

Erzincan'da Kırk Yaş ve Üzeri Bireylerde Hipertansiyon Sıklığı, Farkındalığı, Tedavisi ve Kontrolü

[Frequency, Awareness, Treatment and Control of Hypertension in the over 40 Population of Erzincan]

ÖZET

AMAÇ: Bu çalışmanın amacı Erzincan il merkezinde bulunan 5 sağlık ocağına herhangi bir sebeple başvuran 40 yaş ve üzeri bireylerde hipertansiyon sıklığı, farkındalığı, tedavisi ve kontrolü durumunu belirlemektir.

YÖNTEM: Kesitsel özellikte olan bu çalışma Ocak-Mayıs 2009 tarihleri arasında sağlık ocaklarına başvuran 40 yaş ve üzeri 1.570 kişi ile tamamlanmıştır. Veriler yüz yüze görüşerek toplanmış ve iki kez kan basıncı ölçümleri yapılmıştır. Sistolik kan basıncı ortalaması 140 mmHg ve üzeri olan veya diastolik kan basıncı 90 mmHg ve üzerinde olan veya antihipertansif ilaç kullanan bireyler hipertansif olarak kabul edilmiştir. Ayrıca bireylerin farkındalık, tedavi ve kontrol durumları değerlendirilmiştir.

BULGULAR: Genel toplamda hipertansiyon sıklığı %67,0 (kadınlarda %69,6, erkeklerde %63,0) olarak belirlenmiştir. Çalışma örneğinde bireylerin %77,4'ünün kan basınçlarının yüksek olduğunun farkında olduğu, tamamının antihipertansif tedavi kullandığı ve bunların %33,9'unun kan basıncının kontrol altında olduğu belirlenmiştir. Tüm hipertansifler arasında kontrol %26,2 olarak saptanmıştır. Yaş, beden kitle indeksi (BKI), sigara kullanımı, eğitim düzeyi, tuz kullanımı ve diyabet ile hipertansiyon sıklığı arasında ilişki bulunmuştur.

SONUÇ: Bu sonuçlara göre sağlık ocaklarına herhangi bir sebeple başvuran ve tedavi alan bireylerde hipertansiyon sıklığı yüksek ve yönetimi yetersizdir. Bireylerin önemli bir kısmı hasta olduğunun farkında değildir. Bu doğrultuda hipertansiyonun erken tanısı ve kontrolünün sağlanması, farkındalığın artırılmasına yönelik stratejilerin geliştirilmesine gereksinim vardır.

SUMMARY

AIM: The aim of this study is to determine the frequency, awareness, treatment and control of hypertension in population over 40 years of age who came to the 5 primary health care centers in Erzincan for any reason.

METHODS: This cross-sectional study was completed with 1570 people aged 40 and older, who received care at health care centers between January and May 2009. The data were collected through face-to-face interviews, and blood pressures were measured twice. Participants were considered as hypertensive if their average systolic blood pressure was ≥ 140 mmHg, or their average diastolic blood pressure was ≥ 90 mmHg, or if they were taking antihypertensive medication. The awareness, treatment and control status of the individuals were also assessed.

RESULTS: The overall hypertension frequency was 67.0% (69.6% in women and 63% in men). In the study sample, 77.4% of individuals were aware of their hypertension, all were receiving anti-hypertensive drugs, and 33.9% of patients had their blood pressure under control. Among all hypertensive individuals, the percentage of controlled hypertension (HT) was 26.2%. The frequency of hypertension was associated with age, body mass index (BMI), smoking, level of education, the use of salt, and diabetes.

CONCLUSION: These results indicate that the frequency of HT was high, and it was inadequately managed in individuals who came to the primary healthcare centers for any reason and received treatment. Many of the individuals were not aware of their illness. Therefore, it becomes very important and necessary to ensure early diagnosis and control of hypertension and to develop strategies to increase awareness.

