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Research Article

An evaluation of the diet and physical activity compliance of elderly hypertensive patients in Isparta city centre: A cross-sectional study

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Abstract

Objective: This study aimed to determine factors related to physical activity and dietary compliance in hypertensive elders living in Isparta. **Method:** This cross-sectional study included a population living in Isparta city aged >65 years with hypertensive symptoms diagnosed at least 3 months ago. A total of 411 patients were included, with an attainment rate of 91.9% according to the sample size. Dependent variables were physical activity and dietary compliance, and independent variables were sociodemographic and hypertension characteristics. Data was collected using face to face interviews. The chi square test, Fisher's exact test, independent samples t-test, Mann–Whitney U test, ANOVA, logistic and multiple regression analyses were used for data evaluation. **Results:** Physical activity compliance was 43.6%, and dietary compliance scores were 5.3 ± 0.9 SD. Physical activity compliance was higher; 3.58 times (p <0.001, 95% CI = 2.18-5.88) in males, 2.01 times (p = 0.004, 95% CI = 1.25-3.23) in patients with regular health checks, 5.84 times (p <0.001, 95% CI = 3.28-10.40) in the group with good/very good health perception, 2.49 times (p = 0.008, 95% CI = 1.26-4.92) in the group with no comorbidities other than hypertension, 2.21 times (p = 0.008, 95% CI = 1.22-3.98) in the group with 1-2 concomitant diseases, 2.10 times (p = 0.013, 95% CI = 1.16-3.79) in the 65-69 age group compared to the 75 years and over group, 2.72 times (p = 0.002, 95% CI = 1.46-5.05) in normal BMI compared to the obese, 2.41 times (p=0.002, 95% CI = 1.37-4.21) in the overweight compared to obese individuals. According to multivariate analysis results, the effects of regular health check-ups (p=0.002) and polypharmacy (p=0.016) variables on dietary compliance are significant.

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Conclusion: Physical activity and dietary compliance were low in elderly hypertensive patients living in Isparta. Raising awareness has positive impacts on non-drug treatment of hypertension, and ensuring appropriate conditions are recommended to improve physical activity and dietary compliance.

Keywords: Elderly, hypertension, physical activity, diet, patient compliance

Isparta il merkezinde yaşayan yaşlı hipertansif hastaların fizik aktivite ve diyet uyumunu belirleyen etmenler: Kesitsel bir çalışma

Öz

Amaç: Bu çalışmanın amacı Isparta il merkezinde yaşayan yaşlı ve hipertansif hastalarda fizik aktivite ve diyet uyumu ve bunları belirleyen etmenlerin belirlenmesidir. **Yöntem:** Kesitsel tipteki çalışmanın evreni Isparta il merkezinde yaşayan 65 yaş ve üzeri hipertansiyon hastalarıdır. Araştırmanın örnek büyüklüğü 447 kişi olarak belirlenmiştir ve örnek büyüklüğü fizik aktivite ve diyet uyumu için ayrı ayrı hesaplanmıştır. 411 kişiye ulaşılmıştır. Ulaşma oranı %91.9'dur. Araştırmanın bağımlı değişkenleri fizik aktivite ve diyet uyumu, bağımsız değişkenleri sosyodemografik ve hipertansiyonla ilgili özelliklerdir. Veri yüz-yüze görüşme yöntemiyle toplanmıştır. Verinin değerlendirilmesinde sayı, yüzde, ortalama, standart sapma, minimum ve maksimum değerler, Ki-kare, Fisher'in kesin testi, bağımsız gruplarda t testi, Mann-Whitney U, ANOVA, Lojistik ve Çoklu Regresyon Analizi kullanılmıştır. **Bulgular:** Fizik aktivite uyumu %43.6, diyet uyum puanı ortalaması ise 5.3±0.9 bulunmuştur. Fiziksel aktivite uyumu erkeklerde 3.58 kat (p <0.001, %95 GA= 2.18-5.88), düzenli sağlık kontrolüne gidenlerde 2.01 kat (p = 0.004, %95 GA = 1.25-3.23), sağlık algısı iyi/çok iyi olan grupta 5.84 kat (p <0.001, %95 GA = 3.28-10.40), hipertansiyon dışında komorbiditesi olmayan grupta 2.49 kat (p = 0.008, %95 GA= 1.26-4.92), 1-2 yandaş hastalığı olan grupta 2.21 kat (p = 0.008, %95 GA = 1.22-3.98), 65-69 yaş grubunda 75 yaş ve üzeri gruba göre 2.10 kat (p = 0.013, %95 GA= 1.16-3.79), normal VKİ'de obezlere göre 2.72 kat (p = 0.002, %95 GA = 1.46-5.05), fazla kilolularda obezlere göre 2.41 kat (p = 0.002, %95 GA= 1.37-4.21) daha yüksek bulunmuştur. Çoklu regresyon analizi sonuçlarına göre, düzenli sağlık kontrollerine gitme (p=0.002) ve polifarmasi (p=0.016) değişkenlerinin diyet uyumu üzerine etkisi anlamlıdır. **Sonuç:** Isparta il merkezinde yaşayan yaşlı hipertansiyon hastalarında fizik aktivite ve diyet uyumu düşüktür. Fizik aktivite ve diyet uyumunu artırmak için hipertansiyonda ilaç dışı tedavinin olumlu etkileriyle ilgili farkındalığın artırılması önerilmektedir.

