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RESEARCH ARTICLE

Practices and knowledge levels of older individuals about rational drug use

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ABSTRACT

Introduction: This study was conducted to examine the knowledge levels and practices of older individuals about rational drug use.

Materials and Method: This descriptive study was conducted on 382 older individuals. The data were collected with the Rational Drug Use Survey through face-to-face interview method. The data were evaluated through the chi-square test and descriptive analysis methods.

Results: In the study, 72.5 % of the older individuals stated that they used drugs without a prescription of a doctor, 23.6 % stated that they increased/decreased their doses without consulting the doctor, 91.1 % stated that they complied with the drug hours recommended by the doctors, and 44.2 % stated that they quit medication before the date prescribed by the doctor.

Conclusion: The most important problems of older individuals concerning the rational drug use were determined to be using drugs without the prescription of a doctor and quitting the medication before the date recommended by the doctor. In line with these results, informing and supporting older individuals about rational drug use will make significant contribution for the rational drug use.

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Older individual, rational drug use, knowledge, practice

Yaşlı bireylerin akılcı ilaç kullanımıyla ilgili bilgi ve uygulamaları

ÖZET

Giriş: Bu çalışma, yaşlıların akılcı ilaç kullanımına yönelik bilgi ve uygulamalarının incelenmesi amacıyla yapılmıştır.

Gereç ve Yöntem: Tanımlayıcı türdeki çalışma 382 yaşlı birey ile yürütülmüştür. Veriler Akılcı İlaç Kullanım Anketi ile yüz yüze görüşme yöntemiyle toplanmıştır. Veriler tanımlayıcı analiz yöntemleri ve ki-kare testi ile değerlendirilmiştir.

Bulgular: Çalışmada yaşlıların %72.5'i doktor tavsiyesi olmadan ilaç kullandıklarını, %23.6'sı doktora danışmadan ilaç dozlarını artırıp/azalttıklarını, %91.1'i doktorun önerdiği ilaç saatlerine uyduklarını, %44.2'si de doktorun önerdiği süreden önce ilaç kullanmayı bıraktıklarını ifade etmişlerdir.

Sonuç: Yaşlılarda akılcı ilaç kullanımı ile ilgili en önemli sorunların doktor tavsiyesi olmadan ilaç kullanımı ve ilacın önerilen süreden önce bırakılmasıdır. Bu sonuçlar doğrultusunda yaşlıların akılcı ilaç kullanımı konusunda desteklenip, bilgilendirilmesi ilaçların akılcı kullanımına önemli katkı sağlayacaklardır.

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1.INTRODUCTION

Rational drug use was defined by the World Health Organization (WHO) as "as the appropriate consumption of drugs in the appropriate dose, for an adequate period of time and at the lowest cost to patients and their community" (WHO 2020).The practices other than rational drug use are considered to be irrational drug use (Ekenler & Koçoğlu, 2016). Irrational drug use is a major worldwide public health problem and is common in older individuals (WHO 2020; Ekenler & Koçoğlu, 2016). According to the estimations of World Health Organization (WHO), more than half of all drugs are appropriately prescribed, distributed or sold; however, half of all patients fail to receive them correctly (WHO, 2020). Irrational drug use can lead to the waste of scarce resources, increased cost of treatment, benefiting inadequately from the drug, emergence of antimicrobial drug resistance, and adverse consequences such as widespread health hazards (WHO, 2020; Öztürk, Ardıç & Toprak, 2017; Ekenler & Koçoğlu, 2016).

