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ARAŞTIRMA MAKALESİ	RESEARCH ARTICLE

Bireylerin Kardiyovasküler Hastalıklara İlişkin İnançlarının Fiziksel Aktivite Düzeyleri ile İlişkisi: Kütahya Birinci Basamak Örneği

The Relationship Between Individuals' Beliefs About Cardiovascular Diseases And Their Physical Activity Levels: The Case Of Kütahya Primary Care Center

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ÖZET

Amaç: Bu araştırma, bireylerin kardiyovasküler hastalıklara ilişkin inançlarının fiziksel aktivite düzeyleri ile ilişkisini incelemek amacıyla yapılmıştır. **Gereç ve Yöntemler:** Tanımlayıcı tipteki araştırmanın evreni, Kütahya merkez ilçesindeki aile sağlığı merkezlerine kayıtlı 30-50 yaş 77.082 bireyden oluşmaktadır. Örneklem seçimine gidilmeyerek araştırmanın yürütüldüğü tarihlerde aile sağlığı merkezlerine başvuran, araştırmaya katılmaya gönüllü ve dahil edilme kriterlerini karşılayan 411 kişi araştırmanın örneklemini oluşturmuştur. Veriler Sosyo-Demografik Özellikler Formu, Kardiyovasküler Hastalıklara İlişkin Sağlık İnançları Ölçeği ve Uluslararası Fiziksel Aktivite Anketi-Kısa Formu kullanılarak toplanmıştır. Verilerin analizinde iki ortalama arasındaki farkın önemlilik testi (t testi) ve Pearson korelasyon analizi kullanılmıştır. **Bulgular:** Katılımcıların Kalp ve Damar Hastalıkları ile İlişkili Sağlık İnançları puan ortalaması 63,88±6,01'dir. Çalışmaya katılan bireylerin fiziksel aktivite skorları incelendiğinde; şiddetli aktivite yapma durumlarında %88,1'inin inaktif olduğu, orta şiddetli aktivite yapma durumlarında %88,2'sinin inaktif olduğu ve yürüme durumlarında %55,2'sinin minimal aktif olduğu belirlenmiştir. Katılımcıların sigara kullanma durumları ile Kalp ve Damar Hastalıkları ile İlişkili Sağlık İnançları ölçeği, duyarlılık alt boyutu ve şiddetli fiziksel aktivite skoru arasında anlamlı fark saptanmıştır ($p<0,05$). Katılımcıların ilaç kullanma durumları ile Kalp ve Damar Hastalıkları ile İlişkili Sağlık İnançları ölçeği, duyarlılık alt boyutu, yarar alt boyutu ve engel alt boyutu arasında anlamlı fark saptanmıştır ($p<0,05$). Bireylerin kardiyovasküler hastalıklara ilişkin inançları ile fiziksel aktivite düzeyleri arasında pozitif yönde çok zayıf düzeyde ($r=0,121$ $p=0,01$) ilişki vardır. **Sonuç:** Çalışmaya katılan bireylerin kalp ve damar hastalıkları ile ilişkili sağlık inançları puanlarının orta düzeyde olduğu ve fiziksel aktivite skorlarının inaktif seviyede olduğu saptanmıştır. Bireylerin kardiyovasküler hastalıklara ilişkin inançları ile fiziksel aktivite düzeyleri arasında ilişki bulunmuştur.

Anahtar Kelimeler: Fiziksel aktivite, Kardiyovasküler hastalıklar, Sağlık inancı, Kardiyovasküler risk faktörleri

