Cardiovascular nursing research / Kardiyovasküler hemşirelik araştırması

Evaluation of compliance and level of knowledge of patients with hypertension living in the Karaman city center, Turkey

Mekanik mitral kapak değişimi sonrası gelişen protez kapak-hasta uyumsuzluğu ve sistolik pulmoner arter basıncı üzerine etkisi

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Objectives: This descriptive study was performed in hypertensive patients to determine their level of knowledge on, and attitudes to drug use.

Study design: The study was carried out in 194 patients (144 women, 50 men) who had been on antihypertensive treatment for at least a year. The mean duration of hypertension was 6.3±5.7 years. Data were collected using a questionnaire on sociodemographic characteristics and level of knowledge on, and attitudes to drug use.

Results: Of the participants, 70.1% were at the age of 50 years or beyond. Fifty-six patients (28.9%) were found to have a poor compliance with drug use. Noncompliance showed a significant association with age and gender, being 43.1% and 22.8% in the age groups of ≤49 years and ≥50 years, and 34.7% and 12% in women and men, respectively. Compliance was significantly correlated with the delivery of information to the patients on the dose, the right time, and the properties of the drugs prescribed. Multivariate logistic regression analysis showed that age ≤49 years and lack of knowledge on the right time of drug intake were independent risk factors contributing to irregular drug use. The incidences of nonadherence were 2.916-fold (95% CI 1.415-6.009) and 8.964-fold (95% CI 2.164-37.127) higher in the age group of 49 years, and in those who did not know the right time of drug intake, respectively.

Conclusion: Poor compliance to therapy in about one third of the patients is a critical problem. Patients with hypertension must be informed and monitored by health professionals with respect to drug use.

Key words: Health knowledge, attitudes, practice; hypertension/drug therapy; patient compliance.

Amaç: Bu tanımlayıcı çalışmada ilaç kullanan hipertansiyonlu hastaların ilaç kullanımına ilişkin bilgi düzeyleri ve durumları değerlendirildi.

Çalışma planı: Çalışma hipertansiyon tanısı ile en az bir yıldır ilaç tedavisi örmekte olan 194 hastada (144 kadın, 50 erkek) yapıldı. Hastalarda hipertansiyon süresi ortalama 6.3±5.7 yıl idi. Veriler, hastaların sosyodemografik özelliklerini ve antihipertansif ilaç kullanım özelliklerini sorgulayan bir anket aracılığı ile toplandı.

Bulgular: Katılımcıların %70.1'i 50 yaş ve üzerindeydi. Elli altı hastanın (%28.9) ilacını düzenli kullanmadığı öğrenildi. Hastaların ilaçlarını düzenli kullanmama durumları yaş ve cinsiyet ile anlamlı ilişki gösterdi.

Yaş grubu ≤49 ve ≥50 olan hastalar içinde düzenli ilaç kullanmama oranları sırasıyla %43.1 ve %22.8 idi. Kadınların %34.7'si, erkeklerin %12'si ilaçlarını düzenli kullanmayan gruptaydı. Hastaların ilaçlarını düzenli kullanma durumu, ilacın dozu, saati ve ilaçla ilgili bilgilendirilmeleri ile anlamlı ilişki gösterdi. Çokdeğişkenli lojistik regresyon analizinde "49 yaş ve altında olma" ve hastanın "ilacı alacağı saati bilmemesi"nin hipertansiyonlu hastalarda ilacı düzenli kullanmama durumu için bağımsız risk etmenleri olduğu görüldü. İlacı düzensiz kullanma durumu, 49 yaş ve altında olanlarda 2.916 kat (%95 GA 1.415-6.009), ilacını alma saatini bilmeyenlerde 8.964 kat (%95 GA 2.164-37.127) daha fazlaydı.

Sonuç: Hastaların yaklaşık üçte birinin tedaviye uyumunun kötü olması ciddi bir durumdur. Hipertansiyonlu hastalar sağlık personeli tarafından ilaç kullanımı konusunda mutlaka eğitilmeli ve izlenmelidir.

