

Determining the Relationship Between Nursing Care Perception and Drug Compliance in Hypertensive Patients

Hipertansiyon Hastalarının Hemşirelik Bakım Algıları ve İlaç Uyumlari Arasındaki İlişkinin Belirlenmesi

ABSTRACT

Objective: This study was carried out to determine the relationship between the perception of nursing care of hypertension patients and chronic disease and drug compliance.

Methods: This study was conducted correlational, cross-sectional, and descriptive type. It was carried out with patients diagnosed with hypertension ($n=101$) in an internal medicine ward between December 2019 and April 2020 in Training and Research Hospital affiliated to Provincial Health Directorate. Data were collected with personal information form, Adaptation to Chronic Illness Scale, Scale of Patient Perception of Hospital Experience with Nursing Care, and the Beliefs about Medication Compliance Scale.

Results: The mean age of patients was 62.40 ± 12.39 years, 69.3% were male and married, 81.2% of them were smoking and 70.3% of them were not doing exercises. There was a positive weak correlation between patients' perception of nursing care and the physical adaptation subscale of the Adaptation to Chronic Illness Scale ($r=-0.283$; $P = .004$) and a negative weak correlation with the social adaptation subscale ($r=-0.206$; $P = .039$). In addition, there was a negative weak correlation ($r=-0.320$; $P = .001$) between the mean score of the patients' perception of the nursing care scale and the mean score of the barriers sub-dimension of the beliefs regarding medication scale ($r=-0.320$; $P = .001$). The positive perception of the nursing care provided by the hypertension patients positively affects both their drug compliance and their adaptation to chronic disease ($P > .05$).

Conclusion: It was determined that there was a relationship between the patients' perception of nursing care and physical and social compliance. In addition, it was observed that there was a relationship between the perception of nursing care and barriers.

Keywords: Chronic disease, health care, hypertension, nursing care, medication adherence, perception.

ÖZ

Amaç: Bu çalışma hipertansiyon hastalarının hemşirelik bakımı algısı ile kronik hastalık ve ilaç uyumu arasındaki ilişkiyi belirlemek amacıyla yapıldı.

Yöntemler: Bu çalışma, ilişki arayıcı, kesitsel ve tanımlayıcı tipte yapıldı. İl Sağlık Müdürlüğü'ne bağlı bir Eğitim ve Araştırma Hastanesinde Aralık 2019-Nisan 2020 tarihleri arasında dahi- liye servisinde hipertansiyon bulunan hastalarla ($n=101$) gerçekleştirildi. Veriler, Kişi- sel Bilgi Formu, Hastanın Hemşirelik Bakımını Algılayışı Ölçeği, Kronik Hastalığa Uyum Ölçeği, ve ilaçlara Uyum İnançları Ölçeği ile toplandı.

Bulgular: Hastaların yaş ortalaması $62,40 \pm 12,39$ yıl, %69,3'ü erkek ve evli, %81,2'si sigara içiyordu ve %70,3'ü egzersiz yapmıyordu. Hastaların Hemşirelik Bakımını Algılayış Ölçeği puan ortalaması ile Kronik Hastalığa Uyum Ölçeğinin Fiziksels Uyum alt ölçüği ($r=0,283$; $P = .004$) arasında pozitif yönlü zayıf düzeyde ilişki varken Sosyal Uyum alt boyutu ($r=-0,206$; $P = .039$) arasında negatif yönlü zayıf düzeyde ilişki vardı. Ayrıca Hastaların Hemşirelik Bakımını Algılayış Ölçeği puan ortalaması ile ilaç Uyumuna İlişkin İnançlar Ölçeğinin Engel alt boyutu puan ortalamaları arasında negatif yönlü zayıf düzeyde ilişki ($r=-0,320$; $P = .001$) vardı. Hipertansiyon hastalarının, verilen hemşirelik bakımını olumlu algılamaları, hem ilaç uyumlarını hem de kronik hastalığa uyumlarını olumlu yönde etkilemektedir ($P > .05$).

