



Original Research / Özgün Araştırma

Evaluation of Multiple Drug Using Status by Sociodemographic Characteristics of Individuals with Chronic Disease

Kronik Hastalığı Olan Bireylerin Çoklu İlaç Kullanım Durumlarının Sosyodemografik Özelliklerine Göre Değerlendirilmesi

Burcu Kayhan Tetik^{*1}, Işıl Gay Gedik Tekinemre¹, Hacer Gözde Gül¹, Burak Mete², Samima Hassanlı³, Wadee Alhuraibi³

ABSTRACT

Introduction: The most common belief in traditional medicine is necessarily needed to prescribe a drug. Studies show two-thirds of medical examinations are ended up with the prescription. In this study, our aim is showing the effects and features of polypharmacy on chronic disease patients and assess the sociodemographic properties, create awareness about them. **Method:** This descriptive cross-sectional study is done with 340 patients who admit Inonu University Turgut Ozal Medicine Centre cardiology, pulmonary disease, neurology, family medicine and psychiatry policlinics. Statistical analysis is done with SPSS ver. 22.0 and in all tests $p < 0.05$ level is accepted as statistically meaningful. **Results:** In our study, there are 333 participants and 154 of them are female (46.2%) 179 of them are male (53.8%) and mean age is 52.37. Eighty participants are 65 years old or over. When we evaluate the chronic disease patients, the most common diagnoses are heart disease which is seen in 177 (52.1%) of participants and hypertension which is seen in 176 of participants (51.8%). 184 of participants (54.1%) are using less than 5 drugs and 149 of participants (43.8 %) are using more than 5 drugs. In the comparison of multi-drug using and suffer from side effects, 50 of less than 5 drugs using participants (27.2%) and 29 of more than 5 drugs using participants (19.5%) had adverse effects, this difference is not statistically meaningful ($p=0.100$). **Conclusion:** We are in thought of family physicians can lower multi-drug using rates collaborating with patients for managing both acute and chronic diseases in our country where the cost of drugs are rising day by day. Because of that sociodemographic properties and drugs should be questioned for all the policlinics appeal of chronic disease patients and the cessation of drugs should be done according to the proper guidelines, they should be warned about drug interaction and how to use it.

Keywords: Chronic disease, polypharmacy, patient education

Giriş: Geleneksel tıpta en yaygın inanış bir hekim muayenesine gidildikten sonra mutlaka ilaç yazılması gerektiğidir. Yapılan çalışmalarda hekim muayenelerinin yaklaşık üçte ikisi reçete yazılması ile sonuçlanmaktadır. Bu çalışmada amacımız kronik hastalığı olan bireylerde çoklu ilaç kullanımının özelliklerini, bireyin sosyodemografik özelliklerine göre değerlendirmek ve bu konuda farkındalık yaratmaktır. **Yöntem:** Kesitsel tanımlayıcı olan çalışma, İnönü Üniversitesi Turgut Özal Tıp Merkezi Hastanesi'nin Aile hekimliği, Kardiyoloji, Göğüs hastalıkları, Nöroloji ve Psikiyatri polikliniklerine müracaat eden 340 hastada yapılmıştır. Verilerin istatistiksel değerlendirilmesi SPSS ver. 22.0 yazılımı ile yapılmış ve tüm testlerde $p < 0.05$ istatistiksel olarak anlamlı kabul edilmiştir. **Bulgular:** Çalışmada toplam 333 katılımcı mevcut olup, 154'i kadın (%46,2), 179'i erkek (%53,8) ve yaş ortalaması 52.37 yıl idi. 80 kişi (%23.5) 65 yaş ve üzerindedir. Kronik hastalığı olan bireylerin hastalıkları sorgulandığında en çok 177 kişi (%52,1) kalp hastalığı ve 176 (%51,8) inde hipertansiyon tanısı mevcuttu. Katılımcıların 184'ü (%54,1) 5'den az ilaç kullanırken, 149'u (%43,8) 5 ve üzeri ilaç kullanmaktaydı. Çoklu ilaç kullanım durumlarıyla yan etki görülme durumları kıyaslandığında 5 ten az ilaç kullananların 50' si (%27,2), 5 ve üzeri ilaç kullananların 29' u (%19,5) yan etki gördüğünü ifade etmiş bu fark istatistiksel olarak anlamsız bulunmuştur ($p=0.100$). **Sonuç:** İlaç maliyetinin her geçen gün arttığı ülkemizde aile hekimlerinin hastasıyla iş birliği yaparak hastasının hem akut hem kronik hastalıklarını aynı anda yöneterek çoklu ilaç kullanım oranlarını düşürebileceği kanaatindeyiz. Bu nedenle kronik hastalığı olan bireylerin polikliniğe her müracaatında sosyodemografik özellikleriyle kullandıkları ilaçlar sorgulanmalı, kılavuzlar eşliğinde gereksiz kullandığı ilaçlar kesilmeli ve etkileşime girebilecek ilaçlar konusunda hasta uyarılarak, ilaçları nasıl kullanacağı hakkında gerekli bilgilendirme yapılmalıdır.