Anahtar sözcükler: Sağlık bilgisi, davranışı, uygulaması; hipertansiyon/ ilaç tedavisi; hasta uyumu.

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Hypertension is one of the health problems especially affecting a great portion of the elder population.[1] In the "measuring Turkey's blood pressure" campaign launched by the Turkish Society of Hypertension and Renal Diseases in 2008, the rate of diagnosed cases of hypertension was reported to be 40.4%. The rate of hypertensive patients who are not aware of their condition is 60%, the rate of those who do not receive treatment is 70%, whereas hypertension of 92% of individuals is not under control.[2,3]

Most hypertensives require drugs in order to keep their blood pressure under control.[4] The goal of managing hypertension is to prevent future possible long term damage of target organs, and to decrease cardiovascular and real morbidity and mortality.[1] Inconsistency of patients and the variation of treatment response was last highlighted in the 2007 European Hypertension Guidelines; as a result it is recommended to initiate drug treatment on time, without delay and under close monitoring.[5] Despite effective treatment of hypertension the rate of hypertension management is still under the target 50% value for the year 2010.[6]

Various studies have demonstrated that patient compliance to treatment is very low thus leading to the inadequate control of blood pressure.[7-16] Regular use of medication is important for the prevention of hypertension and the accompanying cardiovascular risks.[17]

Although compliance to antihypertensive drug treatment is known as the basics in the treatment of hypertension poor compliance to antihypertensive drug treatment is still common.[8]

The aim of this study was to conduct a descriptive evaluation of the level of knowledge and compliance to treatment in hypertensive patients using drug treatment.

PATIENTS AND METHODS

The study group included all hypertensive patients (n=194; 144 women, 50 men) who visited the Karaman Number 3 Central Primary Health Care Center from October 2005 to December 2005, and were under drug treatment for at least one year following the diagnosis of hypertension.

Official approval for the study was obtained from the Karaman Provincial Health Directorate, while the study-related information was provided and verbal consents were obtained from the patients. Study data, sociodemographic data of participants and the features of antihypertensive drug use were collected through questionnaires prepared by investigators following a detailed literature search. Sociodemographic features of the patients such as age, gender, level of educations, social insurance, residence, profession, the person with whom they were living, and income were investigated in the question forms used in the study. Information was also collected regarding antihypertensive and medical feature about whether or not the patients had previous been hospitalized, duration of hypertension, whether or not information about the drug was obtained, and if obtained the person who provided the information; name of the drug, its effects and side effects, recommended daily dose of the drug, knowledge of the time of the day when the drugs was to be administered; whether or not the drug was regularly used, and the reason why if the drugs was not regularly used. Data were collected by face-to-face communication with the patients.

In the statistically evaluation of the results parametric variable were expressed as mean±standard deviation, while categorical variables were expressed as percentages. Evaluation of categorical variables was performed using the student's t-test. Multivariable regression analysis was performed for the significant variable of unidirectional analysis. $p<0.05$ value was considered as statistically significant.

RESULTS

Sociodemographic characteristics of the patients are shown in Table 1. Of the participants in the study 70.1% were in the age of 50 and above. 74.2% of the participants were women whereas 25.8% were men. In the patient group consisting mostly of literate patients, 61.9% were primary school graduates. The proportion of those with social insurance was found to be 89.7% (Table 1).

The duration of hypertension was reported as 6.3±5.7 years. Of the patients 104 (53.6%) had never been hospitalized, 139 patients (71.7%) stated that they would par-

Table 1. Distribution of sociodemographic characteristics of hypertensive patients

	Number	Percentage
Age		
≤49 years	58	29.9
≥50 years	136	70.1
Gender		
Females	144	74.2
Males	50	25.8
Level of education		
Illiterate	53	27.2
Literate-Primary school	120	61.9
High school and beyond	21	10.3
Social insurance		
Present	174	89.7
Absent	20	10.3

Table 1. Distribution of sociodemographic characteristics of hypertensive patients

