## ORIGINAL ARTICLE

# Non-Prescription Medicine Usage Prevalence in College Students Receiving Education in Branch of Medical Sciences

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**ABSTRACT**

**AIMS:** The objective of this survey was to determine the non-prescription medicine usage prevalence in college students receiving education in branch of Medical Sciences.
**METHODOLOGY:** The study has been conducted on 418 students (349 females, 69 males) in the age group 17-38 (average $20.26 \pm 2$) receiving education in Health College and Health Services Vocational College of Çanakkale Onsekiz Mart University. The data of the survey was collected through questionnaire prepared by the surveyors. Before commencing the survey, permission was received from the institution and verbal consent was received from the students. The data was assessed with mean, percentage and chi-square test in SPSS Windows 10.0 package program.
**RESULTS:** Non-prescription medicine usage prevalence in the students is 74.9 % within the past one year.  49.2 % of the students showed the fact that they do not need to see a doctor in diseases widely seen as the justification for non-prescription medicine usage. Non-prescription medicine was found to be used mostly in headache (53.6 %). Non-prescription medicine usage prevalence is higher in the second grade students and students who stay at home with their friends ($p<0.05$).
**CONCLUSION:** The tendency of using non-prescription medicine is prevalent in students receiving education in branch of medical sciences. It is necessary to develop the sensitivity of students towards rational medicine usage

**KEYWORDS:** Non-prescription medicine usage, prevalence, health, college, students

#### INTRODUCTION

Although the basic goal of modern medicine is to protect the health, most of the health services nowadays are realized in the form of curing the patients (Gökalp & Mollaoğlu 2003, Uskun et al. 2004). Some patients, instead of referring to the treatment methods of modern medicine, try to treat their health problems with non-prescription medicines (Covington 2006). This situation may cause some adverse effects to arise, the treatment to be delayed, the treatment costs to increase and the treatment to get difficult depending on postponement of early diagnosis (Gungormus 2001).

It is stated that the medicines such as analgesics, antibiotics and vitamins are being used widely, extravagantly and wrongly in Turkey (Gungormus 2001). In a survey conducted, it has been determined that, of each 100 houses, 80 houses have one or more sorts of medicines (Gokalp &Mollaoğlu, 2003). In another survey, it has been determined that, of the individuals using the medicines stored in the house, only 25.2 % pay attention to the best before date of medicines, whether they are or not suitable to their diseases and whether their packages are broken or not (Bilgili & Karatay 2005).

In addition to non-prescription medicine usage, another problem encountered is the insensible in medicine usage. In a survey conducted by Özkan and his friends (2005) it has

been determined that 28.6 % of the participants give up using the medicines proposed by doctor before the period in which they are used, 34.9 % do not read the handout and 28.3 % do not look at the best before dates of medicines (Ozkan et al. 2005). On the other hand, it has been determined that some demographical factors such as education, the distance of settlements to health unit and age are effective factors in non-prescription medicine usage (Uskun et al. 2004).

Another important factor in non-prescription medicine usage is the availability of such medicines. In another survey conducted on individuals between the age 20-40, it has been determined that, of medicines being used as non-prescription, 33.8 % are obtained from pharmacies, 24.9 % from medicines having piled up in the houses, 14.7 % from neighbors and 9.6 % from grocery stores (Bilgili & Karatay 2005).

Turkey is a country where total health expenditure is 7.9 billion Dollars a year and the sum which is spent on medicine importation is approx. 2 billion Dollars a year (Gokalp & Mollaoğlu, 2003). Social security institutions use approx. half of total health expenditures for medicine products (Özkan et al. 2005). In line with the statements given above, it may be said that the habit of using non-prescription medicine is at a considerable level in our country.

In preventing non-prescription medicine usage, all health employees should take responsibilities at different levels. Especially, family doctors, public health nurses, midwife and other health employees working closely to public in Primary Health Services should take responsibilities to a great extent. Primarily, the attitudes on non-prescription medicine preferences of the students receiving education in branches of Medical Sciences and who are expected to complete their education as the persons who have comprehended the importance of rational medicine usage are limited. It is evident that it is important to assess the approaches towards using non-prescription medicine of such professional group who will be in one to one communication with persons who are to apply to a health organization with a suspicion of disease with a survey to be conducted in terms of the education they receive.

It is thought that it is important to determine how their own attitudes are and assess the some important factors on such attitudes for such students who are expected to reflect the importance of rational medicine usage on the community to which they render health service and to bring in the desired attitude to them.

In this context, the survey has been conducted in order to determine the non-prescription medicine usage prevalence in students receiving education in branch of Medical Sciences and the effect of some important factors on such usage.

