

Knowledge Level of Individuals Applying Cardiology Outpatient Clinic About Risk Factors for Cardiovascular Diseases: A Cross-Sectional Study

Kardiyoloji Polikliniğine Başvuran Bireylerin Kardiyovasküler Hastalıklara Yönelik Risk Faktörleri Hakkında Bilgi Düzeyleri: Kesitsel Bir Çalışma

ABSTRACT

Objective: The aim of this study is to determine the knowledge levels of the individuals, who applied to cardiology outpatient clinic, about the risk factors for cardiovascular diseases and the influencing factors.

Methods: This cross-sectional study was conducted in a state hospital between July 2017 and August 2017. "Cardiovascular disease risk factors knowledge level" scale was applied to the participants (n=304). Data were analyzed with mean, standard deviation, frequency, and t-test by using SPSS 23 software.

Results: There was no significant difference between the patients diagnosed with cardiovascular diseases and those without the diagnosis of cardiovascular diseases in terms of scores of the cardiovascular disease risk factors knowledge level scale ($P > .05$). The mean score of the patients, who had high school and higher education level, received training about cardiovascular system diseases, did regular exercises, had hypertension, and had body mass index of 25-29.9 kg/m², was found to be the highest ($P < .05$). It was determined that the knowledge levels of the participants about cardiovascular diseases were above the moderate level.

Conclusion: The scheduled training activities should be organized to increase the awareness levels of individuals about primary and secondary prevention measures. Individuals with increased awareness are more likely to implement healthy living behaviors.

Keywords: attitude, cardiovascular diseases, knowledge

ÖZ

Amaç: Bu çalışmanın amacı, kardiyoloji polikliniğine başvuran bireylerin kardiyovasküler hastalıklar için risk faktörleri ve etkileyen faktörler hakkında bilgi düzeylerini belirlemektir.

Yöntem: Kesitsel tipteki bu çalışma Temmuz-Ağustos 2017 tarihleri arasında bir devlet hastanesinde yapıldı. Katılımcılara (n=304) "Kardiyovasküler Hastalık Risk Faktörleri Bilgi Düzeyi" (KARRF-BD) ölçeği uygulandı. Veriler, SPSS 23 programı kullanılarak ortalama, standart sapma, frekans ve t-testi ile analiz edildi.

Bulgular: Kardiyovasküler hastalık tanısı alan hastalar ile kardiyovasküler hastalık tanısı almayan hastalar arasında KARRF-BD ölçeği puanları açısından anlamlı fark bulunmadı ($P > .05$). Lise ve üzeri eğitim düzeyine sahip, kardiyovasküler sistem hastalıkları konusunda eğitim almış, düzenli egzersiz yapan, hipertansiyonu olan ve vücut kitle indeksi 25-29,9 kg/m² olan hastaların puan ortalaması en yüksek olarak bulundu ($P < .05$). Katılımcıların KVH ile ilgili bilgi düzeylerinin orta seviyenin üzerinde olduğu belirlendi.

Sonuç: Bireylerin birincil ve ikincil korunma önlemleri konusunda farkındalık düzeylerini artırmak için programlı eğitim faaliyetleri düzenlenmelidir. Farkındalığı artan bireylerin sağlıklı yaşam davranışlarını uygulama olasılıkları daha yüksektir.

Anahtar Kelimeler: tutum, kardiyovasküler hastalıklar, bilgi

ORIGINAL ARTICLE

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Introduction

The data of the World Health Organisation and the Centers for Disease Control and Prevention indicated that more than half of about 60 million deaths worldwide in 2016 are caused by only 10 reasons. Cardiovascular diseases (CVDs), globally and

nationally, are the most common among these causes of death and this has been continuing for the last 60 years.^{1,2} It is predicted that CVDs would be one of the problems to be frequently encountered by human beings until 2040.³ This information shows that CVDs have many important consequences for both individuals and countries. The treatment cost of ischemic heart disease in the United States of America is estimated to be approximately \$156 billion only in 2008. Therefore, the activities for the prevention of CVDs have been becoming even more important.⁴

