

ORIGINAL RESEARCH

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Evaluation of drug use habits and rational drug use of persons registered to primary health care**Serdar Deniz¹, Ayse Ferdane Oguzoncul², Recep Bentli¹**¹Malatya Provincial Health Directorate, Malatya, Turkey²Firat University Faculty of Medicine Public Health Department, Elazig, Turkey

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Abstract

Wrong or unnecessary use of medications seriously affects public health. The aim of this study is to evaluate the drug use habits and rational drug use among people aged 15 and over who are registered to family health centers in Akçadağ district of Malatya. The population of the study consists of 21659 people in the 15 and older age group registered in the family physicians in Akçadağ district of Malatya. The frequency of rational drug use was determined as 46.6%, the margin of error was 5% and the confidence interval was 95% and the minimum sample size was calculated as 376. It was aimed to reach a total of 420 people. Not be using drugs other than doctor's advice, using drugs as recommended time by the doctor and using drugs as recommended dose by the doctor, all of the features were evaluated as 'rational drug using'. The mean age was 42.84 ± 16.39 . Of the group, 50.2% were males and 7.1% were illiterate. It was determined that those who had difficulty in meeting health expenses accounted for 9.3% of the group, 61.9% of them were generally in good health, 36.0% had a long-term or chronic disease. Those who did not use the medication without a doctor's recommendation were 31.4%, those who used the drug in the amount recommended by the doctor, 55.7%, and 54.5% of the patients who were taking the drug at the recommended time. The prevalence of rational drug use was 23.8%. Rational drug use was associated with gender and educational status ($p < 0.05$). The frequency of rational drug use is low. The importance of rational drug use to each individual in society should be explained in accordance with the individual characteristics.

Keywords: Drug, rational, using**Introduction**

According to the World Health Organization, rational use of medicines is the lowest cost of taking the drugs at the doses and times that meet the clinical needs of the patients. In other words, it can be said that the drug to be used is effective, safe, reasonable and low cost. In general, the obstacles to rational drug use are from diagnosis (insufficient examination, communication etc.), from prescription writing (wrong, over-prescription etc.), from drugs (lack of instructions, poor quality packaging etc.) and from patients (poor follow-up, environmental and cultural situation etc.). In our country and in the world, the use of wrong or unnecessary medication seriously affects public health. This effect leads to decreased treatment compliance, development of resistance to drugs, increased treatment costs and risk of death. Training, management, economic and regulatory strategies need to be developed to rationalize drug use [1,2].

The Ministry of Health has launched a website application to promote rational drug use and has made it available to health professionals and patients. In addition to this, many posters and brochures have been made to ensure the use of the right medication instead of many drugs, antibiotics are used only with a physician's recommendation, the drugs are used in the dosage and duration recommended by the physicians, drugs are not shared with others [2].

Prescription writing is a complex process that includes the ability to diagnose, knowledge of medicine, understanding of the principles of clinical pharmacology, and evaluation of risks along with communication capabilities. The treatment plan to be established as a result of a prescription should include goals such as treatment of a disease, relieving symptoms without affecting the underlying condition (such as diarrhea), long-term prevention and diagnosis. It is possible to evaluate the results of the treatment with or without the benefit of the drugs or medications provided by the objective evaluation. Therefore, it is important to follow the treatment given in order to make changes in the treatment plan [3].

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While the development of the pharmaceutical industry has had a positive impact on health levels in our country as well as in the world, the increase in the number and variety of drugs has increased the share allocated to medicines from health budgets to a more important place. The drug expenditure constitutes an important part of health spending in Turkey as a result [4,5].

There are many studies in which a significant number of patients have been found to hide increased drugs at the end of their treatment and then re-use it in their similar disorders without consulting anyone. However, it is also shown that the most frequently used drugs are painkillers without consulting the physician in case of illness [6–9]. In addition to the economically negative contribution of medicines that patients have at home and do not pay attention to their storage conditions, the risk of poisoning in children is also important. Without adequate knowledge or without a physician's recommendation, the use of drugs threatens not only the individual but also the health of his / her dependents. While encouraging rational drug use, trainings that can provide access to accurate information along with legal measures are of great importance [10–12].

