ÖZGÜN ARAŞTIRMA ORIGINAL RESEARCH

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KNOWLEDGE AND AWARENESS LEVELS OF 4TH AND 5TH CLASSROOM STUDENTS OF A MEDICINE FACULTY ABOUT CORONARY ARTERY DISEASE

BİR TIP FAKÜLTESİ 4. VE 5. SINIF ÖĞRENCİLERİNİN KORONER ARTER HASTALIĞI HAKKINDAKİ BİLGİ VE FARKINDALIK DÜZEYLERİ

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Öz

Amaç

Koroner arter hastalığı (KAH) dünyada mortalite ve morbiditede ilk sırada yer almaktadır. Hekimlerin bu konuda bilgi, beceri ve bilinç düzeyinin yüksek olması bu kronik hastalıkla mücadelede önem arz etmektedir. Bu çalışma ile hekim adaylarının KAH ile ilgili bilgi ve farkındalık düzeyini belirlemek ve anket sonrasında geliştirilmesi gereken alanlara katkı sağlanması amaçlandı.

Gereç ve Yöntem

Çalışma 1 Nisan 2022 ile 1 Mayıs 2022 tarihleri arasında Süleyman Demirel Üniversitesi Tıp Fakültesi 4. ve 5. Sınıf 600 öğrenciye sosyal medya haberleşme ağlarından yada yüzyüze ulaşılarak KAH ile ilgili bilgi ve bilinç düzeyini ölçen anket aracılığıyla tanımlayıcı ve kesitsel olarak yapıldı.

Bulgular

Çalışmamıza dahil edilen 348 katılımcının 200'ü (%57,5) kadındı. Katılımcıların yaş ortalaması 23,14±1,1 , kilo ortamalası 68,6± 10,7 , boy ortalaması ise 169,73± 12,7 olarak hesaplandı. Ankete katılan öğrencilerin 223'ü (%65) dönem 5 öğrencisi olup 125'i (%35) dönem 4 öğrencisidir. Toplam öğrencinin 314'ü (%90) kardiyoloji stajını tamamlamıştır. Katılımcıların KAH hakkında kendi bilgi düzeylerini 1 ile 5 arasında değerlendirmelerini istediğimizde; katılımcıların %48.2'ü kendi bilgi düzeylerine 3 puan vermiştir. Ayrıca ankete katılan öğrencilerin %74,7'si (n=260) miyokard iskemisinde en spesifik belirtecin troponin I olduğunu bilmektedir. KAH'nın takibinde en olumlu etkiyi hangi yaşam tarzı değişikliği yapar sorusuna ise %52,2'si (n=182) sigarayı bırakmak olarak işaretlemiş olup doğru cevabı vermişlerdir. Akut koroner sendromda hayat kurtarıcı tedavinin sorgulandığı anket sorusuna katılımcıların %24,4'ü (n=85) stent implantasyonu seçeneğini işaretleyerek doğru cevabı vermiştir. Bu cevabı %36,2 (n=126) ile hızlı etkili nitrat seçeneği izlemiştir.

Sonuç

Sonuç olarak tıp fakültesi öğrencilerinin KAH ile bilgi ve bilincini artırmak KAH ile mücadele için önemli olup bu çalışma eksik olan noktaların belirlenmesine katkı sunmuştur.

Anahtar Kelimeler: Bilgi ve bilinç düzeyi, Koroner arter hastalığı, Tıp fakültesi öğrencileri

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Abstract

Objective
Coronary artery disease (CAD) ranks first in mortality and morbidity in the World. Physicians' high level of knowledge, skills, and awareness on this subject is essential in the fight against this chronic disease. This study aimed to determine the knowledge and awareness levels of physician candidates about CAD and to contribute to the areas that need to be developed after the survey.

Material and Method
This cross-sectional and descriptive study was conducted on 600 students from the 4th and 5th grades of Suleyman Demirel University Faculty of Medicine between April 1, 2022, and May 1, 2022. The questionnaire that measured the level of knowledge and awareness about CAD was administered through social media communication networks or face-to-face.