The world population is ageing as a result of prolonged life expectancy and declining birth rates. Turkey is also one of the rapidly aging countries (Samancı Tekin & Kara, 2018). Rapid aging of the population increases the risk of certain chronic diseases, and consequently, the increased drug use increases the incidence of polypharmacy (Öztürk, Ardıç & Toprak 2017; Samancı Tekin & Kara, 2018). In a cohort study on older individuals in Sweden, the multi-drug prevalence (5+ drugs) was reported as 44.0% and the extreme multi-drug prevalence (10+ drug) as 11.7% (Morin, Johnell, Laroche, Fastbom & Wastesson, 2018). As per our country, despite the lack of comprehensive data about this issue on the elderly living in the society, a cross-sectional study indicated that 58.3% of older individuals use four or more drugs (Gümüştakım & Ayhan Başer, 2019). According to the figures of the Pharmaceutical Industry Employers Union in Turkey, 2.2 billion boxes of drugs were sold in 2017 and 2.3 billion in 2018 with an increase of 4.5% (T.C. Turkey Ministry of Health, drug & Medical Devices Agency, 2015). More than half of drugs in developing countries and a significant amount of drugs in developed countries are used irrationally, rendering this issue as a major health problem for all countries. Irrational drug use is considered a habit that is difficult to correct (Ekenler & Koçoğlu, 2016; Gülmez 2015). Therefore, it is very important to take care of rational drug use principles in the regulation of the treatment of the older individuals (Gelal, 2015).

Based on the previous studies conducted in our country, it was determined that high irrational drug use (Öztürk, Ardıç & Toprak 2017; Gümüştakım & Ayhan Başer, 2019; Gülmez 2015; Gelal, 2015). increases mortality and morbidity and decreases the quality of life of the older individuals. The rational drug use by the elderly, especially the ones with chronic diseases using multiple drugs, will reduce the possible harmful effects (Gelal, 2015). Furthermore, it is very important to examine the rational drug use in older individuals and to emphasize the problem in Turkey. Therefore, the aim of this study is to determine the knowledge levels and practices of older individuals regarding rational drug use.

2.MATERIALS AND METHODS

The study was conducted between January-March 2020 in a descriptive design in order to determine the knowledge levels and practices of older individuals, who were living in a city center, about rational drug use.

Population and Sample of the Study

The population of the study is comprised of older individuals who are cared in ten Primary Care Clinics (PCC) in a city center. The total amount of the older individuals receiving health care from these PCCs was 13.718. Since the number of the older individuals in the population is known, the precision sampling method was used for determining the sample. In determining the sample size, the irrational drug use proportion (66.0%) reported in a previous study was utilized (Ekenler & Koçoğlu, 2016). Alpha (0.05) was determined as 1.96 which is the infinite degree of freedom, deviation was accepted as d=0.04, and the sample size was determined as 382. In the sample selection of the study, stratified sampling method was used for the PCC areas in order to better represent the population. As the stratum criterion, the PCCs were taken as reference and since there were 10 PCCs in the city center that the study was conducted, it was divided into 10 main stratum. After determining the number of older individuals from each PCC (Table 1), the sample was comprised of 382 people who were selected through the improbable sampling method from among older individuals who applied to receive health service from the PCC for any complaint, 65 years old and over, with at least one chronic illness, and without any problem in cooperation.

Data Collection Method and Tools

In the collection of data, it is a study that aims to evaluate some individual characteristics of the elderly and rational drug use (stopping the medications recommended by the doctor before the prescribed period, taking medication without doctor's advice, increasing or decreasing the medication dose without consulting a doctor, and complying with the doctor's recommended medication hours) questionnaire form was used (Öztürk, Ardıç & Toprak 2017; Gümüştakım & Ayhan Başer, 2019; Gülmez 2015; Ekenler & Koçoğlu, 2016; Gelal, 2015). Before starting the application, the questionnaire form was pre-applied with elderly individuals who are not included in the scope of the study, the data collection tools can be applied within 25-30 minutes with the pre-application, the questions in the data collection tools are understandable, and the obtained data is to collect the data requested in the study. It has been found to be sufficient. Research data were collected by face-to-face interview method with elderly individuals who applied to PCC.

Table 1. Elderly population of the PCC areas and the number of older individuals to be included in the sample

PCC	Elderly population	Stratum weight	Number of older individuals to be included in the sample
1. PCC	1457	0.1062	41
2. PCC	3449	0.2514	96
3. PCC	869	0.0633	24
4. PCC	1537	0.1120	43
5. PCC	1735	0.1264	48
6. PCC	1015	0.0739	28
7. PCC	923	0.0672	26
8. PCC	464	0.0338	13
9. PCC	1644	0.1198	46
10.PCC	621	0.0455	17

Ethical Aspects of the Study

In order to collect the data, the written permission was gained from Ethics Committee of Kırşehir Ahi Evran University (dated 11.20.2019 and numbered 34/04), and the individuals included in the study sample were informed about the purpose of the research and their verbal/written consent was obtained.