The factors such as the attitudes of the physicians and the personal and environmental characteristics of the patient while explaining the way of prescription are effective on the drug use habits. It is of utmost importance that the physician prescribes the prescriptions and instructions that the pharmacist reviews and passes on the necessary instructions to the patient, and that the patient understands and applies these directions [6–9].

The aim of this study is to evaluate the drug use habits and rational drug use among people aged 15 and over who are registered to family health centers in Akçadağ district of Malatya.

Materials and Methods

The population of this descriptive study is composed of 21659 people aged 15 and over, registered to family physicians in Akçadağ district of Malatya. The frequency of rational drug use was determined as 46.6% [7], the margin of error was 5% and the confidence interval was 95% and the sample size was calculated as 376. The aim was to reach a total of 420 people, 60 of whom were registered to each family medicine unit, considering the failure to reach the sampling due to the inability to participate in the research. After the lists which are registered to the family health units are sorted by age and gender, a number from 1 to 51 is selected and the next every 51st person is included in the sample. The questionnaire was applied to the volunteers from the individuals who were sampled by the researchers after obtaining permission from Fırat University Non-Interventional Clinical Research Ethics Committee.

Do not use drugs other than doctor's advice, use the medication as recommended time by the doctor and use the medication as recommended dose by the doctor, all of the features were evaluated as "rational drug using".

Data were analyzed with SPSS package program. The differences between the averages were analyzed by t-test and the differences of the categorized data were analyzed by X2 (Chi-square) test.

Results

The mean age of the participants was 42.84 ± 16.39 (min. 15, max. 84). 74.5% of the group was married. The sociodemographic characteristics of the study group are presented in Table 1.

Table 1. Sociodemographic characteristics of the study group N=420

	HT	n	%
Gender	Male	211	50.2
	Female	209	49.8
	Married	313	74.5
Marital status	Single	93	22.1
	Seperated/widowed	14	3.3
	Illiterate	30	7.1
Education status	Literate	28	6.7
	Primary school	76	18.1
	Secondary school	90	21.4
	High school	134	31.9
	University	62	14.8
	Houswife/Unemployed	179	42.6
Occupation	Officer	46	11.0
	Worker	32	7.6
	Retired	49	11.7
	Self-employment	65	15.5
	Student	49	11.7

42.6% of the participants had a minimum wage (1603 Turkish liras) and under monthly household income, 15.7% considered the economic situation to be poor. 3.3% of the group that does not have social security, 9.3% found it difficult to cover health costs (Table 2).

Table 2. Socioeconomic characteristics of the study group N=420

		n	%
Monthly household income (Turkish liras)	≤1603	179	42.6
	1604-3500	202	48.1
	≥3501	39	9.3
How do you assess your economic situation?	Good	53	12.6
	Middle	301	71.7
	Bad	66	15.7
Are you having trouble meeting your health care expenses?	Yes	39	9.3
	No	381	90.7
Do you have social security?	Yes	406	96.7
	No	14	3.3

Patients with a long-term or chronic disease accounted for 36.0% of the participants. The most common (18.1%) chronic disease was cardiovascular disease, 61.9% of the group evaluated their health status as good and 33.1% as moderate. While 64.5% of the study group preferred to go to the doctor (family physician or hospital outpatient clinic) when they were sick, 19.0% of them stated that they used drugs at home and 8.3% of them applied to the emergency department. When the first preferred health care provider is queried; 74.5% of the group referred to the first health care institution as state hospital, only 21.9% used the primary health care facility as the first choice. When the drug he used showed an unexpected effect, he stated that more than half of the group (51.0%) had stopped taking the drug, only 37.9% had consulted a professional such as a doctor or pharmacist (Table 3).