Results
Of the 348 participants included in our study, 200 (57.5%) were women. The mean age of the participants was 23.14±1.1, their average weight was 68.6± 10.7, and their average height was 169.73± 12.7. Of the students who participated in the survey, 223 (65%) were fifth-grade students, and 125 (35%) were fourth-grade students. Of the students, 314 (90%) completed their cardiology internship. When we asked the participants to rate their level of knowledge about CAD between 1 and 5, 48.2% of the participants gave 3 points to their knowledge level. In addition, 74.7% (n=260) of the students who participated in the survey know that troponin I is the most specific marker in myocardial ischemia. 52.2% (n=182) marked smoking as the question of which lifestyle changes the most in the follow-up of CAD and gave the correct answer. When they surveyed the life-saving treatment in CAD, 24.4% (n=85) of the study population gave the correct answer by marking the stent implantation option. This response was followed by the fast-acting nitrate option with 36.2% (n=126).

Conclusion
As a result, increasing the knowledge and awareness of the faculty of medical students about CAD is important for the fight against CAD, and this study contributed to the determination of the missing points.

Keywords: Coronary artery disease, Faculty of medicine students, Level of knowledge and awareness

Introduction

Coronary Artery Disease (CAD) is the clinical picture that occurs when the myocardium cannot be fed due to narrowing or occlusion of the coronary arteries that feed the heart, resulting from the accumulation of fatty material called atherosclerotic plaque (1, 2). Atherosclerosis is a chronic, progressive, inflammatory, systemic disease involving the walls of elastic vessels. This inflammatory process constitutes the pathogenesis of CAD. Symptoms and findings in CAD result from regional blood flow differences due to CAD (1).

CAD is a cardiovascular disease affecting the human population and is a significant cause of mortality (1). According to data in the USA, CAD was identified as the most common type of heart disease, causing 360.900 deaths in 2019 (3). About 18,2 million adults aged 20 years have CAD (4).

CAD manifests clinically in 4 always: sudden death, chronic coronary heart disease (CHD), acute myocardial ischemia syndromes, and congestive heart failure. According to epidemiological studies, the first sign of CAD is sudden death in 20-25%, angina pectoris in 35%, AMI in 30%, unstable angina in 10%, and ischemic cardiomyopathy accompanied by congestive heart failure in 1-2% (5). The life expectancy of patients with clinical diagnosis varies from 1 minute to decades, with an average of 10-12 years (5). This variability depends on the stability of the disease, i.e., the development of acute ischemic events.

One of the important difficulties in controlling CAD is the lack of information about drugs used in treating CAD, unhealthy diets, and a sedentary lifestyle. This deficiency causes increased mortality and morbidity (6).

Physicians' adequacy of knowledge on this subject is important in the treatment and follow-up of CAD. In this context, in our study, we investigated the level of knowledge and awareness about the risk factors for CAD among 4th and 5th grade students of Süleyman Demirel University Faculty of Medicine in order to observe the knowledge and awareness of the 4th and 5th year medical faculty students who have completed and are taking their cardiology internship, to contribute

to the areas that need to be developed after the survey and to evaluate the education program of cardiology.

Material and Method

Study Population

The study was carried out between April 1, 2022, and May 1, 2022, by contacting 600 students of 4th and 5th-grade Süleyman Demirel University Faculty of Medicine through social media communication networks or face-to-face. Students who participated in the survey voluntarily were asked to answer 30 multiple-choice or open-ended questions. There is an option "I don't know" in questions that measure knowledge, and questions about lifestyle consist of yes or no options. Three hundred forty-eight students who agreed to answer the questionnaire were included in the study. The survey questions consisted of questions about the anatomy of the coronary arteries, the risk factors related to coronary artery disease, the diagnosis and treatment of acute coronary syndrome developing based on CAD, and how much the students applied CAD awareness in their lifestyles in the light of this information, apart from questions about demographic data. Informed consent was obtained from all volunteers participating in the study, and the study was conducted in accordance with the ethical standards included in the 1964 Declaration of Helsinki and its later adaptations.

Statistical Analysis

The study's data were analyzed with the SPSS 22.0 (IBM SPSS Inc., Chicago) package program. Data were expressed as mean ± standard deviation for continuous variables and percentages for categorical variables. In addition, the differences between the distributions of the answers given to the questions were examined by Chi-square analysis. Statistically, $p<0.05$ was considered significant.