	Irregular drug users (n=56)		Regular drug users (n=138)			
	Number	Percentange	Number	Percentange	X^2	*P*
Age					8.168	0.004
≤49 years	25	44.6	33	23.9		
≥50 years	31	55.4	105	76.1		
Gender					9.332	0.002
Female	50	89.3	94	68.1		
Male	6	10.7	44	31.9		
Drug dose taken						0.002*
Knows	46	82.1	133	96.4		
Does not know	10	17.9	5	3.6		
Time of drug use					23.117	0.000
Knows	42	75.0	134	97.1		
Does not know	14	25.0	4	2.9		
Knowledge about drugs					4.036	0.045
Obtain	37	66.1	110	79.7		
Does not obtain	19	33.9	28	20.3		

*Fisher's exact test

ticipate in any instruction/education program on antihypertensive given at the primary care center, while 147 (75.8%) of the patients reported obtaining information about medication from the health care professional.

Fifty six patients (28.9%) were reported not to have taken their medication regularly. The reasons for the irregular use of medication included non use of drugs during periods when blood pressure was normal, forgetfulness, inability to afford expensive drugs, not obtaining new prescriptions when the drugs got finished or negligence to obtain the prescription, and also refusal to use the drugs.

Age of the patients was found to be significantly correlated with regular drug use. Patients who were ≤49 years old were found to be more irregular in their use of medication compared to those ≥50 years old. The incidence of irregular use of medications in the ≤49 year-old patient group (n=58) was found to be 43.1%, whereas the incidence was 22.8% in the ≥50 year-old patent-group (n=136) (Table 2).

Irregular use of drugs was found to be more common in women than in men. 34.7% of a total of 144 women and 12% of 50 men were found to be in the group of irregular drug use (Table 2).

The attitude of patients towards regular use of medication was found to be correlated with drug dose, time and their knowledge about the drug. 74.3% (133/179) of those who knew the drug dose, 76.1% (134/179) of those who took their medication on time, and 74.8% (110/179) of those who received information from individuals such as physicians, nurses, and pharmacists were found to use their medication regularly (Table 2).

Evaluation by the Spearman correlation analysis, of the relationship of the attitude towards patient drug use with age, knowledge of the name, effect and side effects of the drug, its dose and time of taking the drug, the desire to participate in the instruction/education program, and obtaining knowledge about the drug, demonstrated that there was a significant relationship of regular drug

Table 3. Evaluation of the risk factors for compliance to drug use in hypertensive patients by multinomial regression analysis

	ß	Standard error	*P*	Odd ratio	95% CI
Age (≤49 years)	1.070	0.369	**0.004**	**2.916**	1.415 - 6.009
Participation in education (non participants)	-0.528	0.427	0.216	0.590	0.256 - 1.362
Knowledge about drugs (not obtained)	0.209	0.420	0.618	1.233	0.541 - 2.807
Time of drug use (No knowledge)	2.193	0.725	**0.002**	**8.964**	2.164 - 37.127
Drug dose taken (No knowledge)	0.515	0.769	0.503	1.673	0.371 - 7.552
Constant	-1.481	0.279	0.000		

use with age, desire to participate in the instruction/education program, knowledge about the drug, its dose and the time of taking the drug. Evaluation of variable which were significantly related using multivariable multinomial logistic regression analysis demonstrated that age ≤49 years and lack of knowledge on the right time of drug intake were independent risk factors for irregular drug use in patients with hypertension. The incidence of irregular drug use was 2.916-fold higher in ≤49 year-old patients compared to ≥50 year-old patients (95% CI 1.415-6.009), and 8.964-fold higher in patients who did not know the right time of drug intake, compared to those who knew (95% CI 2.164-37.127) (Table 3).

DISCUSSION

Enrollment of patients according to time instead of using sample size calculation, and limited number of patients who were contacted due to the new residential nature of the area around the Number 3 Central Primary Health Care Center of Karaman province where our study was performed and the presence of a relatively younger population in this area, was one of the limitations in our study. Consequently, the results obtained are valid only for this sample group.