Sonuç: Hastaların hemşirelik bakımı algısı ile fiziksels ve sosyal uyum arasında ilişki olduğu belirlendi. Ayrıca hastaların hemşirelik bakımı algısı ile engel arasında ilişki olduğu görüldü.

Anahtar Kelimeler: kronik hastalık, sağlık bakımı, hipertansiyon, hemşirelik bakımı, tedavi uyumu, algı.

ORIGINAL ARTICLE

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Introduction

Hypertension (HT) is causing serious complications and mortality by increasing the risk of heart failure, stroke, kidney failure, and myocardial infarction.¹ It was reported that HT mortality constitutes 3% of all deaths and ranks sixth among the diseases causing death. According to the World Health Organization, insufficient control of blood pressure is responsible for two-thirds of stroke cases and half of ischemic heart disease. Given all these data, HT is an important public health problem with serious clinical consequences.² In the management of the HT, besides the drug treatment approach, lifestyles changes and non-pharmacological treatment have a significant role.³ The purpose in the treatment of HT is to prevent long-term target organ damage and to decrease the rate of cardiovascular and renal morbidity and mortality.³ Compliance in the HT is the extent of patient behavior to comply with clinical recommendations in terms of using medications, following the diet or performing other lifestyle changes.⁴ Even though HT is easy to diagnose and treat, the incompatibility of the patient against the disease and its treatment is a neglected issue. It is crucial for patients to continue their blood pressure checks and to be determined to achieve it so that they can effectively cope with HT and maintain compliance with the disease and treatment.⁵ It was reported that an important factor that may be effective in disease and medication compliance of HT patients is the patients' perception of nursing care. This is because the patients who are adequately informed, valued, and took administered individual care have more confidence in nurses and their specialties, and disease and medication compliance may increase in this context. It was reported that the fact that nurses are always with them during the diagnosis and treatment procedures, establish positive communication, actively listen to the diseases and treatment processes, give clear answers, get to know the patients better than other healthcare professionals, and make patients not feel so lonely speeds up the recovery processes and increases their adherence to treatment.⁶ Therefore, nurses are one of the most important healthcare professionals in HT management. It was determined in the study results of Çoban and Kaşikçi⁷ regarding the patients' perception of nursing care that nurses do their work without asking the patient (67.7%), nurses are not there when patients need them (26.3%) in the study of Şişe,⁸ they do not make comforting statements to patients (12.5%) in the study of Land and Suhone,⁹ nurses do not provide individualized care to patients (45.0%) in the study of Atallah et al.¹⁰ patients were not given discharge training by nurses (56.0%). As can be understood from these results, patients' positive perceptions of nursing care are not at the desired level. Failure to meet the expectations of patients at the desired level, in turn, decreases patient satisfaction and also reduces patient's adherence to treatment and self-care abilities. If HT patients perceive nursing care positively, patient satisfaction will increase in parallel to that. Positive nursing care perception of the patient will make a significant contribution to the patients' coping mechanism and will increase the compliance to disease and self-care abilities. Thanks to these contributions; patients will be able to recover in a short time, be discharged early, and the cost of care of patients will decrease.¹¹

Conducted studies evaluated patients' nursing care perceptions and their disease, medication compliance separately in different patient groups.^{3,7,12} However, no study results that examined the relationship between the perception of nursing care of HT patients and chronic disease and drug compliance was found in the literature. In the light of this information, this study was carried out to determine the effect of the perception of HT patients on nursing care on disease and medication compliance.

This study was carried out to determine the relationship between the perception of nursing care of HT patients and chronic disease and drug compliance.

Methods

Design, Participants, and Setting

This study was conducted correlational, cross-sectional, and descriptive type. It was carried out with patients diagnosed with HT in an internal medicine ward between December 2019 and April 2020 in a Training and Research Hospital affiliated to Provincial Health Directorate.