Table 3. Chronic disease status and use of healthcare services N=420

	n	%
Distribution of long-term or chronic diseases*		
Cardiovascular diseases	76	18.1
Diseases of the musculoskeletal system	34	8.1
Diabetes	32	7.6
Diseases of the gastrointestinal tract	26	6.2
Chronic respiratory diseases	23	5.4
Other	21	5.0
Cerebrovascular diseases	5	1.2
Cancers	3	0.7
I go to doctor (family physician or hospital clinic)	271	64.5
I use the drugs at home	80	19.0
What do you usually do first when you're sick?		
I go to the emergency service.	35	8.3
I don't do anything	23	5.5
I consult people around me	9	2.1
I consult my pharmacy	2	0.5
Which health institution do you prefer first?		
State hospital	313	74.5
Family medicine	92	21.9
Private hospital	13	3.1
University hospital	2	0.5
How many times have you consulted a doctor in a year?		
1-3 times	154	36.7
4-6 times	132	31.4
≥7 times	134	31.9
What do you do when there is an unexpected effect when using the drug?		
Stop using the drug	214	51.0
Go to doctor	112	26.7
Consult the pharmacist	47	11.2
Consult people around me	24	5.7
Keep using drug	23	5.5

*There are more than one long-term or chronic diseases in the research group.

The mean age of patients with long-term or chronic diseases was 53.72 ± 13.89 , those with no long-term disease was found to be 36.73 ± 14.42 . In the last year, the mean of referral to physicians (7.28 ± 4.55 and 5.39 ± 3.66) was different in favor of those with long-term or chronic disease ($p < 0.001$).

When more than half of the patients were ill, they were on medication without a doctor's recommendation. When using the drug, 55.7% of the group was in compliance with the amount recommended by the doctor and 54.5% of the time. However, only 29.8% of the group read the instructions for use of the drugs (Table 4).

Table 4. Drug use status and habits N=420

	Yes		No	
	n	%	n	%
Do you use drugs without a doctor's advice / without consulting a doctor?	288	68.6	132	31.4
Do you use the drug in the amount recommended by the doctor?	234	55.7	186	44.3
Do you use the medicine during the time recommended by the doctor?	229	54.5	191	45.5
Do you recommend someone else to take the medicine that is good for you?	104	24.8	316	75.2
Do you pay attention to the expiration date of the drugs?	339	80.7	81	19.3
Do you read the instructions for use of the drugs?	125	29.8	295	70.2
Do you want your doctor to prescribe drug outside your treatment?	152	36.2	268	63.8
Do you keep drugs at home?	318	75.7	102	24.3

The most common way of taking medication without doctor's advice was to consult the pharmacy (61.1%). 60.7% of the participants who were taking home drugs were painkillers (Table 5).

Table 5. According to what the medicines were taken without doctor's advice and the distribution of drugs in the home

		n	%*
How do you get the drugs you take without a doctor's recommendation? (N=288)	Consulting pharmacist	176	61.1
	Consult people around me	157	54.5
	According to my knowledge / before the drug from the good	146	50.7
	Researching on the Internet	28	9.7
	Painkiller	193	60.7
Which drugs are kept at home? (N=318)		95	29.9
	Stomach medicine	56	17.6
	Antibiotic	51	16.0
	Other	25	7.9

* Percentages are taken over N, there are patients who mark more than one option

The frequency of rational drug use (not be using drugs other than doctor's advice, using drugs as recommended time by the doctor and using drugs as recommended dose by the doctor, all of the features were evaluated as "rational drug using") was determined

as 23.8%. The relationship between rational drug using and some variables is shown in Table 6. According to gender and educational status, it was found that women used more rational medication than men ($p < 0.05$).

Table 6. The relationship between rational drug using and some variables N=420

		Rational drug using				X2	p
		Yes		No			
		n	%	n	%		
Gender	Male	39	18.5	172	81.5	6.631	0.010
	Female	61	29.2	148	70.8		
Age group	15-64	89	23.9	283	76.1	0.024	0.877
	≥65	11	22.9	37	77.1		
Marital status	Married	73	23.3	240	76.7	0.289	0.865
	Single	24	25.8	69	74.2		
	Seperated/widowed	3	21.4	11	78.6		
Educational status	≤Primary school	46	34.3	88	65.7	13.280	0.004
	Secondary school	15	16.7	75	83.3		
	High school	24	17.9	110	82.1		
	University	15	24.2	47	75.8		
Occupation	Employee or retired	38	19.8	154	80.2	3.147	0.760
	Unemployed	62	27.2	166	72.8		
Monthly household income (Turkish liras)	≤1603	49	27.4	130	72.6	3.458	0.177
	1604-3500	40	19.8	162	80.2		
	≥3501	11	28.2	28	71.8		
Social security	Yes	94	23.2	312	76.8	2.897	0.089
	No	6	42.9	8	57.1		
General health status	Good	58	22.3	202	77.7	1.517	0.468
	Middle	35	25.2	104	74.8		
	Bad	7	33.3	14	66.7		
Long-term or chronic disease	Yes	39	25.8	112	74.2	0.529	0.467
	No	61	22.7	208	77.3		
Doctor consulted in a year?	1-3 times	32	20.8	122	79.2	1.855	0.395
	4-6 times	31	23.5	101	76.5		
	≥7 times	37	27.6	97	72.4		

