Ozpancar, Nurhan; Cinar Pakyuz, Sezgi; Topcu, Birol
Hypertension management: what is the role of case management?

Hypertension management: what is the role of case management?

Manejo da hipertensão: qual é o papel do manejo de caso?

Manejo de la hipertensión: ¿cuál es el papel del manejo de caso?

Nurhan Ozpancar[1], Sezgi Cinar Pakyuz[2], Birol Topcu[3]

[1] Namık Kemal University, School of Health, Department of Nursing, Tekirdag, Turkey.

[2] Celal Bayar University, School of Health, Department of Nursing, Manisa, Turkey.

[3] Namık Kemal University, School of Medicine, Department of Biostatistics, Tekirdag, Turkey.

ABSTRACT

Objective: The aim of this study was to determine the effect of case management on hypertension management and on adherence to antihypertensive medication and chronic disease care of patients with hypertension. **Method:** This study was conducted as an experimental and randomized controlled study. The sample of the study consisted of randomly selected patients with hypertension who did not have communication problems, who used antihypertensive medication treatment and whose treatment had been continuing for at least six months. The study group was given individual training (Hypertension causes, the risk factors, significance, unwanted side effects, medication treatment, changes in life style) and was applied case management model in hypertension – joint care protocol but no intervention was offered to the control group. Data was collected using the adherence to antihypertensive medication scale, the patient assessment of chronic illness care in the first and six months later interview. **Results:** There was no significant difference between the study and control group according to adherence to antihypertensive medication and patient assessment of chronic illness care in the first interview. Otherwise, there were significant differences between the study and control group according to blood pressure, adherence to antihypertensive medication and patient assessment of chronic illness care in the six months later interview. The adherence to antihypertensive medication total score and the patient assessment of chronic illness care total score were significantly higher in the study group compared with control group in the six months later interview. **Conclusion:** The case management plays an important role the in control of hypertension, and can improve adherence to antihypertensive medication and chronic illness care.

DESCRIPTORS

Hypertension; Chronic Disease; Adherence Medication; Case Management; Nursing Care.

Corresponding author:
Nurhan Ozpancar
Namık Kemal University,
School of Health, Department of Nursing,
Namık Kemal Mah. Kampus Cad. No: 1 59030
Tekirdag, Turkey
nurhan25@hotmail.com

INTRODUCTION

Hypertension is one of the leading global risk factors for disease load and mortality. Hypertension causes death in 6% of the total population, in other words approximately 7.6 million individuals. If untreated, it can shorten life, and become a major risk factor for coronary, cerebral, renal and vascular diseases[1]. Keeping hypertension under control using pharmacological or non-pharmacological approaches requires individuals to adhere to their treatment, and to make various lifestyle changes. Individuals also need to learn how to live with this chronic condition along with the symptoms and inadequacies it brings, so that they may better control its effects. Worldwide, as well as in Turkey, one of the most important factors preventing blood pressure control beyond 25% is patient non-adherence to treatment[2]. Non-adherence may start with avoidance of medicinal treatment and not taking his/her prescriptions. Not attending the clinic regularly for control, as well as continuing unhealthy habits such as smoking, insufficient physical activity, excess calorie intake, a diet rich in fat and sodium, are the most common and important forms of non-adherence[3].

Hypertension is a chronic disease whose treatment takes a very long time. To enable individuals to cope with their new situation, it is very important they are taught how to adapt[4]. Since the treatment of hypertension is a continuous process, the development and maintenance of healthy lifestyle behaviours requires management of a case basis, covering long-term support and advice[5]. Effective case management will not only ensure adherence to the treatment, but also the control of the disease and its symptoms, the reduction of emergency visits and hospitalizations, the reduction of disease-related physiological and psychological effects, and the improvement of the quality of life[5]. Nowadays, the fact that chronic diseases are increasing highlights the importance of chronic disease control and community-based disease management programs. Chronic disease control includes much more than just the treatment of a disease. Specifically, it comprises preparing and strengthening the patient, through various guidance methods, to have her/him acquire self-management skills. Although various models have been suggested for chronic disease control, the most widely known, as well as the one accepted as being the most effective, is the Chronic Care Model[6]. As a consequence of the ever increasing economic and social burden in chronic disease management, the chronic care model has been suggested as a way to improve the quality of care, while at the same time reducing the costs of care[6].

