

# Self – Medication with Analgesics Among Nursing Students for Pain Management

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## ABSTRACT

**Objectives:** The purpose of this study was to determine the status of nursing students regarding self - medication with analgesics for pain management.

**Materials and Methods:** This descriptive study was conducted in the nursing department of a university in Turkey between May 12th - 27th 2016. For the data collection, a form was used that included questions about the individual characteristics of the students as well as the status of self - medication with analgesics. Descriptive analysis, chi-square test and independent samples t-test were used for data analyzing. Statistically significant differences were expressed at the 95 percent level of confidence ( $p < .05$ ).

**Results:** Among 398 nursing students, 199 of them (50%) reported using analgesics for pain management during the last 30 days and self - medication with analgesics rate among students was 61.8% ( $n = 123$ ). The main reason for self - medication was a previous analgesic experience.

**Conclusion:** This study showed a critically high rate of self - medication with analgesics without a prescription among nursing students. There is a need to raise awareness of nursing students about the disadvantages of self - medication to provide safe analgesic use.

**Keywords:** Analgesic, nursing students, pain management, self – medication

## HEMŞİRELİK ÖĞRENCİLERİNİN AĞRI YÖNETİMİNDE KENDİ KENDİNE ANALJEZİK KULLANMA DURUMLARI

### ÖZET

**Amaç:** Bu çalışmanın amacı, hemşirelik öğrencilerinin ağrı yönetimi için kendi kendine analjezik kullanma durumunun belirlenmesidir.

**Gereç ve Yöntem:** Tanımlayıcı nitelikte olan bu araştırma, 12-27 Mayıs 2016 tarihleri arasında hemşirelik bölümünde okuyan 398 öğrenci ile gerçekleştirildi. Verilerin toplanmasında, öğrencilerin bireysel özelliklerini ve kendi kendine analjezik kullanma durumlarını belirlemeye ilişkin soruları içeren form kullanıldı. Veri analizi için, tanımlayıcı istatistiksel analiz, ki-kare testi ve bağımsız örneklem t testi kullanıldı. İstatistiksel anlamlılık,  $p < 0.05$  (%95 güven aralığı) olarak değerlendirildi.

**Bulgular:** Öğrencilerin 199'unun (%50) son 30 günde ağrı yönetimi için analjezik kullandığı ve bu öğrencilerin %61,8'inin ( $n=123$ ) analjeziği reçetesiz kullandığı belirlendi. Öğrencilerin kendi kendine analjezik kullanma nedeninin ise daha önceki analjezik deneyimleri olduğu saptandı.

**Sonuç:** Bu çalışma, hemşirelik öğrencilerinin yüksek oranda kendi kendine analjezik kullandığını gösterdi. Hemşirelik öğrencilerinde güvenli analjezik kullanımı sağlamak için kendi kendine ilaç kullanımının olumsuzlukları hakkında farkındalıklarının artırılmasına gereksinim vardır.

**Anahtar sözcükler:** Analjezik, hemşirelik öğrencileri, ağrı yönetimi, kendi kendine ilaç kullanımı

**S**elf – medication is defined as the use of drugs by a person on the own initiative or on the advice of a person instead of prescription and it also includes the use of previous prescriptions and share of drugs with other people around the local area (1). The use of self – medication is a global health problem and has been on a rise in developing countries (2,3). The prevalence rate of self – medication was found to be 42.5% in Jordan and 59% in Nepal (4). In Özdiñç et al.'s study in Turkey, the rate of self – medication was reported as 54% (5). Unfortunately, self – medication is often perceived for pain management, and analgesics (as paracetamol and various non-steroidal anti-inflammatory drugs - NSAID) are the most frequently-used drug groups for self – medication (6,7). In western countries, analgesics were the most used drug groups without a prescription (8). In Turkey, analgesics were reported as the top list of drugs that are sold without a prescription with a rate of 39.23% in 2012 and 40.39% in 2013 (9). According to the Turkish Pharmaceutical Sector Report 2017, analgesics were found to be the most commonly used drug group among the general population with the total marketing price around 465.222,148 US \$ (10). Although analgesics are easily accessible and eliminate pain quickly, self – medication with analgesics may mask the signs of the underlying disease, and the problem may get more complicated (11,12). Tüfekçi et al. in Turkey stated that 2/3 of the analgesic overdose cases were caused by paracetamol (13). These drugs are also known as causing heart failure, elevating blood pressure, and a new report is warning about developing heart attacks or strokes even in short term usage (6,14).

