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Research Article

Reasons why Hypertensive Patients Admission to Emergency Services and their Chronic Illness Care Management

Abstract

The study sample was composed of 200 individuals with hypertension who were admitted to the emergency department of a government hospital. Of the participants, 36.5% presented to the emergency department. Of the participants, those who were older, who had a low education level, who consumed salt without restriction, coffee drinkers, who were not on a diet and who did not receive health education obtained lower scores from the Patient Assessment of Chronic Illness Care scale. Effective discharge planning from hospital to home, home visits and counselling provided by primary health care departments will contribute to a reduction in emergency admissions and to successful chronic disease management.

Introduction

Hypertension, like other chronic illnesses, is a non-communicable disease which has an adverse effect on the quality of life of an individual. It requires treatment with advanced expertise, its complications can result in disability or death, and its monitoring and treatment entail high costs [1]. Hypertension is a significant risk factor for cardiovascular patients, because although treatable, it is the most frequent cause of myocardial infarction, stroke, cardiac insufficiency, peripheral vascular disease and chronic kidney failure [2]. The World Health Organization has reported that in developing countries, hypertension is the leading cause of cardiovascular disease-related illnesses and deaths which accounts for 20-50% of all deaths. This proportion is expected to rise to 75% by 2020 [3]. In Turkey, hypertension mortality accounts for 3% of all deaths, and ranks sixth among causes of death [4]. In a study conducted on the prevalence of diabetes, hypertension, obesity and endocrinological diseases [5], the prevalence of hypertension was 32.3% in women and 30.9% in men, and it began to increase when people were in their 40s. The same study found that awareness of hypertension was low in both men and women [5].

The individual effects of chronic diseases such as hypertension cause mental and social limitations which reduce an individual's independence, increase the need for a long-term care, and have an adverse effect on the perception of health. Given the country's health system, chronic diseases bring about social and economic problems. Thus, the quality of life of individuals and families is adversely affected, and the costs of diagnosis, treatment, care and rehabilitation of these individuals gradually increase [6]. This highlighted the importance of the management of chronic illnesses [1], which involves not only the treatment of the disease but also the preparation and empowerment of the patient by using a variety of education methods to gain the patient self-management skills [7,8]. The aim of the management

of chronic illnesses is to prevent the development of symptoms and complications, and in case complications develop, to manage them effectively, to preserve the health of individuals and to increase their quality of life [9-11]. Effective chronic disease management will reduce the frequency of admissions to emergency services or hospitals, limit the physiological and psychological effects of the disease, prevent dependence on others while performing activities of daily life and improve patients' quality of life [7,9,12]. In this process, priority must be given to the methods of nurses working at primary, secondary and tertiary protection levels to control the blood pressure of hypertensive patients, and to topics such as the necessity of taking medication regularly and timely compliance with medication, hypertension-related complications, and the positive effects of taking medicine regularly to control blood pressure [6,13,14]. In health education, the importance of the risk factors affecting the control of blood pressure can be taught, and individuals' awareness can be increased.

In the management of hypertension, nurses play an important role by helping hypertensive individuals to adopt healthy lifestyle behaviors and by providing them counselling services to better comply with medication and to keep their blood pressure under control. Thus, such attempts can take complications likely to develop, emergency and unplanned hospital admissions and indirect cost increases under control. Several international and national studies demonstrated that education and home visits aiming to promote hypertensive individuals' compliance with medication and healthy lifestyle behaviors increased their compliance with the treatment and led to significant reduction in their blood pressure and body mass index. Thus, the International Council of Nurses emphasized the importance of chronic disease in the world and management of chronic diseases in its 2010 theme [6].

The aim of this descriptive study was to determine the reasons why individuals with a diagnosis of hypertension were admitted to the

emergency department, and the ways they used in the management of chronic illness. The research questions were:

1. What are the reasons for the admission of individuals with hypertension to the emergency department?

2. What are the scores of hypertensive individuals on the Patient Assessment of Chronic Illness Care (PACIC)?

3. Do the scores of hypertensive individuals on the PACIC differ significantly in terms of their sociodemographic characteristics?

