www.sciencedirect.com/journal/journal-of-vascular-nursing

Effect of social support on the treatment adherence of hypertension patients

Gülcan Bahçeçioğlu Turan, PhD, Meyreme Aksoy, PhD, and Bahar Çiftçi, PhD

This descriptive study was conducted to determine the effect of social support on drug treatment adherence in patients with hypertension. The sample of this study consisted of 259 patients who met the research criteria, agreed to participate in the research, and admitted to the cardiology clinic of a university hospital in Turkey between January and June 2017. Data were collected by "Patient Information Form", "Adherence to Drug Treatment Self-Efficacy Scale", and "Multidimensional Perceived Social Support Scale". It was determined that 48.3% of the patients participating in the study were in the 61–75 age group, 58.7% were female, 91.9% were married, and 66.4% were living in the city. It was also found that 71% of the patients had at least one relative or person with hypertension in the family, 79.2% were using at least one blood pressure medication, 61% adhered to his/her diet, and 72.2% adhered to the disease. The average score of the Medication Adherence Self-Efficacy Scale was calculated as 64.24 ± 16.89, whereas the total score average of the Multidimensional Perceived Social Support Scale was calculated as 53.74 ± 23.30. Besides, a statistically significant positive correlation was found among Medication Adherence Self-Efficacy Scale score average, Multidimensional Perceived Social Support Scale total score, and all subgroup score averages (P = .000).In conclusion, in this study, treatment adherence and social support levels of the patients were found to be substantially good; besides, adherence to drug treatment was found to increase positively as the social support of patients with hypertension increase. (J Vasc Nurs 2018;37:46-51)

Hypertension represents a major public health problem worldwide due to its high prevalence and association with the risk of increased cardiovascular disease.[1] Hypertension is a condition characterized by increased arterial blood pressure with accompanying genetic and acquired factors and metabolic disorders. According to the World Health Organization, a systolic blood pressure higher than 140 mmHg and a diastolic blood pressure equal to or higher than 90 mmHg is defined as hypertension.[1,2]

Every year, approximately 17 million individuals die in the world due to cardiovascular reasons. Hypertension complications are the reason for 9.4 million of these deaths. High blood pressure is the reason for death in 45% of the hearth failure–related deaths and 51% of the stroke-related deaths.[1] Of the adult population in the world, 31.1% are hypertension patients according to 2010 data.[3] It was determined that hypertension prevalence was 30.7% in men and 28.8% in women,[4] and 1.39 billion individuals are estimated to be affected.[3] A hypertension prevalence study (PatenT2), conducted in Turkey in 2012, determined that hypertension prevalence was 28.4% in men and 32.3% in women, whereas the total prevalence was 30.3%.[5,6]

Adherence is the main factor in controlling blood pressure and is a key factor in maintaining and improving health of individuals with hypertension.[7] Adherence in the treatment of hypertension is defined as the level of patients' adherence with the recommendation of health professionals, including medication, admitting to appointments (controls) on time, adherence with diet, and lifestyle changes.[8] Despite the availability of effective treatment options, nonadherence is reported to be the main reason for not achieving the desired levels of blood pressure.[9]

Educating and informing the patient and his/her family is quite important to improve adherence with drug treatment. One of the most effective ways to improve adherence is the active participation of patients while taking decisions about treatment strategies.[9–11] It is stated in the literature that nurses and other health professionals have a great contribution in the improvement of adherence and implementation of lifestyle changes of the patients.[6-8] However, some studies reported that social support and interaction between patients and their family increases adherence to the treatment.[7,12–14] Adequate and improved social support positively affects treatment and adherence of the patients, accelerates the healing process, and increases the quality of life of patients by reducing social isolation.[12,15] The lack of family and social support leads to adjustment problems, difficulties in treatment, and prolongation of the recovery process.[12,14]

There is a growing need for studies to improve patient adherence and social support in terms of reducing treatment and care costs and improving quality of life. The review of relevant

From the Research Assistant, Department of Internal Medicine Nursing, Faculty of Nursing, Ataturk University, Erzurum, Turkey; Research Assistant, Department of Nursing Fundamentals, Faculty of Nursing, Ataturk University, Erzurum, Turkey; Assistant Professor, Department of Nursing Fundamentals, Faculty of Nursing, Ataturk University, Erzurum, Turkey.