Self – medication is influenced by factors such as socio-demographic, education, the severity of pain and previous experience (4,15,16). The major predictive factors for self-medication were found as having a high level of education and being a health care professional (8,17). Studies report that self – medication is on the increase among the student population and it is more common among medical students (18,19). In a study from India, 79.4% of medical students stated as using self – medication and the most common group of drugs were analgesics (19). The rate of self – medication among pharmacy, medical and health science students was found as 87.5% and the most used drugs were antipyretic and analgesics (16). As many reasons are mentioned for the high usage of self – medication among health-related departments' students, the major predictive factors are reported as self-diagnosing, having the knowledge of drugs and self-confidence (2,16). In a study conducted on nursing students in North India, it was found that self – medication was widely used

by a rate of 88.24% and the commonly used drugs were analgesics (20). In a study from Brazil, the prevalence of self – medication was found 76.0% among nursing students and the NSAIDs were found to be the most commonly used (21).

Although several studies conducted among medical students and analgesics were found as the most self-medicated drugs, there is a paucity of literature among self – medication of nursing students and their status of analgesic use for pain management (18,22). As reported, self – medication is common among students of health-related departments, this study focused to determine the status of nursing students regarding self – medication with analgesics for pain management.

## Materials and methods

### *Research design and sampling*

This descriptive study was conducted on 398 nursing students from all classes (first, second, third and fourth), who were undergoing their education/studying in the Nursing Department of a university in Turkey between May 12th-27th 2016. Inclusion criteria of this study were being a nursing student, filling in the data collection form completely and being volunteered for the study. In this study, the independent variables were age, gender and education year. The self - medication was the dependent variable and it was defined as "using an analgesic without a prescription". This was assessed with these questions "Did you use any analgesic for pain management during the last 30 days?" and "Did you take this analgesic without a prescription?". The usage was considered as self - medication if the answer to the second question was "Yes".

### *Measures and data collection*

The data collection form created by the guidance of literature (7,11,16,20,21), consisted of two separate parts include questions that were used to collect data on the characteristics of the students as well as the status of self - medication with analgesics for pain management. Among the characteristics questions were age, gender and educational year. The self - medication with analgesics usage status questions involved analgesic use for pain management during the last 30 days, reason of the taking an analgesic without prescription, type of analgesic, the source of the analgesic, factors in dosing, using an analgesic on advice, reading package inserts, knowing for the side effects and indications leading to self - medication with analgesics.

Before the application of the data collection form, students were given the objective of the study. It was requested from the voluntary students that they fill in the data collecting form without writing their names down. Forms were delivered to all students at the beginning of basic course time that all students have to join in their education term. It took approximately 15 minutes to fill the form.

### Data analysis

The data of the study were analyzed in the Statistical Package for the Social Sciences (SPSS) 21.0 package program. Descriptive analysis, chi-square test (Fisher's Exact and Linear-by-Linear Association), and independent samples t-test were used for data analysis. Statistically significant differences were expressed at the 95 percent level of confidence ( $p < .05$ ).

### Ethical consideration

The study was approved by the Medical Faculty Ethics Commission of Non-invasive Clinical Trials (2016 / 127 - decision number 09 / 07), and permission to conduct the study was obtained from the Director of the Faculty. Students were informed about this study, and their informed consent was verbally obtained before the data collection form was applied and it was emphasized to them that they could withdraw from the study anytime they wish. It was told the students that the information obtained would be used for only scientific purposes and their verbal consent was taken.

## Results

Among 398 nursing students, 199 of them (50%) reported using analgesics for pain management during the last 30 days and self-medication with analgesics rate among students was 61.8% ( $n = 123$ ). According to the characteristics of nursing students, there were no significant differences between using analgesics with self-medication and prescription ( $p > .05$ ) (Table 1).

Study results showed that the main reason for self-medication with analgesics was previous analgesic experience (78.0%), and the most commonly used analgesic group was NSAIDs (69.9%). As to where the medicine was obtained, 91.1% of the students said that they took the analgesics from the pharmacy. The severity of pain was the most important factor to arrange in the dosing of analgesics at a percentage of 48 (Table 2).