Method

Sampling

This descriptive study was performed in the emergency department of a government hospital. The sample was selected using the purposive sampling method. Of the 230 patients aged 18 years or over who had been diagnosed with hypertension at least six months before and admitted to the emergency department due to hypertension-related symptoms between October and December 2014, and who were able to communicate verbally were requested to participate in the study. However, 13% of them declined to participate in the study. Therefore, the study sample included 200 patients. The participants were treated and monitored for a short time in the emergency department. Those who had serious complications were referred to the inpatients clinic for longer treatment.

Instruments

- Individual Interview Form: This form was created by the researchers in accordance with the literature [6,13,14]. It consisted of 27 closed- and open-ended questions aimed at determining individuals' sociodemographic characteristics, their lifestyle behaviors, their reasons for admission to the emergency department and their chronic illnesses. Professional advice was obtained from three academics and three clinical nurses.

- Patient Assessment of Chronic Illness Care (PACIC): Glasgow et al. [15], developed this 20-item survey in 2005 and its Turkish validity and reliability studies were performed by Incirkus [12]. This valid instrument assesses chronic illness care received by patients with chronic illnesses. It consists of five sub-dimensions: Patient Activation, Delivery System/Practice Design, Goal Setting/Tailoring, Problem Solving/ Contextual, Follow-up/Coordination [15,16]. For the Turkish version, the alpha coefficient was 0.91 and the mean alpha coefficient for the sub-scales was 0.74 [12]. In the present study, the Cronbach alpha value was 0.86. Permission to use the Turkish version of the PACIC was obtained from Incirkus by email.

Data were collected by the first researcher during treatment and follow up of patients in the emergency department through face-to-face interviews. It took about 15-20 minutes to interview each patient. Patients' questions were answered after the interviews.

Ethical aspects

Ethical permission for the study was obtained from the Non-Interventional Clinical Research Ethics Committee of the university (24.07.2014/ no: 180). Institutional permission was obtained from the government hospital where the study was to be performed. After the patients were informed verbally, their written consent was obtained.

Analysis

Data analysis was performed using the program SPSS PASW (Predictive Analytics Software Statistics). Dependent variables were the scores obtained from the PACIC survey. The independent variables were sociodemographic characteristics such as age, gender, education, diet, nutritional behaviors and health education. Frequency and percentage values, means and standard deviations were used as descriptive statistical analysis. The Kolmogorov-Smirnov test value was found to be p < .05 in normality tests for numerical data. Therefore, the Mann-Whitney U-test and the Kruskal-Wallis test were used for numerical variables. The confidence interval was taken as 95% and p<0.05 was accepted as statistically significant.

Results

Sociodemographic and health/Illness characteristics

The mean age of the individuals participating in the study was 60.5±12.4 years. Of the participants, 74.5% were female, 79% were married, and 73% perceived their health as fair. They spent most of their lives in towns or cities. Many had been under treatment for hypertension for ten years or more: 44.5% had been diagnosed in routine checkups, 41% in the emergency department, and 14.5% coincidentally. Forty-five percent of the patients stated that they had no other chronic illness. Of those with chronic illnesses, 25.5% had diabetes mellitus and 10.5% had coronary artery disease. Most of the participants had first-degree relatives with a history of hypertension (Table 1).

Management of hypertension

Table 2 shows the distribution of participants in the study in terms of lifestyle behaviors. Of them, 65% were non-smokers. As for the smokers, the mean duration of smoking was 31.4±13.8 years, and the mean age at onset of smoking was 20.8±7.4 years. As for alcohol consumption, 84.5% were non-drinkers. Among the alcohol-drinkers, the average age of the first use of alcohol was 22.9±6.9 years. Of the participants, 47.5% did not diet, 26% strictly adhered to their diets and 26.5% adhered to their diets poorly, 39.5% paid attention to salt consumption and 30% did not pay any attention to salt consumption, and only 36.5% were coffee-drinkers. A great majority of the participants did not exercise. Of those who exercised, 95.8% preferred walking. Of the participants, 55.5% had their blood pressure measured only when they felt unwell.