Corresponding author: Meyreme Aksoy, Research Assistant, Department of Nursing Fundamentals, Faculty of Nursing, Ataturk University, Erzurum, Turkey. Tel.: +90 0442 231 57 98. (E-mail: meryeme_072@hotmail.com).

1062-0303/$36.00

https://doi.org/10.1016/j.jvn.2018.10.005

literature shows that there are studies investigating the relationship between drug adherence and social support. However, these studies have been conducted mostly with other disease groups. In this study, it was aimed to determine the relationship between drug treatment adherence and social support of individuals with hypertension, which is an important health problem in Turkey.

MATERIALS AND METHODS

Type of study

This descriptive study was conducted to determine the relationship between drug treatment adherence in patients with hypertension and social support.

Study population and sampling

The study population consisted of all patients diagnosed with hypertension at least 1 year ago and admitted for treatment in the Cardiology Clinic of Atatürk University Health Research and Application Center between October 2016 and June 2017. The study sample consisted of 18-year-old or older patients with hypertension for at least one year and admitted to the Cardiology Clinic of Atatürk University Health Research and Application Center at these dates and those who agreed to participate in the study, had their treatment started, had no advanced chronic renal failure, heart failure, and any communication problems.

Data collection

Data-collection instruments. "Patient Information Form", "Medication Adherence Self-Efficacy Scale" (MASES), and "Multidimensional Perceived Social Support Scale" (MSPSS) were used to collect data.

Patient information form—The patient information form contains personal and disease-related variables. The personal characteristics consist of five questions including age, gender, marital status, educational status, place of residence, income status, social security status, and employment status. Disease-related items consist of ten questions on the year of hypertension diagnosis, year of treatment, presence of hypertension in the family, regularity of health checks, adherence with the disease, hospitalization due to hypertension, number of hypertension drugs used daily, feeling of increased blood pressure, accompanying chronic disease, and adherence to diet.

Medication adherence self-efficacy scale—MASES was developed by Ogedegbe et al[16] in 2003 on a hypertensive American sample, revised and revalidated in 2008 by Farnandez et al[17] on a hypertensive American sample, and Cronbach's alpha coefficient was calculated as 0.95. Turkish validity and reliability of the scale was analyzed by Gözüm and Hacıhasanoğlu[18] in 2009, and Cronbach's alpha coefficient was calculated as 0.92. Cronbach's alpha coefficient was calculated as 0.98 in this study. MASES is used to determine medication adherence self-efficacy of hypertensive patients. MASES consists of 26 items that evaluate the factors affecting patients' regular use of antihypertensive drugs. The total score obtained ranges from 26 to 78. The increase in score indicates that the individual's adherence with the antihypertensive drug treatment is good.

Multidimensional perceived social support scale—MSPSS is developed by Zimet et al[19] in 1988, and Cronbach's alpha coefficient was found to be between 0.85–0.91. Turkish validity and reliability of the scale was analyzed by Eker and Arkar in 2001, and

TABLE 1

SOCIODEMOGRAPHIC CHARACTERISTICS OF THE PARTICIPANTS

Sociodemographic characteristics (n = 259)	*Data*
Age, years, minimum-maximum (mean ± standard deviation)	24–102 (64.94 ± 11.57)
Age group, N (%)	
30–45	14 (5.4)
46–60	75 (29)
61–75	125 (48.3)
76–90	45 (17.4)
Gender, N (%)	
Female	152 (58.7)
Male	107 (41.3)
Marital status, N (%)	
Single	21 (8.1)
Married	238 (91.9)
Place of residence, N (%)	
City	172 (66.4)
District	45 (17.4)
Village	42 (16.2)
Education status, N (%)	
Illiterate*	97 (37.5)
Literate	32 (12.4)
Primary education	99 (38.2)
High school	21 (8.1)
Undergraduate/ graduate degree	10 (3.9)
Economic status, N (%)	
Income is lower than expenses	50 (19.3)
Balanced income	198 (76.4)
Income is higher than expenses	11 (4.2)
Employment status, N (%)	
Employed	33 (12.7)
Unemployed (retired)	226 (87.3)
Social security status, N (%)	
Yes	240 (92.7)
No	19 (7.3)

*Illiterate: Individuals who never get education and do not know how to read or write.