Data Analysis

The data were analyzed in the computer environment. Continuous variables were given as mean ± standard deviation and categorical variables were given as number and percentages. The chi-square test was used in the comparison of independent categorical variables. The significance level was accepted as $p<0.05$.

3.RESULTS

56.5% of the participant older individuals were female (n=216), 43.5% were male (n=166) and the average age was 71.08 ±7.45. Of the study participants, 65.4% were married (n=250), and the education level of 80.9% were primary education and below. 90.6% of them had a health insurance and 70.2% perceived their income as inadequate and 29.8% as adequate. It was also determined that 76.2% of the elderly did not live alone, while 51.6% had health care workers among their immediate family members and most of them (83.8%) had no problems in the access to a health care institution.

Of the older participants, 59.7 % stated that they know the names of the drugs they used, 8.7% stated to know the purposes of the drugs used, 92.9% stated to know the medication time, 91.6% stated to know medication frequency, 78.5% stated to know the doses, 92.9 % reported to know the application, 27.7% stated to know the side effects of the drugs, 66.8% stated to know the storage conditions, and 34.0% stated to know the expiration dates of the drugs used (Table 2).

Table 2. Distribution of the knowledge levels of the older individuals about drug use

	Yes		No	
Knowledge levels about the drug(s) used	**n**	**%**	**n**	**%**
Knows the names of the drugs used	228	59.7	154	40.3
Knows the purposes of the drug(s) used	335	87.7	47	12.3
Knows the medication times of the drug(s) used	355	92.9	27	7.1
Knows the medication frequency of the drug(s) used	350	91.6	32	8.4
Knows the doses of the drug(s) used	300	78,.5	82	21.5
Knows the application of the drug(s) used	355	92.9	27	7.1
Knows the side effects of the drug(s) used	106	27.7	276	72.3
Knows the storage conditions of the drug(s) used	255	66.8	127	33.2
Knows the expiration date(s) of the drug(s) used	130	34.0	252	66.0

Table 3. Some features of the older individuals about the drug use

Statements	Yes		No	
	n	%	n	%
Cares about the expiration date of the drug	199	52.1	183	47.9
Checks whether the drugs given in the pharmacy are the ones written on the prescription	153	40.1	229	59.9
Quits using the drugs when the illness/complaint are disappeared	224	58.6	158	41.4
Sticks to using the drugs while hungry or full according to the recommendations of the doctor	358	93.7	24	6.3
Recommends drugs to others	148	38.7	234	61.3
Gives drugs to others	119	31.2	263	68.8
Reuses the drugs given previously	220	57.6	162	42.4
Quits drug use when feeling oneself better	221	57.9	161	42.1
Gives information to the doctor about previously used drugs before the examination	283	74.1	99	25.9
Quits taking drugs without asking the doctor when feeling better	211	55.2	171	44.8
Quits taking drugs without asking the doctor when feeling worse	231	60.5	151	39.5
Reads or takes help about reading the prospectus of the drug	211	55.2	171	44.8
Uses the products advertised in the media (television, radio, newspaper etc.) for treatment	83	21.7	299	78.3
Applies to the doctor for a follow-up examination after the treatment	245	64.1	137	35.9

Some features of the older participants of the study about the drug use are given in Table 3. Of the older individuals, 52.1% stated to care about the expiration date of the drug, 40.1% stated to check whether the drugs given in the pharmacy are the ones written on the prescription, 58.6% stated to quit using the drugs when the illness/complaint are disappeared, 93.7 % claimed to stick to using the drugs while hungry or full according to the recommendations of the doctor, 38.7% mentioned to recommend drugs to others, 31.2 % stated to give drugs to others, 57.6% mentioned to reuse previously given drugs, 57.9% stated to quit drug use when feeling better, 74.1% mentioned to give information to the doctor about previously used drugs before the examination, 55.2% stated to quit drugs without asking the doctor when feeling better, 60.5 % mentioned to quit taking drugs without asking the doctor when feeling worse, 55.2% claimed that they read or take help about reading the prospectus of the drug, 21.7% stated to use the products advertised in the media (television, radio, newspaper etc.) for treatment, and 64.1% mentioned to apply to the doctor for a follow-up examination after the treatment (Table 3).