**METHODOLOGY**

The population of this survey in the cross-sectional consisted of 436 students receiving education in Health College and Health Services Vocational College of Çanakkale Onsekiz Mart University. In the survey, one has aimed at reaching the entire population without using any sampling method. In all, 418 (95.9 %) volunteer students participated in the survey. The data was collected between December 2006 and February 2007 with face to face meeting method by using the questionnaires prepared by the surveyors. Researchers was handouted the questionnaires to a group of students and collect them afterwards. Interviwers trained to performe the survey in the same way. The questionnaires were consisted of the demographical characteristics of students and questions on non-prescription medicine usage. It was done a pilot study to test the questionnaires. In order for the survey to be performed, permissions were received from the administrations of both colleges. The objective of the survey was told to students and verbal consents of them were received. The questionnaires were applied in groups by determining the suitable times of students so that it will not delay their lessons. The data was assessed by using complementary statistics and chi-square test in SPSS 10.0 computer statistic package program.

**RESULTS**

**Study sample**
The data showing the gender of participant students, the departments at which they receive education, settlement units, education level of their families, health guaranty, financial situation and sheltering forms has been presented in Table 1. In all, 83.5% of the study group consisted of female students, and the students of nursing department (31.1 %) and students receiving education in grade one (34.9 %) have the highest rate.

**Prevalence of non-prescription medicine usage**
The attitudes of students on non-prescription medicine usage are shown in

Table 2. According to the survey results, it has been determined that, of the students, 68.1 % have used non-prescription medicine within the past one month, 24.9 % within the past 6 months, and 7.0 % within the past one year. The students reported to use the non-prescription medicines mostly in headache. Students are thought for which it is not necessary to go to a doctor 49.2%  and most widely analgesics (73.7 %) constituted the medicine group which is used most widely without prescription.

**Table 1. Socio-demographic Characteristics of students (n=418)**

| Characteristics | n | % |
|---|---|---|
| **Gender** | | |
| Female | 349 | 83.5 |
| Male | 69 | 16.5 |
| | | |
| **Department** | | |
| Nursing | 130 | 31.1 |
| Midwifery | 128 | 30.6 |
| Urgent Aid and Disaster Management | 48 | 11.5 |
| Radiology | 33 | 7.9 |
| Medical Laboratory | 41 | 9.8 |
| Ambulance and Emergency Care | 38 | 9.1 |
| | | |
| **Grade** | | |
| First Grade | 146 | 34.9 |
| Second Grade | 141 | 33.7 |
| Third Grade | 62 | 14.8 |
| Fourth Grade | 69 | 16.5 |
| | | |
| **Settlement Unit** | | |
| Village | 73 | 17.5 |
| District | 152 | 36.4 |
| Province | 193 | 46.2 |
| | | |
| **Education Level of Mother** | | |
| Illiterate | 27 | 6.5 |
| Primary School Graduate | 274 | 65.6 |
| Secondary School Graduate | 40 | 9.6 |
| High School Graduate | 66 | 15.8 |
| University Graduate | 11 | 2.6 |
| | | |
| **Education Level of Father** | | |
| Illiterate | 8 | 1.9 |
| Primary School Graduate | 191 | 45.7 |
| Secondary School Graduate | 65 | 15.6 |
| High School Graduate | 111 | 26.6 |
| University Graduate | 43 | 10.7 |
| | | |
| **Status of being Chronic Patient** | | |
| Yes | 56 | 13.4 |
| No | 362 | 86.6 |
| **Health Guaranty Status** | | |
| Yes | 363 | 86.8 |
| No | 55 | 13.2 |
| **Sufficiency of money in meeting the needs** | | |
| Yes | 182 | 43.5 |
| Partly | 190 | 45.5 |
| No | 46 | 11.0 |
| | | |
| **Form of Settlement** | | |
| At home with friends | 145 | 34.7 |
| Government dormitory | 123 | 29.4 |
| Private dormitory | 70 | 16.7 |
| With his/her family | 41 | 9.8 |
| Other (Pension, apart, near relative, familiar) | 39 | 9.3 |