ABSTRACT

Objectives: This study aims to examine the relationship between individuals' beliefs about cardiovascular diseases and their physical activity levels. **Materials and Methods:** The population of this descriptive study consisted of 77,082 individuals aged 30-50 years enrolled in family health centers in the central district of Kutahya. There was no sample selection, and 411 individuals who applied to family health centers on the dates of the study, volunteered to participate in the study, and met the inclusion criteria constituted the sample of the study. The data were collected using the Socio-Demographic Characteristics Form, the Health Beliefs Related to Cardiovascular Diseases Scale, and the International Physical Activity Questionnaire-Short Form. Test of the difference between two means (t test) and Pearson correlation analysis was used in the analysis of data. **Results:** The mean score of participants' Health Beliefs Related to Cardiovascular Diseases was 63.88±6.01. When the Physical Activity scores of the individuals participating in the study were examined, it was determined that 88.1% were inactive in cases of vigorous activity, 88.2% were inactive in cases of moderate activity, and 55.2% were minimally active in walking situations. A significant difference was found between the smoking status of the participants and the Health Beliefs Related to Cardiovascular Diseases scale, sensitivity sub-dimension, and vigorous physical activity score ($p<0.05$). A significant difference was found between the participants' medication use status and the Health Beliefs Related to Cardiovascular Diseases scale, sensitivity sub-dimension, benefit sub-dimension, and obstacle sub-dimension ($p<0.05$). A very weak positive correlation ($r=0.121$ $p=0.01$) was found between individuals' beliefs about cardiovascular diseases and their physical activity levels. **Conclusion:** The study participants' physical activity scores were found to be at an inactive level, while their Health Beliefs Related to Cardiovascular Diseases scores were determined to be intermediate. There was a correlation between individuals' beliefs about cardiovascular diseases and their physical activity levels.

Keywords: Physical activity, Cardiovascular disease, Health beliefs, Cardiovascular risk factors

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INTRODUCTION

Non-communicable diseases are the primary public health issue that lowers quality of life, results in more deaths and disabilities, and drives up healthcare costs globally. The number of deaths due to non-communicable diseases is predicted to increase over the years. Nearly 42% of all non-communicable disease deaths globally occurred before the age of 70 (1). It is emphasized that as risk factors decline, there will be a decrease in cardiovascular events as well as mortality rates from all causes, since cardiovascular illnesses are among the major causes of death (2). The World Health Organization's (WHO) Action Plan for the Prevention and Control of Non-Communicable Diseases (2013–2020) includes the target of reducing premature deaths due to cardiovascular illness, cancer, or diabetes by 25% (3). The European Heart Health Convention emphasizes that social and individual interventions are necessary to address all risk factors and causes of heart disease in order to avoid it. Risk factors are stated to be hypertension, diabetes, smoking, high cholesterol, obesity, and a sedentary lifestyle (1, 4, 5).

It has been emphasized in many studies that increasing exercise is a major element in lessening the hazard of cardiovascular illness and that being physically active significantly reduces the hazard of cardiovascular illness with effects for example, lowering blood pressure and cholesterol levels, weight control, and controlling diabetes mellitus (DM) (6, 7, 8, 9). A protective relationship was found between weekly moderate exercise and cardiovascular mortality, depending on the type, frequency, intensity, and duration of exercise. Exercise improves endothelial function and is associated with improvements in weight loss, glycemic control, blood pressure, lipid level (increases HDL levels), and insulin sensitivity (10). In people performing aerobic exercise, the risk of coronary occlusion due to a plaque rupture is reduced due to antithrombotic effects, for example, increased plasma level, decreased blood viscosity, decreased platelet aggregation, and improved thrombolytic capacity. Physical activity includes sports-related activities for example rollerblading, lifestyle-related activities (11).

In addition, 5% of deaths from cardiovascular disease can be prevented if smoking, one of the most important hazard elements, is reduced (12). In Erhardt's study, it was emphasized that directing smokers to smoking cessation therapies and implementing these therapies are

important factors in reducing cardiovascular illness risk and mortality. In addition, it was also mentioned that smoking cessation is more effective than cholesterol-lowering therapies in reducing the hazard of cardiovascular disease and that the risk is significantly reduced within two years following smoking cessation (13). In terms of cardiovascular disease, it is significant to raise awareness with recommendations such as exercise, diet, and smoking cessation to a patient in the low-moderate hazard group, to identify patients in the high hazard group, to follow them closely, to recommend lifestyle changes, and to reduce cardiovascular risk with pharmacological treatment when necessary. Cardiovascular illness are the major cause of death in Turkey. In light of the identification of risk factors that contribute to the development of cardiovascular illness, secondary prevention measures, identification of existing risk factors, and primary protection of the general population and high-risk individuals in relation to these factors have become more significant (14, 15). The research was managed to examine the relationship among the beliefs of individuals about cardiovascular diseases and their physical activity levels.