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INTRODUCTION

Hypertension is an important public health problem throughout the world. Reports as of the year 2000 indicate that 26.4% of adults and approximately one billion people in the world are afflicted with hypertension (HT). This figure is estimated to rise to 1.56 billion by 2025 (1).

The prevalence of HT in adults in Turkey is approximately 30% and in individuals 50 years old and

older, the rate is 45-50% (2). The PatenT study (Prevalence, awareness, treatment and control of hypertension in Turkey) reported that the prevalence of HT was 31.8% and that 40.7% of these hypertension cases were aware of their disease (3). The same study showed that the percentage of patients being treated for HT was 31.1% and that 8.1% of all hypertensive patients had their blood pressure (BP) under control (3). In the same populations, the study of HinT

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(Hypertension incidence in Turkey) stated that the overall 4-year incidence rate of hypertension was 21.4% (4).

HT significantly increases a person's risk for heart attacks, strokes, heart failure, and kidney diseases (5). Increased blood pressure is the major cause of deaths in the world and is responsible for 60% of strokes and 50% of coronary heart diseases (6). Although diagnosed and treated easily, HT is often not managed adequately (7) and continues to be a significant public health issue (8). Since HT is a major risk factor in cardiovascular diseases, its diagnosis, treatment and control are important health goals across the world (9). Despite the fact that HT is one of the most common reasons for outpatient consultations, BP is not usually adequately managed (10).

The aim of this study is to determine the frequency, awareness, treatment and control of hypertension in population over 40 years of age who came to the 5 primary health care centers in Erzincan for any reason.

MATERIALS AND METHODS

This cross-sectional study was carried out in five health care centers located in the provincial center of Erzincan. The study sample consisted of individuals who are 40 years of age and older, who came to the healthcare centers for any reason between January and May 2009. No sampling was made of the participants. Instead, all individuals, 40 years of age and older, who presented to the health care centers in the abovementioned period, who could be communicated with, and who were willing to participate in the study (n=1570), were included in the study. At the beginning of the study, a preliminary administration of the descriptive questionnaire was tested on 20 people to measure if it could be easily understood; however, these individuals were not included in the study. The data were collected by nurse researchers through face-to-face interviews.

Blood Pressure Measurement

After study participants were allowed to rest for at least 10-15 minutes, each individual's BP was measured in a seated position with their right arm on the same level as their heart. A second BP reading was taken 5-10 minutes later, and the average of the two measurements was recorded. For thirty minutes prior to having their blood pressure measured, participants were not allowed to smoke, drink coffee, tea or alcohol nor could they do any exercise. A sphygmomanometer with standardized cuff was used for measuring the blood pressure.

BMI Measurement

Heights were measured using a tape measure while the subjects were standing on a horizontal surface with their heads, shoulders, hips and heels touching a vertical wall. The values were recorded in centimeters (cm). The weight was measured using a standard scale after the patients took off their heavy clothes such as jacket, coat, shoes, and fur, and it was recorded in kilograms (kg). BMI was calculated using the formula "body weight (kg) / height (meter)²" as per the World Health Organization (WHO) standards. BMI values under 18.5 were considered as thin, between 18.5 and 24.9 as normal, between 25 and 29.9 as overweight, between 30 and 39.9 as obese, and 40 and over as morbidly obese (11).

Definition

Based on the JNC-7 Report (5) cut-off-point, participants were considered as hypertensive if their average systolic blood pressure was ≥ 140 mmHg, or average diastolic blood pressure was ≥ 90 mmHg, or if they were taking antihypertensive medication. Awareness was established when individuals expressed that they had a previous medical diagnosis of hypertension. Individuals' use of antihypertensive medication during the interview was defined as treatment for hypertension.

Blood pressure control was defined according to the JNC-7 guidelines report; the blood pressure was considered to be under control when the systolic blood pressure was less than 140 mmHg and the diastolic blood pressure less than 90 mmHg (5).