Patients under the age of 18 years old, with problems in understanding and speaking Turkish, and with a diagnosis of HT less than 6 months were not included in the study.

Patients over 18 years of age who had been diagnosed with HT for at least 6 months and who agreed to participate in the study were included. The sample size was determined as 96 participants according to the analysis performed in the G-power statistical software with a significance level of 0.05, 95% power (G*Power Version 3.1.9.2 statistical software). In this calculation, the minimum sample size was determined as 64 participants. The study was completed with 101 patients.

Data Collection

Data were collected with information form where personal and disease information of HT patients were questioned (age, gender, how many years have been ill, medication used, etc.), Adaptation to Chronic Illness Scale (ACIS), Scale of Patient Perception of Hospital Experience with Nursing Care (PPHEN) and the Beliefs about Medication Compliance Scale (BMCS).

Information form; The form consists of 12 questions containing personal and disease information (age, gender, years of illness, medications used, etc.) of HT patients. It has been prepared in accordance with the literature by the researchers as a result of the literature review.

Adaptation to Chronic Illness Scale; The scale was developed by Atik and Karatepe (2016)¹³ and is a 5-point Likert scale. It includes a total of 25 items under 3 sub-dimensions namely physical adaptation, social adaptation, and psychological adaptation. Items 1, 9, 10, 13, 14, 15, 16, 18, 22, 23, and 24 measure physical adaptation (maximum 55, minimum 11 points), items 2, 3, 5, 7, 17, 19, and 25 measure social adaptation (maximum 35, minimum 7 points), items 4, 6, 8, 11, 12, 20, and 21 measure psychological adaptation (maximum 35, minimum 7 points). While calculating the scale points, the total scale point is taken, and the scale point is calculated by dividing this by the number of

items. Scale scoring is as follows: 1=I totally disagree, 2=I agree, 3=Undecided, 4=I agree, and 5=I completely agree. Items 5, 6, 12, 17, 19, 20, 24, and 25 are scored inversely. The total points taken from the scale is 125. The increase in the score means that the level of adaptation of patients with the disease is also increased. This study found that Cronbach's alpha values of the scale's physical adaptation, social adaptation, and psychological adaptation were 0.92, 0.94, and 0.93, respectively, and the total score of Cronbach's alpha values was 0.84.

Scale of Patient Perception of Hospital Experience with Nursing Care; PPHEN was developed by Ann M. Dozier et al and adapted to Turkish by Çoban.¹⁴ The scale results in a minimum score of 15 and a maximum score of 75. A high score indicates patient satisfaction in terms of nursing care. The Cronbach's alpha value of the scale was reported to be 0.94. This study found that Cronbach's alpha value of the scale was 0.91.

The Beliefs about Medication Compliance Scale; It was developed by Bennet et al and adapted to Turkish by Oguz et al.¹⁵ It has "benefit" and "barrier" subscales. The high score in the benefit subscale indicates that the benefits of performed behavior are perceived more, and a high score in the barriers subscale implies that major obstacles are perceived in performing a behavior. In the evaluation of both sub-dimensions of the scale together, the minimum total score that can be obtained in the scale is 12 and the maximum total score is 60. It was stated that Cronbach's alpha value of the scale is 0.74.

Data Analysis

Statistical Package for the Social Sciences version 22.0. (IBM SPSS Corp.; Armonk, NY, USA) was used to evaluate the data. In the analysis of the data, variables were defined as mean, standard deviation (SD), and median with frequency and percentages, and the Chi-square test was used to compare frequencies and percentages. Shapiro-Wilk test was used for normality analysis of data. A correlation test was used to determine the relationship between ACIS, PPHEN, and the BMCS. All results were considered meaningful at $P < .05$ and a CI of 95%.