Results

Of the 348 participants in our study, 200 (57.5%) were women. The mean age of the participants was 23.14±1.1, the mean weight was 68.6± 10.7, and the mean height was 169.73± 12.7. Of the students who participated in the survey, 223 (65%) were 5th-grade students, and 125 (35%) were 4th-grade students. Of the students included in the study, 314 (90%) completed their cardiology internship and 34 (10%) were students who continued their internship. 19.5% (n=68) of the participants use cigarettes and tobacco products (Table 1). The body mass index value of the participants was calculated as 22.94 ± 1.7.

While 82.8% of the participants did not have any chronic disease, participants with chronic disease (n=47) had the most common psychiatric disease (n=13). This is followed by metabolic disease (n=11),

Table 1 Demographic information of the students participating in the survey

Variables	Number (n)	Percent (%)	Average value
Gender: Female Male	 200 148	 57,5 42,5	
Age (years, average)			23,14
Height (cm, average)			169,73
Weight (kg, average)			68,6
Total number Class-4 Class-5	348 125 223	100 35 65	
Cardiology intership; Completed Didn't complet	 314 34	 90 10	
Cigaret: Smoker Not smoker	 68 280	 19,5 80,5	

Table 2 Data on the level of knowledge and awareness of the students participating in the survey about coronary artery disease

	number(n)	percent(%)
Please rate your level of knowledge about coronary artery disease between 1-5?		
1 point	11	3
2 point	49	13,8
3 point	168	48,2
4 point	91	26,1
5 point	29	8,9
How mant main coronary arteries are there in the human body?		
1 pc	0	0
2 pc	195	56
3 pc	102	29,3
4 pc	27	7,8
I don't know	24	6,9
Which branch(s) of the left anterior descending artery?		
R. Marginalis Dexter	27	7
Circumflex Artery	153	44
Diagonal Artery	119	34,2
Septal Artery	97	29
I don't know	94	27,6
Which of the following is not a preventable risk factor for coronary artery disease?		
Family history	329	94,6
Dyslpidemia	6	1,7
Hypertension	5	1,4
Obesity	1	0,2
cigaret	7	2,1
What do you think is our definition of coronary artery disease?		
It is a condition that occurs when blood flow to the heart decreases due to atherosclerosis developing in the coronary artery.	338	97
Other answers	10	3
What is the cardinal sign of coronary artery disease?		
Angina	325	93,3
Palpitations	5	1,4
Dyspnea	13	3,7
I don't know	6	1,6
Which of the following lifestyle changes is most effective in coronary artery disease patients?		
Smoking cessation	182	52,2
Regular physical examination	149	42,8
Decreasing alcohol consumption	11	3,1
I don't know	6	1,9

Table 3 Data on the level of knowledge and awareness of the students participating in the survey about acute coronary syndrome

Which one of the following is a life-saving treatment for acute coronary syndrome?		
Stent implantation	85	24,4
Mono antiplatelet therapy	62	17,8
Fast acting nitrates	126	36,2
Statins	15	4,3
Beta-blockers	22	6,4
I don't know	38	10,9
What is the most important medical treatment in acute coronary syndrome?		
Dual antiplatelet therapy	106	30,4
Other therapies	242	69,6
What is the most important cause of mortality after acute coronary syndrome?		
Arrhythmia	118	33,9
Ventricular Septum Rupture	40	11,4
Chordo Tendinea Rüptürü	23	6,7
Pericarditis	9	2,6
Stroke	73	20,9
I don't know	85	24,5
Which one of the following is the most specific marker of myocardial ischemia?		
Troponin I	260	74,7
CK-MB	84	24,1
Other markers	4	1,2

immunological disease (n=10), respiratory system disease (n=9), cardiovascular system disease (n=6), cerebrovascular system (n=2), and genitourinary system disease (n=2). Among the people who have at least one of the diseases we questioned in their families, Hypertension ranks first at 72.2%; Diabetes Mellitus follow it at 57.5%, Hyperlipidemia at 35.2%, coronary artery disease at 29.3%, Myocardial Infarction (MI) with 22.3% and Cerebrovascular accident with 11.7%.