There are many risk factors contributing to the development of CVD. While some of these risk factors are changeable (such as dyslipidemia, hypertension, smoking, diabetes, inadequate physical activity, and obesity), some are unchangeable (such as gender, age, race, genetic predisposition).⁵ Although CVDs are not completely preventable, it is possible to reduce the risk of CVDs considerably by adopting a healthy lifestyle.⁶ Primary and secondary prevention measures can be effectively implemented by adopting healthy lifestyle habits in particular. While primary prevention activities applied for this purpose enable to prevent the development of the disease, secondary prevention activities can prevent the complications that may develop depending on the disease.⁷ Individuals may adopt a new lifestyle by giving up a familiar behavior only upon having sufficient knowledge level on the subject.⁸ It is reported that the adoption of healthy lifestyle behaviors may be low in patients with low knowledge level. Additionally, the low level of knowledge about the disease may cause many negative situations such as incorrect drug use, unrecognized attack symptoms, and increased exposure to risk factors. Research results show that patients with a low level of knowledge are more unsuccessful in describing attack symptoms. In this case, it prolongs the patients' access to treatment and may adversely affect the success of the treatment.⁹ Knowledge-enhancing activities can contribute to reducing these risks by helping patients adopt healthy lifestyle behaviors permanently.¹⁰ Thanks to the various roles they undertake in the patient care process, nurses can guide individuals in adopting and maintaining healthy lifestyle habits by increasing their knowledge level.¹¹ In addition, the disease-related knowledge level of 2 patients having similar disease characteristics may also vary depending on personal beliefs, economic status, and social status. Therefore, it is very important to determine the current knowledge level of the patients and inform them about the required issues.⁴

The aim of this study was to determine the knowledge levels of individuals applying to cardiology outpatient clinic about risk factors for CVDs and the influencing factors.

Methods

Study Design, Setting, and Participants

This cross-sectional study was conducted in a State Hospital, in Turkey, between July and August 2017. In order to calculate the sample size, the mean number of patients applying to the related outpatient clinic in 1 month was determined as 1400 people by examining the outpatient clinic records of the institution where the study would be conducted. When the population was accepted as 1400 people, the minimum sample size

was calculated as 300 people at $\alpha=0.05$ and with the power of the test $(1-\beta)=0.80$ in order to test the statistical significance of the difference in the scores of cardiovascular disease risk factors knowledge level (CARRF-KL) scale. A total of 309 patients over the age of 18 who applied to the cardiology outpatient clinic, agreed to participate in the study and had no communication problems were included in the study. A simple random sampling method was used in sample selection. Five patients, who filled out the questionnaires incorrectly, were excluded from the study.

Study Procedure and Data Collection

The data were collected using the face-to-face interview method before the outpatient clinic examination. A personal information form was used to collect the information of the participants. Upon the literature review, the researchers prepared the personal information form.^{6,12,13} This form includes questions about the attitudes and behaviors of the participants about the risk factors for CVDs as well as some of their socio-demographic characteristics.

"Cardiovascular Disease Risk Factors Knowledge Level" scale, which was developed by Arıkan et al (2009), was used to determine the knowledge level of the participants about the risk factors for CVDs. 28 items of the scale are answered as "Yes," "No," or "I do not know." While 1 point is given for each correct answer, 0 point is given for each wrong answer. Six of the statements in the scale were wrong and these were inversely encoded compared to the rest. The highest total score on the scale is 28. A high score signifies a high knowledge level.¹⁴ In the present study, Cronbach's alpha value of the CARRF-KL scale was found as 0.741.

Data Analysis

Frequency, independent samples *t*-test, 1-way ANOVA test, and Tukey test for multiple comparisons in independent groups were used to evaluate data. The obtained data were analyzed using the Statistical Package for the Social Sciences version 23.0 (IBM SPSS Corp.; Armonk, NY, USA). The statistical significance level was determined as $P < .05$.

Ethical Consideration

The study was conducted in accordance with the principles outlined in the Declaration of Helsinki. Before starting to collect data, official permissions were obtained from the related institution (36809483/508.01) and a Gaziantep University Medicine Faculty Clinical Trials Ethics Committee (Date: July 24, 2017, Decision no: 2017/263). In addition, verbal consent was obtained from the participants after giving the necessary information.

Results

When the socio-demographic characteristics of the participants were examined, it was determined that 61.8% of the participants were female and 69.4% were in the age group of 40-64 years ($P > .05$). 58.9% of the participants had CVDs, 31.9% applied to the outpatient clinic for control purposes, 10.5% had been hospitalized before due to CVD, and 62.5% of those who were hospitalized due to CVD were hospitalized only once ($P >$

.05). It was also determined that 61.8% of the patients were literate/primary school graduates and 81.2% were not informed about CVDs before ($P > .05$). The mean score of the participants for the CARRF-KL scale was 19.43 ± 3.83 (Table 1).

It was found that mean scores of the CARRF-KL scale were 20.51 ± 3.36 for those doing regular exercises (14.8%), 20.61 ± 3.40 for those with hypertension (37.2%), and 19.97 ± 3.21 for those with a body mass index (BMI) of 25-29.9 kg/m² (38.8%) ($P < .05$). In addition, those who quit smoking, had no ischemic heart disease, had dyslipidemia or diabetes, and were eating their food without adding salt had higher CARRF-KL mean scores compared to the other participants ($P > .05$) (Table 2).