TABLE 2

DISTRIBUTION OF DISEASE CHARACTERISTICS OF PARTICIPANTS

Characteristics (n = 259)	*n (%)*
How many years ago were you diagnosed with high blood pressure?	
1–5	92 (35.5)
6–10	69 (26.6)
11–15	37 (14.3)
16 and over	61 (23.6)
Since how many years are you receiving treatment for hypertension?	
1–5	52 (20.1)
6–10	88 (37)
11–15	50 (19.3)
16 and over	69 (26.6)
Do you have any member with hypertension in your family?	
Yes	184 (71)
No	75 (29)
The number of hypertension medication you use daily?	
1	205 (79.2)
2	46 (17.8)
3	2 (0.8)
4	3 (1.2)
5	2 (0.8)
6	1 (0.4)
Your health checkup frequency?	
Monthly	79 (30.5)
once in every 3 months	77 (29.7)
Every 6 months and over	54 (20.8)
Never	49 (18.9)
Have you ever been hospitalized due to hypertension?	
Yes	175 (67.6)
No	84 (32.4)
Do you have other accompanying chronic illnesses?	
Yes	197 (76.1)
No	62 (20.9)
Do you adhere to your diet?	
Yes	158 (61)
No	101 (39)
Do you comply with your disease treatment?	
Yes	187 (72.2)
No	72 (20.8)
Do you feel your increasing blood pressure?	
Yes	224 (86.5)
No	35 (13.5)

Cronbach's alpha coefficient was found to be between 0.80–0.95.[20] Cronbach's alpha coefficient was calculated as 0.96 in this study. MSPSS is a seven-point Likert-type scale consisting of 12 items scored between 1 "absolutely no" and 7 "absolutely yes." The scale has three subscales of four items to determine support from family, friends, and significant others. The lowest and highest scores of the subscales are 4 and 28, respectively. The lowest and highest total scores obtained by the sum of subscale scores are 12 and 84, respectively. Higher scores in the scale indicate higher perceived social support.[20]

Data collection. Data were collected by the researcher by face-to-face interviews with the patients who agreed to participate in the research after explaining the purpose of the research.

Ethical aspect of the study—Before conducting the study, approval of the ethics committee and permission from the hospital where the study was conducted were obtained. Written and verbal consents of the participants were also taken after informing them about the purpose of the study.

Evaluation of the data—Data obtained were evaluated using the SPSS 20 software in a computer environment. Number, percentage, chi-square test, and correlation analysis were used in the statistical evaluation of the data.

RESULTS

The participating individuals had a mean age of 64.94 ± 11.57 years; 48.3% of them were aged between 61 and 75 years, 58.72% were female, 91.6% were married, 66.5% were residents in the city center, 38.2% were primary school graduate, 76.42% had balanced income, 87.3% were unemployed, and 92.7% had social security (Table 1).

When the distribution of the disease-related characteristics of the participants were examined, it was determined that 35.5% of the participants had hypertension for 1 to 5 years, and 26.6% of them were receiving hypertension treatment for 16 years or more. Among the patients, 71% had a family history of hypertension, 79.2% were using one drug daily for hypertension, 30.5% had a monthly health checkup, 67.6% had been hospitalized due to hypertension, and 76.1% had accompanying chronic illness. Among the individuals participating in the study, 61% and 72.2% had adherence to diet and disease treatment, respectively, and 86.5% stated to feel increase in blood pressure (Table 2).

Scale score averages of patients included in the study were calculated as follows: the MASES score average was 64.24 ± 16.89, MSPSS total score average was 53.74 ± 23.30, MSPSS Social Support Perceived from Family subgroup score

TABLE 3

AVERAGE SCALE SCORES OF PARTICIPANTS

Scales	*Obtained minimum and maximum values*	*Obtained score average, mean ± SD*
MASES	26–78	64.24 ± 16.89
MSPSS	12–84	53.74 ± 23.30
Subgroups		
Social support perceived from family	4–28	20.17 ± 7.34
Social support perceived from friends	4–28	18.05 ± 7.60
Social support perceived from individuals other than family and friends	4–28	16.93 ± 8.75

MASES = medication adherence self-efficacy scale; MSPSS = multidimensional perceived social support scale; SD = standard deviation.

