Determination of Rational Drug Use Behaviors of Adult Individuals - A Cross-Sectional Study from Turkey

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ABSTRACT: Purpose: The aim of this study was to determine rational drug usage behaviour of adults. Material/Methods: The study was descriptive and cross-sectional. The study was conducted between January-March 2014 in Mustafa Kemal Paşa Civizli Family Health Center in the province of Bursa, Turkey. The sample of study was composed 129 individuals who 18 years and over, had not the communication problem with place, and time orientation and accepted a voluntary basis in the study. In the collection of study data, individual identification questionnaire and questionnaire for rational drug use which by researchers in the direction of literature was used. Results: It was found that 30.2% (n: 39) of the individuals enrolled in the study were in the 18-30 age range, 57.4% (n: 74) were male, 42.6% (n: 55) were graduated from primary school, 34.9% (n: 45) were housewife, and 32.6% (n: 42) have chronic disease. 52.7% (n: 68) of the individuals, found that they used irregular their drugs, 70.6% (n: 48) did not comply the hours of taking drug, 23.3% (n: 30) used drug before consulting a doctor, 69% (n: 89) read the prospectus of drugs, 73,5% (n: 95) was prescribed the most analgesic drugs, and 65.9% (n: 85) didn't stop before the end of the antibiotic group drugs. It was found that there did have a significant difference between the presence of chronic disease of the individuals who participated in the study and their habits of regular drug using and their situation of drug prospectus reading (p<0.05). Conclusions: As a result, it was found that individuals do not comply for rational drug use. In this respect; it is recommended to organize training programs the individuals to increase awareness about rational drug use and to perform the study on the most the sample.

KEYWORDS: rational drug use, rational drug usage behavior, drugs

Introduction

Drug is a substance which changes in body functions when taken by living organisms, obtained from four main sources (animal, vegetable, mineral, synthetic), a chemical combination used in the diagnosis, treatment or prevention of disease [1]. Because of the drugs are technological products which have great importance in fight and prevention of diseases in individual and social levels, rational use of these valuable resources is essential for public health [2].

In 1985, rational drug use, was defined by World Health Organization (WHO) in a meeting held in Nairobi as, “set of rules that must be followed in order to make patients take drugs proper with their clinical requirements, within the doses meet personal needs, in sufficient time and the lowest cost for themselves and society” [3]. Irrational drug use is among the major health problems of all countries while it is more common in underdeveloped and developing countries. In our country, irrational drug use is a serious problem and it increases the drug’s share in the overall health expenditures [4,5]. In a study conducted by Akan et.al. in Turkey, 40% of health expenditures are spendings on drugs [6].

Furthermore; the importance of irrational drug use problem is also emphasized with academic studies. In a study conducted by Arslan and Semih, it was stated that irrational drug use in Turkey is even important problem in urban areas [7]. In a study handled in Adana, Turkey it was found that knowledge of individuals about rational drug use is inadequate [8].

In a study conducted in the province of Mersin, Turkey it was determined that the 31.3% of participants get over the counter drugs from pharmacies [9]. In a study made in the province of Muğla, Turkey it was found that the rate of drug use on their own without consulting a doctor is 61.6%, and 92.4% of these drugs were painkillers, 16.3% of them were antibiotics [10]. In also other similar studies conducted, it was found that most of the individuals use drugs without consulting a doctor and the most of drugs they use were found to be painkillers and antibiotics [11-14]. When analyzed studies on different groups, Karakurt et.al found that the 47.9% of college students were stop using the drug when their complaints expire, and 61.5% of the drugs student used, were painkillers [15]. In the result of their study, Yılmaz et.al, emphasized the need to consolidate the students’ knowledge about rational drug use [16]. In a study focused on elderly population, it is found that the elderly people behave incapable about rational drug use [17].

As understood from the results of the study above, irrational drug use in Turkey is a major public health problem and it is one of the major
social issues that need to be addressed. In addition, as a result of the literature review, it has not seen the result of studies conducted in the province of Bursa, Turkey. In this context, this study is carried out to determine the rational drug use behaviors and factors associated with these behaviors of individuals living in the area of Mustafa Kemal Paşa Cevizli Family Health Center in the province of Bursa.

Material and Methods

This research is planned as prospective, descriptive and cross-sectional. The research conducted at Mustafa Kemal Paşa Cevizli Family Health Center of Bursa, Turkey in between January and March 2014. In order to conduct the study, written permission from the Research Commission of Public Health Directorate of Bursa, Turkey was taken. In addition, all individuals participating the study were informed about the research and their verbal consents were obtained with respecting the principle of voluntary.