Discussion

Adoption and implementation of healthy lifestyle behaviors are among the most effective ways to prevent diseases. However, it is also reported that insufficient knowledge level is an

important obstacle in adopting healthy lifestyle behaviors.¹⁵ In a study conducted by Qasem Surrati et al.¹⁶ it was determined that CVD risk factors are higher in women with a low level of knowledge. In our study, we found that the mean score of the patients for the CARRF-KL scale was 19.43 ± 3.83 . When examining the other related studies conducted in Turkey, the mean scores were reported to be between 19.23 ± 3.03 - 20.98 ± 4.10 .¹⁷⁻¹⁹ In the present study, the knowledge level of the patients was seen to be above the medium level. It is known that the exposure to risk factors can be reduced by increasing the awareness about CVDs.²⁰

In our study, it was determined that the participants' scale scores increased with increasing education levels. It was found in the study by Aminde et al.²⁰ that the increase in educational level showed parallelism with the increased knowledge level about CVDs. These results suggest that standardized training programs may not be beneficial for the adoption of preventive measures by patients. Instead, individualized training

Table 1. Comparison of CARRF-KL Scores of the Participants in Terms of Their Individual Characteristics

Characteristics	n	%	Score Mean \pm SD	Statistics	P
Gender					
Female	188	61.8	19.52 \pm 4.05	t = 0.511	.609
Male	116	38.2	19.28 \pm 3.46		
Education level					
Illiterate	69	22.7	18.59 \pm 4.16	F = 7.005	.001
Literate/primary school	188	61.8	19.29 \pm 3.70		
High school and higher*	47	15.5	21.19 \pm 3.30		
Age					
<40	37	12.2	19.97 \pm 2.97	F = 1.359	.258
40-64	211	69.4	19.52 \pm 3.98		
>65	56	18.4	18.73 \pm 3.71		
The presence of CVD					
Yes	179	58.9	19.75 \pm 3.54	t = 1.755	.080
No	125	41.1	18.97 \pm 4.18		
Status of hospitalization due to CVD					
Yes	32	10.5	18.69 \pm 3.50	t = -1.157	.248
No	272	89.5	19.51 \pm 3.86		
Number of hospitalizations due to CVD					
1 time	20	62.5	18.85 \pm 3.39	t = 0.335	.740
2 and more	12	37.5	18.42 \pm 3.80		
Status of receiving the training about CVD					
Yes	57	18.8	20.49 \pm 2.75	t = 2.944	.004
No	247	81.2	19.18 \pm 4.00		
Total score of CARRE-KL scale	304	100	19.43 \pm 3.83		

*The group causing the significant difference; t, Student's t-test; F, ANOVA test. $P < .05$ is shown in bold.

CARRF-KL, cardiovascular disease risk factors knowledge level; CVD, cardiovascular disease.

Table 2. Comparison of CARRF-KL Scores of the Participants in Terms of Their CVD Risk Factors

Characteristics	n	%	Score, Mean \pm SD	Statistic	P
Status of smoking					
Smoking	63	20.7	19.35 \pm 3.60	F = 0.464	.629
Not smoking	193	63.5	19.33 \pm 3.98		
Quit smoking	48	15.8	19.92 \pm 3.54		
Regular exercise					
Yes	45	14.8	20.51 \pm 3.36	t = 2.068	.040
No	259	85.2	19.24 \pm 3.88		
The presence of hypertension					
Yes	113	37.2	20.61 \pm 3.40	t = 4.259	.000
No	191	62.8	18.73 \pm 3.90		
The presence of ischemic heart disease					
Yes	74	24.3	19.20 \pm 3.45	t = -0.580	.562
No	230	75.7	19.50 \pm 3.95		
The presence of dyslipidemia					
Yes	82	27.0	19.62 \pm 3.63	t = 0.537	.592
No	222	73.0	19.36 \pm 3.90		
The presence of diabetes					
Yes	64	21.1	19.88 \pm 3.84	t=1.052	.294
No	240	78.9	19.31 \pm 3.83		
Status of adding salt to food					
I taste and add it	199	65.5	19.33 \pm 3.96	F = 0.671	.512
I add it without tasting the food	10	3.3	18.50 \pm 5.64		
I do not add it	95	31.2	19.74 \pm 3.30		
Body mass index (kg/m ²)					
18.5-24.9*	56	18.4	18.16 \pm 3.92	F = 2.885	.036
25-29.9	118	38.8	19.97 \pm 3.21		
30-39.9	115	37.8	19.48 \pm 4.30		
>40	15	4.9	19.53 \pm 3.31		

*The group causing the significant difference; t, Student's t-test; F, ANOVA test. P < 0.05 is shown in bold.

CARRF-KL, cardiovascular disease risk factors knowledge level; CVD, cardiovascular disease.

programs should be prepared by considering the education levels of individuals.

