in Turkey, along with the effective factors and self-medication practices.

MATERIAL AND METHODS

For the descriptive cross-sectional study, a biostatistical power analysis was performed for the universe, which included undergraduate students (n=10,009) in a university in Ankara. The minimum sample size was calculated using the equation of n=[Z2×P(1−P)]/d2. Where n is sample size (370), Z is Z statistic for a level of confidence (1.96), P is expected prevalence or proportion (0.5), and d is precision (0.05). With an addition of 10% for non-response, it was decided to recruit a minimum of 426 participants from university (16). The study was conducted with the participation of 494 undergraduate students selected with stratified random weight-proportional sample. A participation approval was obtained from the students with an informed consent form.

In the study, a questionnaire form consisting of four sections was used to evaluate the sociodemographic characteristics of the participants, their current health status and harmful habits, the behaviors they exhibit when they get ill, and their attitudes and experiences about using an OTC.

The study data were entered to the digital environment and analyzed using the SPSS (Statistical Package for Social Sciences) for Windows 17.0 (SPSS Inc. Chicago, IL) software. The descriptive statistics were presented as mean (±) standard deviation (SD), and percentage. In addition to descriptive statistics, the Pearson/Fisher exact Chi-square tests were also performed. The conformity of the variables to normal distribution was tested using the visual (histograms and probability graphs) and analytical methods (Kolmogorov-Smirnov/Shapiro-Wilk tests). Effective factors were investigated using a binary logistic regression analysis. Odds ratio (OR) values and 95% confidence intervals (95% CI) were calculated.

This study project was approved by the Ethics Committee of Baskent University Faculty of Medicine before starting the study (Project number KA17/123).

RESULTS

The study was completed in the 2017-18 academic year. The study included 494 undergraduate students from 11 faculties. Of the participants, 64.4% (n=318) were female and 35.6% (n=176) were male. The mean age was 20.9 ± 2.0 (18-29) years. Of the participants, 21.0% (n=108) were receiving undergraduate education in a healthcare-related faculty. Of the students, 61.5% (n=304) lived in urban and 38.5% (n = 190) in rural. The family income levels were distributed as 36.8% (n=182) ≤TRY3,500/month and as 63.2% (n=312) >TRY 3,500/month. A large proportion of the participants lived with their parents (67.8%, n=335). Of the students, 37.9% (n=187) were smoker while 39.9% (n=197) consumed alcohol. Of the students, 30.8% (n=152) had a chronic clinical and/or surgical disease diagnosed by a physician to this date. It was determined that 15.8% (n=78) of the participants were using a prescription drug continuously due to a chronic disease (Table 1).

Of the participants, 403 (81.6%) used self-medication at any time. The prevalence of self-medication was 84.9% in females and 75.6% in males (OR 2.0, 95% CI 1.2-3.3, p = 0.005). The mean age was 21.0 ± 2.1 years in the self-medication group and 20.6 ± 2.0 years in the non-self-medication group (OR 1.1, 95% CI 0.9-1.3, p = 0.097). A self-medication prevalence of 82.9% was found in the participants living in urban and 79.5% in those living the rural (OR 0.7, 95% CI 0.4-1.2, p = 0.198). Although a higher prevalence of self-medication was reported in those with a high-

income level (83.0%) and in those who lived alone/with friends (84.9%), it was not significant (p> 0.05). In terms of health-related determinants, a prevalence of 86.2% was determined in those with a chronic disease and of 79.5% in those without any diseases (OR 1.4, 95% CI 0.8-2.3, p = 0.278). Although the prevalence of self-medication was higher in the students who smoke (83.4%) and consume alcohol (84.3%), there was no significant difference (Table 1).

