Sakarya Üniversitesi Holistik Sağlık Dergisi
Sakarya University Journal of Holistic Health
ISSN: 2687-6078 / SAUHSD 2023;6(1): 16-31
doi: 10.54803/sauhsd.1200437
RESEARCH ARTICLE

Cardiovascular Risk, Risk Knowledge, and Related Factors in Patients

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Abstract
Objective: The aim of this study was to investigate cardiovascular risk, risk knowledge, and related factors in patients.
Method: The descriptive and corelational study was carried out with 340 patients who applied to the state hospital between November 2018 and March 2019 and agreed to participate in the study. Data was collected through face-to-face interviews with the scale of the Cardiovascular Disease Risk Factors Knowledge Level (CARRF-KL) and Systematic Coronary Risk Evaluation (SCORE) Calculator.
Results: In the study, it was found that patients were in the middle risk group in terms of cardiovascular risk, and their risk information level was slightly higher than the average. There was no statistically significant relationship between the level of knowledge of patients and the level of cardiovascular risk (r= -.062, p=.256).
Conclusion: The study emphasises that initiatives should be developed to increase awareness of cardiovascular disease risks in Turkey and to increase the level of cardiovascular disease risk information available in order to prevent diseases. Preventative strategies can reduce the risk of cardiovascular disease and improve outcomes. Nurses should assess risk knowledge in patients to ensure best outcomes.

Keywords: Cardiovascular disease, risk factors, level of knowledge, nursing care

Hastalarda Kardiyovasküler Risk, Risk Bilgisi ve İlişkili Faktörler

Öz
Amaç: Bu çalışmanın amacı, hastalarda kardiyovasküler risk, risk bilgisi ve ilişkili faktörleri araştırmaktır.
Yöntem: Tanımlayıcı ve kolerasyonel özellikte yapılan çalışma, Kasım 2018-Mart 2019 tarihleri arasında devlet hastanesine başvuran ve çalışmaya katılmayı kabul eden 340 hasta ile gerçekleştirilmiştir. Veriler, Kardiyovasküler Hastalık Risk Faktörleri Bilgi Düzeyi (KARRİF-BD) ölçeği ve Sistematik Koroner Risk Değerlendirme (SCORE) Ölçeği ile yüz yüze görüşülerek toplanmıştır.
Bulgular: Çalışmada hastaların kardiyovasküler risk açısından orta risk grubunda olduğu ve risk bilgi düzeylerinin ortalamanın biraz üzerinde olduğu saptanmıştır. Hastaların bilgi düzeyi ile kardiyovasküler risk düzeyi arasında istatistiksel olarak anlamlı bir ilişki bulunmamaktadır (r= -.062, p=.256).
Sonuç: Çalışma, Türkiye'de kardiyovasküler hastalık riskleri konusunda farkındalığın artırılmasına yönelik girişimlerin geliştirilmesi ve hastalıkları önlemek için mevcut kardiyovasküler hastalık risk bilgilerinin düzeyinin artırılması gerektiğini vurgulamaktadır. Önleyici stratejiler, kardiyovasküler hastalık riskini azaltabilir ve sonuçları iyileştirebilir. Hemşireler, en iyi sonuçları sağlamak için hastalardaki risk bilgilerini değerlendirmelidir.

Anahtar Kelimeler: Kardiyavasküler hastalık, risk faktörleri, bilgi düzeyi, hemşirelik bakımı

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Geliş Tarihi/Received: 07.11.2022 │***Kabul Tarihi/Accepted:*** 24.01.2023│ ***Yayım Tarihi/Published:*** 28.04.2023
Atıf/Cited: Zengin F, Demir Barutcu C. Cardiovascular Risk, Risk Knowledge, and Related Factors in Patients. Sakarya Üniversitesi Holistik Sağlık Dergisi. 2023;6(1): 16-31.doi: 10.54803/sauhsd.1200437