**Table 1.** Characteristics of nursing students using analgesics with self-medication or with a prescription (N = 199)

Characteristics	with self-medication	with a prescription	Statistic values
	n (%)	n (%)	
<b>Gender</b>			
Female	115 (93.5)	72 (94.7)	$p = .489^a$
Male	8 (6.5)	4 (5.3)	
<b>Education year</b>			
1 <sup>st</sup>	32 (26.0)	21 (27.6)	$p = .687$ ; $\chi^2 = .206^b$
2 <sup>nd</sup>	35 (28.5)	23 (30.3)	
3 <sup>rd</sup>	29 (23.6)	17 (22.4)	
4 <sup>th</sup>	27 (21.9)	15 (19.7)	
<b>Mean age (M <math>\pm</math> SD)</b>	20.58 $\pm$ 1.45	20.53 $\pm$ 1.45	$p = .829$ ; $t = -.216^c$

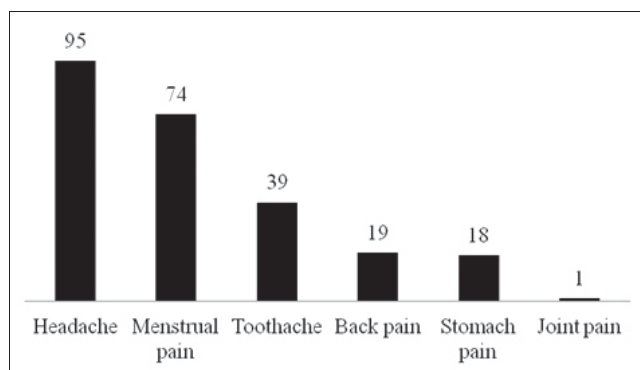
<sup>a</sup>: fisher's exact test, <sup>b</sup>: linear-by-linear association, <sup>c</sup>: independent samples t test

**Table 2.** Self-medication among nursing students according to analgesic use variables (N = 123)

Introductory Feature	n	%
<b>Reasons of self-medication*</b>		
Previous analgesic experience	96	78.0
Limitation of the time	30	24.4
Convenience	4	3.3
Economic situation	1	0.8
<b>Type of analgesic</b>		
NSAIDs	86	69.9
Paracetamol	37	30.1
<b>Taking an analgesic from*</b>		
Pharmacy	112	91.1
Friend	18	14.6
Market	3	2.4
Family members	2	1.6
<b>Factors in dosing*</b>		
Severity of pain	59	48.0
Knowledge about analgesic	30	24.4
Previous analgesic experience	28	22.8
Efficacy of the analgesic	23	18.7
No criteria	3	2.4
<b>Using an analgesic on advice</b>		
Yes	36	29.3
No	87	70.7
<b>Reading package inserts</b>		
Yes	106	86.2
No	17	13.8
<b>Knowing the side effects</b>		
Yes	100	81.3
No	23	18.7

NSAIDs: non-steroidal anti-inflammatory drugs, \* Multiple answered

The most common indications leading to self-medication with analgesics were headache (77.2%,  $n = 95$ ) and menstrual pain (60.2%,  $n = 74$ ) (Figure 1).



**Figure 1.** Indications leading to self-medication with analgesics

## Discussion

This study focused on the use of self-medication with analgesics for pain management among nursing students at a university in Turkey. In this study, half of the students reported that they had used analgesics in the last 30 days, and 61.8% of them used analgesics without a prescription. In the literature, rate of using analgesics without a prescription was 76% - 84.5% among nursing students (16,21) and similarly in medical students, it was 55.4% - 81.4% (2,23,24). Comparable results were reported by other authors investigating self-medication for pain management in Turkey, showing that 35.4 percent of the university students take drugs without a prescription (25). In Gupta et al.'s study, the rate of using NSAIDs for pain management was 63.75 percent among university students experiencing pain (26). The reason for the high rate of self-medication among healthcare students (including nursing students) may be that they feel confident enough to treat their pain according to their medical knowledge and skills gained from their education. This situation needs to be taken seriously. Students' knowledge about analgesics should be clarified, and educational efforts should be implemented which focus on the use of self-medication and which emphasize the importance of consulting medical professionals on appropriate analgesic usage.