Currently, to ensure the proper care and adherence to treatment of patients, it is necessary to inform individuals with hypertension on the healthy lifestyle changes they need to make. This paces immense responsibilities on nurses, since it requires them to work in cooperation with all other healthcare personnel, such as physicians and dieticians. In the process of working on hypertension patients, the nurse must assume the role of case manager, as they are the health worker closest to the patient[7]. There are many studies in the literature evaluating healthy lifestyle behaviours for individuals with hypertension[7], the effect of the training given by the nurse regarding healthy lifestyle behaviors[4-7], the effect of proper adherence to antihypertensive medication treatment[4], and the effect of case management[8]. However, there are currently no studies assessing the effect of case management on patient adherence to antihypertensive medication and chronic disease care.

The first aim of this study was to determine the effect of case management on hypertension management. The second aim of this study was to determine the effect of case management on adherence to antihypertensive medication and chronic disease care of patients with hypertension.

METHOD

The study population for this randomized, controlled and experimental study consisted of individuals diagnosed with hypertension whose treatment/follow-up continued between February 2012 and January 2013 at the General Internal Medicine and Cardiology Outpatient Clinics, and who were prescribed with antihypertensive medication treatment. The sample of the study consisted of randomly selected 60 patients with hypertension who did not have communication problems, who used antihypertensive medication treatment and whose treatment/follow-up had been continuing for at least six months. These individuals were grouped into two, being 30 study patients and 30 control patients.

Study data was collected using patient identification form, the Scale for Adherence to Antihypertensive Medication and the Patient Assessment of Chronic Illness Care (PACIC) – Patient Form and the Case Management Model in Hypertension – Joint Care Protocol.

Patient Identification Form: This form, prepared by the researcher by reviewing the relevant literature, consists of 33 questions detailed to identify the daily habits of the individual with hypertension. It includes questions on variables relating to disease and metabolism, such as blood pressure, weight, and body mass index.

Scale for Adherence to Antihypertensive Medication Treatment: The Turkish validity and reliability of this scale developed in 2003 by Morisky et al. was conducted by Demirezen and Nahcivan in 2006[9]. The scale involves nine statements for identifying medicine use behaviour. The first eight questions are answered with either a Yes or No. In the present study, the Cronbach alpha coefficient of the scale was found to be 0.72.

Patient Assessment of Chronic Illness Care – Patient Form (PACIC): The Patient Assessment of Chronic Illness Care – Patient Form (PACIC) was developed by Glasgow et al., in 2005, in a study on chronic diseases, such as hypertension, arthritis, depression, diabetes, asthma[10]. The validity and reliability analysis of the Turkish form of the scale was conducted by Incirkus and Nahcivan in 2010[5]. The total score of the scale is the average of all 20 items. The lowest total score is 1, while the highest total score is 5. In the present study, the Cronbach alpha coefficient of the scale was found to be 0.70.

Case Management Model in Hypertension – Joint Care Protocol: The case management technique was used in the

follow-up of patients with hypertension. A joint care plan, hypertension care protocol (Clinical Pathway) and a care follow-up table for patients with hypertension were established by the researcher to be used in case management. The form was finalized after receiving approval from an expert. This form for patient follow-up includes variables related to general assessment, laboratory assays, medical treatment, hypertension management, and adherence to disease and the subject titles for training. In each section, there are three separate date columns. This way, both the researcher and the patient can see the results of the first interview, and the last interview and interpreting these can easily direct the follow-up. While the case management model and joint care protocol were used in the study group, the form was not used in the control group.

The 60 patients with hypertension were randomly divided into the study group (Group 1) and control group (Group 2). The two interviews were made with both groups.

First interview: The researcher explained the purpose and content of the study and the patients completed the patient information and consent form. The researcher completed the diagnosis form and the scale forms in face-to-face interviews. Height and weight measurements, the calculation of BMI, blood pressure and assessments of the heart pulse rate were made accordingly. Blood sampling for biochemistry and total blood count and urine for albuminuria was requested by the physician. The dietician was contacted and informed to make only weight follow-up for the control group.

The Case Management Model in Hypertension – Joint Care Protocol, prepared by the researcher for case management, was completed for the study group after the pre-assessment had been made. In addition, the dietician was contacted to ask for support in information concerning the weight measurements, close follow-up, and weight loss of the patients.

As a result of the case management analysis, individually customized hypertension training was given to the patients in the study group, in line with the needs of each patient. Guidance on the definition of hypertension, its causes, the risk factors, its significance, unwanted side effects, medication treatment, changes in life style (reducing body weight to normal, regular physical exercise, salt limitation, diet, smoking and alcohol intake), and the importance of blood pressure monitoring was given. Relaxing exercises were taught with the researcher doing them first and the patients copying.

After the session, the patients were given a hypertension training booklet. An appointment was made for six months later for the last interview. In addition, the researcher's contact details were also given to the patients, in case they had a question.