When we asked the participants to rate their knowledge about CAD (Coroner Artery Disease) between 1 and 5, 48.2% of the participants gave 3 points to their knowledge level. This was followed by students who gave 4 points to the level of knowledge with 26.1%. While 56% of the participants correctly knew how many main coronary arteries there were, 6.9% said they did not know. While 27.6% of the participants did not know the branches of the left anterior artery, 44% knew that the Circumflex Artery and 34.2% knew that the diagonal artery was a branch of the left anterior artery. %97 of the participants (n=338) confirmed the definition of coronary artery disease, and 93.3% (n=325) confirmed that the major sign of CAD was angina pectoris. At the same time, students can distinguish between preventable and unavoidable risk factors of CAD with a rate of 94.6%. In addition, 74.7% (n=260) of the students who participated in the survey know that troponin is the most specific marker in myocardial ischemia. This was followed by CK-MB response with 24.1% (n=85) responses. 52.2% (n=182) of them marked quitting smoking and gave the correct answer to the question of which lifestyle change has the most positive effect in the follow-up of CAD. This was followed by the response of doing regular exercise with 42.8% (n=149). When the most important cause of mortality in acute coronary syndrome was questioned, 33.9% (n=18) of the participants chose the arrhythmia option and gave the correct answer. This was followed by the "I don't know" option with 24.5% (n=85). 24.4% of the participants

(n=85) gave the correct answer to the questionnaire questioning life-saving treatment in acute coronary syndrome by marking the option of stent implantation. This response was followed by the fast-acting nitrate option with 36.2% (n=126). (Table 2, 3)

19.5% of the participants (n=68) smoke. 65% of smokers smoke an average of 13 cigarettes a day. 37.9% (n=26) of smokers do not plan to quit anytime soon. 70.1% (n=244) of the participants exercise regularly. 29.9% of them live sedentarily. 62% of the participants (n=216) consume 1-3 servings of fruit and vegetables per week. The rate of those who do not consume is 6.6% for fruit and 5.7% for vegetables. The rate of those who pay attention to a diet rich in fiber is 58.3% (n=203). In addition, 36.2% (n=126) of the participants consume two meals a week, 28.2% consume two meals a month, and 27% rarely consume fast food.

Discussion

The knowledge and awareness of physicians who will diagnose, follow up and treat CAD, the most essential part of cardiovascular diseases, which is the first cause of mortality in the World, is important in the fight against this disease (2, 7). In this study, the level of knowledge of term 4 and 5 students about CAD and whether it has an effect on their life in the light of this information were investigated. In the obesity classification made by the World Health Organization (WHO), the BMI calculated within the scope of the body mass index value is 22.94, and it is within the normal range (between 18.5-24.99 normal) according to the reference range of the WHO (8). While 82.8% of the participants did not have any chronic disease, participants with chronic disease (n=47) had the most common psychiatric disease (n=13). In another study on the evaluation of healthy lifestyle behaviors in which medical and nursing students participated, 7.67% of 534 participants had chronic diseases. In our study population, the frequency of chronic diseases is approximately two times higher than usual (9).

Hypertension ranks first at 72.2% among people who have at least one family member with one of the diseases from our survey; Diabetes Mellitus follows it with 57.5%, Hyperlipidemia at 35.2%, coronary artery disease at 29.3%, Myocardial Infarction (MI) with 22.3% and Cerebrovascular Event with 11.7%. In another study of 683 people on the relationship between healthy living behaviors and medical education in medical school students, it was stated that 38.4% of the families of the students had a chronic disease, 51.8% did not have a chronic illness, and 9.8% did not know about it. In our study population, the proportion of individuals with a family history of chronic disease is inconsistent and much higher than in a previous study (10).