Table 1. Distribution of self-medication by demographic factors

	Self-medication		OR (CI 95%)	p-value
	Yes	No		
Age (mean)	21.0 (2.1)	20.6 (2.0)	1.109 (0.982-1.252)	0.097
Sex				
Male (n=176)	133 (75.6)	43 (24.4)	2.019 (1.233-3.305)	0.005
Female (n=318)	270 (84.9)	48 (15.1)		
Socio-economic status				
Municipality				
Rural	151 (79.5)	39 (20.5)	0.720 (0.437-1.187)	0.198
Urban	252 (82.9)	52 (17.1)		
Income level (TRY/month)				
<3,500	144 (79.1)	38 (20.9)	1.278 (0.784-2.083)	0.326
>3500	259 (83.0)	53 (17.0)		
Living setting				
With parents	268 (80.0)	67 (20.0)	1.429 (0.826-2.473)	0.202
Alone/with friends	135 (84.9)	24 (15.1)		
Health determinants				
Non-smoking	247 (80.5)	60 (19.5)	1.132 (0.647-1.979)	0.665
Smoking	156 (83.4)	31 (16.6)		
Non-Alcohol	237 (79.8)	60 (20.2)	1.209 (0.685-2.134)	0.512
Alcohol	166 (84.3)	31 (15.7)		
Non-illness	272 (79.5)	70 (20.5)	1.356 (0.782-2.349)	0.278
Chronic illness	131 (86.2)	91 (18.4)		

As a source of self-medication, 75.4% (n=304) of the students stated that the OTC drugs they used were previously prescribed by a physician. Secondly, 27.5% (n=111) of the participants stated that they purchased the drugs by their own preferences and experiences. This rate was 25.6% in females (n=69) and 31.6% in males (n=42) (p = 0.203). While 11.2% (n=45) of the students stated that they purchased the drug upon an advice from a pharmacist, 10.7% (n=43) stated that they took the drug from a relative. The rate of taking medication from a relative is 8.1% in females (n=22) and 15.8% in males (n=21) (p = 0.019).

In the gender-based distribution of the self-medication symptoms of the participants, it was determined that the most common cases of taking drugs without consulting any doctor were headache (90.8%) and common cold (59.8%). The prevalence of self-medication due to dysmenorrhea in females was found to be 64.4% (n=174). This was followed by the major symptoms of muscle and/or joint pain (40.0%), abdominal pain (except for dysmenorrhea) (31.3%), dyspeptic complaints (21.3%), nausea/vomiting (17.4%), diarrhea/constipation (14.4%), as per the order of prevalence. While the prevalence of self-medication for abdominal pain (except for dysmenorrhea) was 38.5% in females, this prevalence was found to be significantly lower in males (16.5%) (p=0.000). In general, these health conditions were distributed under three titles, which are pain, cold symptoms, and dyspeptic symptoms (Table 2).

When the self-medication drug groups of the participants were examined, it was found that 95.9% of females (n=259) and 93.2% of males (n=123) used analgesics. Of the students, 58.2% (n=234) stated that they used cold drugs, while 47.5% used myorelaxants, and 41.8% used drugs with vitamin or minerals ingredients. Of the participants, 11.7% (n=47) used anti-acids for self-medication. The prevalence of antibiotic self-medication was found as 9.5% for the university students using self-medication, and as 7.7% for all participants. This rate was 10.0% (n=27) in females and 8.3% in males (n=11) (Table 2).

In the distribution of the reasons of the participants for preferring self-medication, the most common reason is the thought of mild disease with 77.6% (n = 312). Other reasons were determined as school or work intensity with 14.2% (n=57), long waiting times at health institutions with 5.7% (n=23), and other reasons with 2.5% (n = 10), such as the thought that the quality of the services provided by the health-care institution is low, or that an examination by a physician is costly, or that having access to health-care institution is challenging. There was no significant difference in the distribution of the reasons for self-medication preference by gender (p = 0.063).

Table 2. Characteristics of self-medication among participants

	Female (n=270) n (%)	Male (n=133) n (%)	Total (n=403) n (%)	p-value
Symptoms for which drugs were self-medicated				
Headache	248 (91.9)	118 (88.7)	366 (90.8)	0.306
Cold symptoms (Cough, fever etc)	161 (59.6)	80 (60.2)	241 (59.8)	0.920
Dysmenorrhea	174 (64.4)		174 (43.2)	N/A
Muscle and/or joint pain	110 (40.7)	51 (38.3)	161 (40.0)	0.644
Abdominal pain	104 (38.5)	22 816.5)	126 (31.3)	0.000
Dyspepsia	62 (23.0)	24 (18.0)	86 (21.3)	0.257
Nausea/vomiting	50 (18.5)	20 (15.0)	70 (17.4)	0.386
Diarrhea/constipation	38 (14.1)	20 (15.0)	58 (14.4)	0.796
Other	18 (6.7)	9 86.8)	27 (6.7)	0.970
Drug groups for self-medicated				
Analgesics	259 (95.9)	123 (93.2)	382 (95.0)	0.143
Cold medicines	157 (58.1)	77 (58.3)	234 (58.2)	0.961
Myorelaxants	128 (47.4)	63 (47.7)	191 (47.5)	0.994
Vitamins	106 (39.3)	62 (47.0)	168 (41.8)	0.159
Gastrointestinal drugs	27 (10.0)	20 (15.2)	47 (11.7)	0.138
Antibiotics	27 (10.0)	11 (8.3)	38 (9.5)	0.576
Others	2 (0.7)	8 (6.1)	10 (2.5)	0.007*