Research questions:

What are the levels of individuals' beliefs about cardiovascular diseases?

What is the grade of exercise scores of individuals?

Is there a significant difference between the mean scores of the Health Beliefs Scale regarding cardiovascular diseases and the descriptive characteristics and physical activity scores?

Is there a correlation between individuals' beliefs about cardiovascular diseases and their exercise scores?

MATERIALS AND METHODS

Type of Study and Participants: The population of the descriptive cross-sectional study included 77,082 individuals aged 30 to 50 years enrolled in twenty-one family health centers in the central district of Kütahya. In the power analysis, the sample size was determined as 383 people (16). The sample of the study consisted of 411 people who applied to family health centers during the study period and who volunteered to participate in the study and met the inclusion criteria.

Study Data Collection: The data were collected from April 2023 to September 2023 using the Socio-demographic Characteristics Form, the Health Beliefs Related to Cardiovascular Diseases Scale, and the International Physical Activity – Questionnaire Short Form prepared by researchers. The "Socio-demographic Characteristics Form" consists of 10 questions

questioning the socio-demographic characteristics of the individuals, such as age and gender. The form was prepared by researchers as a result of a literature review (15, 17).

Health Beliefs Related to Cardiovascular Diseases Scale: Turkish Validity and Reliability was conducted by Karahan Okuroğlu and Ercan Toptaner. The scale has 25 items and a 4-point Likert scale. A score of 25 to 100 is obtained from the scale. An increase in the score indicates an increase in health beliefs regarding cardiovascular diseases. The Cronbach's alpha coefficient of the scale was found to be 0.69 (17). In this study, the Cronbach's alpha coefficient of the scale was calculated to be 0.60. In this research, the minimum score of the Health Beliefs Related to Cardiovascular Diseases Scale was 25 and the maximum score was 100, and an increase in this score indicates an increase in health beliefs related to cardiovascular diseases.

International Physical Activity Questionnaire – Short Form (IPAQ-SF): The activity level was assessed with the IPAQ-SF and categorized as inactive, low level active, and adequately active. The IPAQ-SF is the Turkish version of the 7-question short form of the International Physical Activity Questionnaire (IPAQ) created by Booth in 1996 to determine the inactivity and physical activity levels of individuals. The validity and reliability study of the questionnaire in Turkey was conducted by Sağlam et al., and the correlation coefficient was r = 0.69 (18). In the questionnaire, activities at low, medium, and high intensity levels are questioned in terms of walking status, timing and frequency. Sitting time was also evaluated. "**Continuous rating**" was used to make the assessment easier. In the "**Continuous rating**" walking is 3.3 metabolic equivalents (METs), moderate physical activity is 4 METs, vigorous physical activity is 8 METs and the rating was created by multiplying these values by time (how many minutes per day) and frequency (how many days per week). Individuals were classified as inactive (category I), low level active (category II) and adequately active (category III). Category I: Those at the inactive level: <600 MET-min.g/hf, Category II: Active at low level: 600 - 3000 MET-min.g/hf, Category III: Active at a sufficient level: >3000 MET-min.g/hf (18,19).

Dependent–Independent Variables: The dependent variables of the study were the scores of the Health Beliefs Related to Cardiovascular Diseases Scale of individuals aged 30 to 50 years. The independent variables were age, educational status, employment status, marital status, family structure, income status, chronic disease status, having children, and using family health center services of individuals aged 30 to 50 years.

Analysis of Study Data: Descriptive statistics were used in the analysis of the data, and since the data showed a normal distribution in further analysis, the significance test of the difference between two means (t-test) and Pearson correlation analysis were performed from parametric tests.

Ethical Aspects of the Study: We obtained an informed consent form from the participants and ethics committee approval (Decision no: 2023/01-27) from the Kütahya Health Science University Non-interventional Clinical Research Ethics Committee. While conducting the study, the principles of the Declaration of Helsinki, 2013 were followed.