Some features of the older participants of the study about the rational drug use are given in Table 4. Of the older individuals, 72.5% stated to use drugs without any recommendation of a doctor and 44.2 % stated to quit using drugs before the date recommended by the doctor. It was determined that the rate of changing the dose of the drug without asking the doctor (23.6%) was lower compared to the proportion of refusing to change (76.4%) the dose. Furthermore, it was determined that the rate of using the drug at hours recommended by the doctor (91.1%) was higher compared to the proportion of using at inappropriate hours (8.9%).

Table 4. Some features of the older individuals about the rational drug use

Features about rational drug use	Yes		No	
	n	%	n	%
Uses drugs without any recommendation of a doctor	277	72.5	105	27.5
Quits drugs before the time recommended by the doctor	169	44.2	213	55.8
Changes the dose of the drug without asking the doctor	90	23.6	292	76.4
Complying with the drug hours recommended by the doctor	348	91.1	34	8.9

The relationship between rational drug use and some certain sociodemographic variables are shown in Table 5.

Table 5. The relationship between some sociodemographic variables and rational drug use

	Using drugs without any recommendation of a doctor					Quitting drugs before the time recommended by the doctor					Changing the dose of the drug without asking the doctor					Not-complying with the drug hours recommended by the doctor				
	Yes		**No**		Test and significance value	**Yes**		**No**		Test and significance value	**Yes**		**No**		Test and significance value	**Yes**		**No**		Test and significance value
	n	**%**	**n**	**%**		**n**	**%**	**n**	**%**		**n**	**%**	**n**	**%**		**n**	**%**	**n**	**%**	
Gender																				
Female	158	73.1	58	26.9	X^2=0.101	106	49.1	110	50.9	**X^2=4.707**	49	22.7	167	77.3	X^2=0.211	193	89.4	23	10.6	X^2=1.872
Male	119	71.7	47	28.3	P=0.751	63	38.0	103	62.0	**P=0.030**	41	24.7	125	75.3	P=0.646	155	93.4	11	6.6	P=0.171
Age																				
65-69	145	77.1	43	22.9		92	48.9	96	51.1		42	22.3	146	77.7		170	90.4	18	9.6	
70-74	63	67.7	30	32.3	X^2=4.724	36	38.7	57	61.3	X^2=4.986	25	26.9	68	73.1	X^2=0.992	88	94.6	5	5.4	X^2=2.045
75-79	32	72.7	12	27.3	P=0.193	21	47.7	23	52.3	P=0.173	9	20.5	35	79.5	P=0.803	39	88.6	5	11.4	P=0.563
80 and over	37	64.9	20	35.1		20	35.1	37	64.9		14	24.6	43	75.4		51	89.5	6	10.5	
Marital status																				
Married	174	69.6	76	30.4	X^2=3.080	100	40.0	150	60.0	**X^2=5.275**	57	22.8	193	77.2	X^2=0.232	229	91.6	21	8.4	X^2=0.224
Single/Widowed/Divorced	103	78.0	29	22.0	P=0.079	69	52.3	63	47.7	**P=0.022**	33	25.0	99	75.0	P=0.630	119	90.2	13	9.8	P=0.636
Educational Status																				
Primary School and lower	221	71.5	88	28.5	X^2=0.798	138	44.7	171	55.3	X^2=0.115	67	21.7	242	78.3	X^2=3.164	279	90.3	30	9.7	X^2=0.833
Secondary School and higher	56	76.7	17	23.3	P=0.372	31	42.5	42	57.5	P=0.734	23	31.5	50	68.5	P=0.075	69	94.5	4	5.5	P=0.361
Health insurance																				
Yes	246	71.1	100	28.9	X^2=3.687	149	43.1	197	56.9	X^2=2.063	83	24.0	263	76.0	X^2=0.374	320	92.5	26	7.5	**X^2=8.699**
No	31	86.1	5	13.9	P=0.055	20	55.6	16	44.4	P=0.151	7	19.4	29	80.6	P=0.541	28	77.8	8	22.2	**P=0.003**
Income level perception																				
Adequate	72	63.2	42	36.8	**X^2=7.135**	44	38.6	70	61.4	X^2=2.099	31	27.2	83	72.8	X^2=1.191	106	93.0	8	7.0	X^2=0.711
Inadequate	205	76.5	63	23.5	**P=0.008**	125	46.6	143	53.4	P=0.147	59	22.0	209	78.0	P=0.275	242	90.3	26	9.7	P=0.399
Living with family members																				
Alone	73	80.2	18	19.8	X^2=3.560	44	48.4	47	51.6	X^2=0.818	28	30.8	63	69.2	X^2=3.447	83	91.2	8	8.8	X^2=0.002
Living with family members	204	70.1	87	29.9	P=0.059	125	43.0	166	57.0	P=0.366	62	21.3	229	78.7	P=0.063	265	91.1	26	8.9	P=0.967
Having a health worker among the immediate family members																				
Yes	153	77.7	44	22.3	**X^2=5.417**	87	44.2	110	55.8	X^2=0.001	57	28.9	140	71.1	**X^2=6.523**	177	89.8	20	10.2	X^2=0.786
No	124	67.0	61	33.0	**P=0.020**	82	44.3	103	55.7	P=0.975	33	17.8	152	82.2	**P=0.011**	171	92.4	14	7.6	P=0.375
Experiencing problems in Access to a health institution																				
Yes	52	83.9	10	16.1	**X^2=4.790**	27	43.5	35	56.5	X^2=0.014	16	25.8	46	74.2	X^2=0.207	52	83.9	10	16.1	**X^2=4.769**
No	225	70.3	95	29.7	**P=0.029**	142	44.4	178	55.6	P=0.905	74	23.1	246	76.9	P=0.649	296	92.5	24	7.5	**P=0.029**