Anahtar kelimeler: Kronik hastalık, çoklu ilaç kullanımı, hasta eğitimi

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¹Inönü University Medical Faculty, Department of Family Medicine

²Inönü University Medical Faculty, Department of Public Health

³Inönü University Medical Faculty, 1. Class Student

*Address for Correspondence / Yazışma Adresi: Burcu Kayhan Tetik. İnönü University Medical Faculty, Department of Family Medicine, Malatya-TURKEY. E-mail: drburcukayhan@hotmail.com

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INTRODUCTION

Polydrug use can be named as taking two or more drugs at the same time.¹ Drug-using is increasing with age and being the important public health issue. In Ireland 21.9% of the aged population is taking more than 10 drugs are reported and this increase is associated with encouraging the guidelines for polydrug using.² Polydrug using cause many problems like drug interaction, adverse effect, elimination difficulties and patient compliance. The human lifespan is much longer because of health improvement, preventive medicine and using modern technologies in nowadays than used to be. So, the population structure of countries is started to change and the ratio of aged individuals in general population is increased. As multidrug using can be needed for treatment of a disease, sometimes it can be because appealing of to the same patient with the same complaint to more than one doctor and so prescription of the similar drug. This situation cause may problems like drug adverse reactions, drug interactions treatment incompatibility. Multidrug using is a big problem especially, in geriatric patients. Because of modern dietary pattern or environmental factors, chronic diseases can come out at early ages, even more than one disease can be at same time. So lowering the drug number of patients who have multi health problems or using combined preparations are emphasized in nowadays.³

In this study, our aims are to evaluate the properties of multidrug using individuals with chronic diseases on basis of sociodemographic features and create awareness.

METHOD

Ethical approval of our study, which is descriptive and cross-sectional, has taken from Inonu University Science Research And Publication Ethics Board by 2017/13--5 decision number. Totally 340 patients who admitted Inonu University Turgut Ozal Medicine Center Cardiology, Pulmonary Disease, Family Medicine, Neurology and Psychiatry Policlinics at 8-10 June 2017 and were agreed to be part of our study, was taken. A survey which has 19 question was done with face to face technique after took the consents of participants. Individuals with no consent for study, have no chronic disease or has a psychiatric disease which causes not to understand the question in the survey, answered wrong or missing, younger than eighteen years old are excluded form the study. In survey paper there were questions for sociodemographic properties (age, gender, marital status, education level, occupation, monthly income, living alone or with whom he lived) what are the chronic diseases, how many drugs he use, have any child, whether living together

with them, who gives the drugs, whether he goes checks-up regularly and adverse events he has or not. The number of patients' drugs are categorized into two group like less than five and five or more to determine multi-drug using rate by examining the literature. Data are statistically analyzed with SPSS for Windows version 22.0. For qualitative variables, arithmetic mean (X) and standard deviation, for quantitative variables numbers (n) and percent (%) were used. Comparing the quantitative variables Pearson chi-square test was used and in all tests $p < 0.05$ is accepted as statistically meaningful.