The subjects' salt consumption was evaluated by their responses. The salt consumption was considered as minimum if the individual did not add salt to meals and consumed unsalted food deliberately, as moderate if the person added salt to meals at a minimum level, and as maximum if he/she used extra salt with normally salted food.

Subjects' alcohol use was as follows: 1.9% used alcohol; one person used it every day; 2 of them once or twice a week; 18 people once or twice a month, and 9 people only once or twice a year.

Descriptive questionnaire was used to obtain socio-demographic characteristics of the participants. It consisted of 14 questions (regarding age, sex, educational status, marital status, occupation, health insurance, income level, cigarette use, alcohol consumption, salt use status, types of fat consumed, physical activity, present diabetes status and family history of hypertension).

Statistical Analysis

All statistical tests were two-tailed, and a p-value of <0.05 was accepted as statistically significant. Number, distribution of percentage, Chi Square test and logistic regressions analysis were performed.

Ethical Issues

Institutional approval was obtained from the Erzincan District Health Board. The aims, plans and benefits of the study were explained to patients who met the study criteria. The participants were asked if they wanted to volunteer for the study and their verbal consent was obtained. Confidentiality was maintained at all times.

RESULTS

Frequency

The overall frequency of HT ($n=1052$) was 67.0%; 69.6% in women and 63.0% in men. It was higher in women than that in men HT frequency increased with age in both men and women. The highest frequency of HT was in men aged 80 and over (92.9%) and in women aged 70-79 (95.3%).

Awareness, Treatment and Control of HT

Among the subjects with HT, only 814 (77.4%) were aware of their condition, and 238 (22.6%) were unaware of their HT. Women were more aware than men (81.8% versus 69.9%). Patients' awareness of their HT was found to increase with age in both genders. The highest rate of awareness was observed in women aged 70-79 (89%), and in men aged 80 (80.8%) and over. Among the subjects with hypertension, only 814 (77.4%) were aware of their condition and receiving antihypertensive treatment. Of the patients under drug treatment for HT, 33.9% were under control (in women 32%, in men 37.6%). Among all hypertensive (aware and unaware) individuals, the percentage of controlled HT was 26.2% (276 of 1052) (Table 1).

HT and Associated Risk Factors

The result of the chi-square analysis revealed that age, gender, BMI, education, physical activity, marital status, occupation, cigarette use, salt use, and diabetes were associated with the frequency of hypertension ($p<0.01$, $p<0.001$).

No significant relationship was found between the frequency of hypertension and social security status,

income level, use of alcohol and fat or family history of hypertension ($p>0.05$) (Table 2).

Of the parameters that were included in the chi-square analysis, 10 variables were identified as risk factors for hypertension. As these were considered statistically significant, a logistic regression analysis was run for them. Results of the analysis showed a significant relation between the frequency of HT and age, BMI, smoking, education level, use of salt and diabetes. Every increased year in a patient's age increased the frequency of hypertension 1.01 times, and every single increased unit in the BMI value increased its frequency 1.14 times ($p<0.001$). The frequency of hypertension was seen 0.60 times less frequently in smokers ($p<0.01$). Hypertension was seen at a rate 2.304 times higher in those who were illiterate ($p<0.05$) and 3.426 times higher in literate patients ($p<0.01$). Hypertension was seen 0.435 times less frequently in those who used salt at a moderate level and 0.342 times less frequently in those who used high levels of salt ($p<0.001$). Hypertension was 4.064 times higher in those with diabetes ($p<0.001$).

No statistically significant difference was found between HT and gender, marital status, occupation or physical activity ($p>0.05$) (Table 3).