Last interview: In the last interview, blood pressures of all the patients in the study and control groups were measured, their heart pulse rates were calculated, and their weights were measured. The outpatient clinic physicians were contacted to request blood sampling for biochemistry and total blood count and urine for albuminuria.

After each patient interview, the dietician was contacted for a face-to-face interview to assess the weight loss of the patient together. The scales were again completed for the study and the control group. The hypertension care protocols of the patients were assessed, the third section of the care follow-up table was completed, and the hypertension management of the patients was assessed.

The restrictions of the study were not having a hypertension outpatient clinic at the center where the study was conducted, treating the patients with hypertension in the general internal medicine and cardiology outpatient clinics, not keeping the records and not following up the patients with hypertension.

For statistical analysis of the data obtained in the study, the SPSS 17.0 program was used. The data were expressed as frequency and mean ± standard deviation (SD). For comparisons of parametric data exhibiting normal distribution of the two groups, the Independent Samples t test was used; for comparison of those not exhibiting normal distribution, Mann Whitney U test was used. For in-group comparisons of parametric data exhibiting normal distribution, Paired Samples t test was used; in comparison of those not exhibiting normal distribution, Wilcoxon Signed Ranks test was used. In comparison of non-parametric data, chi-square test was used. The p value less than 0.05 was considered to show statistical significance.

Before starting the study, the necessary permission was obtained from the institution, along with the approval of the Non-invasive Clinical Studies Ethics Committee of the Health Research (under number: 2012/01/01/01) and Implementation Centre. The researchers who had conducted in Turkey the validity and reliability studies of the relevant scales used in the present study also their granted permission. Upon completion of the study, Hypertension Training and a training booklet were given to both the study group and control group – in line with the patients' rights defined in the principles of the Helsinki Declaration.

RESULTS

With respect to the socio-demographical particulars of the patients with hypertension in the study and control groups, there was no statistically significant difference between the ages, genders, education, marital status, and work of the groups (p>0.050) (Table 1).

Time from hypertension diagnosis was 7.06±5.89 years for the study group and 8.00±5.85 years for the control group, with no significant difference between the two groups (t_1= 0.61 and p=0 .541). It was observed in both groups that the majority of the patients did not diet with respect to hypertension and that they noticed their increasing blood pressure. There were no statistically significant differences between the two groups with respect to the presence of a disease other than hypertension, use of medication other than the hypertension medication, dieting, smoking, drinking alcohol, tea-coffee consumption, having symptoms of hypertension, noticing increasing blood pressure, having family members with hypertension and self-measurement of blood pressure (p>0.050), (Table 1).

Table 1 – Differences between the study and the control groups with respect to socio-demographical characteristics – Tekirdag, Turkey, 2012/2013.

Socio-demographical characteristics		Study group (n = 30)		Control group (n = 30)		Significance
		n	%	n	%	
Age (year)		54.50±11.14		51.83±10.29		t^1=0.962
						p =0.340
Gender	Male	10	33.3	9	30	χ^2 = 0.077
	Female	20	66.7	21	70	p =0.781
Education level	Literate	2	6.7	3	10	χ^2 = 0.868
	Primary sch.	15	50	17	56.7	p =0.929
	Secondary sch.	3	10	3	10	
	High sch.	6	20	4	13.3	
	University	4	13.3	3	10	
Marital status	Married	29	96.7	28	93.3	χ^2 = 0.351
	Single	1	3.3	2	6.7	p =0.554
Work	Working	5	16.7	6	20	χ^2 = 0.111
	Not working	25	83.3	24	80	p =0.739
Income-Expenditure Balance	Compensates	26	86.7	18	60	χ^2 = 6.026
	Partially compensates	3	10.0	11	36.7	**p =0.049***
	Does not compensate	1	3.3	1	3.3	

Note: (n=60). Chi-Square test and Independent Samples test were used.* $p < 0.05$.

In the study group, there was a statistically significant difference in the systolic and diastolic blood pressure between the first interview and the last interview ($p<0.001$, $p<0.001$), (Table 2). In the control group, there was a statistically significant difference in the systolic and diastolic blood pressure between the first follow-up and the second follow-up ($p <0.010$, $p <0.050$), (Table 2). While in the first follow-up, there was no statistically significant difference in the systolic and diastolic blood pressure between the study and control group ($p>0.050$), in the last follow-up there was a statistically significant difference in the systolic and diastolic blood pressure between the two groups ($p<0.010$), (Table 2).

While there was no statistically significant difference in the control group in the total score from the Scale for Adherence to Antihypertensive Medication ($p>0.050$), there was a statistically significant difference in the study group ($p <0.010$), (Table 3). There was a significant decrease in the scores from the Scale for Adherence to Antihypertensive Medication in the study group patients after hypertension training.