Anahtar kelimeler: Yaşlı, hipertansiyon, fizik aktivite, diyet, hasta uyumu

Introduction

Hypertension is a serious public health problem that affects one billion individuals worldwide, leading to nine million deaths annually. It rarely causes symptoms and is an important risk factor for cardiovascular disease.[1] Populations worldwide are rapidly ageing, and the prevalence of hypertension increases with age.[1-3] Reducing high blood pressure can be achieved with medicines and healthy lifestyle changes. Lifestyle modifications include salt restriction; reducing alcohol intake; increasing fruit and vegetable, fibre, wholegrain, and herbal product consumption; reducing saturated fat and cholesterol-rich product consumption; regular physical activity; normal body weight maintenance and smoking cessation.[2,4,5]

The Dietary Approaches to Stop Hypertension (DASH) study showed that a

diet rich in fruits, vegetables, and low-fat dairy foods and with reduced saturated and total fat content can substantially lower blood pressure in hypertensive patients including the elderly.[6,7] It is important to determine how hypertensive patients in a population fit this diet and the features that reduce or increase compliance. This can elucidate nutrition behaviours that are of importance in developing recommendations and can establish the foundation of prevention and intervention at the social level.

Hypertension is more common in overweight individuals and is more difficult to control.[8] Epidemiological studies have shown that in addition to diet, regular aerobic physical activity prevents and treats hypertension and reduces mortality. Guidelines suggest that hypertensive patients should participate in at least 30 minutes of moderate-intensity dynamic aerobic exercise (walking, jogging, cycling, or swimming) 5–7 days per week.[5] Similarly, for adults aged 65 and above, the World Health Organization advises 150 minutes of moderate-intensity aerobic physical activity per week for improving cardiorespiratory and muscular fitness, bone and functional health, and reducing the risk of noncommunicable diseases, depression, and cognitive impairment.[9]

The successful treatment of hypertension requires patient compliance with the regimen adopted by the physician and patient. The most important reason for treatment failure is patients' inability or unwillingness to maintain the recommended treatment.[10] Although there are many studies on medication compliance in the literature, studies on the adaptation of lifestyle modifications such as diet and physical activity are limited.[11] In particular, determining factors related to compliance to non-drug treatment in elderly hypertensive patients is important for controlling blood pressure in this fragile population. Therefore, this study aimed to determine physical activity and dietary compliance in elderly hypertensive patients and factors affecting them in Isparta city centre.