* Fisher-exact test, N/A: Not available

Upon the investigation of the initial behaviors exhibited by the participants whey they get ill, it was determined that 56.9% of them visited a doctor's office, and that 21.9% of them waited for a while and did not take any drug. It was observed that the behavior of waiting for a while without taking any drug was lower in the self-medication group compared to the other group, but it was not significant (25.3% vs. 21.1%, p = 0.383). The prevalence of resorting to natural supplements or traditional non-medication methods as the initial behavior when they get ill was found to be higher in the non-self-medication group (9.2% vs. 15.2%, p = 0.079). Consulting a relative in the self-medication group was significantly higher compared to the other group (2.2% vs. 9.9%, p = 0.012). Consulting a pharmacist (0.0% vs. 3.0%) was higher compared the non-self-medication group (Table 3).

Table 3. The behaviors of the participants when they get sick according to the self-medication status

Behaviors when they get sick	Self-medication		Total n (%)	p-value
	Yes n (%)	No n (%)		
I go to the physician' examination	229 (56.8)	52 (57.1)	281 (56.9)	0.956
I wait for a while without taking any medication	85 (21.1)	23 (25.3)	108 (21.9)	0.383
I try natural supplements or traditional non-drug methods	37 (9.2)	14 (15.4)	51 (10.3)	0.079
I consult a relative	40 (9.9)	2 (2.2)	42 (8.5)	0.012*
I consult a pharmacist	12 (3.0)	0 (0.0)	12 (2.4)	0.135*

* Fisher-exact test

Some practices that could show the responsibilities of young people were investigated in the self-medication group. Among those, the prevalence of patient information leaflet (PIL) reading behavior was 82.2% in total, distributed as always with 48.4% and sometimes with 33.8% (n=326). Of the young people reading PIL, 2.2% (n=7) reported that they did not understand what they were reading. Although the prevalence of reading PIL was higher in females and not understanding was higher in males, they were insignificant. Of the young people in the self-medication group, 95% (n=383) checked the information on drug boxes such as expiration date. The rate of recommending drugs to others was determined as 38.5% for the self-medication group (Table 4). In the self-medication group, any adverse effect was experienced due to OTC drugs at any time with 8.2% (n=33). Of the self-medication group, 65.7% believe that OTC drugs that are commonly used for self-medication may cause adverse effects, while 30.5% believe that the adverse effects of OTC drugs would not be serious at all even if they develop. Of the young people, 3.8% think that OTC drugs had no adverse effects (Table 4).

Table 4. Characteristics of self-medication practices by gender

	Female n (%)	Male n (%)	Total n(%)	p-value
Read patient information leaflet				
Always	134 (50.0)	58 (45.0)	192 (48.4)	
Sometimes	90 (33.6)	44 (34.1)	134 (33.8)	0.480
Never	44 (16.4)	27 (20.9)	71 (17.9)	
Understand patient information leaflet				
Yes	132 (58.9)	65 (63.7)	197 (60.4)	
Sometimes	88 (39.3)	34 (33.3)	122 (37.4)	0.473*
No	4 (1.8)	3 (3.0)	7 (2.2)	
Non-prescription drugs have adverse effects?				
Yes	176 (65.9)	85 (65.4)	261 (65.7)	
Yes, but not seriously	84 (31.5)	37 (28.5)	121 (30.5)	0.207
No	7 (2.6)	8 (6.2)	15 (3.8)	
Does check the drug expiration date				
Always	149 (55.2)	74 (55.6)	223 (55.3)	
Sometimes	107 (39.6)	53 (39.9)	160 (39.7)	0.856
Never	14 (5.2)	6 (4.5)	20 (5.0)	
Has he/she suggested a non-prescription drug to any relatives				
Yes	103 (38.1)	52 (39.1)	155 (38.5)	0.913
No	167 (61.9)	81 (60.9)	248 (61.5)	
Did he/she have any adverse effects with self-medication				
Yes	20 (7.4)	13 (9.8)	33 (8.2)	0.442
No	250 (92.6)	120 (90.2)	370 (91.8)	