While there was no statistically significant difference in the first follow-up between the study and control group in the total score from the Scale for Adherence to Antihypertensive Medication ($p >0.050$), in the last follow-up, a statistically significant difference in favour of the study group was found ($p <0.010$) (Table 3).

Table 2 – Differences between the groups and within the group in the first and the last interview with respect to systolic and diastolic blood pressures – Tekirdag, Turkey, 2012/2013.

		First Interview mean±SS	Last Interview mean±SS	Significance	
Systolic Blood Pressure (mm/Hg)	Study Group (n=30)	136.16±17.60	117.50±9.80	Z=-4.26	**p =0.000***
	Control Group (n=30)	141.33±19.95	129.66±15.80	Z=-2.676	**p =0.007**
	Significance	U=380.50	U=227.00		
		p =0.296	**p = 0.001**		
Diastolic Blood Pressure (mm/Hg)	Study Group (n=30)	87.66±10.88	77.50±9.44	Z=-3.80	**p =0.000***
	Control Group (n=30)	89.83±14.41	84.50±12.05	Z=-2.196	**p=0.028***
	Significance	U=362.00	U=236.50		
		p =0.182	**p =0.001**		

Note: (n=60). Wilcoxon Signed Ranks test and Mann-Whitney U test were used.*$p<0.05$,**$p<0.01$, ***$p <0.001$.

Table 3 – Differences between the groups and within the group in the first and last interview with respect to total score from the Scale for Adherence to Antihypertensive Medication – Tekirdag, Turkey, 2012/2013.

		First Interview mean±SS	Last Interview mean±SS	Significance	
Adherence to Antihypertensive Medication Scale Total score	Study Group (n=30)	5.50±2.43	3.77±1.19	Z=-3.344	**p =0.001****
	Control Group (n=30)	6.23±2.49	5.80±2.43	Z=-1.483	p =0.138
	Significance	U=371.5	U=203.5		
		p =0.241	**p =0.000*****		

Note: (n=60). Wilcoxon Signed Ranks test and Mann-Whitney U test were used. **p <0.01, ***p <0.001.

While there was no statistically significant difference in the control group in the total score from the Patient Assessment of Chronic Illness Care and the scores from the scale sub-dimensions between the first follow-up and the second follow-up (p >0.050), there was a statistically significant difference in the study group (p <0.001), (Table 4).

Between the study and control group, in the first and second follow-up, there was a statistically significant difference in the total score from the Patient Assessment of Chronic Illness Care (p<0.050 and p<0.001), (Table 4).

While the first follow-up the total score from the Patient Assessment of Chronic Illness Care was significantly higher in the study group compared with the control group, in the last interview it was observed that this difference had increased in favour of the study group. Between the study and control group, in the first follow-up and the second follow-up there was a statistically significant difference in the total score from the patient participation sub-dimension of the Patient Assessment of Chronic Illness Care (p<0.050 and p<0.001), (Table 4).

Table 4 – Differences between the groups and within the group in the first and the last interview with respect to total score from the Assessment of Chronic Illness Care Scale – Tekirdag, Turkey, 2012/2013.

Assessment of Chronic Disease Care Scale		First Interview mean±SS	Last Interview mean±SS	Significance	
Total Scale score	Study Group (n=30)	1.11±0.17	5.00±0.00	Z=-4.890	**p =0.000****
	Control Group (n=30)	1.02±0.05	1.00±0.00	Z=-1.604	p =0.109
	Significance	U=294.0	U=0.00		
		p =0.003**	**p =0.000*****		
Patient Participation	Study Group (n=30)	1.28±0.67	5.00±0.00	Z=-5.103	**p =0.000****
	Control Group (n=30)	1.00±0.00	1.00±0.00	Z=0.000	p =1.000
	Significance	U=360.0	U=0.00		
		p =0.011*	**p =0.000*****		
Health care services Delivery plan/Support in Decision Making	Study Group (n=30)	1.27±0.43	5.00±0.00	Z=-4.993	**p =0.000****
	Control Group (n=30)	1.07±0.27	1.00±0.00	Z=-1.342	p =0.180
	Significance	U=346.5	U=0.00		
		p =0.023*	**p =0.000*****		
Goal setting/Guidance	Study Group (n=30)	1.05±0.14	5.00±0.00	Z=-5.150	**p =0.000****
	Control Group (n=30)	1.02±0.11	1.00±0.00	Z=-1.000	p =0.317
	Significance	U=392.0	U=0.00		
		p =0.099	**p =0.000*****		
Problem/Solving	Study Group (n=30)	1.06±0.14	5.00±0.00	Z=-5.150	**p =0.001****
	Control Group (n=30)	1.00±0.00	1.00±0.00	Z=0.000	p =1.000
	Significance	U=375.0	U=0.00		
		p =0.021*	**p =0.000*****		
Follow-up/ Coordination	Study Group (n=30)	1.01±0.07	5.00±0.00	Z=-5.396	**p =0.000****
	Control Group (n=30)	1.00±0.00	1.00±0.00	Z=0.000	p =1.000
	Significance	U=435.0	U=0.00		
		p =0.317	**p =0.000*****		

Note: (n=60). Wilcoxon Signed Ranks test and Mann-Whitney U test were used. * p <0.05 ***p <0.001.