It was determined that, concerning the use of drugs by older individuals without a prescription of a doctor, there was a statistically significant difference in terms of income perception (p=0.008), having a health care worker among immediate family members (p=0.020) and experiencing problems in access to the health institutions (p=0.029). It was determined that older individuals, who perceive to have a lower income, resorts to use drugs without a prescription of a doctor at a higher rate compared to those perceiving higher income levels; similarly, the ones having a health worker among the immediate family members were determined to be using drugs without a doctor's recommendation at a higher proportion compared to those without a health worker in the family; likewise, older individuals, who have problems in the access to a health institution, were determined to be using drugs without a doctor's advice at a higher rate compared to those having no problem in access to a health institution (P<0.05).

It was determined that there were statistically significant differences among the rates of quitting medication by older individuals before the time recommended by the doctor in terms of gender (p=0.030) and marital status (p=0.022) variables (p<0.05). It was determined that the rates of quitting medication by older individuals before the time recommended by the doctor were higher in women than men and in single/widowed/divorced seniors than in married seniors (p<0.05).

It was determined that there was a statistically significant difference among the rates of changing the medication dose by older individuals without asking the doctor in terms of having a health worker in the immediate family members (p=0.011). It was determined that the rates of changing the medication dose without asking the doctor were higher in the older individuals having a health worker among the family members than those without a health worker in the family (p<0.05).

It was determined that there was a statistically significant difference among the rates of ignoring the drug hours recommended by the doctor in terms of having a health insurance (p=0.003) and experiencing problems in access to a health institution (p=0.029) variables (p<0.05). It was determined that the rates of ignoring the drug hours recommended by the doctor were higher in the older individuals who have a health insurance compared to those without an insurance, and similarly, it was higher in the ones experiencing no problems in access to a health institution compared to those having problems in access to a health institution (p<0.05). No significant relationship was determined between the rational drug use of older individuals and other variables (p>0.05).

4.DISCUSSION

Older population is the highest consumers of drugs due to their various illnesses. This case causes irrational drug use. Therefore, the knowledge levels and practices of older individuals about the rational drug use will be evaluated in this study.