Method

Study design, population, and sample size

The present study had a cross-sectional design and was carried out between December 2014 and June 2016. The study population was hypertensive patients aged ≥ 65 years living in Isparta city centre, southwestern Turkey. The study population was selected as per the following: 17,120 individuals aged ≥65 years live in the Isparta city centre. The prevalence of hypertension among the elderly (≥65-year-old) in Turkey is 75.1% [12], which is approximately 12,857 based on the study population size estimation. The sample size was separately calculated for physical activity and dietary compliance from the literature. Prevalence of physical activity compliance was 47%[13-16], deviation was 5% and 95% confidence interval level of the number of patients to be included was 372. The sample size for dietary compliance was calculated using the statistical sample size formula '$n=Nt^2\sigma^2/d^2(N-1)+t^2\sigma^2$'. According to this, for dietary compliance, based on t=1.96, σ=0.9 [17], d=0.1 values, it was determined that 304 patients should be included in the study. The sample size of the present study was 447, which was calculated by taking the pattern effect as 1.2 for the largest sample size (n=372). A total of 411 patients were included, with an attainment rate of 91.9%. Neighbourhoods in Isparta city centre were divided into low, medium and high according to socioeconomic levels, and two neighbourhoods were randomly selected from each layer.

Data collection

For data collection, a questionnaire was completed by face-to-face interview in participants' home by a researcher. A pre-trial survey was conducted in patients diagnosed with hypertension at least 3 months ago. Those unable to communicate because of factors such as mental impairment, hearing difficulties, dementia and those bedridden or unable to walk were excluded. Body mass index was calculated by measuring the height and body weight of patients.

Dependent and Independent variables

Dependent variables of the study were the physical activity and dietary compliance of patients. The number of times a week and average time per day in which patients participated in moderate-intensity physical activity, such as walking, gardening, cycling, swimming and jogging, were examined by open-ended questions, and weekly physical activity times were calculated. For physical activity compliance, ≥150 min/week was considered positive.[9] For dietary compliance, the composite index was used. This composite index was created by the researchers according to the DASH eating plan .[18,19] Food consumption frequency for average daily and weekly consumed cereal and cereal products, vegetables, fruits, non- or low-fat milk and dairy products, lean meat/poultry/fish, nuts and legumes, solid fats and oils and sweets over the past month were reported by the patient. Portion equivalents and images were used to determine the amount of nutrients consumed. Salinity status was evaluated according to patients' perceptions during the preparation, cooking and consumption of foods. These were classified as unsalted/low salty, normal salty, and very salty food consumption. Dietary compliance scores ranged between 0 and 10, with a high score indicating high compliance.

Independent variables of the study were sociodemographic characteristics, including age, gender, educational status, regular income, duration of hypertension, drug usage, regular control visits for hypertension, risky behaviours such as smoking and alcohol use, presence of concomitant disease, and Body Mass Index (BMI).

Statistical analysis

Study data were evaluated using SPSS (Statistical Package for the Social Sciences) version 22.0 (SPSS Inc., Chicago, IL, USA). The descriptive data were presented as frequencies, percentages, means, standard deviations, minimum, and maximum values. Chi square test, Fisher's exact test, Mann–Whitney U test, ANOVA, and independent samples t-test were used for bivariate analysis. Multivariate logistic and multiple regression models were built with variables which showed statistically significant differences in bivariate analysis. Multivariate analysis was conducted with the backward elimination method. $p<0.05$ was taken as the limit value for significance.

Ethical Approval

This study was in full conformance with the principles of the Declaration of Helsinki. Following a debriefing on the study aims and content, all participants gave written informed consent prior to enrolment for their participation. The present study was approved by the Ethical Committee of Suleyman Demirel University for Clinical Studies (2016/36).

Results

Characteristics of the survey participants

By the end of the study, 411 elder hypertensive individuals had been reached. Descriptive characteristics of the study group are presented in Table 1.