Between the study and control group, in the first and second follow-up, there was a statistically significant difference in the total score from the healthcare delivery plan / decision support sub-dimension ($p<0.050$ and $p<0.001$), (Table 4). While in the first follow-up in the total score from the goal setting/guidance sub-dimension there was no statistically significant difference between the study and control group ($p>0.050$), in the last follow-up there was a statistically significant difference in the total score from the goal setting/guidance sub-dimension between the study and control group ($p<0.001$), (Table 4).

Between the study and control group, in the first and second follow-up, a statistically significant difference in the total score from the problem solving sub-dimension was found ($p <0.050$ and $p<0.001$), (Table 4). While in the first follow-up in the total score from the follow-up/coordination sub-dimension there was no statistically significant difference between the study and control group ($p>0.050$), in the last follow-up there was a statistically significant difference ($p<0.001$), (Table 4).

DISCUSSION

One of the most effective factors in hypertension is excessive salt intake in the diet. In the present study, it was determined that most of the patients did not restrict either their diets or salt intake. In other studies on individuals with hypertension, it was found that adherence to the recommended diet was not at the desired level for most of them[3,11-13]. In another study with 500 hypertension patients (300 female and 200 male), in parallel to the findings of the present study, it was observed that majority of the participants (93.6%) continued to eat salty foods and did not have a special diet for hypertension[14]. In another study with 112 hypertension patients (73 female and 39 male), it was reported that the patients did not restrict salt because they could not get used to eating without salt (19.6%)[15]. Another study determined a hypertension prevalence of 32.1%, among patients who say they use normal or small amounts of salt in meals, and a hypertension prevalence of 52.7%, among patients who say that they use large amounts of salt. It is known that salt intake is a cause of hypertension, or that it at least increases the severity of hypertension; restricting salt intake is thus essential for controlling hypertension[16]. In another study, the relationship between hypertension and amount of salt intake was defined and it was reported that hypertension was not observed when salt intake is below 1.76 g/day and that the prevalence is 20% when salt intake is about 10 g/day. Accordingly, it is reported that the minimal effect dose of salt causing hypertension is about 1.76 g/day[16]. These findings demonstrate that it is necessary to inform the patients with hypertension on the importance of a salt-restricted diet and how to apply it. Such training cannot be given by the physician due to the excessive number of patients in outpatient clinics and the lack of sufficient time, which is why they could be provided by trained nurses instead. Thus, the lack of nurses who can educate patients in outpatient clinics leads to issues in the proper training and follow-up of hypertensive patients, which in turn results in

treatment failure. It is suggested that, especially in outpatient clinics, trained nurses are employed to carry out the guidance and follow-up of patients with hypertension.

Although important progress has been made in the control of hypertension, adequate blood pressure control can still not be ensured in 50.0 to 75.0% of patients. In international and Turkish guidelines on preventing detecting, assessment and treatment of high blood pressure, the importance of change of life style and adherence to medication and treatment is being emphasized[17]. However, one of the most important problems in the control of hypertension is the low rate of the patients who adhere to treatment. It is reported that adherence to long-term treatment is lower than 50%[2]. It is reported that adherence to treatment is very important in the control of the disease, and that the adherence of patients to treatment might be increased by applying training and follow-up programs[18]. In a study made to investigate the adherence to medicinal treatment among Turks living in Turkey and in Germany, it is reported that the rate of non-adherence is 8% in Turkey and 37.6% in Germany. The rate of non-adherence and the adherence score was found to be high in the group living in Germany. In addition to an increasing level of non-adherence an increase in the systolic and diastolic blood pressures was also observed[9].

