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Awareness among patients taking oral non-steroidal anti-inflammatory drugs as analgesics: a cross-sectional study

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ABSTRACT

Aim: Non-steroidal anti-inflammatory drugs (NSAIDs), the most used drugs for pain management, are among the most commonly prescribed drugs both in the world and in Turkey. NSAIDs have a serious side effect profile, and their inappropriate use can result in adverse outcomes, including mortality. This study aimed to determine consciousness level of drug use among patients who used oral NSAIDs for pain relief.

Material and Method: This was a cross-sectional and descriptive study. The universe of the study consisted of patients aged ≥18 years who presented to the Ankara City Hospital Family Medicine Outpatient Clinic at the end of 2019 for any reason who used at least one type of oral NSAID for pain relief. Data were collected using a questionnaire developed by the researchers. Awareness was measured via a survey concerning knowledge and attitude, and knowledge and attitude scores were calculated for each participant. Significance was determined at a $p<0.05$ level.

Results: There were 210 participants. The most used NSAID was diclofenac. The most common reasons for analgesics use were headache and musculoskeletal pain. Participants had poor knowledge of the diseases associated with NSAID use, and the most well-known diseases were stomach ulcer and bleeding and kidney failure. Participants' average knowledge scores were low, and average attitude scores were relatively higher. Women had significantly higher knowledge scores than men. Knowledge and attitude scores were positively associated with education and income status. Analgesics use was positively correlated with age and negatively correlated with attitude scores. Participants with chronic diseases had lower attitude scores than those without chronic diseases. Knowledge and attitude scores were positively correlated.

Conclusion: We conclude that participants lacked knowledge about the general characteristics of and risks associated with NSAIDs, widely used, over-the-counter drugs that are found in almost every home. A more cost-effective, knowledgeable, and rational approach is required for NSAID use.

Keywords: Analgesics, pain management, non-steroidal anti-inflammatory agents, rational drug use, family medicine

INTRODUCTION

Non-steroidal anti-inflammatory drugs (NSAIDs), the most used drugs for pain management, are among the most prescribed drugs around the world. In addition to their analgesic properties, NSAIDs are widely used as antipyretic and anti-inflammatory agents, and their utility in colorectal cancer prophylaxis has also been demonstrated by recent studies. Low dose of acetylsalicylic acid, also known as aspirin, is used for cardiovascular and cerebrovascular prophylaxis.

Prescriptions for ibuprofen and naproxen, both among the most commonly used NSAIDs, reached 40 million in the USA in 2009 (1). In Europe, NSAIDs account for 7.7% of all prescriptions (1). Like the rest of the world, NSAID use is common in Turkey. According to 2017 data, analgesics constituted 7.1% of 2.2 billion boxes of drugs sold in Turkey, the majority of which consisted of NSAIDs (2). NSAIDs are also prominent due to being available over the counter and easy to access.

Studies have proven that NSAIDs can have serious and mortal consequences, including gastrointestinal, renal, cardiovascular, hematological, pulmonary, allergic, and anaphylactic side effects. The prominent gastrointestinal side effects of NSAIDs include dyspepsia, peptic ulcer disease, and bleeding. At least 25% of chronic NSAID users develop peptic ulcers, while 2-4% of these ulcers are complicated by bleeding or perforation (3). Serious renal side effects, on the other hand, occur in about 1-5% of all patients taking NSAIDs (4). This number can reach 20% for patients under

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increased risk due to concomitant diseases (5). NSAIDs also have various side effects on the cardiovascular system. NSAIDs have been shown to increase the risk of adverse vascular events, such as myocardial infarction and stroke, and can also exacerbate heart failure (6).

In primary care, NSAIDs are frequently requested by patients and prescribed by physicians irrespective of indication. It was statistically demonstrated that 39.9% of all prescriptions written by family practitioners in Turkey in 2017 included analgesics (7). NSAIDs have also been shown to have the largest share of sales among all analgesics. It is estimated that $6.8 billion has been spent on NSAIDs worldwide each year (5).

To summarize, NSAIDs have many serious side effects and are also a significant economic burden. NSAID availability over the counter sets the stage for inappropriate use. Physicians should inform patients at the point of access to health care. Moreover, it is important to determine patients' level of NSAID knowledge to try and prevent possible side effects. In our study, we aimed to determine awareness concerning NSAIDs, drugs that are widely used and can have serious side effects.