*Fisher-exact test

DISCUSSION

Among university youth in different parts of the world, the prevalence of self-medication has been reported to be in a wide range from 30% to 95% (6, 7, 9, 11-15, 17-20). In our study, we determined the prevalence of self-medication in the university youth in Turkey as 81.6%. The prevalence was significantly higher in females (75.6% vs. 84.9%, OR 2.0, 95% CI 1.2-3.3, p = 0.005). In the literature, self-medication has been found to be more prevalent in females than in males (7, 21). The prevalence of self-medication is generally reported to be higher among females, who are at younger ages, who live alone, who have a low socioeconomic status, who have a chronic disease, and who have psychiatric problems (7, 13). In our study, the prevalence of antibiotic self-medication was found as 10.0% in females and as 8.3% in males, with a total prevalence of practice of 7.7%. In other studies conducted on university students in Turkey, the prevalence of antibiotic self-medication was reported to be 44.0% in 2005 and 36.0% in 2017 (22, 23). In Turkey, the prevalence of antibiotic self-medication in the general population was 19% in 2009 (24). In a 2006 multi-national study conducted in European countries, the prevalence of anti-microbial drug self-medication was reported to be ranging from 7% to 45% by countries for the last year (25).

The reasons for self-medication may vary depending on sociocultural characteristics. Factors such as a high level of education, the presence of leftover drugs from previous treatments, chronic diseases, minor health problems, long waiting times for examinations, high costs of medical examinations by a physician, low numbers of reimbursed drugs, presence of OTC drugs, information on pharmaceutical products in the media, possibility to buy drugs online can be included in the reasons for self-medication (25). In a study conducted in Brazil, more self-medication practices were determined in those with children, in those with home medicine cabinet, and in students with adequate knowledge of drugs (17). In our study, the prevalence of using drugs that were previously prescribed by a physician for self-medication was found to be above 75%. This indicates that self-medication drugs are obtained from leftover drugs from previous treatments. The prevalence of those who supplied drugs by their own preferences or from a relative was 27.5%. The prevalence of purchasing drugs upon a pharmacist's recommendation was found to be lower (10.7%) than the rates previously reported in Turkey (26). In a study conducted in India, when the students were analyzed in terms of their behaviors of taking drugs without consulting a doctor, 31.3% of students studying in a health-related faculty stated that they used medicines previously prescribed by a doctor, while this rate was 24.6% in students who studied in non-health-related faculties (27). In a study conducted in Turkey, it was determined that 71.5% of self-medication drugs were the drugs already available at home (20).

In our study, the participants reported that headache was the most common reason for self-medication with 90.8%. This rate was found as

59.8% for cold symptoms such as cough and fever, and as 40.0% for muscle/joint pain symptoms. The rate of taking drugs due to dysmenorrhea without consulting a doctor was found as 64.4% among the female students who participated in the study. In two separate yet similar studies conducted on university students in Turkey and Brazil, the same ranking of symptom prevalence was found for self-medication (17, 19). In studies conducted in Pakistan and Iran, a similar ranking was reported (7, 28). Symptom rankings for self-medication have been reported as common cold, fever and headache among medical students (27). Self-limiting conditions such as cold and diarrhea are known to constitute the majority of conditions where antibiotics are improperly consumed with self-medication (24, 29, 30).

In 2018, the use of OTC drugs had a prevalence of 81.0% as the primary treatment of simple diseases among the adults living the USA (31). According to the American College of Preventive Medicine (ACPM) data from the year 2009, the most commonly sold OTC drugs in the USA are common cold drugs, painkillers, antacids, and laxative medicines (3, 32). Of the general population in the USA, 92%'siused an OTC drug in the last year, while 55% sed OTCs several times (3). According to the Turkish Pharmaceutical Market Survey Report published by the Turkish Medicines and Medical Devices Agency (TMMDA) in Turkey, analgesics and cold medicines are at the top three in the list of most common over-the-counter drugs sold across the country based on the sales volume in 2015-2016 (33).