INTRODUCTION

Cardiovascular diseases (CVDs) are a major health problem and a leading cause of mortality and morbidity. An estimated 17.9 million people died from CVDs in 2019, representing 32% of all global deaths. Over three quarters of CVD deaths take place in low- and middle-income countries (1). In Turkey, among other developing countries, 39.7% of the deaths occurred due to cardiovascular system diseases (2). As a result of urbanization worldwide, primary risk factors such as hypertension, obesity, physical inactivity, malnutrition, alcohol and smoking are increasing (3). Most cardiovascular diseases can be prevented by addressing behavioral risk factors such as tobacco use, unhealthy diet and obesity, physical inactivity and harmful use of alcohol. The effects of behavioral risk factors can occur as high blood pressure, blood sugar, and blood lipids, overweight, or obesity in individuals. It has been shown that reducing/ quitting the use of tobacco and alcohol, reducing salt in the diet, preferring a healthy diet and regular physical activity reduce the risk of cardiovascular disease. Health policies must create conducive environments to make healthy choices affordable and accessible, and motivate people to adopt and maintain healthy behaviors (1). Early detection and prevention of risk factors can help reduce the negative impact of their cardiovascular diseases (4-10). When the studies are examined in the literature in individuals with cardiovascular disease risk calculations, the presence of cardiovascular disease risk factors, cardiovascular disease or studies have been conducted (3-8) for the detection of the level of knowledge about healthy lifestyle behaviors however, studies examining the relationship between cardiovascular disease risk level and cardiovascular disease risk factors knowledge levels could not be found. Therefore, it is necessary to determine the level of knowledge about the factors that cause cardiovascular risk in individuals. The study was conducted to determine the level of cardiovascular disease knowledge and risk status of individuals in a developing country.

MATERIAL AND METHOD

Design and sample

Research was applied in a descriptive, cross-sectional, and comparative design. The research was carried out in the polyclinic of a state hospital (was conducted in a small city located in the west of Turkey) between November 2018 and March 2019. Convenience sampling methods were used. Eighteen patients refused to participate because of limited time (5%). To determine the sample size, the significance level was

set at α=0.05, the statistical power at 0.80, and effect size at 0.50. The sample size was calculated as 128, but we conducted the study with 340 patients to increase power. The inclusion criteria for patients were a person who voluntarily accepted participation in the research, who had been admitted to outpatient clinics, those between 40 - 65 years and the presence of HDL, LDL, total cholesterol values measured in the last 6 months. Exclusion criteria were as follows: Having a history of cardiovascular diseases (past myocardial infarction, coronary bypass, etc.), having been diagnosed with diabetes (diagnosis of diabetes was determined as an exclusion criterion since it was accepted as equivalent to coronary heart disease).

Data Collection

The purpose of the interview was explained to the patients who applied to state hospital on the specified dates and matched the sample characteristics at a time when they were eligible, and the scales were applied with the consent of the patients who agreed to participate in the study. Medical data are taken from medical sources. The scale forms took about 15 minutes to complete. In the SCORE risk calculation, a standard protocol was applied by the researcher; blood pressure was measured in a sitting position with a blood pressure monitor calibrated after at least 15 minutes of rest. Total cholesterol and LDL cholesterol values that have been looked up from hospital data of patients over the past year have been recorded in mg/dl. The SCORE and risk values of the participants were calculated electronically.

Instruments

Sociodemographic and Medical Data Collection Form

This form is comprised: age, gender, weight, height, marital status, education level, employment status, social insurance, economic status, and medical characteristics; family history of coronary artery disease, smoking, exercise status, chronic illness, and metabolic parameters; total cholesterol, high-density lipoprotein [HDL-C], low-density lipoprotein [LDL-C], fasting blood glucose [FBG], triglycerides level, blood pressure (4-10).

Systematic Coronary Risk Evaluation (SCORE) Calculation Tool

The SCORE risk model is included in the dyslipidemia guideline jointly published by the European Society of Cardiology and the European Atherosclerosis Society in July 2011. The SCORE calculation system is evaluated separately for high and low risk countries. It is recommended to use the "European High Risk Score" for Turkey and all other European countries. The Systematic Coronary Risk Assessment

system can predict an individual's 10-year risk of fatal cardiovascular disease (CVD) and assist in making management decisions. The parameters used in the SCORE risk calculation tool used to estimate CVD risk include total cholesterol level, systolic blood pressure, smoking status, gender and age. Risk levels according to the SCORE risk calculation tool are: • 1%: low risk • 2-4%: medium risk • 5-10%: high risk • >10%: very high risk (11,12).