As can be seen in Table 3, 82% of the participants were taking at least one medication. Of them, 58% stated that they forgot to take their medicine at least once or twice a week, and of those who failed to take their medicine, 50% did not take their medication at the recommended time because they felt well, and 23.3% did not take the medicine because they forgot.

Figure 1 shows that 36.5% of the individuals had been admitted to emergency services at least once in the previous six months, and 20% of these had been admitted three times or more. Among the reasons for admission were headache, nausea and vomiting, other symptoms relating to high blood pressure, dizziness and chest pain.

Of the participants, 86% received no planned health education relating to their illness. Of those who had received training, 74% received it from a doctor, and 8% from a nurse or other sources.

Table 1: Sociodemographic characteristics of the participants (N:200).

Sociodemographic characteristics	n	%
Age (mean ± standard deviation)	60.5±12.4	
Gender		
Female	149	74.5
Male	51	25.5
Education		
Less than primary school	34	17.0
Primary	104	52.0
Secondary	21	10.5
Higher	41	20.5
Marital status		
Married	158	79.0
Single	42	21.0
Place of residence		
Village	47	23.5
Town	37	18.5
City	67	33.5
Metropolis	49	24.5
Health Perception		
Bad	54	27.0
Fair	104	52.0
Good	42	21.0
Duration of diagnosis (years)		
1-3	37	18.5
4-6	39	19.5
7-10	26	13.0
>10	98	49.0
Presence of chronic diseases*		
No	90	45.0
Diabetes mellitus	51	25.5
Coronary artery disease	21	10.5
Asthma	16	8.0
Endocrine disorders	10	5.0
Other disease (KOAH, Rheumatic diseases etc.)	21	10.5
Total	200	100
*more than one choice		

Table 2: Distribution of Healthy Life Style Behaviors (N: 200).

Healthy Life Style Behaviors	n	%
Smoking		
Currently	47	23.5
Formerly	23	11.5
Never	130	65.0
Alcohol drinking		
Currently	24	12.0
Formerly	7	3.5
Never	169	84.5
Paying Attention to Salt Consumption		
No	60	30.0
Yes	79	39.5
To a certain extent	61	30.5
Dieting		
No	95	47.5
Yes	52	26.0
To a certain extent	53	26.5
Coffee Drinking		
Yes	73	36.5
No	127	63.5
Exercise		
Never	177	88.5
Three times in a week	13	6.5
Everyday	10	5.0
Frequency of Measuring Blood Pressure		
Never	39	19.5
In case of feeling unwell	111	55.5
Everyday	50	25.0

Table 3: Medication Use Characteristics of Individuals with Hypertension.

Medication Use Characteristics	n	%
Medication Use		
No medication	3	1.5
One medicine	164	82.0
More than one medicine	33	16.5
Taking medicines on time		
Yes	177	88.5
No	23	11.5
Forgetting to take medicines (n:197)		
No	147	74.6
Yes	50	25.4
Frequency of forgetting to take medicine (n:50)		
Every day	9	18.0
Once or twice a week	29	58.0
Once or twice a month	12	24.0

While half of the participants who had health training on the illness considered the training as sufficient, the other half considered it as somewhat sufficient. None of the patients had received home care or discharge education.

PACIC - patient form

As is seen in Table 4, obtained by the participants from the Chronic Illness Care Evaluation scale and its subscales were as follows: Patient Activation 1.97 ± 0.95, Delivery System/Practice Design 2.21 ± 0.74, Goal Setting/Tailoring 1.26 ± 0.50, Problem Solving/ Contextual 1.88 ± 0.52, Follow-up/Coordination 1.26 ± 0.53, and total PACIC score 1.63 ± 0.46.

## Correlation between sociodemographic characteristics and the PACIC

The analysis of the distribution of scores obtained from the PACIC in terms of various sociodemographic characteristics revealed that of the participants, those who were over the age of 75, those who were illiterate, those who did not pay attention to salt consumption, those who paid moderate or strict attention to salt consumption, those who were coffee drinkers, those who were not on a diet, and those who did not receive health education obtained lower scores from the PACIC. Variables such as gender, marital status, income, perception of health, how the diagnosis was made, presence of chronic disease, medication use, smoking, alcohol use, having blood pressure measured and the number of admissions to emergency services did not affect the overall PACIC score (Table 5).