TABLE 4

INVESTIGATION OF THE RELATIONSHIP BETWEEN THE MASES AND MSPSS

	Medication adherence self-efficacy scale	
Scales	*r*	P
Social support perceived from family	0.338*	.000
Social support perceived from friends	0.302*	.000
Social support perceived from individuals other than family and friends	0.221*	.000
Multidimensional perceived social support scale	0.306*	.000

MASES = medication adherence self-efficacy scale; MSPSS = multidimensional perceived social support scale.

*$P < .01$.

average was 20.17 ± 7.34, Social Support Perceived from Friends subgroup score average was 18.05 ± 7.60, and Social Support Perceived from Individuals Other Than Family and Friends subgroup score average was 16.93 ± 8.75 (Table 3).

Besides, it was determined that there is a statistically significant positive correlation among MASES score average, MPSS total score, and all subgroup score averages (r = 0.306, $P = .000$) (Table 4).

DISCUSSION

Hypertension is a treatable and preventable disease that shows high prevalence in adult population.[2] But, it is stated that the uncontrolled blood pressure in patients with hypertension has a high proportion according to many studies conducted in various countries.[21] Controlled blood pressure ratio in patients with hypertension is determined to be 28.7% in our country.[6] One of the most important factors playing a role in blood pressure control is adherence of the patient to the treatment.[11] Patients showing low adherence to treatment possess high risk for uncontrolled blood pressure and negative consequences arising from this situation.[22] Therefore, it is very important to determine and understand the factors affecting adherence to treatment.

This study evaluated the relationship between patients' adherence to treatment and their perception of social support. MASES score average was calculated as 64.24 ± 16.89 (Table 3). It was determined that the patients had high perception level for medication adherence self-efficacy. There are other studies with similar findings to our study[10,23,24] and also others reporting that patients experienced problems in adherence to the treatment.[18,25–27] This difference among studies could have resulted from differences in social, cultural, economical, and lifestyle characteristics that may affect the adherence behavior of study groups. In this study, 61% of the patients stated they complied with their diet, and 72.2% stated they adapted to the disease. It could be concluded that patients adapting to the disease and diet embrace healthy lifestyle behaviors, and correspondingly, their adherence to disease and medication adherence self-efficacy increases.

Social support can be defined as support from family, friends, neighbors, and institutions which strengthens the patient's psychological dynamics for coping with emotional problems and provides emotional, economical, and cognitional help.[28] In this study, MSPSS total score average was calculated as 53.74 ± 23.30, and patients' social support levels were determined to be good (Table 3). When subgroups of the scale were evaluated, it was determined that the support level perceived from family (20.17 ± 7.34) was higher than the support level perceived from friends (18.05 ± 7.60) and individuals other than family and friends (16.93 ± 8.75). Güneş (2009)[29] also found that support from family was higher than those of friends and individuals other than family and friends. Similar results were obtained from the study of Demir (2011)[30] on patients with cardiac dysfunction. Literature search reveals that family members, especially spouses, provide more help in case of crisis situations, and married patients perceived more emotional support than single patients.[31] The reason for higher support level perceived from family than other subgroups may be due to the fact that most of the patients included

in the study were married (91.9%) and lived with their families. Besides, this is an expected result because family members live together, support and family bonding is strong, and family is an important issue[32] in the Turkish society; hence, this result is in accordance with the cultural traditions.

Drug adherence of patients with hypertension is found to have a strong correlation with perceived social support according to the literature.[7,12,33] Osamor (2015)[34] found that patients perceiving support from friends and family have better adherence to treatment than those who do not perceive support. Similarly, study of Hu et al (2015)[35] in China shows a positive correlation between social support and treatment adherence and controlled blood pressure. There are also studies in the literature showing no relation between social support ant treatment adherence.[36] This study, which evaluates the relationship between patients' adherence to treatment and their perception of social support, found a positive relationship between social support and adherence to treatment (Table 4). This finding implies that as social support increases, adherence to treatment also increases in patients with hypertension. Social interaction positively effects health of the patient by rendering access to health-related information and aiding in following and applying healthy lifestyle behaviors.[37] Besides, it is thought that friends, family members, and other social connections improve treatment adherence by social control.[12,37]