DISCUSSION

The study results for the community we monitored demonstrated that hypertension is a common health problem with a frequency of 67.0%. This result is higher than the prevalence found in previous studies conducted in other countries and different parts of Turkey. One of these studies carried out in Turkey on the general population showed a hypertension prevalence of 31.8% (3). In fact, in Eskişehir, the prevalence of hypertension was 59.5% among individuals 50 years and over (12); in Trabzon the rate was 44% (13). As for rates of hypertension in other countries, studies have shown a rate in China of 46.5% (14), in Asia, 41.5% (15), and in Europe, 24.4% (16). As shown in a study by Wolf- Maier et al. (17), the prevalence of hypertension varies from country to country. These differences may reflect the effects of dynamic interactions between genetic, socio-cultural, demographic and economic factors. Moreover, the results may vary in different regions of a country. Another reason for the high frequency of HT in this study could be that the study was conducted in health care centers and getting a blood pressure measurement was one of the reasons for going to the health care centers.

Table 1. Hypertension, Awareness, Treatment and Control (treated) of Hypertension in the Study Sample by Age and Gender.

	Age group											
	40-49		50-59		60-69		70-79		≥ 80		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Men												
Hypertension												
Yes	50	32.3	102	60.4	116	75.8	98	83.8	26	92.9	392	63.0
No	105	67.7	67	39.6	37	24.2	19	16.2	2	7.1	230	37.0
Awareness												
Yes	26	52.0	63	61.8	85	73.3	79	80.6	21	80.8	274	69.9
No	24	48.0	39	38.2	31	26.7	19	19.4	5	19.2	118	30.1
Treatment												
Yes	26	16.8	63	37.3	85	55.6	79	67.5	21	75.0	274	44.1
No	129	83.2	106	62.7	68	44.4	38	32.5	7	25.0	348	55.9
Control												
Yes	14	53.8	28	44.4	31	36.5	23	29.1	7	33.3	103	37.6
No	12	46.2	35	55.6	54	63.5	56	70.9	14	66.7	171	62.4
Women												
Hypertension												
Yes	144	43.0	210	75.8	189	88.7	101	95.3	16	94.1	660	69.6
No	191	57.0	67	24.2	24	11.3	5	4.7	1	5.9	288	30.4
Awareness												
Yes	112	77.8	161	76.7	164	86.8	90	89.0	13	81.2	540	81.8
No	32	22.2	49	23.3	25	13.2	11	11.0	3	18.8	120	18.2
Treatment												
Yes	112	33.4	161	58.1	164	77.0	90	84.9	13	76.5	540	57.0
No	223	66.6	116	41.9	49	23.0	16	15.1	4	23.5	408	43.0
Control												
Yes	42	37.5	52	32.3	52	32.0	22	24.4	5	38.5	173	32.0
No	70	62.5	109	67.7	112	68.0	68	75.6	8	61.5	367	68.0
All Subject												
Hypertension												
Yes	194	45.2	312	70.0	305	83.3	199	83.8	42	92.9	1052	67.0
No	296	54.8	134	30.0	61	16.7	24	16.2	3	7.1	518	33.0
Awareness												
Yes	138	71.1	224	71.8	249	81.7	169	85.0	34	81.0	814	77.4
No	56	28.9	88	28.2	56	18.3	30	15.0	8	19.0	238	22.6
Treatment												
Yes	138	28.2	224	50.2	249	68.0	169	75.8	34	75.6	814	51.8
No	352	71.8	22	49.8	117	32.0	54	24.2	11	24.4	756	48.2
Control												
Yes	56	40.6	80	35.7	83	33.3	45	26.7	12	35.3	276	33.9
No	82	59.4	144	64.3	166	66.7	124	73.3	22	64.7	538	66.1