A total of 69.6% of patients had a family history of hypertension. The mean duration following the diagnosis of hypertension was 136.1±97.8 (range, 3–576) months. The average number of drugs was 3.9±2.5 (range, 1–19) pills per a day. As suggested by their doctor, 55.7% of patients attended regular health check-ups, and the most common reason for not going to control (91.7%) was to feel good about them and not seeing the necessity for check-ups. The most preferred healthcare organisation (52.8%) was a family health centre. The mean number of concomitant chronic diseases was 1.7±1.5 (range, 0–8); further, 23.4% of patients had no comorbidities, 51.1% had one to two diseases and 25.5% had more than three chronic diseases. The most common concomitant diseases were diabetes mellitus (28.5%), cardiovascular system diseases other than hypertension (21.9%) and gastric or duodenal ulcers (20.2%). The rates of smoking (4.6%, n=17) and alcohol use (0.7%, n=3) were low among the study group.

Table 1. Descriptive characteristics of the study group

Characteristics	n	%
Age groups		
65–69	146	35.5
70–74	119	29.0
75–79	75	18.2
80–84	45	11.0
85+	26	6.3
Gender		
Male	144	35.0
Female	267	65.0
Educational status		
Illiterate/Literate	162	39.4
Primary/secondary school	205	49.9
High school/university	44	10.7
Regular income		
Yes	270	65.7
No	141	34.3
Social insurance		
Yes	402	97.8
No	9	2.2
Marital status		
Single/widowed/divorced	136	33.1
Married	275	66.9
Lives with		
Alone	87	21.2
Spouse/children/relatives	324	78.8
Health perception		
Poor	8	2.0
Moderate	113	27.5
Good	287	69.8
Very good	3	0.7
Body Mass Index groups (kg/m2)		
Normal (18.5-24.9)	108	26.3
Overweight (25-29.9)	150	36.5
Obese Class I (30-34.9)	105	25.5
Obese Class II (35-39.9)	32	7.8
Obese Class III (>40)	16	3.9
Total	411	100.0

Physical activity compliance and affecting factors

Physical activity compliance of patients was 43.6%, with 19.7% reporting no physical activity. Health problems (75.4%) and disregard (19.8%) were the most common reasons for not performing adequate physical activity.

Univariate analysis was used to predict the physical activity compliance. It was observed that physical activity compliance decreased with age. Compliance was the highest in the 65–69 age group (50.0%) followed by the 70–74 age group (46.2%) and >75 age group (34.9%) (p=0.010). Physical activity compliance was higher in men than in women (63.9% and 32.6%, respectively; p<0.001). Compliance was also higher with higher educational status (p=0.002). Physical activity compliance was higher in married individuals (p=0.031). As the number of concomitant diseases with

hypertension increased, compliance decreased (p=0.001). Physical activity compliance was significantly lower in obese patients than in normal or overweight patients and significantly lower in the group with poor/moderate health perceptions than in that with good/very good perceptions (p<0.001). Attending a regular check-up and a regular income have higher physical activity compliance (p=0.002 and 0.001, respectively). Patients with physical activity compliance than with physical activity non-compliance had a lower duration of hypertension (123.1±90.4 months and 146.1±102.2 months, respectively; p=0.018).

Physical activity compliance did not significantly differ with social insurance, individuals lived with, number of medicines taken, smoking status or family history of hypertension (all, p>0.05).

According to the multivariate logistical regression analysis; physical activity compliance was higher; 3.58 times (p <0.001, 95% CI = 2.18-5.88) in males, 2.01 times (p = 0.004, 95% CI = 1.25-3.23) in patients with regular health checks, 5.84 times (p <0.001, 95% CI = 3.28-10.40) in the group with good/very good health perception, 2.49 times (p = 0.008, 95% CI = 1.26-4.92) in the group with no comorbidities other than hypertension, 2.21 times (p = 0.008, 95% CI = 1.22-3.98) in the group with 1-2 concomitant diseases, 2.10 times (p = 0.013, 95% CI = 1.16-3.79) in the 65-69 age group compared to the 75 years and over group, 2.72 times (p = 0.002, 95% CI = 1.46-5.05) in normal BMI compared to the obese, 2.41 times (p=0.002, 95% CI = 1.37-4.21) in the overweight compared to obese individuals (Table 2).