The Cardiovascular Disease Risk Factors Knowledge Level (CARRF-KL) Scale

The Cardiovascular Disease Risk Factors Knowledge Level (CARRF-KL) Scale was prepared by Arıkan et al. in 2009 (13). This scale is composed of 28 items in total. The first four items were examining the factors like characteristics of CVD, prevention and age, 15 items (items 5, 6, 9-12, 14, 18-20, 23-25, 27, 28) were examining the risk factors and nine items (items 7, 8, 13, 15, 16, 17, 21, 22, 26) were examining the outcome of changes in risk behaviors. All the items were presented in the form of complete true or false statements, requiring participants to respond by "Yes", "No" or "Don't know." Each correct answer was given a score of 1. Six of the statements in the scale were wrong and these were inversely encoded compared to the rest. The maximum total score was determined as 28. The score increases as the level of knowledge is increasing. Internal consistency using Cronbach's was 0.76 (13). In this study, the reliability coefficient of the scale was determined as 0.82.

Data Analysis

For data analysis, the SPSS 22.0 software (SPSS, Inc., Chicago, IL, USA) was used. A test of hypothesis with p value of $< .05$ was considered significant. One of the descriptive statistics in the analysis of the data number, percentage, mean, standard deviation, t test were used. Pearson correlation test was used to evaluate the relationship between SCORE risk score and CARRF-KL scale score. The numerical data collected in the study are mean, median, standard deviation, range of values; Categorical data were expressed by descriptive methods such as ratio and percentage. One-way analysis of variance (One Way ANOVA) method was used to compare the measured variables in more than two groups. In addition, Kruskal Wallis H test was used to compare non-homogeneously distributed continuous variables in more than two groups.

Ethical Considerations

First of all, permission was obtained from the author who developed the scale via e-mail. Written consent was obtained from the participants. Written permission from Mehmet Akif Ersoy University Ethical Committee (GO 2018/104) and the Burdur

State Hospital (23286918/806.02.02) was also obtained.

RESULTS

It was determined that 40.6% of the participants to research were between the age interval of 60-65, 62.9% were female, 62.4% had a chronic disease, 70.3% did not smoke cigarettes, and 53.2% do exercise. Other sociodemographic and medical characteristics of the participants are summarized in Table 1.

Table 1. Comparison of sociodemographic features with SCORE and CARRF-KL scale scores

Demographic Characteristics	**n**	**%**	**SCORE X±SD**	**CARRF-KL X±SD**
Age				
40-44	61	17.9	0.14 ± 0.35	19.29 ±4.64
45-49	52	15.3	0.48 ± 0.77	19.88 ± 3.48
50-54	35	10.3	1.80 ± 1.90	16.60 ± 3.95
55-59	54	15.9	3.81 ± 2.48	18.16 ± 3.69
60-65	138	40.6	6.93 ± 5.66	17.48 ± 3.78
F			49.333	6.214
p			**0.000***	**0.000***
Gender				
Female	214	62.9	2.41 ± 3.04	18.34 ±4.27
Male	126	37.1	5.90 ± 6.21	17.93 ±3.58
t			-6.936	0.904
p			**0.000***	0.367
Marital status				
Married	304	89.4	3.89 ± 4.92	18.16 ± 3.96
Single	36	10.6	2.13 ± 2.99	18.44 ± 4.58
t			2.087	-0.393
p			**0.038***	0.694
Education status				
Not literate	23	6.8	5.96 ± 1.24	17.04 ± 5.04
Primary school	135	39.7	4.71 ± 0.40	17.31 ± 3.93
Middle school	69	20.3	3.92 ± 0.47	17.71 ± 3.27
High School	52	15.3	5.55 ± 0.77	18.44 ± 3.90
University	61	17.9	3.61 ± 0.46	20.91 ± 3.56
KW			76.565	44.315
p			**0.000***	**0.000***
Employment status				
Employed	109	32.1	1.35 ± 2.57	19.28 ±3.96
Retired	96	28.2	7.07 ± 6.42	17.71 ± 3.23
Unemployed	135	39.7	2.97 ± 3.35	17.65 ± 4.43
F			44.446	6.046
P			**0.000***	**0.003***
Social insurance				
Have	297	87.4	3.88 ± 4.89	18.20 ±4.01
Have not	43	12.6	2.46 ±3.81	18.09 ± 4.17
t			1.825	0.176
p			0.069	0.861
Economic status				
Income > expense	32	9.4	1.71 ± 2.99	18.75 ± 4.36
Income=expense	71	20.9	3.97 ± 4.89	18.67 ± 4.31
Income < expense	237	69.7	3.89 ± 4.90	17.97 ± 3.89
F			3.088	1.163