MATERIAL AND METHOD

Prior to data collection, the scientific and ethical aspects of the protocol were reviewed by the local hospital research ethics committee, and the study was granted ethical approval (date 07/11/2019, decision number E-19-115). All procedures were performed adhered to the ethical rules and the Helsinki Declaration of Principles.

This was a cross-sectional, descriptive, and comparative observational study. The universe of the study consisted of patients aged ≥18 years with good cognition (no neurological or psychiatric disorders that may affect the results of the questionnaire) who presented to the Ankara City Hospital Family Medicine Outpatient Clinic between 10/11/2019–31/12/2019 for any reason and who used at least one type of oral NSAID for pain relief. The analysis conducted using G Power 3.1.5 software revealed that a sample size of 207 was required with a medium effect size and an alpha-type error of 0.05.

Data were collected using a 20-item questionnaire, which included descriptive questions concerning sociodemographic characteristics (gender, age, occupation, income status, education status, any illnesses) and painkiller use, and questions measuring attitude and knowledge of painkillers. Moreover, we calculated knowledge and attitude scores to evaluate our participants' NSAID awareness levels. Than the "Overall Knowledge Score" and "Overall Attitude Score" were compared with sociodemographic features of the participants.

When assessing knowledge, "one" point was assigned to all correct answers. These points were summed up to determine the Overall Knowledge Score. The highest possible score was 16 and the lowest possible score was 0.

To determine attitude, participants were given 12 statements that reflected positive or negative behavior. The statements were scored as a 5-point Likert-type scale (4 always, 3 often, 2 sometimes, 1 rarely, 0 never). Negative propositions were scored in reverse. The scores from all propositions were added to determine the Overall Attitude Score. The highest possible score was 48 and the lowest possible score was 0.

The questionnaire was applied using the face-to-face interview method.

Data were analyzed using IBM SPSS Statistics 18© Copyright SPSS Inc. 1989, 2010. Fit to normal distribution was investigated using the Kolmogorov–Smirnov test. Categorical variables were presented as frequencies and percentages, and continuous variables as means, medians, standard deviation, and minimums and maximums. Chi-square and Fisher's chi-square significance tests were used to analyze categorical variables. When parametric assumptions were met, one-way ANOVA was used to compare means between two or more independent groups. When parametric assumptions were not met, the Mann Whitney U test was used to compare means between two groups and the Kruskal-Wallis test to compare means between more than two groups. Correlations between continuous variables were examined using Spearman's correlation analysis. The level of statistical significance was accepted as 0.05. The internal consistency of the questionnaire items was analyzed using Cronbach's alpha. Cronbach's alpha coefficient was calculated as 0.671.

RESULTS

There were a total of 210 volunteer participants. The mean age was 41.23±13.96 years, and the median age was 39 years (range 19-82). **Table 1** presents the participants' sociodemographic characteristics.

The number of participants with chronic diseases was 92 (43.8%). The most common chronic diseases were hypertension (12.9%), diabetes (8.1%), asthma (7.1%), goiter (6.7%), gastritis, and depression (6.2%). Average painkiller use was 5.83±3.53 units per month (range 1-25). Reasons for using painkillers and the most used painkillers are presented in **Table 2**.

78.6% (n=165) of participants stated that they never used aspirin, and 17.1% sometimes and 4.3% regularly used aspirin. Among participants who used aspirin, 22 (48.9%) did so because they believed that taking aspirin every once in a while was good for their health, 14 (31.1%) for

pain relief, 7 (15.6%) due to having cardiovascular disease as heart attack prophylaxis, and 2 (4.4%) due to having cerebrovascular disease as stroke prophylaxis.

Table 1. Sociodemographic data of the participants

	Number (n)	Percent (%)
Gender (n=210)		
Female	129	61.4
Male	81	38.6
Educational status (n=210)		
University and above	100	47.6
High school	80	38.1
Middle school	16	7.6
Elementary school	13	6.2
Illiterate	1	0.5
Marital status (n=210)		
Married	120	57.1
Single	66	31.4
Widowed/divorced	24	11.4
Occupation (n=210)		
Government officer	47	22.4
Housewife	43	20.5
Worker	34	16.2
Unemployed	25	11.9
Retired	24	11.4
Other	18	8.6
Tradesman	12	5.7
Medical staff	7	3.3
Households income status (n=210)		
Income=expenses	108	51.4
Income<expenses	89	42.4
Income>expenses	13	6.2