A quasi-experimental study to determine the effect of an education program on lifestyle changes and compliance with drug treatment with 45 hypertension patients was demonstrated that adherence to medical treatment can be increased by providing guidance to patients with hypertension[4]. Methods that will help increase adherence include: informing the patient verbally and in writing, encouraging the patient to adhere to the treatment, minimizing the dose and number of tablets, choosing medication with good tolerability, choosing low cost medication as far as possible, and ensuring that the family also adheres to the treatment regime[19]. In another study with 194 hypertension patients (144 female, 50 male) is emphasized that about one third of hypertensive patients have bad adherence to treatment and they must be taught and monitored with respect to their use of medication[11]. In the present study, while there is no statistically significant difference in the control group in the total score from the Scale for Adherence to Antihypertensive Medication in the first and second follow-up, there was a significant difference in the in the study group. Parallel to the information from the literature, it was determined that adherence to antihypertensive medication significantly increased in the study group with case management. These findings are important in demonstrating the effectiveness of the guidance delivered by the nurse to hypertensive patients.

The main reasons for not using the hypertension medication regularly include the lack of an appropriate trust relationship between the patient and the physician, insufficient information given to the patient concerning the conditions that may arise due to hypertension, a general wish not to use medication, refraining due to side effects, not wanting to make daily life difficult and not having a sufficiently strong desire to treat himself/herself[20].

In the present study, the reason for non-adherence was investigated in the study group patients, and each patient was individually assessed to identify their problems in taking medication, using the case management form. For patients who did not take their medications regularly, due to reasons such as not knowing the importance of using medication or thinking that it would cause addiction, the issue was highlighted in the guidance, to explain the importance of regular medication use. At the end of the study, while there was no statistically significant difference in the total score from the Scale for Adherence to Antihypertensive Medication between the study and the control group in the first follow-up, in the second follow-up there was a statistically significant difference in favour of the study group. This finding demonstrates the importance of investigating the reasons given by hypertensive patients for their non-adherence to medication and to provide solutions specific to the patient and thus, the importance of case management.

In the management of chronic diseases that are commonly diagnosed in patients, it must be ensured that they actively participate in their own care, are comprehensively informed, and receive support for self-management. If a more suitable treatment and follow-up plan is planned for the patients, it can be possible to expect an improvement in care outcomes and quality, as well as an increase in patient satisfaction[21]. The Patient Assessment of Chronic Illness Care, developed on the basis of the chronic care model, is a scale that provides chronic patients with the opportunity to assess the care they receive themselves and considers the care delivered by the physician, nurse and other care personnel as a team approach[10]. In the present study, conducted using the Patient Assessment of Chronic Illness Care Scale, while there was no significant difference in the total scale score in the control group between the first and second follow-up, there was a significant difference in the study group. The hypertension training provided to the patients of the study group, and the case management applied, had a positive effect on the way the patients coped with the chronic disease, and thus, there were significant increases in the total score of the Patient Assessment of Chronic Illness Care Scale for the patients in the study group, compared with that of the control group.

While the total score from the Patient Assessment of Chronic Illness Care Scale was found to be significantly higher in the first follow-up for the study group, compared with the control group, in the last interview this difference had further increased. Similar results were obtained in the dub-dimensions of the Patient Assessment of Chronic Illness Care Scale. While there was no significant difference between the first and last follow-up with respect to the scores from the patient participation, the patient participation healthcare delivery plan / decision support, the goal setting/guidance, the problem solving and the follow-up/coordination sub-dimensions, there was a significant difference in the study group[10].

In the study[22], a case management model was applied by pharmacists to patients with hypertension. Also blood pressure measurement applied at home. Home blood pressure tele monitoring and pharmacist case management achieved better blood pressure control compared with usual care during 12 months of intervention that persisted during 6 months of post intervention follow-up. As a result of the 12-month follow-up, it was concluded that case management was effective in reducing blood pressure.

CONCLUSION

The outcomes of the present study support the information given in the literature. Positive improvement regarding chronic disease management was ensured in the study group patients, who were monitored closely through hypertension guidance and case management.

It was observed that as a result of case management a significant decrease in blood pressure occurred in individuals with hypertension, that adherence to treatment increased, and that chronic disease care improved. Based on these findings, it is maintained that the case management model, implemented by nurses for hypertension management and adherence to treatment, can be used as an effective model.