When the patients were examined in terms of their education about CVD, it was found that those who received the education had higher CARRF-KL scores. However, when compared to other studies, it was stated that this difference was insufficient than expected in the adoption of lifestyle changes.^{21,22} The reason for this may be that the trainings are given in the polyclinic and in the form of verbal information. When considering the intense patient circulation in outpatient clinics, it can be thought that individual variables cannot be taken into account sufficiently in the trainings. Well-programmed and individualized trainings also including cardiac rehabilitation stages may have more positive effects on healthy lifestyle changes of patients.

It is known that regular exercise can prevent many chronic diseases, especially CVDs. Exercise programs organized within the scope of cardiac rehabilitation provide significant benefits to individuals in terms of both primary and secondary prevention.²³ In the present study, it was determined that CARRF-KL scale scores of those who expressed that they did regular exercise were higher. When examining the obstacles to regular exercise, the lack of sufficient awareness of the benefits of exercise was seen as an important barrier.²⁴ Based on this information, it is thought that CVDs risk factors can be reduced by planning informative events that emphasize the importance of exercise.

Being one of the main CVDs, hypertension triggers the development of many other CVDs.²⁵ In the present study, CARRF-KL

scale scores of the participants with hypertension were found higher. This situation shows that individuals with hypertension may have a higher awareness of secondary risk factors. It is also known that adherence to hypertension treatment can be improved by increasing awareness.²⁶ The reason for the high awareness of the participants may be the hypertension information activities conducted in this group (reduction of salt intake, smoking cessation, etc.).²⁷ In another study conducted with hypertensive patients, it was determined that knowing the causes of hypertension or the name of the drug did not make a difference in terms of treatment adherence. However, in the same study, it was determined that knowing why the drug was used or the duration of use affected treatment adherence.²⁸ In information studies, emphasis should be placed on educational issues that are appropriate to the needs of the patient. Thus, we think that exposure to CVDs risk factors can be reduced.

It is known that overweight is associated with CVDs along with many chronic diseases. It was determined in the present study that the CARRF-KL scale scores may increase with the increase in BMI. According to this result, it was understood that those having a BMI higher than normal had higher knowledge levels about CVD risk factors. This result is one of the important findings of our study. Although these results seem to be confusing, similar results are seen in the literature. In the study conducted by Hansel et al. with approximately 55 000 patients, it was found that individuals who have overweight or obese had less mortality risk related to CVD.²⁹ In another study by Wang et al., it was determined that smoking and alcohol use were lower in overweight/obese individuals.³⁰ However, there are different opinions about the prognosis of obese patients such as the obesity paradox. This situation, called the obesity paradox, has not been fully explained why obese or overweight individuals have a lower risk than other individuals. According to this situation, it is thought that when people see themselves as risky in terms of the disease, this may lead them to be more careful about their health. We think that investigating the obesity paradox in future studies may shed more light on this issue.

One of the important research questions of this study was whether or not there was a difference between CARRF-KL scores of the individuals with and without CVD. When the results were analyzed, the score difference between those with and without CVD was found to be statistically insignificant. In the study by Kendir et al.³¹ it was determined that those suffering from a CVD may be at risk in terms of other CVDs. This requires an individual, suffering from any CVD, to have higher awareness levels in order to protect him/herself from other CVDs. However, it was observed as a result of the present study that patients did not have this awareness. In addition, considering the low level of education (18.8%) of the participants in our study, it can be said that the participants are insufficient in adopting and applying secondary prevention measures.

Conclusion

As a result of the present study, it was determined that the knowledge levels of the participants about CVDs were above

the moderate level in accordance with the literature. There was no significant difference in the knowledge levels of those with and without CVD because most of the participants were not previously informed about CVDs. One of the interesting results of the study was that when BMI increased, the scale scores may also increase. This may be an indication of the obesity paradox.

According to these results, the programmed training activities to improve public health should be organized to increase the awareness levels of patients about primary and secondary prevention measures. This increase in awareness of individuals may increase the likelihood of permanently adopting and implementing healthy living behaviors. The active participation of nurses, who have a trainer role in the patient care process, in planning these trainings will make a great contribution to obtain positive results. In addition, it can be suggested for future studies to investigate the obesity paradox and the influencing other factors. So, new information on the subject may make a contribution to the literature.

Limitations of the study

There are some limitations of the present study. First, it is not possible to generalize the data because the sample of the study consisted only of individuals who applied to cardiology outpatient clinic in a state hospital. Secondly, since the data were collected from individuals waiting for examination, the attitudes of reluctant individuals who declined to participate in the study might cause some biases in the responses of voluntary participants for the questions. Finally, information about individual characteristics was taken according to the participants' statements due to economic limitations. This situation caused the collected personal information to be subjective.

Ethics Committee Approval: Ethical committee approval was received from the Ethics Committee of Gaziantep University (Date: July 24, 2017, Decision no: 2017/263).

Informed Consent: Written informed consent was obtained from all participants who participated in this study.

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