Table 2. Reasons for using analgesics and distribution of used analgesics

	Number (n)	Percent (%)
Reasons for using analgesics		
Headache	120	57.1
Other joint and muscle pain	72	34.3
Low back pain	62	29.5
Dysmenorrhea	47	22.4
Toothache	24	11.4
Knee pain	17	8.1
Abdominal pain	13	6.2
Cancer pain	2	1.0
Used analgesics		
Diclofenac	87	41.4
Dexketoprofen	79	37.6
Paracetamol	76	36.2
Flurbiprofen	72	34.3
Naproxen	64	30.5
Etodolac	21	10.0
Indometacin	9	4.3
Mefenamic acid	8	3.8
Nimesulide	8	3.8
Metamizole	2	1.0
Ibuprofen	2	1.0
Morphine/tramadol	2	1.0
Meloxicam	1	0.5

A total of 77 participants (36.7%) reported painkiller-related side effects. The observed side effects and participants' reactions to side effects are presented in detail in **Table 3.**

Table 3. Participants' characteristics regarding side effects related to analgesics

	Number (n)	Percent (%)
Any side effects (n=210)		
No	133	63.3
Yes	77	36.7
Side effects (n=117) *		
Heartburn	46	21.9
Stomach pain	28	13.3
Nausea	18	8.6
Allergic reaction	7	3.3
Fatigue	4	1.9
Rash	4	1.9
Palpitation	4	1.9
Headache	2	1.0
Drowsiness	2	1.0
Dizziness	1	0.5
Vomiting	1	0.5
Visual impairment	0	0.0
Tinnitus	0	0.0
Confusion	0	0.0
Anaphylaxis	0	0.0
Reaction to Side Effects (n=77)		
Waiting it out	51	66.2
Consulting a doctor	14	18.2
Using other medication to reverse side effect without consulting a doctor	12	15.6
Other methods	0	0.0

*Multiple items could be selected.

Answers to the Knowledge Score item "What diseases do you know that are at increased risk or triggered by painkillers?" are presented in **Table 4.** The presented answers are correct according to the literature. 12.4% (n=26) of the participants answered this question as "I don't know".

Answers to another Knowledge Score item "Where do painkillers need to be stored?" were as follows: almost half (49.5%) of all participants correctly answered the question by indicating that painkillers need to be stored "at room temperature in a cool and dry environment", whereas 28.6% indicated "in the refrigerator" and 21.9% indicated that "painkillers do not require specific storage conditions".

Lastly, the correct answers given to the remaining Knowledge Score items concerning the properties of painkillers are also presented in **Table 4.** Knowledge scores were calculated by assigning 1 point to each item. The mean overall knowledge score of the participants was calculated as 3.72±2.11 points (range 0-12) over 16.

Table 4. Number of correct answers to knowledge questions

Parameters that determine the Overall Knowledge Score	Number of correct answers given (n)	Percent (%)
Increased risk of stomach ulcers/ bleeding	123	58.6
Increased risk of kidney failure	100	47.6
Increased risk of liver failure	47	22.4
Increased risk of heart attack	37	17.6
Increased risk of intestinal ulcers/ bleeding	31	14.8
Increased risk of clot formation in blood vessels	25	11.9
Increased risk of hypertension	15	7.1
Increased risk of depression	7	3.3
Increased risk of asthma attacks	6	2.9
Increased risk of hepatitis	5	2.4
Increased risk of various blood diseases	5	2.4
Increased risk of epilepsy	2	1.0
Where do painkillers need to be stored?	104	49.5
"Painkillers interact with certain other drugs when taken together"	72	34.3
"Painkillers can reduce fever."	129	61.4
"Painkillers have anti-inflammatory properties."	74	35.2

Table 5 presents the distribution of participants' responses to the overall painkiller attitude score parameters. Accordingly, the mean overall attitude score was calculated as 26.24±5.88 (range 11-42) over 48.

Table 6 presents the relationship of knowledge and attitude scores with age and painkiller use. Correlation analysis revealed a weak positive correlation between knowledge and attitude scores (r=0.219, p<0.01).

Table 6. Relationship of knowledge and attitude scores with age and analgesics use

Correlation test results	Knowledge score	Attitude score	Age	Amount of analgesics
Knowledge score	1			
Attitude score	0.219**	1		
Age	-0.007	-0.050	1	
Amount of analgesics	-0.032	-0.362**	0.217**	1

** p<0.01

Mean overall knowledge and attitude scores and their comparisons according to sociodemographic data are presented in **Table 7**. Statistical analysis revealed that the mean overall knowledge score of participants who had experienced side effects (4.27±2.25) was significantly higher than that of participants who had not (3.41±1.96) (p=0.005). Also, patients who had chronic diseases that required chronic medication had significantly lower attitude scores compare to participants who did not (p=0.005).