RESULTS

There are 333 participants in this study and 154 of them (46.2%) are female, 179 of them (53.8%) are male. Mean age was 52.37, and 80 of them are sixty-five years old or over. When education levels are compared 93 of participants (27.4%) are uneducated. And 52 of them (15.3%) are college graduate. On basis of occupation 135 of them are retired (44.3%), 122 of them (35.9%) are housewives. Sociodemographic features of participants are shown in table 1.

When we evaluate the chronic disease patients, the most common diagnoses are heart disease which is seen in 177 (52.1%) of participants and hypertension which is seen in 176 of participants (51.8 %).

184 of participants (54.1%) are using less than 5 drugs and 149 of participants (43.8 %) are using more than 5 drugs.

There was no statistically meaningful difference between with comparing the drug adverse effects on groups one have chronic disease and the other has not ($p = 0.112$). In comparison with the age of 65, there were adverse effects in 68 participants over 65 years old and 14 participants under 65 years old. But it is not statistically significant ($p = 0.114$). 81.9% of patients younger than 65 years and 86.3% of patients older than 65 years went to their examinations regularly. but no statistical difference was found ($p = 0.590$). No statistically significant difference was found when we compared patients older than 65 years with respect to multiple drug use ($p = 0.166$). This situation is shown in table 2.

Table 3 shows multidrug using and sociodemographic data.

Comparing multidrug using and having adverse event, 50 patients (27.2%) of using below 5 drugs and 29 patients (19.5%) of using over 5 drugs mentioned have an adverse event, and this difference is not statistically meaningful. ($p = 0.100$). 150 of using less than 5 drugs (81.5%) mentioned going checkups

Table 1. Sociodemographic features of participants

Gender	Number	Percent (%)
Female	154	46.2
Male	178	53.8
Marital Status		
Married	286	85.3
Single	47	14.7
Education Status		
Illiterate	91	27.4
Primary School	104	31.2
Middle School	48	14.4
High School	39	11.8
University	51	15.3
Occupation		
Retired	133	39.7
Housewife	120	35.9
Private Sector	43	13.2
Office Worker	37	11.2
Monthly Income		
1000 TL	139	41.5
1001-3000 TL	152	45.3
3001-5000 TL	33	10.3
Above 5001 TL	4	1.5

Table 2. Multidrug using situations of below and over age 65 patients

Age	1-4 medicine n / (%)	5 and average medicine n / (%)
Under 65 years	135/ (53.1)	119/ (46.9)
Over 65 years	49/ (61.3)	31/ (38.7)

regularly. And 157(85.3%)of them mentioned taking drugs themselves. There are no statistically meaningful results in both of two comparisons (regularly of $p=0.369$, $p=0.718$).

DISCUSSION

In traditional medicine, the most common belief is needs to prescribe drug necessarily. Studies show-report that two third of medical examinations ended up with prescription.⁴ Multidrug using can be named as using 2 or more drugs¹, when literature is checked polypharmacy is named as using 5 or more drugs.^{1,2,4}

Polypharmacy rate is reported 13% in a study done in ABD. In studies which are done in our country, drug using rates are reported as 17.2% and 69%.^{3,5} In our study, polypharmacy rate is 43.8 %, and this high rate is being associated with this survey has done at the tertiary center were referred more complicated cases and also, included cases based on having chronic disease not to base on age. As a result, polypharmacy can be much more in chronic diseases than the others.