RESULTS

The mean age of the participants was 40.73 ± 9.48 years, 63.7% were female, and 36.3% were male. Of the individuals who participated in the study, 32.6% were primary school graduates, 79.6% were married, 63.3% did not smoke, and 89.1% did not drink alcohol. Due to their chronic diseases, 23.1% of the participants used medication. In terms of chronic diseases, 87.3% of the participants did not have diabetes, 98.5% did not have prediabetes, 86.9% did not have hypertension, and 92% did not have hyperlipidemia. In the chronic disease status of the first-degree relatives of the individuals participating in the study, 50.9% did not have diabetes, 98.1% did not have prediabetes, 53.8% did not have hypertension, and 84.4% did not have hyperlipidemia (Table 1).

Table 1. Some Descriptive Characteristics of Participants

Gender	**Number**	**Percentage**
Female	262	63.7
Male	149	36.3
Educational Status		
Primary School	134	32.6
High school	114	27.7
Associate degree	39	9.5
License	101	24.6
Graduate School	23	5.6
Marital Status		
Married	327	79.6
Single	63	15.3
Divorced	21	5.1
Smoking Status		
Smoker	151	36.7
Non-smoker	260	63.3
Alcohol Use Status		
Alcohol User	45	10.9
Non-alcohol user	366	89.1
The State of Drug Use		

Table 1. Continued

The one using drug	95	23.1
The one not using drug	316	76.9
Diabetes		
Diabetic	52	12.7
Non-diabetic	359	87.3
Prediabetes		
Prediabetic	6	1.5
Non-prediabetic	405	98.5
Hypertension		
Hypertensive	54	13.1
Non-hypertensive	357	86.9
Hyperlipidemia		
Having hyperlipidemia	33	8
No hyperlipidemia	378	92
Diabetes (relative)		
Diabetic	202	49.1
Non-diabetic	209	50.9
Prediabetes (relative)		
Prediabetic	8	1.9
Non-prediabetic	403	98.1
Hypertension (relative)		
Hypertensive	190	46.2
Non-hypertensive	221	53.8
Hyperlipidemia (relative)		
Having hyperlipidemia	64	15.6
No hyperlipidemia	347	84.4
TOTAL	**411**	**100**

The mean score of the individuals who participated in the study was 63.88 ± 6.01 on the Health Beliefs Related to Cardiovascular Diseases Scale, and the mean scores on the sub-dimensions were found to be 11.04 ± 2.76 on the Sensitivity sub-dimension, 12.15 ± 3.09 on the Seriousness sub-dimension, 20.30 ± 3.11 on the Benefit sub-dimension, and 20.38 ± 2.88 on the Obstacle sub-dimension (Table 2).

Table 2. Mean Scores of Participants' Health Beliefs Scale Related to Cardiovascular Diseases

Scales	Lower and Upper Value	Mean Scores ($\bar{X}$±SD)
Cardiovascular Disease-Related Health Beliefs Scale Total Score	41-98	63,88±6.01
Sensitivity Sub-Dimension	5-20	11,04±2.76
Seriousness Sub-Dimension	5-42	12,15±3.09
Benefit Sub-Dimension	6-24	20,30±3.11
Obstacle Sub-Dimension	12-36	20,38±2.88

It was found that 88.1% of the individuals participating in the study were inactive in vigorous activity, 88.2% were inactive in moderate activity, and 55.2% were minimally active while walking (Table 3).

Table 3. Physical Activity Scores of the Participants

Activity Levels	Inactive n(%)	Minimal Active n(%)	Very Active n(%)
Vigorous Physical Activity	362 (88.1)	29 (7.1)	20 (4.9)
Moderate-Intensity Physical Activity	338 (82.2)	60 (14.6)	13 (3.2)
Walking	146 (35.5)	227 (55.2)	38 (9.2)

A significant difference was found between the smoking status of the participants and the Health Beliefs Related to Cardiovascular Diseases, sensitivity sub-dimension and vigorous physical activity score ($p<0.05$). The mean scores of the Health Beliefs Related to Cardiovascular Diseases scale, Sensitivity sub-dimension and vigorous physical activity score of the participants who smoked were higher than those of non-smokers. A significant difference was found between the participants' medication use status and the Health Beliefs Related to Cardiovascular Diseases scale, Sensitivity sub-dimension, Benefit sub-dimension, and Obstacle sub-dimension ($p<0.05$). The mean scores of the Health Beliefs Related to Cardiovascular Diseases scale, Sensitivity sub-dimension and Disability sub-dimension of the participants who used medication were found to be higher than those who did not use medication. The mean scores of the Benefit sub-dimension of the participants who did not use medication were found to be higher than those who used medication (Table 4).