Discussion

In the literature, education is reported to have a positive effect on healthy lifestyle behavior. In this present study, the illiterate patients were unable to manage chronic illnesses effectively, and the individuals with low education levels needed more support in chronic self-care management. Also Arpaci et al. [17], found that patients with low level of education (primary and middle school) had trouble keeping their blood pressure under control; Tokem, Tasci and Yilmaz [18], found that illiterate patients had difficulty in compliance with medication, measuring blood pressure and restricting salt intake. In a study by Kucukberber, Ozdilli and Yorulmaz [19], healthy lifestyle behavior scores increased as the education level increased.

Successful hypertension management is possible when the patient controls and monitors his/her own blood pressure and comply with recommended lifestyle changes Hill & Miller, 2004 [20]. Among the lifestyle changes which have a healthy effect on the management of hypertension are stopping smoking, reducing the consumption of alcohol and coffee to normal levels, reducing weight in those who are overweight [21-23], performing physical activity [21,23] and reducing salt intake [24]. In a study by Irmak, Duzoz and Bozyer [25], after hypertensive individuals were given training on healthy lifestyle behaviors and on increasing their compliance with medication, their healthy lifestyle behaviors changed for the better, and all patients began to take their medication regularly and at the recommended dose. Studies have demonstrated that hypertensive patients consume more salt and coffee [9], and do not comply with their diet appropriately [10]. These results is consistent with the
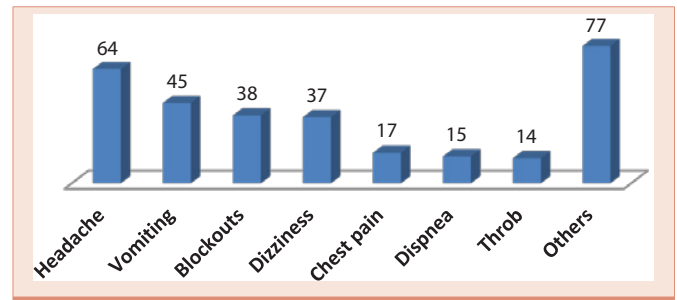
Figure 1: Distribution of Complaints in Admission to Emergency Department*.
*multiple answers.

Table 4: Mean Item Scores on the Chronic Illness Care Evaluation Scale (N:200).

Sub-scales	Mean± SS (min-max=1-5)
Patient Activation	1.97 ± 0.95
Delivery System/ Practice Design	2.21 ± 0.74
Goal Setting/Tailoring	1.26 ± 0.50
Problem Solving/ Contextual	1.88 ± 0.52
Follow-up/Coordination	1.26 ± 0.53
Total Scale	**1.63 ± 0.46**

Table 5: Comparison of Various Sociodemographic Characteristics and PACIC Scale.

Variables	n	Total Scale Points		Statistics
Age groups		x	±ss	
<45	21	1.71	.59	KW=10.02 p=0.018
45-60	77	1.63	.39	
61-75	79	1.68	.53	
>75	23	1.41	.25	
Gender				
Female	149	1.6	.54	MWU=3278.000 p=0.14
Male	51	1.7	.46	
Education				
Illiterate	34	1.45	.39	KW =19.52 p=0.001
Primary	104	1.63	.46	
Secondary	21	1.69	.37	
Higher	41	1.76	.53	
Dieting				
No	95	1.59	.48	KWU:6.57 p=0.03
Yes	52	1.75	.50	
To a certain extent	53	1.60	.39	
Coffee Drinking				
Yes	127	1.57	.42	MWU=3715.0 p=0.01
No	73	1.74	.52	
Salt Consumption				
No	60	1.55	.42	KW:6.35 p=0.042
Yes	79	1.70	.48	
Health education				
No	172	1.61	.45	MWU= 1809.5 p=0.035
Yes	28	1.81	.53	