Ethical Considerations

Before starting the study, the ethics committee's permission was obtained from the Haliç University Research Ethics Committee (October 30, 2019/Decision number: 166). Moreover, the necessary permissions were obtained from the Republic of Turkey Provincial Health Directorate of Governorship in which the hospital that the study was conducted is affiliated (November 11, 2019, number: 71211201-10646). In accordance with the Declaration of Helsinki, participants received verbal and written information about the study. After explaining the purpose of the study, the consent of the participants was obtained.

Results

The average age of patients was 62.40 ± 12.39 years, 69.3% of them were male and married, 59.4% of them were graduated

Table 1. Socio-Demographic and Disease Characteristics of the Participants (n=101)

Characteristics	n	%
Age ($X \pm SD$, min-max)	(62.40 ± 12.39 , 22-85)	
Gender		
Women	31	30.7
Men	70	69.3
Marital status		
Single	31	30.7
Married	70	69.3
Education		
No formal education	12	11.9
Primary and secondary school	60	59.4
High school	11	10.9
University and ↑	18	17.8
Income		
Good	28	27.7
Medium	72	71.3
Low	1	1.0
Smoking		
Yes	75	81.2
No	26	18.8
Doing exercises		
Yes	30	29.7
No	71	70.3
Disease duration, years ($X \pm SD$, min-max)	(9.93 ± 8.63 , 1-48)	
Systolic blood pressure, mmHg ($X \pm SD$)	(129.27 ± 16.92)	
Diastolic blood pressure, mmHg ($X \pm SD$)	(74.58 ± 15.62)	
Comorbidity	55	54.4
Yes	46	45.6
No		
Comorbid conditions		
Diabetes Mellitus	46	46.4
COPD/Asthma	9	9.9
Treatment		
Anticoagulant	64	63.4
Anticoagulant+insulin/OAD	6	5.9
Anticoagulant+antihypertensive	16	15.8
Anticoagulant+antihypertensive +insulin/OAD	15	14.9
OAD, oral anti-diabetic.		

from primary and secondary school, 71.3% of them have middle income, 81.2% of them were smoking and 70.3% of them were not doing regular exercises (Table 1).

Considering the characteristic of patients in the terms of disease and treatment, their mean diagnosis duration was 9.93 ± 8.63 years, their mean systolic blood pressure was 129.27 ± 16.92 mmHg and their diastolic mean blood pressure was 74.58 ± 15.62 . It was found that 54.4% of them had comorbidity, 46.4% of them

Table 2. The Scores of Patients' Adaptation to Chronic Disease, Beliefs about Medication Compliance and Perception of Hospital Experience with Nursing Care (n=101)

Scale and Subscales		Min.-Max.	Mean ± SD
The total adaptation to chronic disease		56-96	73.47 ± 7.52
Subscales	Physical adaptation	22-47	33.51 ± 4.50
	Social adaptation	12-29	18.73 ± 3.04
	Psychological adaptation	14-30	21.22 ± 3.18
The total beliefs about medication compliance		23-50	37.62 ± 5.44
Subscales	Benefits subscale	8-21	15.27 ± 2.90
	Barriers subscale	7-30	22.34 ± 4.25
The total perception of hospital experience with nursing care		27-75	52.12 ± 9.46

SD, standard deviation, Min., minimum value, Max., maximum value.

had diabetes, and 63.4% of them were using anticoagulants (Table 1).

The mean total ACIS score of patients was 73.47 ± 7.52 . Physical adaptation subscale mean score was 33.51 ± 4.50 , social adaptation subscale mean score was 18.73 ± 3.04 and psychological adaptation subscale mean score was 21.22 ± 3.18 . The total score of BMCS was 37.62 ± 5.44 . Benefits subscale mean score was 15.27 ± 2.90 and barriers subscale mean was 22.34 ± 4.25 . The total mean score of PPHEN was 52.12 ± 9.46 (Table 2).

A weak correlation was found between patients' perception of hospital experience with nursing care and their compliance to chronic disease and medication. There was a positive correlation between patients' perception of nursing care and the physical adaptation subscale of ACIS ($r=0.282$; $P = .004$) and a negative correlation with the social adaptation subscale ($r=-0.206$; $P = .039$). Also, there were negative correlations between the perception of nursing care and barrier subscale of BMCS ($r=-0.320$; $P = .001$) (Table 3).