Table 5. Distribution of participants' responses to the overall analgesics attitude score parameters

Parameters that determine the overall attitude score	Always		Often		Sometimes		Rarely		Never	
	n	%	n	%	n	%	n	%	n	%
When I have pain, I take painkillers without seeking a medical opinion.	43	20.5	91	43.3	60	28.6	12	5.7	4	1.9
I buy painkillers over the counter at the pharmacy.	18	8.6	48	22.9	92	43.8	30	14.3	22	10.5
I ask my doctor to prescribe painkillers so that I have them available at home.	18	8.6	42	20.0	78	37.1	54	25.7	18	8.6
I always carry painkillers with me.	28	13.3	30	14.3	75	35.7	57	27.1	20	9.5
I use any leftover painkillers later if I have any pain.	81	38.6	77	36.7	23	11.0	21	10.0	8	3.8
I am careful to take painkillers after eating.	77	36.7	65	31.0	53	25.2	15	7.1	0	0.0
I am careful about the expiration dates of painkillers.	104	49.5	65	31.0	25	11.9	15	7.1	1	0.5
I read medication package inserts before using painkillers.	45	21.4	40	19.0	75	35.7	39	18.6	11	5.2
I take painkillers together with other drugs I am using.	3	1.4	17	8.1	69	32.9	67	31.9	54	25.7
I take painkillers together with herbal/ supplement products.	3	1.4	20	9.5	66	31.4	121	57.6	0	0.0
I take gastroprotective agent together with painkillers.	8	3.8	17	8.1	54	25.7	66	31.4	65	31.0
When painkillers have side effects, I seek medical help.	45	21.4	22	10.5	54	25.7	60	28.6	29	13.8

Table 7. Mean overall knowledge and attitude scores and their comparisons according to sociodemographic data

	Mean overall knowledge score	p value	Mean overall attitude score	p value
Gender (n=210)				
Female	4.01±2.07	0.008*	26.42±6.06	0.839*
Male	3.27±2.09		26.13±5.79	
Educational status (n=210)				
University and above	4.60±2.26	0.0001&	27.48±6.17	0.022&
Elementary school	3.38±1.50		25.69±4.73	
High school	3.04±1.63		23.88±6.85	
Middle school	2.13±1.20		23.69±6.88	
Illiterate	1.0		18.00	
Marital status (n=210)				
Married	3.76±2.16	0.979&	26.93±6.42	0.034&
Single	3.73±2.24		25.92±4.91	
Widowed/divorced	3.54±1.38		23.67±4.81	
Occupation (n=210)				
Medical staff	6.43±2.87	0.001&	28.06±6.22	0.231
Government officer	4.49±2.18		26.82±5.75	
Retired	3.54±1.86		26.13±6.32	
Tradesman	3.42±1.78		25.86±5.64	
Unemployed	3.40±2.39		25.80±4.87	
Worker	3.15±2.07		24.83±3.18	
Housewife	3.05±1.17		24.70±6.07	
Other	4.28±2.29		25.94±6.52	
Households income status (n=210)				
Income<expenses	3.34±1.95	0.012&	31.00±7.80	0.063
Income=expenses	3.89±2.19		26.40±5.47	
Income>expenses	5.00±1.87		25.36±5.77	

* Mann Whitney U test, & Kruskal Wallis test

DISCUSSION

In our study, we aimed to determine the level of NSAID awareness among patients who presented to the family medicine outpatient clinic who used NSAIDs for pain relief.

In our study, the mean frequency of painkiller use was 5.83±3.53 per month. In other words, participants used 6 units of painkillers per month and 1-2 per week on average. A similar thesis study concerning hypertensive patients found that 4.28% of the participants used NSAIDs every day, 6.61% used 3-6 units per week, 8.17% 1-2 units per week, and 22.57% 1-3 units per month (8). A study from Saudi Arabia reported that 3.8% of the participants used painkillers once a day, 6.9% once a week, 12.1% once a month, and 77.2% as needed (9). As evidenced, painkiller use is high among our participants. Our participants were relatively young. That said, we found that painkiller use increased with age. Given that advanced age is associated with increased conditions that cause pain, such as rheumatic diseases, it is expectable that painkiller use will increase with age. However, it is curious that we found high painkiller use throughout our patient group. We infer that patients may not be aware of the potential consequences of frequent and inappropriate painkiller use, which are available over the counter and already present in many homes.