RESUMO

Objetivo: Determinar o efeito do manejo de caso sobre o manejo da hipertensão e sobre a adesão à medicação anti-hipertensiva e à assistência às doenças crônicas de pacientes com hipertensão. **Método:** Estudo experimental, controlado e randomizado. A amostra consistiu de pacientes com hipertensão, selecionados aleatoriamente, que não tivessem problemas de comunicação, usassem tratamento com medicação anti-hipertensiva e cujo tratamento estive sendo realizado por pelo menos seis meses. Foi dado treinamento individual ao grupo de estudo (causas da hipertensão, fatores de risco, significância, efeitos colaterais indesejados, tratamento medicamentoso, mudanças no estilo de vida) e foi aplicado modelo de manejo de caso em hipertensão – protocolo de assistência coletiva, mas nenhuma intervenção foi oferecida ao grupo de controle. Os dados foram coletados usando a adesão à escala de medicação anti-hipertensiva, a avaliação do paciente para a assistência às doenças crônicas na primeira entrevista e na de depois de seis meses. **Resultados:** Não houve diferença significativa entre o grupo de estudo e o grupo de controle no que se refere à adesão à medicação anti-hipertensiva e à avaliação do paciente para assistência às doenças crônicas na primeira entrevista. No entanto, houve diferenças significativas entre o grupo de estudo e o grupo controle no que se refere à pressão sanguínea, adesão à medicação anti-hipertensiva e avaliação do paciente para assistência às doenças crônicas na entrevista de depois de seis meses. O score total de adesão à medicação anti-hipertensiva e o score total de avaliação do paciente para assistência às doenças crônicas foram significativamente maiores no grupo de estudo comparados com o grupo de controle na entrevista de após seis meses. **Conclusão:** O manejo de caso tem um papel importante no controle da hipertensão e pode melhorar a adesão à medicação anti-hipertensiva e a assistência às doenças crônicas.

DESCRITORES

Hipertensão; Doença Crônica; Adesão à Medicação; Administração de Caso; Cuidados de Enfermagem.

RESUMEN

Objetivo: Determinar el efecto del manejo de caso sobre el manejo de la hipertensión y la adhesión a la medicación antihipertensiva y a la asistencia a las enfermedades crónicas de pacientes con hipertensión. **Método:** Estudio controlado, randomizado y experimental. La muestra consistió de pacientes con hipertensión seleccionados aleatoriamente, quienes no tenían problemas de comunicación, usaban tratamiento con fármacos antihipertensivos y cuyo tratamiento se estaba realizando durante por lo menos seis meses. Se proporcionó entrenamiento individual al grupo de estudio (causas de la hipertensión, factores de riesgo, significación, efectos colaterales indeseados, tratamiento medicamentoso, cambios en el estilo de vida) y fue aplicado modelo de manejo de caso en hipertensión –protocolo de acción colectiva, pero ninguna intervención fue ofrecida al grupo control. Los datos fueron recogidos utilizándose la adhesión a la escala de medicación antihipertensiva, la evaluación del paciente para asistencia a las enfermedades crónicas en la primera entrevista y en la entrevista de después de seis meses. **Resultados:** No hubo diferencia significativa entre el grupo de estudio y el grupo control en lo que se refiere a la adhesión a la medicación antihipertensiva y la evaluación del paciente para la asistencia a las enfermedades crónicas en la primera entrevista. Sin embargo, hubo diferencias significativas entre el grupo de estudio y el grupo control en lo que se refiere a la presión sanguínea, adhesión a la medicación antihipertensiva y evaluación del paciente para la asistencia a las enfermedades crónicas en la entrevista tras seis meses. El puntaje total de la adhesión a la medicación antihipertensiva y el puntaje total de la evaluación del paciente para asistencia a las enfermedades crónicas fueron significativamente mayores en el grupo de estudio comparados con el grupo control en la entrevista tras seis meses. **Conclusión:** El manejo de caso juega un rol importante en el control de la hipertensión y puede mejorar la adhesión a la medicación antihipertensiva y a la asistencia a las enfermedades crónicas.

DESCRIPTORES

Hipertensión; Enfermedad Crónica; Cumplimiento de la Medicación; Manejo de Caso; Atención de Enfermería.

REFERENCES

1. Park YH, Chang H, Kim J, Kwak JS. Patient-tailored self-management intervention for older adults with hypertension in a nursing home. J Clin Nurs. 2012;27(5-6):710-22. DOI: http://dx.doi.org/10.1111/j.1365-2702.2012.04236.x

2. Hacıhasanoglu R. Treatment compliance affecting factors in hypertension. TAF Prev Med Bull. 2009;8(2):167-72.

3. Uzun S, Kara B, Yokusoglu M, Arslan F, Yılmaz MB, Karaeren H. The assessment of adherence of hypertensive individuals to treatment and lifestyle change recommendations. Anadolu Kardiyol Derg. 2009;9(2):102-9.