It is found that polypharmacy is more common in man at abroad studies.^{6,7,8} In our country Cakmur et al. found polypharmacy is more common in female and this situation is associated with female participants are two folds of male participants,

Table 3. Multidrug using and sociodemographic data

Gender	1-4 medicine (n)/(%)	5 and average medicine (n)/(%)	p
		85(48.0)	0.200
Female	92/(59.0)		
Male	92(52.0)		
Marital Status			
Married	153(53.9)	131(46.1)	0.222
Single	31(63.3)	18(36.7)	
Education Status			
Illiterate	54(58.1)	39(41.9)	
Primary School	56(52.8)	50(47.2)	0.229
Middle School	20(43.5)	26(56.5)	
High School	27(67.5)	13(32.5)	
University	27(56.3)	21(43.7)	
Occupation			
Retired	68(51.5)	64(48.5)	
Housewife	72(60.0)	48(40.0)	0.363
Private Sector	27(60.0)	18(40.0)	
Office Worker	17(47.2)	40(52.8)	
Monthly Income			
1000 TL	73(52.5)	66(47.5)	
1001-3000 TL	84(55.6)	67(44.4)	0.255
3001-5000 TL	20(60.6)	13(39.4)	
Above 5001 TL	2(40.0)	3(60.0)	

female lifespan is longer than male's and female patients come doctor's office more often.^{3,6,9} In some other studies found polypharmacy is more common in male.^{9,10} In our study number of male and female multidrug user participants are nearly equal though in male polypharmacy is found slightly more common.

Drug-using is much more in living alone than living with family is defined by Solmaz et al.¹¹ But there are also other studies which refer the opposite situation, drug using is more in married the ones who have a child than single.^{5,9} In our study it is found that, multidrug using is slightly higher than living with family even statistically not meaningful like Solmaz et al. This situation may be due to married and child having individuals have much more duties on daily life so because of being more careful and following control of diseases better.

When drug using is examined on basis of education status, in studies done at Portugal, Ireland and Sweden decrease the multidrug using as rising the education level is observed.^{9,11,12,13,14} In our study like all others there is the inverse relationship between with education level and multidrug use.

Hypertension is found the most common chronic disease in study of Peterson et al.¹⁵ In similar manner Taskin et al. have found hypertension is the most common chronic disease too.⁵ Likewise, antihypertension drugs are the number one in studies which are searching for which group of drugs is being used in chronic disease^{16,17,18,19,20,21}. The most common chronic diseases are hypertension and chronic heart disease in our study too as support the literature. The reason for being number one drugs are cardiovascular group drugs in our study can be our study has done at tertiary hospital and included the patients who were admitted to cardiovascular outpatient clinics. Multidrug using and an adverse effects of them are more common in patients coming regularly check-up is indicated in national and international studies.⁹ In our study only 27.31% of patients going regularly checkup have an adverse effect and this situation is associated with going regularly check-up prevents using over the counter drugs and possible side effects of them.

88% of the participants in Taskın et al. mentioned that they get drugs by themselves but there is no data about what percent of them has an adverse effect.⁵ In our study 81% of participants are taking drugs by themselves and only 22.8% of them has adverse effect. This situation is associated with patients who get drugs by themselves are more carefully and follow the control of disease much better, because of no enough data in literature about that.

Multidrug using is more common in chronic disease patients especially at older than age 65. This situation is affiliated with both diseases which are appeared by the age gets older and because of drugs which are added to reduce adverse effects of already using drugs. In a survey it is seen that multidrug using is more common in patients.²² And in another survey it is found that 44% of discharged patients have been prescribing at least one unnecessary drug.²³ Similarly, chronic disease patients are referring more than one physician and prescribing drugs unaware of another are accepted reason for multidrug using.²²

In our country, an important reason for multidrug using is habit of drug using without going doctor examination. Family physicians who are the first contact point of patients with the changed system in Turkey, can stop the unnecessary drugs and prevent usage of multidrug while they are making repeated appointments and getting more information.

CONCLUSION

We are of the opinion that, in our country where the costs of drugs where are gradually increasing, family physicians can reduce the rate of multiple drug use by way of managing both acute and chronic diseases simultaneously through a successful cooperation with their patients. Therefore, the socio-demographic status of patients with chronic diseases as well as the medications they're currently using should be questioned thoroughly during their admittance to the hospital. The physicians should also discontinue unnecessary medications with professional guidance and inform them about adverse effects of the drugs.

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