In the present study, the top two reasons for the use of self-medication were previous analgesic experiences of students and the limitation of the time to go to a hospital. In Helal and ElWafa's study, the causes of using self-medication among medical and non-medical students were having the experience of disease, preventing wasting time or money and having the thought of prescription

of the same medicines (27). According to Jakaria et al.'s study, the main reasons of self-medication were no need to visit a doctor for minor disease, quick relief and time-saving among university students in Chittagong, Bangladesh (28). Similarly, Kaur et al. found that previous drug experience was a reason for self-medication among BSN students (29). According to the results, previous analgesic experiences of students may make the use of self-medication with analgesics as inevitable.

In the present study, 91.1% of the students took analgesics from the pharmacy without a prescription. The rate of taking drugs from the pharmacy without a prescription in medical and nonmedical students was found 69.9% in Helal and ElWafa's study (27) and in Gama and Secoli's study (21), the rate of taking drugs from the pharmacy was found 53.4% among nursing students who use self-medication. In Gupta et al.'s study, 56.3% of the students took analgesics from the pharmacy and only 20.3% said that they used analgesics according to a prescription (26). Because the common analgesics including NSAIDs are available as both prescription and over-the-counter drugs, people can take them from the pharmacy. In Turkey, analgesics are also available in the pharmacy and markets. This current state is reinforced by the study results that the majority of the students stated taking analgesics from the pharmacy.

The severity of pain was an important factor in dosing the analgesic among 48% of the students in the present study. According to Özding et al.'s study, half of the participants chose the drug by relying on their previous experience, so they felt that they did not need to consult a physician (5). In another study, it was revealed that 25.7% of the students made dosage changes of the drugs they use by themselves (25). As known, inadequate or overdose use of drugs can lead to unwanted health problems and students should be educated about the risks of self-medication.

In our study, it was determined that 86.2% of the students had read the package inserts. As more support for this finding, among university students in Kaya et al.'s study, 90.6% were reading the drug information (25). Similarly, in a study conducted on first-year medical students, the package insert was read by 71.6% of the students, and a study conducted at the University of Applied Health Studies in Croatia yielded similar results on the rate of reading drug package inserts (only 23.4% of the students were not reading them) (11). The reason for the high

package insert reading rate among nursing students in the present study may be that they can understand the package insert information.

In the present study, 81.3% of the students stated that they know the side effects of analgesics that they use. Similarly, in Gama and Secoli's study, 81.8% of the nursing students mentioned that they know the side effects of self-medicated drugs (21). In Badiger et al.'s study, 67% of medical students had knowledge about the adverse effects of drugs (2). In another study, it was found that 76.1% of the university students except health-related departments were unaware of the adverse reactions of drugs that they use themselves (16). In Idris et al.'s study, it was found that 53.1% of the university students didn't know about the side effects of analgesics they use (7). This study revealed that nearly half of the nursing students had knowledge about the side effect of analgesics that they use with self - medication.

Headache was the top indication leading to self-medicated analgesic usage, reported by 77.2%, and followed by menstrual pain and toothaches. Similar results were determined in many studies, and the headache was identified as the most common indication for drug usage (28,29). Likewise, in Amin et al.'s study, the most commonly reported syndrome was headache, at a rate of 51.6% among pharmacy students who use self – medication (30). According to Philip et al.'s study, headache was one of the ailments that led to self - medication, with a rate of 53.6% among medical and paramedical students (16). Headache was also reported as a common cause for self - medication in a study investigating the knowledge, attitudes and self - medication use of medical students (19).

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The high prevalence of headache cases for self - medication among nursing students was found to be noticeable and an important point for further research.

## Conclusion

The study showed a high rate of self - medication with analgesics for pain management among nursing students. Although students know the side effects of analgesics and they read package inserts, many of them are unaware of the dosing of analgesics. There is a need to raise awareness of nursing students about the pros and cons of self - medication to provide safe analgesic use. This study contributes to the literature on the status of nursing students about self - medication with analgesics.

The limitation of this study is that the sample size is from the nursing department of one city in Turkey and it results in limited generalizability of the conclusion.

## Conflict of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the article.

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