In this study, it was determined that the number of participant women (56.5%) were higher than men, indicating that the results were similar to those of other studies. In many countries, the life expectancy of the women is higher than that of men (Bayın, 2016) and this may also be the reason why there are a greater number of women in the study. The mean age in our study (71.08 ±7.4 years) was lower than that observed in other studies conducted on older individuals (Morin, Johnell, Laroche, Fastbom & Wastesson, 2018; Güneş & Kıyak 2017; Ünsal , Demir, Çoban Özkan and Gürol Arslan, 2011). Examining the rational drug using features of older individuals, 72.5% of them stated that they use drugs without the advice of a doctor. Ekenler and Koçoğlu (2016) found a similar result (77.3%) in their study conducted on rational drug use among the middle-aged group. A study by Özen, Kaya Erten & Bulbul (2018) found that 62.5% of the elderly took antibiotics on their own without consulting a doctor. Another study conducted in 2011 in the same city, where this study was also conducted, found that 7.9% of older individuals living in nursing homes were using drugs without a prescription (Ünsal, Demir, Çoban Özkan & Gürol Arslan, 2011). In a study on drug use of older individuals over 60 living in Kars, it was stated that 23.7% of older individuals purchased and used drugs on their own without applying to a doctor (Akkuş & Karatay 2011). In a study conducted by Bilgili and Karatay (2005), it was determined that 33.8% of older individuals received their medicines from the pharmacy without any prescription. Unlike these studies, Arpacı, Açıkel & Şimşek (2008) reported that 93.5% of older individuals strictly follow the rule to use drugs with only the recommendation of a doctor. The results of the studies vary. It was thought that these differences may be due to the date of the study, the study area, and socioeconomic and cultural characteristics of the participants. It is thought that using drugs without any indication is one of the irrational drug use processes and can cause health problems such as increased mortality and morbidity rates, development of complications and increased resistance to certain drugs in the elderly.

Despite the high rates of elderly people in taking the drug at the time recommended by the doctor (91.1%) and knowing the times of the drugs used (92.9%), it was determined that the rates of quitting before the time recommended by the doctor (44.2%), knowing the dose of the drugs to be used (78.5%.), and changing the doses of the drugs taken (23.6%) were considerably low. When the results of the study were evaluated in terms of rational drug use, it was observed that older individuals were in compliance with the time of the medication, but did not show the same compliance with the doses and duration of the medication. These results also point that the rational drug use is more accurate in cases where older people have higher levels of knowledge about drug use. In a study conducted by Güneş & Kıyak (2017) on older individuals, it was determined that 32.5% of the participants change their drug doses, while 82% stated that they did not receive the drug on time . In a study conducted on elderly by Canan, Demirbağ, &

Timur (2012), the proportion of older individuals who did not use their drugs regularly was 85.5%. In another study conducted by Ekenler & Koçoğlu (2016) on individuals with an average age of 41.5±16.8, the rate of drug use at the time recommended by the doctor was 84.4%, the rate of quitting drug before the time recommended by the doctor was 77.3%, and the rate of changing drug dose without consulting the doctor was 26.2%. Rational drug using steps are comprised of accurate diagnosis, monitoring of prognosis, determination of treatment objectives, review of treatment options, writing the right prescription if needed and follow-up (Sağır & Parlakpınar 2014). In the follow-up of these steps, certain tasks fall on the health personnel as well as on those who use these drugs. The increase in drug use due to the increase in chronic diseases, especially with aging, is also important for the elderly to take care of the rational drug use.

In the study, it was determined that the older individuals had a high knowledge level about drug use. Only knowing the side effects of the medication (27.7%) and knowing the expiration date (34.0%) were found to be low in the older individuals. It is thought that having chronic diseases and regular use of drugs positively affect knowledge levels of the elderly.