Dietary compliance and affecting factors

The mean dietary compliance score of the study group was 5.3±0.9 (range, 3–8), and distributions of the scores are shown in Table 3.

When dietary compliance scores were considered in bivariate analyses, scores were higher in men than in women (5.5±0.9 and 5.2±1.0, respectively; p=0.012), in those on more than five medications per day than less than five (5.5±0.8 and 5.2±1.0, respectively; p=0.002), attending a regular check-up than not attending a regular check-up (5.5±0.9 and 5.1±0.9, respectively; p<0.001), and in those with regular incomes (5.4±1.0 and 5.2±0.9, respectively; p=0.045).

No differences in dietary compliance scores were found with age, educational status, marital status, social insurance, individuals lived with, family history of hypertension, number of comorbid diseases, BMI, smoking or health perception (all p>0.05).

According to multivariate analysis results, the effects of regular health check-ups (p=0.002) and polypharmacy (p=0.016) variables on dietary compliance are significant (Table 4).

Table 2. Factors affecting physical activity compliance according to logistic regression analysis*

Independent variables		ß	p value	Odds ratio	95% Confidence interval
Gender	Male	1.275	**<0.001**	**3.58**	2.18–5.88
Regular check-up	Yes	0.701	**0.004**	**2.01**	1.25–3.23
Health perception	Good/Very good	1.766	**<0.001**	**5.84**	3.28–10.40
Number of concomitant diseases	1–2	0.793	**0.008**	**2.21**	1.22–3.98
	No	0.915	**0.008**	**2.49**	1.26–4.92
Age	70–74	0.459	0.128	1.58	0.87–2.86
	65–69	0.744	**0.013**	**2.10**	1.16–3.79
Body Mass Index groups	Overweight	0.880	**0.002**	**2.41**	1.37–4.21
	Normal	1.001	**0.002**	**2.72**	1.46–5.05
Constant		−4.061	**<0.001**		

* Women, not attending regular check-up, health perception moderate/poor/very poor, three or more comorbid diseases, ≥75 years and obese were used as the reference group

Table 3. Dietary compliance of elderly hypertensive patients according to scoring criteria

Frequency of food consumption according to the criteria of dietary compliance scoring	n (411)	% (100.0)
Cereal and cereal products (portion/day)		
≥7 (1 point)	52	12.7
5–6 (0.5 point)	330	80.3
<5 (0 point)	29	7.0
Vegetables (portion/day)		
≥4 (1 point)	323	78.6
2–3 (0.5 point)	85	20.7
<2 (0 point)	3	0.7
Fruits (portion/day)		
≥4 (1 point)	144	35.0
2–3 (0.5 point)	243	59.2
<2 (0 point)	24	5.8
Non-fat or low-fat milk and dairy products (portion/day)		
≥2 (1 point)	8	1.9
1 (0.5 point)	0	0.0
<1 (0 point)	403	98.1

Table 3 continue

Meat, poultry, fish (portion/day)		
≤2 (1 point)	186	45.3
3 (0.5 point)	178	43.3
≥4 (0 point)	47	11.4
Nuts and legumes (portion/week)		
≥4 (1 point)	319	77.6
2–3 (0.5 point)	51	12.4
<2 (0 point)	41	10.0
Fat/saturated fat and oil (portion/day)		
≤3 (1 point)	2	0.5
3–4 (0.5 point)	1	0.2
≥4 (0 point)	408	99.3
Saturated fat/fat (portion/day)		
≤1 (1 points)	275	67.0
1–2 (0.5 point)	1	0.2
≥2 (0 point)	135	32.8
Desserts (portion/week)		
≤5 (1 point)	97	23.6
6–7 (0.5 point)	46	11.2
≥8 (0 point)	268	65.2
Salt (self-reported)		
Unsalted/low salty (1 point)	232	56.4
Normal salty (0.5 point)	154	37.5
Very salty (0 point)	25	6.1