Considering studies conducted on university students in Turkey, it was determined that a 2010 study reported the prevalence of non-prescription analgesics as 61.5% and the prevalence of antibiotics as 39.5% (19). Analgesics and antipyretics are the most common drugs taken by medical students in India without consulting a doctor (18). In a recent study conducted on university students in Turkey, it was reported that 86% of female students and 64% of male students took analgesics without consulting a physician. In the same study, 2.8% of females and 4.8% of males stated that they took antibiotics without consulting a physician (34). In our study, 95% of the participants stated that analgesics was the most common self-medication drug they took. Half of the students used cold drugs, while nearly half of them used myorelaxants. The prevalence of antibiotic use without consulting a physician was found as 7.7% among the students in our study. In a study conducted in Izmir in 2005, the prevalence of antibiotic use as a form of self-medication was reported as 45% among university students studying in faculties not related to healthcare (22). This rate is quite high compared to the rates obtained from the studies conducted today. The

decline in this rate might be attributed to the recent limitations implemented in Turkey for the sale of antibiotics in pharmacies.

Most of the students who participated in the study stated their reasons for self-medication as the thought of having mild disease. In a similar study conducted on university students in Turkey, 64% of the students reported that they took self-medication drugs that were previously used by them (22). In our study, this prevalence was found to be 75% in the form of taking a previously prescribed drug. In a study conducted on university students in Egypt, 74% of the students stated that they took drugs without consulting a doctor since they thought that the disease was mild. However, 71% of the students stated that they took drugs without consulting a doctor because of having knowledge based on their previous experiences (13). In a similar study conducted on medical school students, 45% of the participants stated that they used over-the-counter medication to save time, while 25% reported that they thought it was unnecessary to visit a doctor for mild diseases (8). In Brazil, 57% of the university students stated that they preferred self-medication because they knew what drugs to take for the symptoms they experienced, while 44% stated they preferred self-medication for mild diseases (17).

Of the students in the self-medication group, 38.5% stated that they offered OTC drugs to someone else. In a similar study conducted on university students, 17.8% of the students studying in a healthcare-related faculty and 17.7% of the students studying in a non-healthcare faculty stated that they recommended OTC drugs (27). It was found that 36.1% of the female students and 33.3% of the male students in medical faculty in Turkey recommended drugs to someone else (34). In Egypt, 12.6% of university students were shown to promote their close environment for self-medication (13). In a study on rational drug use in our country, 42.6% of the university students participating in the study were shown to take medication upon advice (35).

Of the students in the self-medication group 3.8%'si believe that OTC drugs had no adverse effects, while 30.5%'si think that the adverse effects would not be severe. This misconception about OTC drugs is also observed on a worldwide scale (3, 36). One of three students using OTC drugs does not have information about the adverse effects of OTC drugs. However, although the behavior of responsibility expected for self-medication is reflected by a rate of PIL reading of 82.2% and an understanding rate of 98%, the thought that there would be no adverse effects constitutes a risky situation. In fact, 8.2% of the students experienced an adverse effect due to OTC drugs they used. A major problem with OTC drugs is related to the handicaps in the reporting of adverse effects caused by these drugs. The fact that the patient does not know about the potential adverse effects of OTC

drugs may also affect the description and reporting of adverse effects for OTC drugs. Therefore, it is important that patients have sufficient information about the drugs they take (36).

CONCLUSION

In Turkey, self-medication is a prevalent behavior among university students. Self-medication is more prevalent in female students. Students mainly rely on their previous disease experiences. Drugs previously given by their physicians for similar conditions are pre-dominantly preferred. One third of the students, which is quite a high rate, has a misconception that OTC drugs do not have adverse effects at all or only have not-serious adverse effects. For the rational use of self-medication, the healthcare system should take and prioritize measures to inform students on the adverse effects of drugs and admission to health care institutions at the right time.

Self-medication should be considered a normal and appropriate part of public health. Self-medication with OTC drugs can provide many benefits from the aspects of the patient and physician. Physicians and pharmacists should be more active in monitoring drugs and informing patients to increase the effectiveness of self-medication and to minimize current risks.

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