Studies have reported that the majority of hypertensive patients in developed countries had been diagnosed and were receiving treatment (18). In this study sample, 77.4% of participants were aware of their hypertension, all were receiving antihypertensive treatment, and 33.9% of them had their blood pressure under control. Among all hypertensive individuals, the percentage of controlled HT was 26.2%. One study reported that 40.7% of hypertensives were aware of their diagnosis, only 31.1% of them received antihypertensive treatment, and only 8.1% of all hypertensive patients had their BP under control. The subjects who were aware and had been treated had a control ratio of 20.7% (3). In another study performed again in our country, 41% of hypertensive individuals were aware of their condition, 54% of them took antihypertensive medication, and the blood pressure of 24.3% was under control. Among all hypertensive (aware and unaware) individuals, the percentage of controlled HT was 5.43% (13). In another study performed again in our country by Onat et al. (19), it was reported that 48% of individuals with HT received treatment, and 28% had it under control. It was determined in a study carried out in primary health care centers throughout Turkey that 93.3% of hypertensive individuals received antihypertensive therapy and their HT was under control in 24.2% of these patients (20). In a study conducted in Europe, one-third of hypertensives were receiving treatment, 36.5% of these individuals were on regular medication, 56% were unaware of their situation, and patients who had their HT under control ranged between 42-47% (16). A study carried out in Argentina reported that 87% of hypertensive patients were aware of their diagnosis. The overall prevalence of hypertension treatment was 62%, and the control rate of blood pressure was 30% (21). The level of awareness, treatment and control of HT differs significantly among countries and regions (18). These different results indicate that individual characteristics, economies, and other disparities among countries and regions may account for some differences.

Our study results showed that the awareness and treatment rate were higher in women compared to men, while blood pressure control was observed to be better in men. In the study of Aytekin et al. (22), the rate of awareness, treatment and control was found to be higher in females. On the other hand, one Korean study found that the rate of awareness, treatment and control was higher in women compared to men (23).

Age, BMI, cigarette use, gender, marital status, level of education, occupation, salt use, physical activity, diabetes, which were significant variables in Table 2, were examined with the logistic regression model.

Age is one of the uncontrolled risk factors for HT. In this study, each increased year in age increased hypertension frequency 1.01 times and this increase was statistically significant. Many studies have reported that the prevalence of HT increased with age (12-14,23-28).

Obesity is another significant risk factor for HT (29). In this study, the frequency of hypertension increased significantly with the increased BMI values. Another study reported that HT increased with weight (13,24,25). Being overweight was also reported to be an important risk factor in developing HT in the incidence studies performed (4, 30). This study demonstrated that being overweight was also a serious public health problem in Erzurum with a rate of 84.9%. Increasing physical activity and ensuring a balanced nutrition should be an important goal for preventing obesity (31). Changes in life style are effective in reducing the incidence of blood pressure and cardio-vascular diseases (32).

This study also found that hypertension was 2.304 times higher in the illiterate population and 3.426 times higher in those who were literate. In regression analysis, the frequency of hypertension was greater in individuals with a lower educational level, which constituted a more prominent difference for literate patients. The results are parallel with previous studies conducted in Turkey and other countries (12,13,23, 28,33). The high prevalence of HT in the group with a low education level might result from more common risk factors such as stress, working conditions and nutritional habits (28).

Smoking is also a certain risk factor in hypertension (33). However, the frequency of HT in this study was lower in the group who smoke. This result was similar to the results of other studies (13, 24) and minimizes smoking as a significant and well-known risk factor for developing HT. We speculated that the low rate of smoking in HT patients could be related to giving up smoking upon learning of their HT condition. In other words, the low rate of smoking may be a result of HT. On the other hand, other studies have found no significant association between HT and smoking (12,23). Again, no relationship has been reported between smoking status and hypertension incidence in a hypertension incidence study (4).

Table 2. Descriptive Characteristics of Hypertensive and Non-hypertensive Individuals.