The research is planned to conduct on adult individuals and because of it is just considered the voluntary basis, the sample selection was not chosen. To collect research data in a healthy way, 129 adults who had no communication problems, person, place and time organization, were age 18 or older, and accepted to participate were included in the study. Independent variables of research were created with ages, gender, education levels, professions and presence of chronic diseases of individuals such as descriptive characteristics, the dependent variables were created with the types of behaviors about rational drug use situations. In the collection of data of the research, it was used that a questionnaire and identification form which were developed in accordance with literature [8-16] by researchers about rational drug use behavior. The research data was collected by face to face interviews. In the evaluation of research data, SPSS 20.0 statistical software package program is used. In the analysis of data, numbers, percentage values and Chi-Square Test of Independence is used.

Results

Findings Related to Descriptive Characteristics of Individuals

It is found that 30.2% of individuals (n: 39) were in the 18-30 age range, 57.4% of them (n:74) were female, 42.6% (n:55) had primary school graduate, 74.4% (n:80) were non-smokers, 89.9% (n:116) were not using alcohol, 95.3% (n:123) had social security, 49.6% (n:64) were living with their family. Moreover, it is also found that 32.6% of individuals (n:42) had chronic diseases, 31% of them (n:13) had hypertension.

Findings Devoted to Drug Use Cases

Findings related to drug use cases of individuals which participated the research are presented in Table 1. According to these; 52.7% (n:68)of individuals were not using their prescribed drugs on a regular basis, 73.5% (n:95) were take most painkillers which prescribed for them in family health centers, 65.9% (n:85) had left their prescribed antibiotic group drugs before the end, 27.9% (n:36) have suggested to others when the medicine which were well for themselves, 31% (n:36) used the drug via advice, 69% (n:89) have read the prospectus of the drug (Table 1).

Table 1: Findings devoted to rational drug use habits of individuals participated the study

|                                | Number (N=129) | %   |
|--------------------------------|----------------|-----|
| **Habits of regular drug use** |                |     |
| I use                          | 61             | 47,3|
| I do not use                   | 68             | 52,7|
| **Reason of not using drugs regularly (n=68)** | | |
| Inability to supply finished drugs | 7             | 10,3|
| Failure to comply with the hours of drug intake | 48           | 70,6|
| Inability to see desired effect from drug | 13           | 19,1|
| **Using drug before consulting a physician** | | |
| I use                          | 30             | 23,3|
| Sometimes I use                | 91             | 70,5|
| I never use                    | 8              | 6,2 |
### Consultation about the drug before contacting physician (n=121)**

|                  | Yes | No |
|------------------|-----|----|
| Pharmacist       | 73  | 60,5 |
| Family           | 36  | 29,7 |
| Internet         | 10  | 8,2 |
| Neighbor         | 2   | 1,6 |

### The features of drug affecting drug use situation

|                  | Yes | No |
|------------------|-----|----|
| Yes              | 34  | 26,4 |

### Most used over the counter drug groups

|                  | Yes | No |
|------------------|-----|----|
| Painkillers      | 99  | 76,8 |
| Antibiotics      | 19  | 14,7 |
| Other (stomach protectors, vitamins, sedatives, etc.) | 11 | 8,5 |

### The most widely prescribed drugs

|                  | Yes | No |
|------------------|-----|----|
| Painkillers      | 95  | 73,5 |
| Antibiotics      | 13  | 10,1 |
| Blood pressure medicines | 9 | 7,0 |
| Other (stomach protector, diabetes drugs, etc.) | 12 | 9,4 |

### Using antibiotics until the end

|                  | Yes | No |
|------------------|-----|----|
| Yes              | 44  | 34,1 |

### Reason of not to use antibiotics (n=85)***

|                  | Yes | No |
|------------------|-----|----|
| Thinking being recovered | 60 | 70,6 |
| The greater side effects | 10 | 11,8 |
| To not see the desired effect | 2 | 2,4 |
| To go to a different doctor | 13 | 15,3 |

### The situation of suggesting drug to others

|                  | Yes | No |
|------------------|-----|----|
| Yes              | 36  | 27,9 |

### Drug use on recommendation

|                  | Yes | No |
|------------------|-----|----|
| Yes              | 40  | 31,0 |

### Inform physicians about the drug problem

|                  | Yes | No |
|------------------|-----|----|
| Yes              | 113 | 87,6 |

### Pay attention to important points about drugs

|                  | Yes | No |
|------------------|-----|----|
| Yes              | 83  | 64,3 |

### The status of reading prospectus

|                  | Yes | No |
|------------------|-----|----|
| Yes              | 89  | 69,0 |