P			**0.047***	0.314
Family history of coronary artery disease				
Yes	155	45.6	4.69 ± 5.80	18.18 ±4.13
No	185	54.4	2.87 ± 3.54	18.20 ± 3.95
t			3.553	-0.056
p			**0.000***	0.955
Smoking				
Yes	101	29.7	5.20 ± 6.53	18.27 ± 3.62
No	239	70.3	3.07 ± 3.64	18.15 ± 4.19
t			3.836	0.247
p			**0.000***	0.805
Do Exercise (30 minutes of walking 3 days a week)				
Yes	181	53.2	2.99 ± 3.97	18.32 ± 3.93
No	159	46.8	4.51 ± 5.46	18.04 ± 4.15
t			-2.957	0.643
p			**0.003***	0.521
Chronic disease				
Have	212	62.4	4.47 ± 5.16	17.92 ± 3.90
Have not	128	37.6	2.43 ± 3.77	18.64 ± 4.21
t			3.874	-1.590
p			**0.000***	0.113
LDL(mg/dL)				
100 and below	126	37.1	3.23 ± 4.13	18.50 ± 4.47
101-129	138	40.6	3.52 ± 5.08	18.33 ± 3.46
130-159	63	18.5	4.96 ± 5.20	17.47 ± 4.11
160-189	9	2.6	5.44 ± 5.00	16.22 ± 3.70
190 and above	4	1.2	0.75 ± 0.95	19.25 ± 6.07
KW			15.659	7.318
p			**0.003***	0.120
HDL (mg/dL)				
35 and below	52	15.3	2.69 ± 3.00	18.73 ± 3.71
36-44	76	22.4	3.90 ± 4.19	17.67 ± 4.54
45-49	62	18.2	2.69 ± 3.19	18.79 ± 3.72
50-59	85	25.0	4.38 ± 5.77	18.40 ± 3.75
60 and above	65	19.1	4.35 ± 4.78	17.53 ± 4.22
F			2.065	1.380
p			0.085	0.241

*****p < 0.05**,** X=Mean; SD= standard deviation; KW= kruskal-wallis (KW) test, t=student's t tests; F= one way anova, HDL=high-density lipoprotein [HDL-C], LDL= low-density lipoprotein [LDL-C]

When the cardiovascular risks of the patients included in the study were compared according to their social demographic characteristics, statistically meaningful difference was determined in terms of age, gender, marital status, education level, employment status, economic status, have coronary heart disease, smoking, do exercise, have chronic disease and LDL levels (p < .05). On the other hand, statistically meaningful difference was not determined between social insurance and HDL levels (p >0.05). (Table 1). When the knowledge level of the patients included in the study was compared according to social demographic characteristics, a statistically significant difference was found in terms of age,

education level, employment status; however, no statistically significant difference was found in terms of gender, marital status, social insurance, economic status, presence of CVD in the family, smoking, exercise, chronic disease, LDL and HDL levels ($p > 0.05$). (Table 1). It was determined that, the risk of risk of cardiovascular disease increased as the age increased, male had more cardiovascular disease risk when compared to female and the difference among them were determined significant, married people had more cardiovascular disease risk than single, cardiovascular disease risk decreased as the level of education increased, more risk was observed in retired or unemployed individuals, cardiovascular disease risk decreased as economic status increased, individuals who had coronary artery disease history in family and ho had chronic disease had higher risks, risk was determined higher for smokers in comparison with non-smokers and those who did not exercise had higher risks. It was found that as the LDL level of the patients increased, the level of cardiovascular risk increased (Table 1). Considering the level of knowledge (CARRF-KL), it was determined that level of knowledge decreased as the age increased, level of knowledge increased as the education increased, working individuals had more knowledge than retired or unemployed (Table 1).