Among our participants, the most common reason for using painkillers was headaches (57.1%), followed by other joint and muscle pain, low back pain, dysmenorrhea and toothache, and knee pain, respectively. In our study, we classified musculoskeletal pain under three separate categories, and we preferred to ask the participants about the most common musculoskeletal pains (low back and knee pain) individually, and included "other joint and muscle pain" as a third option. In total, these three options amount to 71.9%. Therefore, it can be said that musculoskeletal pain was the most common reason for painkiller use. Balabanlı indicated that the most common reasons for painkiller use were headaches (76.7%), followed by musculoskeletal pain (43.1%) (10). A similar study from the Sivas province of Turkey indicated that, among patients aged 65 and over, the most common reason for using NSAIDs was diffuse musculoskeletal pain and gonarthrosis (11). Hopayılmaz reported that the most common reason for using NSAIDs was rheumatic pain (50%), followed by headache (30.8%) and low back pain (13%) (12). Accordingly, we inferred that the most common reasons for using NSAIDs are headache and musculoskeletal pain, with varying rates depending on age.

In our study, the most used painkiller was an NSAID, diclofenac (41.4%). This was followed by dexketoprofen, paracetamol, flurbiprofen, and naproxen. Balabanlı (10) indicated that the most used NSAIDs were flurbiprofen (51%) and diclofenac (40.3%). It should be noted that this study did not investigate paracetamol use. Roshi et al. (13) reported the most commonly used painkillers to be paracetamol, ketoprofen, and ibuprofen, respectively. A similar study from Greece found that paracetamol and ibuprofen, respectively, were the most commonly used painkillers, followed by diclofenac and meloxicam (14). Karami et al. (9) similarly found that the most used painkillers were paracetamol (73.4%) and ibuprofen (13.1%). Hopayılmaz (12) and Yılmaz (8) reported that paracetamol, diclofenac and flurbiprofen, respectively, were the most commonly used painkillers among patients aged 65 years and older. As illustrated, paracetamol is consistently the most used painkiller in studies where it was included. This is a favorable result since paracetamol is a milder and more tolerable drug compared to NSAIDs in terms of potential side effects. In our study, paracetamol was the third most used painkiller. We ascribe this finding to the fact that the universe of our study consisted of patients using at least one type of NSAID (excluding paracetamol) and did not include patients who used paracetamol alone. This is both a distinguishing and limiting factor for our study.

Answers to the Knowledge Score item "List all diseases that you know painkillers to increase the risk of or trigger." included stomach ulcer/bleeding, kidney failure, liver failure, heart attack, intestinal ulcer/bleeding, and blood clot formation in descending order; hypertension, depression, asthma attacks, various blood disorders, and epilepsy were less common responses. Yılmaz reported that the most well-known side effects of NSAIDs were gastrointestinal problems and kidney failure. This study reported that more than half of the participants did not know of any side effects and only 14.7% knew about the risk of hypertension (8). Contrarily, Roshi et al. (13) found that 31.7% of their participants knew that NSAIDs could lead to hypertension, 30.2% to gastrointestinal ulcers, 27.1% to kidney damage, and 18.1% to cardiac damage. Karakitsiou et al. (14) demonstrated that the most well-known NSAID side effects were hypertension, peptic ulcer, and kidney damage, while hepatopathy was less well-known. In our study, a very small percentage (7.1%) of participants indicated knowing NSAIDs could lead to hypertension. That said, the percentages were similarly low for other diseases also, with 12.4% of the participants indicating that they did not know of any diseases associated with NSAID use. This suggests that patients should be better informed about the side effects of NSAIDs.

In our study, almost half of all participants indicated that painkillers should be stored in a cool and dry environment at room temperature, while 28.6% said that they should be stored in the refrigerator. Ilhan et al. (15) conducted a study concerning rational drug use and found that 60.3% of the participants stored unused drugs in the refrigerator. A Belgian study showed that one-third of households stored drugs in inappropriate conditions (16). Oral NSAIDs are recommended to be stored at room temperature, but research shows that misinformation and incorrect applications are abundant.