### Check the expiration date of the drug

|                  | Yes | No |
|------------------|-----|----|
| Always           | 79  | 61,2 |
| Generally         | 23  | 17,8 |
| Sometimes         | 21  | 16,3 |
| Never             | 6   | 4,7 |

### Pay attention to storage conditions

|                  | Yes | No |
|------------------|-----|----|
| Always           | 78  | 60,5 |
| Generally         | 13  | 10,1 |
| Sometimes         | 38  | 29,5 |

### Possession of drugs at home are not often used

|                  | Yes | No |
|------------------|-----|----|
| Yes              | 98  | 76,0 |

### Reclamation method of unused drugs

|                  | Yes | No |
|------------------|-----|----|
| I use it again when I get sick | 57 | 44,2 |
| I take it to the family health center | 25 | 19,4 |
| I throw it       | 23  | 17,8 |
| I keep it at home| 22  | 17,0 |
| I give my folks  | 2   | 1,6 |
When the drug side effects occur
I refer to the Physicians  112  86,8
I consult my folks 8  6,2
I do nothing 5  3,9
I refer to the Pharmacists  4  3,1

*Percentages were calculated on the number of individuals (n=68) stated that they do not use drugs regularly.
**Percentages were calculated on the number of individuals (n=121) stated that they use drugs before consulting a physician.
***Percentages were calculated on the number of individuals (n=85) stated that they do not use antibiotic groups until the end of medication.

It is found that there is a significant difference between the presence of chronic diseases of individuals participated in study, their regular drug use habits and reading of prospectus (Table 2). In addition, these were found that there is a significant difference among the regular drug use habits and their ages, education and reading prospectus. Also, it is found that there is no significant difference between the individuals ages and reading prospectus, education levels and regular drug use habits of individuals participated the study (Table 2).

Table 2: Allocation of regular drug use and reading prospectus status according to the characteristics of individuals.

| Descriptive Characteristics | Regular Drug Use Habits | Status of Reading Prospectus |
|-----------------------------|-------------------------|----------------------------|
|                             | User | Non-user | Reader | Non-reader |
| Age Group                   | n    | %*       | n      | %*        | n      | %*      | n      |
| 18-30                       | 12   | 30,8     | 27     | 69,2      | 29     | 74,4    | 10     |
| 25,6                        | 11   | 52,4     | 10     | 47,6      | 17     | 81,0    | 4      |
| 31-40                       | 11   | 35,5     | 20     | 64,5      | 21     | 67,7    | 10     |
| 41-50                       | 19   | 73,1     | 7      | 26,9      | 18     | 69,2    | 8      |
| 51-64                       | 9    | 75,0     | 3      | 25,0      | 4      | 33,3    | 8      |
| 65 ve üzeri                  |      |          |        |           |        |         |       |
| Chi-Square p value          | $x^2=16,800$  | p=0,002  | $x^2=9,085$  | p=0,059  |
| Education level             |      |          |        |           |       |
| Illiterate                  | 4    | 80,0     | 1      | 20,0      | -      | -       | 5      |
| Elementary                  | 28   | 50,9     | 27     | 49,1      | 35     | 63,6    | 20     |
| High School                 | 16   | 43,2     | 21     | 56,8      | 29     | 78,4    | 8      |
| University                  | 14   | 45,2     | 17     | 54,8      | 24     | 77,4    | 7      |
| Master                      | -    | -        | 1      | 100,0     | -      | -       | 1      |
| Chi-Square p value          | $x^2=3,596$  | p=0,463  | $x^2=11,125$  | p=0,025  |
| Presence of chronic disease  |      |          |        |           |       |
| Yes                         | 31   | 75,6     | 10     | 24,4      | 22     | 53,7    | 19     |
| No                          | 31   | 35,2     | 57     | 64,8      | 67     | 76,1    | 21     |
| Chi-Square p value          | $x^2=18,272$  | p=0,000  | $x^2=6,606$  | p=0,010  |

*Percentages are taken as line percentage.

Discussion
Research results shows that more than half of individuals (52.7%) not used their prescribed medication on a regular basis and most of them (60.5%) consulted a pharmacist before doctors

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when they got sick (Table 1). When surveyed the similar studies on this subject; in a study conducted by Yapıcı et al. in the province of Mersin, Turkey it was determined that the %26 of participants used medication without suggestion of doctors and %7.7 of them used medication with suggestions of pharmacists [9]. In a study conducted by Bilgili and Karatay in Sait Yazıcı Health Center area of Ankara in Turkey, it is determined that the 33.8% of participants used medications without prescriptions and consulting a physician [11]. Similar results have found in some studies [10, 18]. Result of our study seems to be higher than the results of the other studies conducted. The irregular use of drugs and using medications without consulting physician are contrary to the behavior of rational drug use. Therefore, higher results of this study, is a concern for the health of the people of the region of Bursa in Turkey.