Table 4. Mean Cardiovascular Disease-Related Health Beliefs Scale Scores and Physical Activity Scores of Participants According to Smoking, Medication Use and Presence of Chronic Disease

		Scales					
		Cardiovascular Disease-Related Health Beliefs Scale Score	**Sensitivity Sub-Dimension**	**Benefit Sub-Dimension**	**Obstacle Sub-Dimension**	**Vigorous Physical Activity**	**Moderate-Intensity Physical Activity**
Smoking Status ($\bar{X}$±SD)	**Smoker**	64,93±6,53	11,82±2,88	20,32±3,23	20,60±2,86	1,25±0,57	1,23±0,53
	Non-smoker	63,28±5,60	10,59±2,59	20,28±3,04	20,26±2,88	1,11±0,42	1,19±0,44
	Degree of Significance	t: 2.70 **p: 0.00***	t: 4,34 **p: 0,00***	t: 0,11 p: 0,91	t: 1,14 p: 0,25	t: 2,67 **p: 0,00***	t: 0,94 p: 0,34
The State of Drug Use ($\bar{X}$±SD)	**The one using**	65.05±5.84	12.06±2.80	19.58±3.18	20.93±2.64	1.11±0.40	1.14±0.35
	The one not using	63.53±6.02	10.74±2.68	20.51±3.06	20.22±2.93	1.18±0.50	1.22±0.50
	Degree of Significance	t: 2.16 **p: 0.03***	t: 4.16 **p: 0.00***	t: -2.56 **p: 0.01***	t: 2.24 **0.02***	t: -1.33 p: 0.18	t: -1.73 p: 0.08
The Presence of Diabetes ($\bar{X}$±SD)	**Yes**	64.46±5.63	11.76±2.88	19.55±3.39	20.90±2.23	1.03±0.19	1.07±0.26
	No	63.80±6.06	10.94±2.73	20.40±3.05	20.31±2.95	1.18±0.51	1.22±0.49
	Degree of Significance	t: 0.73 p: 0.46	t: 2.02 **p: 0.04***	t: -1.85 p: 0.06	t: 1.37 p: 0.16	t: -3.87 **p: 0.00***	t: -3.31 **p: 0.00***
The Existence of Hypertension ($\bar{X}$±SD)	**Yes**	66.18±5.69	13.22±2.33	19.74±3.10	21.16±2.79	1.09±0.35	1.09±0.29
	No	63.54±5.98	10.71±2.67	20,38±3,10	20.27±2.87	1.17±0.50	1.22±0.49
	Degree of Significance	t: 3.04 **p: 0.00***	t: 6.50 **p: 0.00***	t: -1,42 p: 0,15	t: 2.13 **p: 0.03***	t: -1.58 p: 0.11	t: -2.81 **p: 0.00***
Presence of Hyperlipidemia ($\bar{X}$±SD)	**Yes**	64.39±6.06	11.45±2.63	19.48±3.10	21.15±2.51	1.12±0.48	1.09±0.29
	No	63.84±6.01	11.01±2.77	20.37±3.10	20.32±2.90	1.17±0.48	1.21±0.49
	Degree of Significance	t: 0.50 p: 0.61	t: 0.88 p: 0.37	t: -1.57 p: 0.11	t: 1.58 p: 0.11	t: -0.57 p: 0.56	t: -2.26 **p: 0.02***

*P<0.05

significant difference was found between the presence of diabetes and the Sensitivity sub-dimension, vigorous physical activity and moderate physical activity scores ($p<0.05$). The mean scores of the sensitivity sub-dimension of participants with diabetes were higher than those without diabetes. Vigorous physical activity and moderate physical activity scores of participants without diabetes were higher than those without diabetes. There was a significant difference between the presence of hypertension and Health Beliefs Related to Cardiovascular Diseases, Sensitivity sub-dimension, Obstacle sub-dimension and moderate physical activity score ($p<0.05$). The mean scores of Health Beliefs Related to Cardiovascular Diseases, Susceptibility sub-dimension, and the Obstacle sub-dimension of participants with hypertension were higher than those without hypertension. The moderate physical activity score of participants without hypertension was found to be higher than that of those with hypertension. A significant difference was found between the presence of hyperlipidemia and the moderate physical activity score ($p<0.05$). Participants without hyperlipidemia had a higher moderate physical activity score than those with hyperlipidemia (Table 4).