Characteristics		Normal		HT		Total		Statistics
		n	%†	n	%†	n	%‡	X ² , p
Age								
40-49		296	60.4	194	39.6	490	31.2	276.422, 0.000
50-59		134	30.0	312	70.0	446	28.4	
60-69		61	16.7	305	83.3	366	23.3	
70-79		24	10.8	199	89.2	223	14.2	
80 and over		3	6.7	42	93.3	45	2.9	
Gender								
Women		288	30.4	660	69.6	948	60.4	7.395, 0.007
Male		230	37.0	392	63.0	622	39.6	
BMI								
Thin	<18.5	3	60.0	2	40.0	5	0.3	79.529, 0.000
Normal	18.5-24.9	112	48.3	120	51.7	232	14.8	
Overweight	25.0-29.9	252	38.8	397	61.2	649	41.3	
Obese	30.0-39.9	146	23.5	474	76.5	620	39.5	
Morbidly obese	≥40.0	5	7.8	59	92.2	64	4.1	
Education								
Illiterate		79	18.8	342	81.2	421	26.9	110.091, 0.000
Literate		22	16.4	112	83.6	134	8.5	
Primary		280	37.3	470	62.7	750	47.8	
Secondary		39	41.9	54	58.1	93	5.9	
High school		62	55.4	50	44.6	112	7.1	
College/University		36	60.0	24	40.0	60	3.8	
Marital status								
Married		467	36.0	829	64.0	1296	82.5	42.942; 0.000
Unmarried		10	55.6	8	44.4	18	1.2	
Widowed/Divorced		41	16.0	215	84.0	256	16.3	
Occupation								
Tradesman/Worker		95	43.6	123	56.4	218	13.9	50.275; 0.000
Housewife		276	30.4	633	69.6	909	57.9	
Official		56	58.9	39	41.1	95	6.0	
Retired		89	26.3	250	73.7	339	21.6	
Unemployed		2	22.2	7	77.8	9	0.6	
Health insurance								
Insured		497	32.7	1021	67.3	1518	96.7	1.329; 0.249
Uninsured		21	40.4	31	59.6	52	3.3	
Income level								
Income <expenditure		304	30.9	680	69.1	984	62.7	5.523; 0.063
Income = expenditure		196	36.2	345	63.8	541	34.4	
Income >expenditure		18	40.0	27	60.0	45	2.9	
Cigarette								
Yes		124	54.9	102	45.1	226	14.4	57.135; 0.000
No		394	29.3	950	70.7	1344	85.6	

Table 2. Resume.

Alcohol							
Yes	10	33.3	20	66.7	30	1.9	0.002; 0.968
No	508	33.0	1032	67.0	1540	98.1	
Salt use							
Minimum	128	18.7	556	81.3	684	43.5	121.594; 0.000
Medium	309	41.8	430	58.2	739	47.1	
Maximum	81	55.1	66	44.9	147	9.4	
Type of fat							
Vegetable	198	30.1	459	69.9	657	41.8	4.406; 0.110
Animal	60	33.5	119	66.5	179	11.4	
Mix	260	35.4	474	64.6	734	46.8	
Physical activity							
Never	123	26.9	335	73.1	458	29.2	30.436; 0.000
Mild	152	29.3	367	70.7	519	33.1	
Middle	189	39.5	289	60.5	478	30.4	
Heavy	54	47.0	61	53.0	115	7.3	
Diabetes							
Present	24	7.8	282	92.2	306	19.5	108.748; 0.000
Absent	494	39.1	770	60.9	1264	80.5	
Family history of HT							
Yes	233	33.5	462	66.5	695	44.3	0.159; 0.690
No	285	32.6	590	67.4	875	55.7	

†Row percentage ‡Column percentage

Modifications in lifestyle are important factors (weight loss, sodium reduction, exercise) for the control of blood pressure (34). Salt intake always needs to be considered and addressed with high blood pressure levels (6). This study found that the patients with HT mentioned that they consumed less salt than the subjects without HT. The study by Arslantaş et al. (12) reported no significant relationship between hypertension prevalence and supplementary salt intake. Çöl et al. (26) found no significant difference in blood pressure between individuals with and without compliance to life style changes due to hypertension. Because of many variations in study results and the difficulty in determining cause and effect, a certain skepticism remains concerning interpretation of results from cross-sectional studies on HT and salt use.