**Table 2.** Distribution of Behaviors of Students for Non-Prescription Medicine Usage

| Behaviors | n | % |
|---|---|---|
| **Non-prescription medicine usage (n=418)** | | |
| Yes | 313 | 74.9 |
| No | 105 | 25.1 |
| **Reasons for non-prescription medicine usage (n=313)** | | |
| Not being in need for doctor in diseases widely seen | 154 | 49.2 |
| In urgent situations | 20 | 6.4 |
| Not having health guaranty | 108 | 25.8 |
| That health organizations are crowded | 31 | 7.4 |
| **When non-prescription medicine is used most recently (n=313)** | 213 | 68.1 |
| Within the past one month | 78 | 24.9 |
| Within the past 6 months | 22 | 7.0 |
| Within the past one year | | |
| **For which problem non-prescription medicine is used (n=313)** | | |
| Headache | 167 | 53.6 |
| Cold, flu | 43 | 13.7 |
| Menstruation ache | 46 | 14.7 |
| Stomach ache | 10 | 3.4 |
| In problems more than one | 47 | 15.0 |
| **Type of non-prescription medicine used widely (n=313)** | | |
| Analgesics | 231 | 73.7 |
| Antibiotics | 30 | 9.6 |
| Vitamins | 27 | 8.7 |
| All or two of the three medicines above | 25 | 8.0 |
| **Form of obtaining non-prescription medicine (n=313)** | | |
| Purchasing from pharmacy by asking pharmacist | 62 | 19.8 |
| Purchasing from pharmacy with recommendation of a friend | 35 | 11.2 |
| Purchasing the medicine prescribed previously by a doctor with the same complaint | 115 | 36.8 |
| Taking from among the medicines at home | 80 | 25.5 |
| Others (More or two of the four form of obtaining non-prescription medicine above | 21 | 6.7 |
| **Status of reading prospectus prior to non-prescription medicine (n=313)** | | |
| Yes | 240 | 76.8 |
| No | 73 | 23.2 |

It has been determined that the department at which the students receive training, grade and form of sheltering create statistically significant difference on non-prescription medicine usage prevalence ($p < 0.05$, Table 3). It has been understood that non-prescription medicine usage is widespread in ambulance and emergency care students and second grade students and in students who stay at home with their peer. It has been determined that the factors such as gender, education level of parents, the sufficiency of money in meeting the needs of the student, incurring a chronic disease and having a health guaranty do not create a statistically significant difference on non-prescription medicine usage prevalence ($p > 0.05$, Table 3).

**DISCUSSION**

With this survey, the non-prescription medicine usage prevalence on college students receiving education in field of medical sciences and effect of some demographical factors on such prevalence were assessed. As a result of the research, it has been determined that, of the students, 68.1 % have used non-prescription medicine within the past one month, 24.9 % within the past 6 months, and 7.0 % within the past one year. It has been understood that 68.4% of students have taken such medicines within the past one month (Table 2).

In the survey of Güngörmüş (2001), it has been determined that the rate of using non-prescription medicine is 68% on individuals at the age of 20 and above (Gungormus 2001). In a survey conducted prescription medicine usage prevalence has been found to be 92% (Abahussain et al. 2005). Again, in another survey conducted abroad, it has been determined that 83.1% of students use non-prescription medicine within the past one week (Acocella 2005).

**Table 3. Distribution of some factors of the students on non-prescription medicine usage (n=418)**

| *p<0.05, **p<0.01, ***p<0.001 Factors | Non-prescription medicine usage % | Test value |
|---|---|---|
| **Gender** | | |
| **Female** | 73.6 | $X^2 = 1.22$ |
| **Male** | 79.7 | |
| **Department** | | |
| **Nursing** | 66.9 | |
| **Midwifery** | 71.9 | |
| **Urgent Aid and Disaster** | 81.3 | $X^2 = 11.26*$ |
| **Management** | 84.8 | |
| **Radiology** | 80.5 | |
| **Medical Laboratory** | 86.8 | |
| **Ambulance and Emergency Care** | | |
| **Grade** | | |
| **First Grade** | 62.3 | |
| **Second Grade** | 87.9 | $X^2 = 24.90***$ |
| **Third Grade** | 74.2 | |
| **Fourth Grade** | 73.9 | |
| **Settlement Unit** | | |
| **Village** | 72.2 | |
| **District** | 78.9 | $X^2 = 2.34$ |
| **Province** | 72.2 | |
| **Education Level of Mother** | | |
| **Illiterate** | 74.1 | |
| **Primary School Graduate** | 74.5 | |
| **Secondary School Graduate** | 75.0 | $X^2 = .077$ |
| **High School Graduate** | 75.8 | |
| **University Graduate** | 72.7 | |
| **Education Level of Father** | | |
| **Illiterate** | 87.5 | |
| **Primary School Graduate** | 73.3 | |
| **Secondary School Graduate** | 66.2 | $X^2 = 5.21$ |
| **High School Graduate** | 78.4 | |
| **University Graduate** | 81.4 | |
| **Status of being Chronic Patient** | | |
| **Yes** | 74.5 | $X^2 = .000$ |
| **No** | 74.7 | |
| **Health Guaranty Status** | | |
| **Yes** | 73.6 | $X^2 = 1.72$ |
| **No** | 81.8 | |
| **Sufficiency of money in meeting the needs** | 73.1 | |
| **Yes** | 76.8 | $X^2 = .92$ |
| **Partly** | 71.7 | |
| **No** | | |
| **Form of Settlement** | | |
| **At home with friends** | 85.5 | |
| **Government dormitory** | 67.5 | $X^2 = 15.39**$ |
| **Private dormitory** | 65.7 | |
| **With his/her family** | 73.2 | |
| **Other (Pension, apart, near relative, familiar)** | 74.4 | |