A total of 70.1% of the participants were ≥50 years old. Hypertension is a chronic disease whose incidence increases as one grows older. The Turkish Hypertension Prevalence Study (2003) also demonstrated that hypertension was more common between the ages of 40-70 years.[18] The number of hypertensive women who participated in the study was found to be approximately three-fold more than the number of men. Results of other studies in Turkey and around the world are not different from these.[13,19-23] Health institutions and the health professional should pay special attention to elder patients and to female patients with regards to screening and follow-up of hypertension.

A total of 28.9% of the patients do not use their medication regularly. In the 2008 hypertension screening campaign launched by the Turkish Society of Hypertension and Renal Diseases, 70% of hypertensive patients in Turkey were reported not to be undergoing treatment.[3] In a similar study conducted in Hungary, one third of the patients were also found to irregularly use their medication.[14] On the other hand, a Chinese study demonstrated that 59.7% of hypertensive patients continued their treatment.[24] The study results are consistent with those in Turkey and around the world. The objective of Health People 2010 is to organize services and preventive measures in order to increase compliance of patients to antihypertensive treatment.[25]

Non use of drugs during periods when blood pressure was normal, forgetfulness, inability to afford expensive drugs, not obtaining new prescriptions immediately when the drugs got finished or negligence to obtain the prescription, and also refusal to use the drugs were outlined as reasons for the irregular use of medication. In the study conducted by Unalan et al.[10] on the perception and believes of hypertensive patients on drugs, irregular drug use was also attributed to similar factors. Another study conducted in Germany also demonstrated that 40.4% of patients did not take their medication due to forgetfulness, whereas 9.6% did not take their medication due to side effects of the drugs.[15] Reasons for the irregular use of medication should be classified as "patient-related", "related to presentation of unhealthy services" and "drug-related" and solutions should be directed towards these problems.

The regular use of drugs by patients was found to be correlated with age. Various studies have identified young age as a risk factor for drug compliance, whereas others have identified elder age as a risk factor.[8,10,11] In the study by Unalan et al.[10] aging was considered as a factor which facilitates acceptance of the diagnosis of hypertension, and that younger individuals did not perceive the necessity for regular drug use. These results demonstrate that younger patients took longer periods for disease acceptance, leading to problems of drug compliance.

Irregular drug use is known to be more prevalent in women than in men (34.7%). In the Turkish Adult Risk Factor (TARF) study 46.6% of women with high blood pressure were reported to use medication, whereas 38.5% of men used medication.[26] The difference between results of our study and that of the general Turkish population may be due to our study group consisting of individuals from a small region and to the sociocultural variations of this region. In a similar study conducted in the Van province compliance to treatment was also found to be lower in women.[7] Health care professional should pay particular attention female hypertensive patients due to the poor compliance rate among women.

A total of 74.8% of patients who received information from individuals such as physicians, nurses, and pharmacists were found to use their medication regularly (Table 2). This demonstrates that patients who received information of any member of the health team were more liable to use their medication regularly. Hypertensive patients should definitely be instructed by a health professional about drugs use.

Independent risk factors for irregular drug use in patients with hypertension include age ≤49 years and lack of knowledge on the right time of drug intake. The incidence of irregular drug use was 2.916-fold higher in ≤49 year-old patients compared to ≥50 year-old patients (95% CI 1.415-6.009), and 8.964-fold higher in patients who did

not know the right time of drug intake, compared to those who knew (95% CI 2.164-37.127) (Table 3). Younger age and the lack of knowledge about the right time of drug intake were found to affect compliance to treatment and as a result the rate of managing hypertension.

In the Mid Term Joint Program of the Ministry of Health and the WHO Regional Office for Europe declaration of 16th May 2000, decisions were made to use technical support from health professionals and patient education programs for the control of hypertension.[27]

In this light, advancements in the compliance of hypertensive patients to drug treatment and modern and long-term effective drug use can be provided by making possible for patients to attend regular education programs on hypertension and drug use, instruction of patients about measurement of blood pressure at home, increasing the number of education programs for hypertensive patients, provision of regular in-service workshops for health care professional, and meticulous follow up of drug regulations.

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