In order to examine the relationship between individuals' beliefs about cardiovascular diseases, and physical activity levels, Pearson correlation analysis was applied. Accordingly, there was a very weak positive correlation ($r=0.121$, $p=0.01$) between individuals' beliefs about cardiovascular diseases and physical activity levels (Table 5).

Table 5. The Relationship between Individuals' Beliefs about Cardiovascular Diseases and Physical Activity Levels

	Beliefs about Cardiovascular Diseases	
	r	**p**
Physical Activity Levels	0.121	**0.01***

*$p<0.05$

DISCUSSION

When the mean score of the individuals who participated in the research (63.88 ± 6.01) is examined, it can be concluded that the health beliefs of the individuals regarding cardiovascular diseases are at an intermediate level. There is no other study using the scale in the literature.

Of the participants in the study, 12% were active at the vigorous physical activity level, 17.8% at the moderate physical activity level, and 64.4% were minimally or very active at the walking level. On the other hand, it was observed that most of the participants were inactive at the

vigorous and moderate physical activity levels. According to WHO, increasing grades of physical inactivity have unfavorable effects. It has been proven that regular exercise helps prevent and manage non-communicable illnesses, for example heart illness, stroke, diabetes, and diverse cancers. At the same time, it has been reported to help improve health (20). The European Society of Cardiology (ESC) guideline published in 2016 emphasizes at least 150 minutes of moderate-intensity or 75 minutes of vigorous-intensity physical activity per week to prevent cardiovascular diseases (21). In many studies on the subject, it was detected that the participants received the lowest score from the Physical activity sub-dimension (22, 23, 24, 25). Besides the favorable impacts of organized exercise on the health of the individual, it also has positive effects on the general health level of society, the burden of the health system, and the national economy (26). Therefore, health professionals and nurses have important responsibilities for societies to maintain a physically active life or to adopt this as lifestyle behavior.

An important distinction was found among the smoking status of the participants and the Health Beliefs Related to Cardiovascular Diseases, Sensitivity sub-dimension, and vigorous exercise score ($p<0.05$). The mean scores of the Health Beliefs Related to Cardiovascular Diseases scale, Susceptibility sub-dimension, and vigorous exercise score of the participants who smoked were higher than those of non-smokers. According to the findings of the Turkey Household Health Survey "Prevalence of Risk Factors of Non-Communicable Diseases," 43.6% of the population did not meet the exercise criteria recommended by the World Health Organization for health; 31.5% of the population still use tobacco products, 2 out of every 3 people are overweight; and 3 out of every 10 people are obese; in short, more than half of the population (51.2%) has three or more risk factors for non-communicable diseases (27). It was emphasized in a meta-analysis study that the effect of smoking reduction on the risk of cardiovascular illness is uncertain (28). In another meta-analysis, 26 prospective studies were analyzed, and it was found that the risk of heart failure was 59% higher in smokers compared to non-smokers (29). It was observed that there were different results in the literature regarding the relationship between smoking and cardiovascular illness risk. These differences may vary by country and region.

An important distinction was found among the participants' medication use status and the Health Beliefs Related to Cardiovascular Diseases scale, Sensitivity sub-dimension, Benefit sub-dimension, and Obstacle sub-dimension ($p<0.05$). The mean scores of the Health Beliefs Related to Cardiovascular Diseases scale, Sensitivity sub-dimension and Disability sub-dimension of the participants who used medication were found to be higher than those who did not use medication. The mean scores of the Benefit sub-dimension of the participants who did