Discussion

To our knowledge, this is the first study that examines the relationship between the HT patients' perception of nursing care with their compliance to chronic diseases and medication. Our main and first finding was the fact that most of the patients were still smoking and not doing exercises although the mean

duration of illness of HT patients was pretty long. As a secondary finding, patients' perception of nursing care was quite high. At the same time, it was determined that their psychological compliance was low even though the patients were generally well-adapted to chronic diseases. It was determined that medication compliance was moderate, their perceptions of benefits about medication were low and the perception of the barrier was high. Hypertension is generally known as a middle-advanced age disease with comorbidities.¹⁶ Although HT is more common in men at an early age, the incidence increases in women at a later age with a decrease in the hormone estrogen, especially in post-menopausal women.¹⁷ The fact that the mean age of patients in the study group was 62.40 ± 12.39 years and the majority of them were male is similar to the literature. Chronic diseases such as HT are a significant public health problem in developing and developed countries. Causes such as increased calorie intake, insufficient physical activity, and smoking increase the incidence and mortality of cardiovascular diseases.¹⁸ It was observed in this study that the majority of patients were smoking and not doing exercises despite their existing comorbidities. It was reported that the prevalence rates of a study that held in Turkey for 2003 and 2012 were compared (31.8% and 30.3% respectively), the prevalence has not been changed in spite of the efforts of the Ministry of Health to increase the awareness of the patients.¹⁹ Although countries try to raise awareness for being healthy, National Health Interview Survey also reports that the participation of adults in physical activity decreased from 40.2% in 2005

Table 3. Correlations of Patients' Perception of Hospital Experience with Nursing Care and Beliefs about Compliance to Chronic Diseases and Medication Scales (n=101)

	ACIS Subscales			BMCS Subscales				BMCS (Total)
	Physical adaptation	Social adaptation	Psychological adaptation	ACIS (Total)	PPHEN (Total)	Benefits subscale	Barriers subscale	
PPHEN (Total) P^*	.004	.039	.087	.114	-	.255	.001	.058
r	0.283	-2.206	0.171	0.158	-	0.114	-1.320	-3.189

*Pearson correlation was used. $P < 0.05$ is shown in bold.

ACIS, Adaptation to Chronic Illness Scale; PPHEN, Scale of Patient Perception of Hospital Experience with Nursing Care; BMCS, Beliefs about Medication Compliance Scale.

to 25.9% in 2017.²⁰ The fact that the participants still smoke and do not exercise despite their existing diseases gives rise to think that the studies conducted to raise awareness in the society do not raise awareness in terms of protection from cardiovascular diseases.

Nursing is a learned profession that is consisted of science and art, responsible for planning, organizing, and evaluating the nursing services for the protection and improvement of individuals and community health care and for recovering in the case of illness.²¹ As in other professions, quality is indispensable in the nursing. Quality in health or patient satisfaction is used as a concrete data to evaluate the quality of nursing care.²² The quality of health care is related to the satisfaction of nursing care. The role of the nurse is significant especially in the management of chronic diseases such as HT.²³ Hypertension is a disease in which social and psychological support is important. Social support is an important factor for achieving better compliance with drug therapies and better outcomes in patients with HT.²⁴ Another study carried out with hypertensive patients suggested developing strategies to increase family support for the purpose of controlling HT.²⁵ In the same way to lower blood pressure in HT with nursing care, at a reasonable cost and without any side effects.²⁶ Health professionals, and particularly nurses, are known to have a great potential in providing support to patients during treatments.²⁷

In this study, it was found that patients' perception of nursing care was high. It was reported that this rate was also high in the studies to evaluate the perceptions of nursing care in Turkey.²⁸ In the studies conducted in other countries, there are studies stated that the perception and satisfaction of nursing care are low or high.²⁹ Although patient satisfaction varies depending on many reasons, it can also be affected by characteristics such as race and ethnic group. For example, Asian, American, and Native American patients report less patient satisfaction than the white race.³⁰ The fact that our patients' perceptions of nursing care were high can be attributed to the difference in their cultural characteristics.