Table 2. Mean, standard deviation, range of scores of scale of SCORE and CARRF-KL

SCORE Scale Level	**n**	**%**	$\bar{X}$ **± SD**
low-risk (less than 1%)	87	25.6	19.41 ± 4.38
medium risk (1-4%)	171	50.3	17.78 ± 3.91
high-risk (5-9%)	49	14.4	17.65 ± 3.93
very high risk (10% and above)	33	9.7	17.87 ± 3.21
	Min	**Max**	$\bar{X}$ **± SD**
Total SCORE scale	0	25	3.70 ± 4.78
Total CARRF-KL	6	25	18.19 ± 4.03

SCORE = Systemic Coronary Risk Evaluation; CARRF-KL= The Cardiovascular Disease Risk Factors Knowledge Level

Mean, standard deviation, range of scores of scale of SCORE and CARRF-KL are summarized in Table 2.

Table 3. Correlations of SCORE and CARRF-KLvalues with some variables among individuals

Sociodemographic and medical characteristics	$\bar{x}$ ± SD	SCORE value		CARRF-KL value	
		r	p *	r	p*
Weight (kg) (min;43kg, max:128kg)	71.49 ± 15.31	0.021	0.705	0.050	0.356
Height (cm) (min:150 cm, max: 195 cm)	164.27 ± 8.23	0.107	**0.048***	0.075	0.169
Body Mass Index (kg/cm^2) (min:16.33 max: 44.06)	26.41 ± 4.94	-0.044	0.418	0.018	0.736
Total Cholesterol Level (mg/dl) (min: 70 mg/dl, max:300 mg/dl)	167.22 ± 33.96	0.285	**0.000***	0.037	0.494
Triglycerides Level (mg/dl) (min: 40 mg/dl, max: 552 mg/dl)	124.74 ± 58.27	0.128	**0.018***	0.084	0.121
Fasting Blood Glucose Level (min:50 mg/dl, max: 560 mg /dl)	124.44 ± 66.52	0.281	**0.000***	-0.064	0.242
Blood Pressure Systolic (mmHg) (min 70 mmHg, max 206 mmHg)	134.31 ± 21.98	0.491	**0.000***	-0.068	0.208
Blood Pressure Diastolic (mmHg) (min 40 mmHg, max 170 mmHg)	80.94 ± 12.81	0.234	**0.000***	-0.007	0.900

***p < 0.05**, X=mean; SD= standard deviation; r=pearson correlation; SCORE = Systemic Coronary Risk Evaluation; CARRF-KL= The Cardiovascular Disease Risk Factors Knowledge Level

It was found that there was significant correlation between cardiovascular risk score (SCORE) and height, total cholesterol level, triglyceride level, fasting blood glucose, systolic blood pressure and diastolic blood pressure. There was no significant relationship between CARRF-KL and social and medical characteristics (Table 3).

DISCUSSION

In the study, it was found that patients were in the middle risk group in terms of cardiovascular risk, and their risk information level was slightly higher than the average. There is no statistically significant relationship between the level of knowledge of patients and the level of cardiovascular risk. The study compared the sociodemographic characteristics of participants in cardiovascular risk according to their age, gender, marital status, educational level, economic status, family history of coronary artery disease, smoking status, exercise status, and presence of chronic disease and a statistically significant difference was found.

In the study, it was found that the risk of death due to cardiovascular disease increased as the average age of the patients increased. It was determined that 40.6% of the participants were between the ages of 60-65. There is a significant difference between cardiovascular risk scores in terms of age groups. It is known that age is an indicator of the duration of exposure to cardiovascular disease, and cardiovascular disease risk factors increase with age (14). 45 years of age in men and over 55 years of

age in women are a strong risk factor for cardiovascular disease (15). An expected result is that the risk level increases as age increases (16). A study conducted by Kilkeny et al. in 2017 found that 47% of the participants had a risk of cardiovascular disease and that the risk increased with age (10).