Diabetes is also an important risk factor for hypertension (24). The prevalence of HT in this study was found to be higher in those with diabetes than

those without it. This finding is consistent with the results obtained from other studies (4,20,24,25, 35,36).

Gender was not found a significant risk factor in hypertension according to logistic analysis results conducted in this study. These results are similar to those of other studies (4,35).

No significant difference was found in this study between HT and marital status, occupation, or physical activity status of the individual. The Arslantaş et al. study (2008) determined no significant difference between HT prevalence and physical activity or employment status of individuals (12). Another study also found no significant difference between HT prevalence and marital status or physical activity (13). The hypertension incidence study also revealed that there was no relationship between hypertension incidence and physical activity (4).

Table 3. Logistic Regression Analysis of the Variables, Associated with Hypertension in Simple Analysis

Variables		B	OR	p	95% CI	
					Lower	Upper
Age		0.096	1.01	0.000	0.082	1.119
BMI		0.132	1.14	0.000	0.106	0.177
Cigarette use	No(1)					
	Yes	-0.514	0.60	0.005	0.420	0.853
Gender	Male(1)					
	Women	0.647	1.91	0.050	1.00	3.651
Marital status	Widowed/ Divorced	0.016	1.016	0.945	0.649	1.589
	Unmarried	-0.120	0.887	0.842	0.273	2.884
	Married(1)					
Level of education	Illiterate	0.835	2.304	0.045	1.021	5.203
	Literate	1.231	3.426	0.008	3.426	8.474
	Primary	0.605	1.831	0.109	1.831	3.837
	Secondary	0.795	2.215	0.063	2.215	5.122
	High school University (1)	0.285	1.330	0.469	1.330	2.880
Occupation	Tradesman(1)					
	Housewife	-0.336	0.715	0.380	0.337	1.513
	Official	0.573	1.774	0.121	0.860	3.660
	Retired	0.163	1.177	0.536	0.703	1.969
	Unemployed	0.602	1.826	0.117	0.860	3.381
Salt use	Worker	0.225	1.252	0.812	0.197	7.940
	Minimum(1)					
	Medium	-0.833	0.435	0.000	0.327	0.578
Physical activity	Maximum	-1.074	0.342	0.000	0.217	0.538
	Never(1)					
	Mild	0.434	1.543	0.107	0.911	2.614
	Middle	0.485	1.624	0.063	0.974	2.707
Diabetes	Heavy	0.117	1.124	0.651	0.678	1.861
	Absent (1)					
	Present	1.402	4.064	0.000	2.529	6.530

CONCLUSION

The overall hypertension frequency was 67.0% in the study sample and 77.4% of patients were aware of their hypertension and were receiving pharmacological treatment. Of the patients who received drug treatment, 33.9% were able to get their blood pressure under control. Among all hypertensive individuals, the percentage of controlled HT was 26.2%. Old age, overweight and the presence of diabetes were found to be significant factors in the increase of hypertension frequency, and only 14.8% (n=232) of the study participants and 11.4% (n=120) of the hypertensive individuals had a normal weight.

These results suggest that prevention studies and early diagnosis, awareness and treatment programs are needed for everyone but especially for the elderly,

overweight and those with diabetes. Such programs should focus on the risk factors for hypertension, especially in the over 40 population who use the primary health care facilities of Erzincan's city center.

LIMITATIONS OF THE STUDY

This study has several limitations. Firstly, because this is a cross-sectional study, it is difficult to obtain correct results to assess the relationship between cause and effect.

Secondly, the study sample does not include all hypertensive cases in Erzincan. So, these individuals do not represent the general population of hypertensive patients.

CONFLICT OF INTEREST

There are no conflicts of interest.

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