Even though nursing care perception is related to patient satisfaction, it is a complex process. The nursing care perception of the patients changes according to their personal characteristics, expectations from the institution or service. In various conducted studies, it was reported that the patients' perception of nursing is affected by their social status, education level, traditional and cultural characteristics.³¹ In general, a low level of education reduces expectations and increases satisfaction. The fact that 59.4% of patients in this study were graduated from primary and secondary school education may be a reason that increases nursing care satisfaction. Adherence to treatment is defined as the continuation of a patient to treat for 12 months from the start of the diagnosis. Compliance with treatment in chronic diseases is crucial for preventing complications.³² As with other diseases, patients with HT may experience medication compliance problems. These problems arise from the reasons such as patients' disbelief that the treatment will be beneficial, forgetting, or lack of communication between patients and healthcare professionals.³³ Apart from these reasons, having uncontrolled HT

was also reported to increase medication compliance.³⁴ The fact that the perception of patients participating in the study was high suggests that the problems in medication compliance do not depend on nursing care. On the other hand, controlled blood pressure may increase the perception of disability in medication compliance.

In addition to the above-mentioned characteristics of the patients, getting respect and love from the nurse, the feeling that they are with them when there is a need and receiving clear and satisfying information may also affect this perception.³⁵ However, in the study of pain management in the obstetric and orthopedic clinic, patients stated that they were satisfied with nursing practices even though they waited 30 minutes longer in the assessment of pain and analgesic application.³⁶ It is understood that it is not possible to explain patient satisfaction in terms of nursing for a single reason. Moreover, it was found that there was a negative relationship between the nursing care perceptions of patients in our study and their social adaptations to the disease. In chronic diseases such as HT, it is essential to determine a certain lifestyle in order to control the disease. Patients may experience a stressful life and experience various emotional problems because of this. Alexithymia is common in patients with HT. Alexithymia is defined as a difficulty in recognizing and expressing emotions and is frequently seen in patients with HT.³⁷ Alexithymic individuals are uncompanionable in their interpersonal relationships and find it difficult to social adaptation. As their social anxiety increases, it becomes difficult for them to cope, and it is difficult for them to get social support.³⁸ Along with the high anxiety and lack of social support leading to HT, alexithymia is frequently encountered in HT patients. In a study with coronary heart patients, it was stated that a negative correlation was found between alexithymia and social support.³⁹ Moreover, in the study conducted in Turkey with HT and asthma patients, it was reported that alexithymia characteristics of HT patients were higher than that of asthma patients.⁴⁰ It was considered that the negative correlation between the nursing care perception and social adaptations of patients in this study group may depend on the alexithymia characteristics.

Limitations

The research was carried out with HT patients treated in a training and research hospital only. Therefore, it is not possible to generalize the results obtained to all HT patients. In future studies, it is recommended to conduct both qualitative and quantitative studies oriented to other factors affecting the perception of HT patients in nursing care together.

Conclusions

In this study, the relationship between patients' perception of nursing care and their compliance with chronic disease and medication was determined. A positive correlation between the patients' perceptions of nursing care and the physical adaptation subscale of ACIS and a negative correlation between the social adaptation subscales were found. Furthermore, a negative correlation was found between perception of nursing care and barrier subscale of BMCS and total BMCS score. It was determined that the HT patients'

perception of nursing care was affected by the disease and medication compliance.

Ethics Committee Approval: Ethical committee approval was received from the Ethics Committee of Haliç University, (Date: October 30, 2019, Decision No:166).

Informed Consent: Written informed consent was obtained from all participants who participated in this study.

Peer-review: Externally peer-reviewed.

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