In the study, it was found that 50.3% of the participants had a risk of death from cardiovascular disease within the next decadal period of 1-4% (medium risk group). When the studies in the literature were examined, similar results were obtained with our study. In his study, Tekin in 2018 (17) found that the most patients were in the middle risk group, similar to our results. In the study in which Eray et al. in 2018 (18) evaluated the risk of cardiovascular disease in adult individuals, it was found that 53.1% of the participants were in the medium risk group. In other studies, it was found that the cardiovascular risks of the participants were moderate (19, 20).

In the study, it was found that 7.4% of men have a risk of death from cardiovascular disease of 10% and above (very high risk). In women, this rate was found to be 2.4%. In a study conducted in the Netherlands, it was found that 8.5% of men and 0.8% of women have a 5% or higher risk of cardiovascular death (21). As a result, it has been determined that the risk of cardiovascular death in men over the next ten years is higher than women. It was thought that the reason for this might be due to the high average age of the individuals participating in our study (40.6% of them are in the 60-65 age group). In addition, our result can be explained by the high mortality rate due to cardiovascular disease in men living in Turkey (2). In the study, it was found that 50.8% of men smoked, while this rate was 17.3% in women. It is thought that this may be due to the fact that men use more cigarettes. Because most cardiovascular diseases can be prevented by addressing behavioural risk factors (unhealthy diet and obesity, tobacco and alcohol use, physical inactivity) (1).

In the study, it was found that 24.1% of the participants had a 10-year risk of cardiovascular disease of 5% and above (high risk). Tekin in 2018, in his study, stated that the rate of approximately 30% of patients with a risk score of 5% and above (17). Patients with diabetes and coronary artery disease were not included in this study. In this study, diabetes and coronary artery patients were excluded, so the rates were similar. Diabetes, which is an important cardiovascular risk factor, negatively affects cardiovascular disease prognosis and increases the risk of recurrent acute cardiac events (6,22).

The study compared the sociodemographic characteristics of participants in

cardiovascular risk according to their marital status a statistically significant difference was found. It was thought that the reason for the high cardiovascular risk in married individuals may be due to the fact that the group did not show a homogeneous distribution. In the sample group, the number of women is considerably higher than that of men.

In the study, it was found that an increase in education level and economic status decreased the risk of cardiovascular disease. This result is compatible with the literature (5,23). It was thought that this might be due to the fact that patients can access health services more easily due to their socioeconomic status, use early diagnosis methods, follow up blood values more frequently, and pursue health follow ups. Likewise, increasing the level of education can enable people to manage existing risks more easily and avoid risky situations. In addition, it is predicted that the level of health literacy will increase with an increase in the level of education.

In the study, it was found that people who do not exercise and/or smoke have a higher risk of cardiovascular disease in their family history of coronary disease. Baysal et al. in 2014 in a study in which they examined coronary heart disease risk factors and physical activity status, found that individuals who do not exercise have a high risk of coronary artery disease (24). Our study results draw parallels with the literature results. It is known that individuals who smoke and have a family history of coronary artery disease have a high risk of coronary artery disease. In the study, 45.6% of the participants were found to have CVD in their first degree relatives. In a study conducted by Badıllıoğlu in 2011, it was reported that 23.6% of the participants had CVD in their family (25). A study by Uçar et al. in 2017 reported that 55.4% of the participants had CVD in their family (26). Family history is a well-known and important risk factor for CVD. Having a family history of CVD poses a risk (27). From this point of view, our study is in parallel with the literature.

The study participants' level of CARRF-KL when compared with the socio-demographic characteristics of gender, marital status, social security, economic status, family status, coronary heart disease, smoking status, exercise status, was not a statistically significant difference in terms of the presence of chronic disease. When the knowledge level of the patients included in the study was compared according to social demographic characteristics, a statistically significant difference was found in terms of age, education level, employment status.