It is found that 76.8% of the over the counter drug groups used by individuals which participated the study were painkillers (Table 1). In a study conducted by Önder et al. in Ankara, it is determined that taking not prescribed drugs situations of participants were 57.8% [19]. Also in study conducted on students of Ankara University in Turkey, it is found that 63% of medicine which used without suggestion of physician were painkillers [20]. In a study conducted by Yapıcı et al., the rate of using painkiller without prescription were found 28.3% [9], in study conducted by Pınar the rate was 98.4% [8], in study conducted by Uskun et al. was 76.2% [12]. These results support our study results. The reason of this, is thought that it may caused by individuals’ wills to continue using painkillers without the health care provider.

According to our study results, it is found that 65.9% of individuals quit their medications before the end and 70.6% of leavers quit the medication because of they thought they were healed (Table 1). It is stated that unnecessary and improper use of antibiotics, may cause results as increase of morbidity and mortality rates and patient care costs [21, 22]. Therefore, from the results of the research, to end the use of antibiotics in the recommended time by people shows that they do not behave rational in drug use.

In our study, it is found that the 27.9% of individuals suggest a drug which was good for themselves to someone else and 31% of the wanted to prescription from doctor on advice (Table 1). This results shows that participants significantly affect each other in drug use behaviors. This situation does not coincide with the behavior of rational drug use.

In our study, these were found that, 64.3% of participant individuals were careful on the important point in consumption of drugs (hunger-satiety status, alcohol etc.), 44.2% of participants used the unused drugs at home without consulting a physician, 69% read the prospectus of the drugs they use, 95.3% paid attention to the expiration dates of drugs and 60.5% were always pay attention to storage conditions (Table 1). In study conducted by Pınar, these were determined that 94.9% of participants were pay attention to hunger-satiety status, 72.1% read the prospectus of the drugs they use, 85.8% looked the expiration date of the drugs they use [8]. In a study conducted by Göçgeldi et al., 88.4% of participants were pay attention to expiration dates of drugs they use [23]. In the study of İpteş and Khorsid, it was determined that 80.2% of participants read the prospectus (24). Attitudes of society when they got sick are influenced by many factors like detection of health, level of health knowledge, education levels, expectations from health care providers [18]. Therefore, to observe the differences in the results of researches may caused by the difference between participant groups. In addition, most of participant individuals in our study, described paying attention to expiration dates is rational behavior and they described that not pay attention to important points in drug use and not reading the prospectus of drugs are irrational drug use behaviors.

In individuals with chronic diseases which included in the scope of the study, it was found that the regular use habit increased, reading prospectus situation decreased and the difference between statistically significant (p<0,05 Table 2). According to the results of the study, the presence of regular drug use habits in individuals which had chronic diseases, makes to think that they more rationally in drug use behaviors because of their current disease situations. The reason of the rate of reading prospectus behavior is lower in individuals which have chronic diseases, makes to think that it may caused from the situation in they most used the same drugs and they did not need to read the same drug’s prospectus.

When there is a significant difference detected between the habit of using drugs regularly and the ages of individuals participated, there was no significant difference
between reading prospectus situations (Table 2). In particular, the results of the study shows that most of the individuals in age of 65 and over have the habit of regular using drugs. The increase of diseases with the progressing ages of individuals, makes to think that it may encourage them to use the drugs more regularly.

When it is detected that there is a significant difference between the education levels and reading prospectus behaviors of individuals participated, there is no significant difference found between the habit of the regular drug use (Table 2). According to our study results, especially the high school and college graduates intense on reading habits of drug prospectus and it was seen to be too close to each other. This results stated that reading prospectus situation increased with the level of education. On the other hand, it can be seen that especially the illiterate and primary education graduated individuals’ habits of regular drug use were higher than individuals which higher education levels. Thus, it was found that there is an inverse relationship between level of education and regular drug use habit. From these results, it is seen that individuals which have higher education levels not act rationally in the regular drug use habits.

Conclusions

According to results of the study, individuals which live in the area Mustafa Kemal Paşa Cevizli Family Health Center of Bursa in Turkey, was seen not act enough for rational drug use behavior. Based on these results; organization of training programs at regular intervals by public and private organizations to improve the behavior of individuals in rational drug use in this region, spreading these educational programs across the country increasingly and making a broader sample of this research comparatively in Turkey and different countries are recommended.

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