Studies in different age groups indicated that individuals do not use drugs when they think they get healed, when their complaints have passed, when they are exposed to more side effects, when they do not like the drug, and when they think the drug has no effect (Güneş, 2017; Bilgili & Karatay, 2005; Çakır Dolu & Bilgili, 2010; Ayabakan Çot, Aytaç & Akbaba 2019; Şendir, Çelik, Güzel & Büyükyılmaz, 2015). In this study, it was determined that more than half of the older individuals quitted their medication without asking the doctor when their illness/complaints are disappeared, when they felt better and when they felt worse while taking their drugs. In this study, low rates of older individuals in recommending drugs to others, giving drugs to others, using the products advertised in the media for treatment, as well as the high rates of older individuals in sticking to using the drugs while hungry or full according to the recommendations of the doctor, giving information to the doctor about the previously used drugs before the examination, and reading/taking help to read the prospectus are significant indicators of the fact that there is a high consciousness about the drug use.

In the study, the low rates about checking whether the drugs given in the pharmacy are the ones written on the prescription (52.1%), reusing the drugs given previously (57.6%), and caring about the expiration date of the drug (52.1%) can be correlated to the fact that the educational level of the majority (80.9%) of the older individuals participating in the study is low.

It is observed that the drug use behaviors without the advice of a doctor are high in older individuals, who perceive their income levels as inadequate and those who have problems in the access to a health institution. Personal, familial and social motives that facilitate or prevent the use of health care include perceived income levels of individuals, per capita income, health assurance, distance from services, and price of services (Cevik, 2017). The fact that the older individuals participating in the study perceived their income levels as inadequate and had problems in the access to a health institution suggests that they were not able to benefit from the health services adequately, and therefore, their irrational drug use behavior was also high. As a contradictory result, the study shows that older individuals, who do not have any problems in the access to a health institution with a health assurance, were not complying with the doctor's recommended drug hours. This result suggests that the older individuals may have drug use problems arising from decreased cognitive and functional capacity. Akkuş & Karatay (2014) reported that the problem most experienced by the elderly in drug use was forgetfulness (14.5%), emphasizing that 82.9% of them needed help during drug use (Akkuş & Karatay, 2011). Similarly, in another study conducted on older individuals, it was stated that most of the elderly (82%) did not take the drug on time since they forgot (Güneş, 2017).

It was determined that having a health worker among the immediate family members increases the behaviors of older individuals in both drug use without doctor's advice and changing the dose of the drugs without consulting a doctor. This result points that older individuals are significantly influenced by the health workers among their immediate family members in drug use. However, this situation contradicts the rational drug use, suggesting that older individuals are misled by health workers. In rational drug use, members of the health care team (doctors, nurses, pharmacists, etc.) should show the society the appropriate way in drug use. Furthermore, trainings should be organized for health personnel, for the community and for older individuals in order to develop the rational drug use.

In the literature, there are previous studies indicating that gender, one of the sociodemographic variables, has a correlation with the rational drug use (Yapıcı, Balıkçı & Uğur, 2011) and it has not relationship (Ekenler & Koçoğlu, 2016; Say Şahin, Özer & Zubaroğlu Yanardağ 2018). Similarly, in this study, it was found that female older individuals have higher rates of quitting the drugs before the time the doctor recommended.

It is important for an older individual to have one or more family members who will provide social support during the process of rational drug use. A study conducted on elderly found that singles and those with a chronic disease had higher drug use behaviors (Say Şahin, Özer & Zubaroğlu Yanardağ, 2018). Similarly, this study found that the rates of quitting the drug before the time the doctor recommended were higher in the elderly who were single / widowed / divorced.

In this study, the relationship between the age/educational status, which are important sociodemographic variables, and the rational drug use behavior. However, it is known that there are previous studies pointing that age and educational status are effective in rational drug use behaviors (Güneş, 2017; Özen, Kaya Erten & Bülbül, 2018) and

those indicating that they are not effective (Ekenler & Koçoğlu, 2016; Sönmez et al., 2014). It seems to be an important requirement to conduct epidemiological studies for determining the effect of age and educational status on rational drug use.

5.CONCLUSION AND RECOMMENDATIONS

As the conclusion, the most important problems with rational drug use in the older individuals are the use of drugs without doctor's advice and the quitting the drugs before the recommended time. In line with these results, supporting and informing older individuals about rational drug use will make an important contribution to rational drug use.

Conflicts of interest

There are no conflicts of interest.

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