According to the study by Sözmen et al. in 2015, it was found that the level of knowledge increased with increasing age,

being married, having a high income and increasing the level of education (28). Similarly, in the studies conducted, it was found that cardiovascular risk knowledge was higher in individuals with a higher level of education (5,9,23,29). In the study, risk information decreased as age increased, and the difference was statistically significant. Kilkenny et al. in 2017 found that cardiovascular risk information decreased in individuals over the age of 55 in their study (10). In our conclusion, which is compatible with the literature, it is thought that knowledge levels decrease due to decreased cognitive functions and increased chronic diseases with increasing age. Aging is a complex process that involves many physiological changes. The increasing incidence of comorbid conditions with increasing age makes it difficult for the elderly to access and use health services (30). In addition, there may be difficulties in later age due to changes in cognitive functions, including hearing impairment, visual impairment, and attention deficit. In the study, which supports the literature, it was found that the level of knowledge increases as the educational status increases. It is an expected result that individuals with a high level of education and who are active in business life have a higher level of knowledge. It is thought that individuals with health responsibilities who want to get more information about their condition and health management will have high risk information. In addition, the increase in the level of education may be a factor facilitating the access to information. In the study, it was found that the knowledge score averages of retired and non-working participants were lower than those of employees. It has been thought that the reason for this may be due to the fact that working people can access information more easily due to their social environment and ability to interact with each other. In addition, a reason may also be that the average age of working people is lower than that of retired people. Our study result shows similarities with the studies conducted with different sample groups in the literature (5,17,23,29,31-34).

It was determined that there was no statistically significant relationship between the SCORE Risk Scores of the patients and the CARRF-KL scale scores. Similarly, in Tekin's (2018) study, in which men aged 40-65 years were evaluated by the score of cardiovascular death risks and the awareness of cardiovascular risk factors knowledge level, there was a very weak negative correlation between patients' score risk scores and CVD risk factors knowledge level scale scores (17). In the study, it was determined that the level of risk decreased as the level of knowledge increased. Burger et al. in 2016, in their study in which they examined the relationship between

cardiovascular risk and risk knowledge, found that individuals had high risk levels, but there was no significant relationship between risk status and risk knowledge (4). Our study supports this. In the literature, it has been found that individuals with high cardiovascular risk scores have low cardiovascular risk knowledge, similar to our study, and the risk level decreases as risk knowledge increases (9,10).

The limitations of this study are that the results cannot be generalized to patients in Turkey and other regions, since the patients were selected from a public hospital living in a small province. In the study, the level of cardiovascular risk knowledge and influencing sociodemographic characteristics were examined, but individuals' self-care, disease prevention behaviors, and perspective on cardiovascular diseases were not tested, these additional components could lead to a better understanding of the findings.

CONCLUSION

In the study, it was determined that about half of the participants had a moderate or very high risk of cardiovascular diseases. These findings once again show that cardiovascular diseases are an important health problem. Since cardiovascular diseases usually occur as a common component of many risk factors, calculating the risk of developing cardiovascular disease in adult individuals is very important in terms of preventive approaches and treatment.

In the study, the participants' cardiovascular disease risk information levels were found to be moderate. It should be ensured that the level of knowledge of patients about cardiovascular risks is increased and awareness about risks is increased through patient education and lifestyle changes. Patients should be guided to achieve the metabolic goals of their own risk groups and maintain these values.

Ethical Approval: This study was approved by Mehmet Akif Ersoy University Ethical Committee (Date: 03/10/2018, and Decision no: GO:2018/104) and the Burdur State Hospital (23286918/806.02.02) was also obtained.

Author(s) Contributions:

Study design: Fatma Zengin, Canan Demir Barutcu.

Data collection: Fatma Zengin

Data analysis: Fatma Zengin, Canan Demir Barutcu.

Manuscript writing: Fatma Zengin, Canan Demir Barutcu.

Conflict of Interest: The authors have no conflicts of interest to declare.

Financial support: There was no financial support for this article.

Acknowledgments: The authors thank the participants in this study.

Other Information: This research was

conducted as a master of science thesis.

Plagiarism Statement: This article has been scanned by iThenticate.

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