results of the present study. In this study the consumption of salt and coffee and noncompliance with the diet was high, and that these patients were less effective in their management of chronic illnesses. The consumption of cheese, homemade tomato paste, pickles, and barbecued and grilled food all of which contain a large amount of salt is cultural lifestyle factors which make the management of hypertension more difficult. Many of the patients reported that they measured their blood pressure when they felt unwell. Research findings showed that the risk factors relating to hypertension were not managed adequately or at the desired level. Thus, reducing complications to a minimum by reducing risky lifestyle behaviors is a basic but can be effective way of reducing the future use of antihypertensive drugs and minimizing unnecessary hospital visits and admissions.

The present study's results showed that management of and compliance with medication by most patients was not effective. They forgot to take medicine at least once or twice a week, did not take medicines when they felt well, and did not take medicines at the recommended times, Patients should be supported and encouraged to manage rational medicine use. These patients are inconsistent with taking medicines, they can forget, they stop taking them of their own accord, and they only take them when they feel unwell [13,26]. Studies have shown that these behaviors are closely related to inadequate monitoring of and explanation about the use of medications, lack of explanation at the onset of the drug treatment, not believing in the efficacy of the medication, high costs of medicines, failure or neglect to renew the prescription when the medicine finishes [14]. Therefore, if patients are informed about medication use and their awareness of medication use is raised when they are diagnosed with hypertension or followed in health centers, the problem of inappropriate medication use will be solved.

In the present study, a third of the participants had presented to emergency departments within the last six months with complaints of headache, nausea and vomiting, other symptoms relating to high blood pressure, dizziness and chest pain. Analysis of the reasons for admission to the emergency department, revealed that that these symptoms were related to lifestyle behaviors such as compliance with the diet and medication, and exercise. In a study by Kilinc et al. [27], the most frequent reasons for the admission of patients were complaints relating to circulation, breathing, and the musculoskeletal and digestive systems. Continuity of healthcare can be ensured through interventions and follow-ups performed by primary care services at home, and thus admissions to the emergency department can be kept to a minimum. However, in a meta-analysis study [28], monitoring patients' blood pressure at home through tele-monitoring helped patients to keep their blood pressure under control.

Most of the participants had not had any health education relating to their illness, so they were unable to manage chronic illness effectively. In Landenpera and Kyngas's [29], qualitative study, hypertensive individuals expected to be informed about their illness by healthcare professionals, to be monitored regularly and to receive patient-centered care and treatment so that they could keep their blood pressure under control. Clark, Curan and Noji [30], observed that thanks to training given by and home visits paid by public health nurses to hypertensive patients, the blood pressure levels of 71% of

the patients were within normal values. In another study' findings [11], showed that the interventions performed on the experimental group raised patients' awareness, reduced the number of visits to the doctor, their salt intake and their BMI, and increased their compliance with medication. A review of self-management approaches for people with chronic conditions concluded that such approaches were effective in increasing participants' knowledge, self-management behaviors, and aspects of health outcomes [31]. All of these results show that planned discharge education and effective home visits can be a key to the good management of hypertension.

The study has some limitations. The first one is that some data in the study were obtained through the verbal statements of the participants. The reliability of the results therefore depends on the correctness of the responses given by these participants. Secondly, some older patients had difficulty in understanding the PACIC. Therefore, these patients were excluded from the study.

Conclusions

Many of the patients reported that they measured their blood pressure when they felt unwell. The management of and compliance with medication by most patients was not effective. Most of the participants had not had any health education relating to their illness. The patients diagnosed with hypertension or followed in health centers should be informed about medication use, their awareness of medication use should be raised, behaviors likely to pose a risk for hypertension should be assessed. They should be helped gain self-care behaviors in the home environment by health workers working in family health centers. The results of this study suggest that if sufficient and effective discharge planning programs and home care services are planned and organized for the chronically ill, the number of readmissions to hospitals will be reduced, and the quality of life of patients will be increased.

Ethical approval

"All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards."

"This article does not contain any studies with animals performed by any of the authors."

Informed Consent

Informed consent was obtained from all individual participants included in the study.

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