LIMITATIONS AND CONCLUSIONS

This study is limited to patients referred to the Cardiology Clinic of Atatürk University Health Research and Application Center, and the majority of patients in the sample are homogenous-female, married, having social assistance, live in city, and primarily aged between 61 and 75 years. The limitation of this study is that it used a self-report questionnaire to assess adherence; this method has the disadvantages of recall bias and eliciting only socially acceptable responses, and hence, it may overestimate the level of adherence. However, self-reported measures are simple and economical to use and can provide real-time feedback regarding adherence behavior and potential reasons for poor adherence.

As a result of this study, it is determined that treatment adherence and perceived social support levels were high in hypertension patients. Besides, it was found that perceived social support positively effects patient's adherence to the treatment. These findings indicate that social support can be used to improve the adherence in hypertension treatment. Therefore, it can be suggested that programs should be established to help the patients to have more social support nets. Also, to generalize the findings of this study to the whole population, similar studies would be suggested to be carried out in heterogeneous samples determined by randomization.

REFERENCES

1. Hypertension. WHOAgbo; http://apps.who.int/iris/bitstream/10665/79059/1/WHO_DCO_WHD_2013.2_eng.pdf. Accessed June 1, 2018.
2. Şenuzun F, Özer S. *Kronik hastaliklarda bakım*. Baskı. İstanbul: Nobel Tıp Kitabevi; 2012.
3. Mills KT, Bundy JD, Kelly TN, et al. Global disparities of hypertension prevalence and control clinical perspective: a systematic analysis of population-based studies from 90 countries. Circulation 2016;134:441-50.
4. Mills KT, Bundy JD, Kelly TN, et al. Global burden of hypertension: analysis of population-based studies from 89 countries. J Hypertens 2015;33:e2.
5. Arici M, Turgan C, Altun B, et al. Hypertension incidence in Turkey (HinT): a population-based study. J Hypertens 2010;28:240-4.
6. Böbrek Hastalıkları Derneği. Türk Hipertansiyon Prevalans Çalışması PatenT2; 2012. http://www.turkhipertansiyon.org/prevelans_calismasi_2.php.20.09. Accessed June 18, 2018.
7. Magrin ME, D'addario M, Greco A, et al. Social support and adherence to treatment in hypertensive patients: a meta-analysis. Ann Behav Med 2014;49:307-18.
8. Cramer J. Medicine partnerships. Heart 2003;89:ii19-21.
9. Hacıhasanoğlu R. Hipertansiyonda tedaviye uyumu etkileyen faktörler. TAF Prevent Med Bull 2009;8:167-72.
10. Vatansever Ö, Ünsar S. Esansiyel hipertansiyonlu hastaların ilaç tedavisine uyum/öz etkililik düzeylerinin ve etkileyen faktörlerin belirlenmesi. Turk Soc Cardiol Turkish J Cardiovasc Nurs 2014;5:66-74.
11. Hacihasanoğlu R, Gözüm S. The effect of patient education and home monitoring on medication compliance, hypertension management, healthy lifestyle behaviours and BMI in a primary health care setting. J Clin Nurs 2011;20:692-705.
12. Padhy M, Lalnuntluangi R, Chelli K, et al. Social Support and Adherence among Hypertensive Patients. AJHM 2016;1:33-40.
13. Velligan DI, Weiden PJ, Sajatovic M, et al. Assessment of adherence problems in patients with serious and persistent mental illness: recommendations from the Expert Consensus Guidelines. J Psychiatr Pract 2010;16:34-45.
14. Criswell TJ, Weber CA, Xu Y, et al. Effect of self-efficacy and social support on adherence to antihypertensive drugs. Pharmacotherapy 2010;30:432-41.
15. Aksoy A, Kelleci M. Relationship between drug compliance, coping with stress, and social support in patients with bipolar disorder. Dusunen Adam J Psychiatr Neuro Sci 2016;29:210-8.
16. Ogedegbe G, Mancuso CA, Allegrante JP, et al. Development and evaluation of a medication adherence self-efficacy scale in hypertensive African-American patients. J Clin Epidemiol 2003;56:520-9.
17. Fernandez S, Chaplin W, Schoenthaler AM, et al. Revision and validation of the medication adherence self-efficacy scale (MASES) in hypertensive African Americans. J Behav Med 2008;31:453-62.
18. Gozum S, Hacihasanoglu R. Reliability and validity of the Turkish adaptation of medication adherence self-efficacy scale in hypertensive patients. Eur J Cardiovasc Nurs 2009;8:129-36.
19. Zimet GD, Dahlem NW, Zimet SG, et al. The multidimensional scale of perceived social support. J Pers Assess 1988;52:30-41.
20. Eker D. Cok boyutlu algilanan sosyal destek olceginin gozden gecirilmis formunun faktor yapisi, gecerlik ve guvenirligi. Turk Psikiyatri Dergisi 2001;12:17-25.
21. Kaplan N. Clinic Hypertension. *Tercüme: Canbek E. Klinik Hipertansiyon*. İstanbul: Turgut yayıncılık; 2003:1-550.