Table 4. Factors affecting diet adaptation score according to multiple regression analysis*

Independent variables	Regression coefficient (b)	Standardised regression coefficient (beta)	t	p-value	95% Confidence interval
Gender (Male)	0.167	0.085	1.496	0.135	−0.053–0.387
Number of medicines daily (≥5)	0.236	0.118	2.411	**0.016**	0.044–0.428
Regular check-up (Yes)	0.282	0.149	3.047	**0.002**	0.100–0.465
Regular income (Yes)	0.066	0.033	0.584	0.559	−0.155–0.287
Constant=4.972					

* Women, less than five drugs per day, not undergoing regular check-up and non-regular income were used as the reference group

Discussion

Physical activity compliance was 43.6%, and dietary compliance scores were 5.3 ± 0.9 SD. According to multivariate analysis results, physical activity compliance was higher in males, individuals attending regular check-up, those with a good/very good health perception, those without concomitant diseases, hypertension and one to two diseases, those aged 65–69 years and those in the underweight/normal range and pre-obese groups. Dietary compliance was high in individuals attending regular check-up and those taking 5 or more drugs per day.

Few reports in the literature have studied physical activity compliance in elderly hypertensive patients. In most, studies have investigated hypertensive patients of all ages or elders without hypertension. In a study by Bastos-Barbosa et al., 90% of elderly individuals were informed of the importance of physical activity by a doctor, but 43% reported regular physical activity.[20] In some studies conducted on hypertensive adults, regular physical activity rates ranged between 31.0% and 64.3%.[13-16] In a systematic review by Sun et al.[21], the percentages of non-institutional older adults meeting the recommended physical activity levels ranged between 2.4% and 83.0%. In most studies included in this systematic review, 20%–60% of the elderly adults met the recommended levels.[21] In this study, physical activity compliance of elderly hypertensive patients was 43.6%. This is consistent with the literature. Physical activity compliance widely varied, which may be due to differences in the measurement of physical activity compliance variables among studies and/or environmental/cultural characteristics that vary between countries.

Results of multivariate analysis showed that gender, regularity of check-ups, health perception, comorbidity, age and BMI affect physical activity compliance. Compliance was significantly higher in men, those attending regular check-ups, those with a good/very good health perception, those with no additional disease other than hypertension, those aged 65–69 years and those with normal or pre-obese weights. Many studies have also shown physical activity compliance to be higher in men,[3,12,14,22,23] which may be because women have limited opportunities to leave the home in terms of gender roles or have more responsibilities at home, leading to limited compliance.

In accordance with our results, studies have shown physical activity rates decrease with age.[22,23] Advanced age is associated with increasing in chronic diseases and reduction of physical capacity. However, patients may be afraid of physical activity or symptoms may be holding back. To eliminate these obstacles, it is important to provide suitable advice using a specific physical activity programme that fits with the patient/disease and to monitor their compliance. As demonstrated in our results, compliance was higher in patients undergoing regular check-up, those with no comorbid diseases and those with a good/very good health perception.

In our study, physical activity compliance was higher in normal or overweight patients than with obese patients. Obesity is in itself a risk factor in terms of physical activity compliance in this study. Especially, obese and elder patients should be supported for physical activity.

When we look at dietary compliance, 92.5% of patients were advised to diet according to the DASH diet plan. 65.3% of them confirmed compliance. In hypertensive adults, dietary compliance was reported as 65% and 72.5%, respectively, in two studies in which dietary compliance was evaluated according to individuals' own perception.[13,16]

In our study, 56.4% of elderly hypertensive patients consumed less salty/unsalted foods, which is compatible with other studies in Turkey. The percentage of hypertensive Turkish patients consuming less salty/unsalted meals ranged between 47.8%–

91.4%.[12,13,16,24] Salty foods are widely used in traditional Turkish cuisine. Therefore, Turkish elderly hypertensive patients have low-salt consumption restriction.