not use medication were higher than those who used medication. Not using the medication prescribed or developing resistance to it is related to a high hazard of cardiovascular illness (30). It is an undeniable fact that social support has a direct and indirect effect on adherence to medical treatment (medication) (31). If individuals with cardiovascular disease do not take their prescribed medication, they should not ignore the risk of a heart attack and subsequent death. Nearly one-third to two-thirds of individuals hospitalized for cardiovascular disease experience medication-related problems. The majority of these individuals are enrolled in medication adherence programs within the hospital. Therefore, it is attempted to eliminate the risks of cardiovascular disease or the threats associated with the complications of the illness (32). In another research, it was found that approximately half of the individuals with cardiovascular disease stopped taking the prescribed antihypertensive agent within one year. A key point here is the issue of side effects that come to the fore in the early period with the failure to regularly establish the appropriate dosing regimen in individuals who do not continue the treatment of the disease (33). In order to improve the prognosis or risk level of individuals with cardiovascular illness or hazard, it is important for them to continue the treatment deemed appropriate by the physician. Otherwise, the occurrence of side effects and the risk of death are inevitable.

An important distinction was found among the presence of diabetes and the Sensitivity sub-dimension of vigorous physical activity and moderate physical activity scores ($p<0.05$). The mean scores of the Sensitivity sub-dimension of participants with diabetes were higher than those without diabetes. The vigorous physical activity and moderate physical activity scores of participants without diabetes were higher than those without diabetes. For individuals with diabetes, the benefits of exercise are indisputable. The relationship between exercise and mortality for people with diabetes has been demonstrated by observational studies with an inverse linear dose–response relationship. Accordingly, an increase in physical activity indicates a decrease in mortality (34). Compared to the general population, exercise capacity in persons with diabetes is predictive of mortality (35). Moreover, decreased physical activity capacity in persons with diabetes paves the way for the development of cardiovascular diseases in the future (36). Physical activity is an important issue in individuals with diabetes and cardiovascular hazards. In the literature, increasing physical activity is associated with a decreased hazard of cardiovascular illness (37).

There was an important distinction among the presence of hypertension and Health Beliefs Related to Cardiovascular Diseases, Sensitivity sub-dimension, the Obstacle lower dimension, and the intermediate exercise score ($p<0.05$). The mean scores of the Health Beliefs Related to

Cardiovascular Diseases Scale, Sensitivity sub-dimension, and Obstacle sub-dimension of the participants with hypertension were found to be higher than those without hypertension. Participants without hypertension were found to have a higher moderate physical activity score than participants with hypertension (Table 4). Hypertension is a fatal, preventable cardiovascular disease risk factor and causes the majority of cardiovascular mortality. Hypertension is closely associated with an inactive lifestyle. Both aerobic and resistance exercise can lower blood pressure and postpone the development of hypertension. Regular physical activity reduces blood pressure by 5 mm/Hg. This decrease leads to a 9% decrease in deaths from coronary heart disease, a 14% decrease in deaths from stroke, and a 7% decrease in all causes of death (38). Therefore, hypertensive, prehypertensive, and normotensive individuals may be advised to keep in organized exercise.

An important distinction was found among the presence of hyperlipidemia and the moderate physical activity score ($p<0.05$). Participants without hyperlipidemia had a higher moderate physical activity score than those with hyperlipidemia (Table 4). Prevention of hyperlipidemia leads to a lower risk of cardiovascular diseases (39). Duration, intensity, and frequency of physical activity help blood lipids change positively. The most sensitive parameter to physical activity is HDL cholesterol. In order to decrease LDL cholesterol and triglyceride levels, it is necessary to increase the intensity of physical activity. However, it may not be possible to achieve these goals due to limited physical activity capacity in individuals with risk factors such as coronary artery disease (40). In order to reduce the hazard of cardiovascular illness and maintain normal blood lipid levels, individuals are recommended to engage in physical activity for 150 minutes per week.

CONCLUSION

It was found that the Health Beliefs Related to Cardiovascular Diseases scores of the individuals participating in the study were at a moderate level, and their Physical Activity scores were at an inactive level. There was a correlation between individuals' beliefs about cardiovascular diseases and their physical activity levels. It is very important to encourage individuals to monitor their own health and to develop health policies for regular physical activity monitoring with objective methods, taking into account the individual and social benefits of physical activity.

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