22. Hill MN, Miller NH, DeGeest S, et al. Adherence and persistence with taking medication to control high blood pressure. J Am Soc Hypertens 2011;5:56-63.
23. Karadağ E, Akkuş Y, Karatay G. Bir aile sağlığı merkezine başvuran hipertansiyon hastalarının ilaç tedavisine uyum öz etkililik düzeyleri. J EU Nurs Faculty 2012;28:85-96.
24. Tümer A, Dereli F, Demir Uysal D. Hipertansiyon hastalarının ilaç tedavisine uyum düzeyleri. J Cardiovasc Nurs 2016;7:105-13.
25. Cingil D, Delen S, Aksuoğlu A. Karaman il merkezinde yaşayan hipertansiyon hastalarının ilaç kullanım durumlarının ve bilgilerinin incelenmesi. Türk Kardiyol Dern Arş 2009; 37:551-6.
26. Al-Ramahi R. Adherence to medications and associated factors: a cross-sectional study among Palestinian hypertensive patients. J Epidemiol Glob Health 2015;5:125-32.
27. Abegaz TM, Shehab A, Gebreyohannes EA, et al. Nonadherence to antihypertensive drugs: a systematic review and meta-analysis. Medicine (Baltimore) 2017;96:e5641.
28. Tan M, Karabulutlu E. Social support and hopelessness in Turkish patients with cancer. Cancer Nurs 2005;28:236.
29. Güneş Z. Kronik Hastalığı Olan Bireylerin Aileden Algıladıkları Sosyal Destek ve Ümitsizlik Durumları. Florence Nightingale Hemşirelik Dergisi 2009;17:24-31.
30. Demir Barutcu C. Kalp yetersizliği olan hastalarda sosyal destek ve yaşam kalitesi arasındaki ilişkinin incelenmesi. İzmir: DEÜ Sağlık Bilimleri Enstitüsü; 2011.
31. Wang L-Y, Chang P-C, Shih F-J, et al. Self-care behavior, hope, and social support in Taiwanese patients awaiting heart transplantation. J Psychosom Res 2006;61:485-91.
32. Aydemir MA, Tecim E. Türk toplumunda aile ve dinin sosyal sermaye potansiyeli. Konya: Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi; 2012:43-59.
33. Munger MA, Van Tassell BW, LaFleur J. Medication nonadherence: an unrecognized cardiovascular risk factor. MedGenMed 2007;9:58.
34. Osamor PE. Social support and management of hypertension in South-west Nigeria. Cardiovasc J Afr 2015;26:29.
35. Hu H, Li G, Arao T. The association of family social support, depression, anxiety and self-efficacy with specific hypertension self-care behaviours in Chinese local community. J Hum Hypertens 2015;29:198.
36. Wang PS, Bohn RL, Knight E, et al. Noncompliance with antihypertensive medications. J Gen Intern Med 2002;17: 504-11.
37. Kinney AY, Bloor LE, Martin C, et al. Social ties and colorectal cancer screening among Blacks and Whites in North Carolina. Cancer Epidemiol Biomarkers Prev 2005;14:182-9.