4. Irmak Z, Duzoz GT, Bozyer I. Effect of an education programme on the lifestyle change and compliance to drug therapy of hypertensive patients. J Hacettepe Univ School Nurs [Internet]. 2007 [cited 2017 Feb 22];39-47. Available from: http://www.hacettepehemsirelikdergisi.org/pdf/pdf_HHD_37.pdf

5. Incirkus K, Nahcivan NO. A guide for chronic disease management: the chronic care model. FN Hem Derg. 2015;23(1):66-75. DOI: http://dx.doi.org/10.17672/fnhd.49483

6. Beaglehole R, Jordan EJ, Patel V, Chopra M, Ebrahim S, Kidd M. Improving the prevention and management of chronic disease in low-income and middle income countries: a priority for primary health care. Lancet. 2008;372(9642):940-9. DOI: http://dx.doi.org/10.1016/S0140-6736(08)61404-X

7. Drevenhorn E, Bengtson A, Allen JK, Säljö R, Kjellgren KI. Counselling on lifestyle factors in hypertension care after training on the stages of change model. Eur J Cardiovasc Nurs. 2007;6(1):46-53. DOI: http://dx.doi.org/10.1016/j.ejcnurse.2006.03.007

8. Carter BL, Bosworth HB, Green BB. The hypertension team: the role of the pharmacist, nurse, and teamwork in hypertension therapy. J Clin Hypertens. 2012;14(1):51-65. DOI: http://dx.doi.org/10.1111/j.1751-7176.2011.00542.x

9. Mert H, Ozcakar N, Kuruoglu E. A multidisciplinary special study module research: treatment compliance of patients with hypertension. Türk Aile Hek Derg. 2011;15(1):7-12.

10. Glasgow RE, Wagner EH, Schaefer J, Mahoney LD, Reid R, Greene SM. Development and validation of the Patient Assessment of Chronic Illness Care (PACIC). Med Care. 2005;43(5):436-44.

11. Cingil D, Delen S, Aksuoğlu A. Evaluation of compliance and level of knowledge of patients with hypertension living in Karaman City Center, Turkey. Turk Kardiyol Dern Ars. 2009;37(8):551-6.

12. Ahn S, Zhao H, Smith ML, Ory GM, Phillips CD. BMI and lifestyle changes as correlates to changes in self-reported diagnosis of hypertension among older Chinese adults. J Am Soc Hypertes. 2011;5(1):21-30. DOI: http://dx.doi.org/10.1016/j.jash.2010.12.001

13. Ozturk A, Aykut M, Gunay O, Gun I, Ozdemir M, Cıtıl R, et al. Prevalence and factors affecting of hypertension in adults aged 30 years and over in Kayseri province. Erciyes Tip Dergisi. 2011;33(3):219-28.

14. Gunal SY, Gunal AL. The factors preventing to obtain normal blood pressure in hypertensive patients using antihypertensive medications. Ege Tıp Derg. 2010;49(1):13-8.

15. Tokem Y, Tascı E, Yılmaz M. Investigation of disease management of individuals with hypertension at home. Turk J Card Nurs. 2013;4(5):30-40. DOI: http://dx.doi.org/10.5543/khd.2013.004

16. Kawano Y, Tsuchihashi T, Matsuura H. Report of the Working Group for Dietary Salt Reduction of the Japanese Society of Hypertension: assessment of salt intake in the management of hypertension. Hypertens Res. 2007;30(10):887-93. DOI: http://dx.doi.org/10.1291/hypres.30.887

17. James PA, Oparil S, Carter BL, Cushman WC, Dennison C, Handler J. 2014 evidence-based guideline for the management of high blood pressure in adults report from the panel members appointed to the Eighth Joint National Committee (JNC 8). JAMA. 2014;311(5):507-20. DOI: http://dx.doi.org/10.1001/jama.2013.284427

18. Cramer JA, Benedict A, Muszbek N, Keskinaslan A, Khan ZM. The significance of compliance and persistence in the treatment of diabetes, hypertension and dyslipidemia: a review. Int J Clin Pract. 2008;62(1):76-87. DOI: http://dx.doi.org/10.1111/j.1742-1241.2007.01630.x

19. Cakmak HA, Arslan E, Erdine S. Unmet needs in hypertension. Turk Kardiyol Dern Ars. 2009;37 Suppl 7:1-4.

20. Uzuner A, Akman M, Ünalan PC, Cifcili S. Perceptions and beliefs about hypertension and antihypertensive drugs in patients. Türk Aile Hek Derg. 2005;9(4):153-91.

21. Rothman AA, Wagner EH. Chronic illness management: what is the role of primary care? Ann Intern Med. 2003;138(3):256-61. DOI: http://dx.doi.org/10.7326/0003-4819-138-3-200302040-00034

22. Margolis KL, Asche SE, Bergdall AR, Dehmer SP, Groen SE, Kadrmas HM, et al. Effect of home blood pressure telemonitoring and pharmacist management on blood pressure control a cluster randomized clinical trial. JAMA. 2013;310(1):46-56. DOI: 10.1001/jama.2013.6549