Discussion

42.6% of the group monthly household income was minimum wage and less. It was 15.7% of the group that evaluated their economic status as bad. In spite of all this, it was 9.3% of the group who had difficulty in meeting their health expenses. It shows that health policies are in favor of patients with regard to payment of medicines and medical expenses. In our study, the frequency of evaluating the health status as good (61.9%) data for Turkey (63.5%) were similar with [13]. In our study, the frequency of long-term and chronic disease (36%) was similar to that of Dağtekin et al (37.8%) [7]. In a similar study, although the mean age was close to our study (42.84 ± 16.39), because of questioning the presence of chronic disease in households, the incidence of chronic disease in the household was 52.6%. In another study similar to our research, the frequency of chronic disease was found to be 24.1% (8,14). The first health care provider referred to the first stage health institution (although our research was conducted in primary health care) accounted for only 21.9% of the group.

Although the use of drugs in the amount and duration recommended by the doctor was 54.5%, it was found that the frequency of rational drug use was 23.8%. Among the parameters evaluated, there was a difference in rational drug use according to gender and educational status. Women were more advantageous than men in terms of rational drug use. It was seen that 36.2% of the group wanted to prescribe drugs except for their doctor's treatment. It was determined that 29.8% of the participants read the instructions for use of drugs and 80.7% of the participants paid attention to the expiration date. Those who received medication without doctor's advice were 68.6% of the group. More than half of them (61.1%) stated that they had taken the drug in consultation with the pharmacy. Most of the drugs in the house (60.7%) were painkillers.

In the research of Dağtekin et al. (90.6%), the majority of the group stated that they used drugs without consulting their physicians, and 80.6% of them were painkillers [7]. According to the results of our research, it is seen that those who have higher education level in the research of İlhan et al. the frequency of those who read the instructions for use was 60.9%, in addition to the physician's recommendation, the drug use was found to be 62.0% and the ones who had the drug at home were determined as 78.6%. It was found that the most common drugs used in the home (40.3%) were painkillers. In the same study, 44.0% of the group asked the doctor to prescribe the drug they wanted [8]. In the research of Koyuncuoğlu et al., it was found that the frequency of the drug users at the time recommended by the doctor was 42.0%, the frequency of drug users without referring to the physician was 29.3%, and 77.5% of them used painkillers during the research period. In the same study it was found that the attitude of men and women in the use of drugs without examination was similar [6]. In the study of Güngör et al., prevalence of antibiotics was 4.5% in children without the recommendation of a doctor. In the same study, it was determined that their mothers were more likely to start medication than their fathers without going to the doctor and 94% of the participants paid attention to the expiry date of the drugs [12]. In the study of Gökçe, which the high education level and women were seen to have an advantage in knowing the purpose of using antibiotics, the frequency of prospectus reading was 66.7%. However, it was determined that 46.2% of the participants asked

the physician to prescribe antibiotics. In the same study, it was determined that the use of non-prescription antibiotics was 35.7% of the group; It was determined that this situation did not differ according to gender, and as the level of education increased, those using non-prescription antibiotics decreased [15].

Conclusion

Comparing the literature with our research findings, it is seen that it is difficult to distinguish the factors that affect the rational drug use. Therefore, the importance of rational drug use should be explained to each individual in the society in accordance with the individual characteristics. Nevertheless, healthcare providers should be encouraged to communicate more effectively with patients on rational drug use.

Competing interests

The authors declare that they have no competing interest

Financial Disclosure

The financial support for this study was provided by the investigators themselves.

Ethical approval

Before the study, permissions were obtained from local ethical committee.

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