The number of servings per daily/weekly was examined, and vegetables, nuts and legumes were at recommended levels. In contrast, meat, poultry, fish, grain, cereal products, and fruit consumption was below the recommended level. Significantly our study group consumed less non-fat or low-fat milk and dairy products. In a study investigating lifestyle changes in hypertensive patients, only 24.8% sweet limitation and 14.4% fat restriction were reported.[15] In our study, oil and dessert consumption was above the recommended level, particularly in total oil. This is correlated with previous trials.

The mean dietary DASH compliance score was 5.3±0.9 (range, 3-8) in the study group. In a study by Epstein et al. DASH score was 3.9±3.5 on 144 sedentary, overweight or obese hypertensives.[19] Tangney et al. reported a DASH score of 4.1±1.4 (range, 1–8.5) in 826 elder patients.[25] In two different studies, the DASH compliance scores were 2.20±1.59 and 1.4±0.9 over 9, respectively, which were calculated by recording 24-h nutritional consumption in elderly with hypertension or hyperlipidemia.[17,26] In our study, dietary compliance scores were higher than international studies. This may be due to the study region where there is an easy access to the recommended nuts, legumes, vegetables, fruit, and cereal products. However, particularly in the last two studies, low values may be due to differences in the calculation methods of compliance scores.

Although the dietary compliance scores were significantly higher in men on bivariate analyses, this difference disappeared on multiple regression analysis. Dietary compliance was examined according to the categorised age and education variables, and scores were lower at an advanced age and higher in the more educated group. However, the difference was not statistically significant. There was a weak correlation between individual incomes and dietary compliance scores. Another study[19] found no significant correlations between age, sex, education, income and dietary compliance; however, previous studies have shown that dietary compliance increases as the level of education[13,25,27] and age[27] increase. In the present study, a small number of elderly patients were high school/university graduates and the majority had low education levels, which led to no correlation between educational levels and dietary compliance scores.

According to the results of the multiple regression analysis, dietary compliance scores were higher in individuals undergoing regular check-ups and in those using more than five drugs/day. This may be due to high dietary motivation and awareness in these individuals.

The main strength of our study is the inclusion of community-dwelling elderly. Furthermore, data was collected by a single researcher through face-to-face interviews to avoid interviewer bias. However, there are some potential limitations of the study. The main limitation is relatively low generalization of results to other settings with different sociocultural characteristics/different age groups. The second possible limitation is reporting bias among the respondents while answering the questionnaires (for example, recall bias, social desirability bias). Lastly, cross-sectional designs have limitations to demonstrate temporal relationships because of the exposure and outcome are simultaneously assessed. Therefore, the results of the study should be interpreted with caution and these limitations should be kept in mind.

Conclusion

Physical activity and dietary compliance in elderly hypertensive patients were low. Therefore, elderly hypertensive patients must be monitored by primary health care organisations within a specific programme. In follow-ups, patients should be informed

about the importance of physical activity and diet and made aware of healthy life changes, personal physical activity and diet programmes. Physical activity alternatives are required that are acceptable for elderly individuals. Women with lower compliance should be encouraged to participate in physical activity. In addition, the health promotion approach should be adopted to increase physical activity and dietary compliance, and governments should also be engaged in this with the creation of healthy public policies. For example, environmental facilities should be provided for physical activity suitable for elderly individuals (walking, cycling paths, etc.), and low-fat/fat-free milk and milk product consumption should be increased by increasing production and distribution and creating a reasonable price policy. Health services should also be updated to provide services to the ageing population. Those working in primary healthcare institutions should be educated and motivated, and inter-institutional cooperation should be established.

Conflict of Interest

The authors have no conflicts of interest relevant to this article.

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