When looked at the results we have obtained, it is understood that non-prescription medicine usage is widespread. This may be thought to be the result of the fact that access to non-prescription medicine is very easy and the students do not want to comply with the procedures of health institutions toward the diseases widely seen in our country. In a survey conducted, it is stated that a big rate of all the medicines (41 %) is sold without prescription (Gül et al. 2007). Again, the fact that some medicines such as vitamins, herbal medicines, and dietary medicines are available in the market is asserted to have encouraging effect in non-prescription medicine usage (Popovich 2006). In our survey, non-prescription medicine usage prevalence is notably higher compared to the results of another health college and lower compared to the results of surveys made abroad. However, although they are the departments receiving similar education, the big difference between medicine usages is an unwanted situation and should be discussed.

According to the survey results, it is understood that students use the non-prescription medicines mostly in diseases for which they do not need to go to a doctor (Table 2). Coping with health is also the part of our culture. The diseases widely seen in the community are generally tried to be treated with the possibilities at home without applying to a health organization. If such preliminary treatment attempt is not successful, then the doctor is consulted. It may be thought that the students having grown up in such a culture ambient have not gained the awareness of applying to rational treatment methods yet although they have begun studying in branch of medical sciences. However, when one thinks that many health problems widely seen and for which importance is not placed may be the early diagnosis of serious diseases, facilitate early diagnosis and provide opportunity to treatment of diseases and increase in the life quality of the person, it is understood how much such an attitude is unfavorable.

According to our survey results, it was determined that students use non-prescription medicines widely in headaches (53.6 %) (Table 2).  In a survey conducted in the USA, it has been determined that 92.5 % of university students use non-prescription medicines in headaches (Curry&Green 2007). This result may stem from the fact that students deem headache to be among the complaints mostly seen and do not need to go to a doctor. In parallel with this finding, it was determined that non-prescription medicine most widely used by is analgesics (73.7 %) (Table 2). The survey results conducted abroad and in our country regarding this subject are also in this direction (Acocella 2005, Gul et a., 2007, Popovich 2006, Curry & Green 2007, Wu et al. 2008, Lucas et al. 2007, Yilmaz et al. 2008).

Among the reasons why the analgesics are used most commonly without prescription is that analgesics are the medicines accessible easily in pharmacies and the families make such medicines available for any urgent situations.

It was determined that 36.8 % of the students use non-prescription medicines from among the medicines previously given by their doctors (Table 2). This result may stem from the thoughts of students that they do not comply with the procedures of health organizations and gain time by using the medicine that provided success in their treatment before when they encounter the same complaints.

It was determined that 76.8 % of the students do not read the prospectus of the medicines they use without non-prescription (Table 2). Özkan and his friends determined in their survey (2005) that 34.9 % of participants do not read prospectus of the medicines (Ozkan et al. 2005). One may think that the students receiving education in branch of medical sciences do not feel the need for reading the prospectus of medicines due to the fact that they have knowledge on the effects of medicines; that they have chosen the medicines from among the medicines prescribed previously by their doctor may be thought to be another reason.

 It has been determined that the department, grade and form of sheltering of students create difference on non-prescription medicine usage prevalence. It has been determined that non-prescription medicine usage is widespread most in ambulance and emergency care students and second grade students and in students who stay at home with their peers (Table 3). This result may make one think that the knowledge of students on medicines has increased after they have received pharmacology lessons and there has been an increase in non-prescription medicine usage relying on such knowledge. However, it may be understood that students staying in home ambient as independent from their family have a tendency to use non-prescription medicine on their own health with recommendations from their friends.

It has been determined that the rate of non-prescription medicine usage by students receiving education in nursing and midwifery departments is lower compared to the rate in other departments (Table 3, p<0.05). As a matter of fact, the rate of non-prescription medicine usage which was 66.9 % in nursing department, 71.9 % in midwifery department has shown a value over 80 % in all other departments. When one thinks that midwifes and nurses to work among public within one to one relationships with them may be beneficial in raising awareness in individuals, families and community about rational medicine usage, this fact seems meaningful. However, when looked at the rate determined, it is seen clearly that the students of this department also need such awareness raising.

## CONCLUSION

According to the results of the survey, it has been determined that students use non-prescription medicine widely and use non-prescription medicines generally in situations for which they do not need to go a doctor. It has been determined that students use analgesics most widely and they use such medicines most widely in headaches. In case of review of the education program, repetition of this subject with different sampling and finding similar results in order for the students to become more informed and more sensitive regarding rational medicine usage in line with the results, development of common solution may be proposed throughout colleges giving education in field of health.

## ACKNOWLEDGEMENTS

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