When we asked the participants to rate their knowledge of coronary artery disease between 1 and 5, 48.3% of the participants gave 3 points to their knowledge level. This showed that these participants felt that they had an intermediate level of knowledge about coronary artery disease. While the rate of participants (those who gave 1 or 2 points) who think that their level of knowledge is below the average/insufficient is 17% in total, The rate of participants who believe that their knowledge level is good (giving 4 or 5 points) is 34.7%. This makes people believe that adequate education on this subject still needs to be at the desired level. While 55.7% of the participants correctly knew how many main coronary arteries there were, 7.2% stated that they did not know (11). The fact that 78% of the wrong answers were "3" brings to mind the possibility that the main coronary artery branches are perceived as three different arteries: The diagonal artery, Left Circumflex Artery, and the Right Coronary artery (7). In addition, 75% of the participants correctly identified the most specific marker of MI as Troponin I, while 24.1% confused CK-MB, 0.6% (12). This shows that cardiac-specific markers are accurately known in our sample. In light of this data, it is seen that the students of Süleyman Demirel University Faculty of Medicine are at a sufficient level in making the acute diagnosis of coronary artery disease.

When it comes to drugs that reduce mortality in acute coronary syndrome, The rate at which the students knew it was beta-blocker (13) is 64.7%, the rate of correctly knowing as an ACEI/ARB (14) is 57.8%, and the rate of correctly knowing statin (15) is 28.7%. This indicates that statin needs to be emphasized more as a mortality-reducing drug. In addition, 19% of the participants gave the wrong answer to the same question as digoxin and 12.1% as furosemide.

52.3% of participants knew that smoking cessation was the most effective lifestyle change (16). Regular exercise constitutes 89.7% of the wrong answers. 63.8% of the participants did not know or misunderstood the life-saving treatment in ACS, and 69% did not know the most important treatment in the first year (17). This makes us think that the emergency intervention of this disease and the treatment in the following period may not be correct, and the mortality due to ACS will be high. 33.9% of the participating students knew that the most important cause of mortality due to ACS was an arrhythmia (18). 20.9%

of the wrong answers are Stroke, and 11.4% are Ventricular Septum Ruptures. 24.5% have yet to learn. The lack of general information on this subject makes us think that Arrhythmia that may develop due to ACS will adversely affect the survival of the patient and the prognosis of ACS in the patient.

19.5% of the participants smoke. The overall rate is consistent with the results of the previous study on the knowledge and opinions about smoking among the 3rd year students of Süleyman Demirel University Faculty of Medicine (19) and the study of attitudes towards tobacco in Europe (20). 65% of participants smoke an average of 13 cigarettes per day. 37.9% of smokers (25% of all respondents) do not intend to quit anytime soon. This shows that the relationship between smoking, which is at the top of the risk factors that pave the way for ACS, and ACS cannot be internalized among students.

70.1% of the participants exercise regularly, and 29.9% live sedentarily. This again shows that the relationship between sedentary living, which is among the risk factors that pave the way for ACS, such as smoking, and comorbid conditions is internalized.

More than half of the participants consume 1-3 servings of fruit and vegetables per week. The rate of those who do not consume is 6.6% for fruit and 5.7% for vegetables. On the other hand, the rate of those who pay attention to a diet rich in fiber is 58.3%. In addition,36.2% of the participants consume two meals a week, 28.2% consume two meals a month, and 27% rarely consume fast food. These data show us that the consumption of fruits and vegetables, which are indispensable for a healthy diet, of Medical Faculty Term 4 and 5 students is lower than the content of a healthy diet defined by the World Health Organization (21) and that fast food consumption, namely saturated fat (22). Industrial fat intake (23) is at a substantial level. This shows that students are insufficient to apply the knowledge that a healthy diet reduces the mortality of ACS to their own lives.

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

Ethical Approval
The study was conducted in line with the principles of the Helsinki Declaration. The authors have access to all data and share all responsibility. All authors have reviewed and accepted the article. Ethics committee approval required for the study was obtained from Süleyman Demirel Ethics Committee (No:72867572-050.01.04-188824).

Consent to Participate and Publish
Written informed consent to participate and publish was obtained from all individual participants included in the study.

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Availability of Data and Materials
Data are available on request due to privacy or other restrictions.

Authors Contributions
AB: Study concept; Conceptualization; Analysis; Methodology; Writing-original draft.

TB: Data collection; Drafting the manuscript.

MEU: Data collection, Drafting the manuscript.

EŞ: Data collection; Drafting the manuscript.

HEG: Data collection; Drafting the manuscript.

ÖNA: Data collection; Drafting the manuscript.

FA: Analysis; Interpretation of data; Writing-review & editing.

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