In our study, 63.8% of participants stated 'always' or 'often taking painkillers without seeking a medical opinion' when they have pain. 52.6% of Hopayılmaz's participants indicated taking painkillers without visiting the doctor's office when they had pain (12). Multiple studies reported that the vast majority of drugs used without consulting a doctor are painkillers (17,18). This is most likely largely due to the easy availability of painkillers over-the-counter. In our study, 31.5% of participants indicated that they 'always' or 'often buy painkillers over the counter at the pharmacy'. Önder et al. (19) reported a comparatively higher rate of buying over-the-counter painkillers with 57.8%. A similar US study indicated that 65% of the participants used over-the-counter painkillers (20). The National Health and Nutrition Examination Survey III (NHANES-III), also from the United States, reported that 76% of the population used over-the-counter analgesics (21). In our study, the prevalence of buying over-the-counter painkillers was lower compared to the literature. On the other hand, 28.6% of our participants 'always' or 'often asked [their] doctor to prescribe painkillers so that [they] have them available at home'. Balabanlı (10) reported a higher rate, with 40.7% of participants indicating that they requested prescriptions for NSAIDs, even though they had no complaints. These results demonstrate the need for increased public awareness on this issue.

In our study, knowledge and attitude were separately evaluated. The mean overall knowledge score was 3.72±2.11 out of 16, and the mean overall attitude score was 26.24±5.88 out of 48. These scores were below expected. The mean knowledge score was considerably lower compared to the mean attitude score. Most of the knowledge questions concerned the diseases and side effects associated with NSAIDs, therefore the low mean knowledge score suggests that patients need to be better informed about the side effects of NSAIDs. Moreover, the correlation analysis revealed a weak but significant positive relationship between knowledge and attitude scores. Accordingly, we concluded that increased NSAID knowledge was associated with better attitude.

In our study, participants who had completed university education or higher had the highest knowledge and attitude scores. Balabanlı similarly found that educational status was positively correlated with the rational use of NSAIDs (10). A thesis study on rational drug use also observed that increased education was associated with better knowledge of drug side effects (22).

Participants who developed NSAID-related side effects had significantly higher knowledge scores than those who did not. This suggests that experiencing NSAID-related side effects may have resulted in more cautious use.

Correlation analysis revealed a weak but significant negative relationship between attitude scores and painkiller use. This suggests that participants using fewer painkillers had a better attitude, or that a better attitude was associated with reduced NSAID use.

Our results indicated that attitude scores were higher among participants who knew the correct storage conditions for painkillers and those who knew of NSAIDs' drug interactions and antipyretic properties. That said, we found that participants with chronic diseases had lower attitude scores than those without chronic diseases. Balabanlı (10) similarly found that individuals without chronic diseases had better knowledge about NSAIDs. These results are curious since people with chronic diseases who require chronic medication are expected to know more about NSAIDs, and their interactions and side effects.

Among the limitations of this study are the single-center and cross-sectional design, and the limited number of subjects, all of which reduce the generalizability of our results. Hence, the comments presented in the discussion section mostly reflect the attitudes of the participating population.

CONCLUSION

Participants' average knowledge scores were low, and average attitude scores were relatively higher. Women, medical staff, and participants with higher education and income statuses had significantly higher knowledge scores. Moreover, participants with higher education and income statuses, and government officers had significantly higher attitude scores.

We conclude that patients lack information about the general characteristics and risks of NSAIDs, and further education is required.

Furthermore, among our results are increased painkiller use with age, and poor conscious level of drug use among patients with chronic diseases. The elderly and individuals with chronic diseases more frequently require medical care and are at higher risk for side effects and drug interactions; therefore, it is crucial to improve medication awareness in this population. Family physicians are the most likely to receive NSAID prescription requests and also the most likely to prescribe painkillers. As the first line of health care, to provide community-oriented, comprehensive, and person-centered care, family physicians should provide accurate information about NSAIDs to the population they are responsible for. Moreover, due to over-the-counter availability, physician-pharmacist-patient cooperation is also vital for a successful outcome in the context of rational drug use of analgesics.

ETHICAL DECLARATIONS

Ethics Committee Approval: The study was carried out with the permission of the Clinical Research Ethics Committee of Ankara City Hospital (Date 07/11/2019, Decision number E-19-115).

Informed Consent: All patients signed the free and informed consent form.

Referee Evaluation Process: Externally peer-reviewed.

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

Financial Disclosure: The authors declared that this study has received no financial support.

Author Contributions: All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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