

## TIP FAKÜLTESİ 1. VE 3. SINIF ÖĞRENCİLERİNİN CARRF-KL ÖLÇEĞİ İLE KARDİOVASKÜLER HASTALIK BİLGİ DÜZEYLERİNİN BELİRLENMESİ

DETERMINATION OF KNOWLEDGE LEVEL OF CARDIOVASCULAR DISEASES USING CARRF-KL  
SCALE OF 1ST AND 3RD GRADE STUDENTS IN FACULTY OF MEDICINE

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### ÖZ

**AMAÇ:** Kardiyovasküler hastalıklar (KVH) halen dünyadaki en büyük mortaliteye sahip hastalıklardan biridir ve KVH'nın bazı risk faktörleri önlenebilir. Birçok öğrenci KVH'nın risk faktörü ile ilgili bilgi sahibi olsa da, tıp öğrencilerinin algılama düzeyi hala yeterli değildir. Bu çalışmada, Tıp Fakültesi öğrencilerinin KVH risk faktörleri bilgi düzeylerini ölçmeyi amaçladık.

**GEREÇ VE YÖNTEM:** Araştırmada kardiyovasküler bilgi düzeyi ölçeği (CARRF-KL) kullanılmıştır. 310 öğrenci (n=168 1. sınıf, n=142 3. sınıf) çalışmamıza gönüllü olarak katılmıştır.

**BULGULAR:** Öğrencilerin ortalama puanları, 1. sınıfta, 3. sınıfa göre anlamlı derecede yüksek bulundu ( $24,40 \pm 3,07 - 22,71 \pm 4,36$ ,  $p < 0,001$ ). İlk dört sorunun ortalaması 3. sınıfta, 1. sınıftan anlamlı derecede yüksek bulundu ( $3,66 \pm 0,85$ 'e karşı  $3,68 \pm 0,61$ ; F: 4,169;  $p = 0,006$ ). 5, 6, 9, 10, 11, 12, 14, 18, 19, 20, 23, 24, 25, 27, 28 sorular için ortalama değer 1. sınıflarda, 3. sınıflara nazaran anlamlı derecede yüksek bulundu ( $13,64 \pm 1,89 - 12,15 \pm 2,62$ , F: 20,379;  $p < 0,0001$ ). 7, 8, 13, 15, 16, 17, 21, 22, 26 sorular içinde aynı şekilde 1. sınıflarda, 3. sınıflara nazaran anlamlı derecede yüksek bulundu ( $7,11 \pm 1,35 - 6,89 \pm 1,72$ ; F: 58,650;  $p < 0,0001$ ).

**SONUÇ:** Çalışmamıza katılan öğrencilerin CARRF-KL skor puanı ortalaması literatürden daha yüksek bulunmasına karşın, sonuçlar çok yeterli değildi. 1. sınıflar soruların çoğunluğuna, 3. sınıfa göre daha iyi yanıt vermiştir. Sigara içimi en iyi bilinen risk faktördür. Eğitimlerde; hiperlipidemi, diabetes mellitus gibi kronik metabolik hastalıklarla ilgili bilgiler daha etkin olarak vurgulanmalıdır.

**ANAHTAR KELİMELEER:** CARRF-KL ölçeği, tıp öğrencileri, KVH risk faktörleri.

### ABSTRACT

**OBJECTIVE:** Cardiovascular diseases (CVD) are still one of the most mortality disease all over the world and some of the risk factors of CVD are preventable. Although many students have knowledge of the risk factors of CVD, the perception level of medical students is still not enough so we aimed to describe knowledge level of CVD risk factors among faculty of medicine students.

**MATERIAL AND METHODS:** We used the cardiovascular disease risk factors knowledge Level (CARRF-KL) for investigation. Three hundred ten students (168 students were in 1st grade and 142 in 3rd grade) volunteered our study.

**RESULTS:** The average scores of the students was significantly higher in 1st grade than 3rd grade ( $24,40 \pm 3,07 - 22,71 \pm 4,36$ ,  $p < 0,001$ ). The first four questions mean score in 3rd grade was significantly more than 1st grade ( $3,66 \pm 0,85 - 3,68 \pm 0,61$ ; F: 4,169;  $p = 0,006$ ). For the questions 5, 6, 9, 10, 11, 12, 14, 18, 19, 20, 23, 24, 25, 27, 28 mean score was interestingly significantly more in 1st grade than 3rd grade ( $13,64 \pm 1,89 - 12,15 \pm 2,62$ , F: 20,379;  $p < 0,0001$ ). For the questions 7, 8, 13, 15, 16, 17, 21, 22, 26 mean score was significantly more in 1st grade than 3rd grade again ( $7,11 \pm 1,35 - 6,89 \pm 1,72$ ; F: 58,650;  $p < 0,0001$ ).

**CONCLUSIONS:** We found mean CARRF-KL scale score was higher in our study students than literature but 1st grade answered betterly to most part of questions than 3rd grade but totally results were unsatisfactory. Smoking is the best known risk factor in contrast to diabetes mellitus at least one. In education knowledge regarding to chronic metabolic diseases like hyperlipidemia, diabetes mellitus should be stressed more efficiently.

**KEYWORDS:** CARRF-KL scale, medicine students, CVD risk factors.

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## INTRODUCTION

The prevalence of cardiovascular diseases (CVDs) have been increasing by aging and CVD is still the first cause of death of all over the world, responsible for 48% of all deaths in Europe (1). CVD has many risk factors, the most important being dyslipidemias, high blood pressure (BP), smoking, obesity, low physical activity, diabetes, and metabolic syndrome (2). The TEKHARF study reported (the Turkish adult risk factor survey 2009) that the ratio of deaths related to coronary artery disease (CAD) in 1000 men aged between 45-74 years was 7.64, while this rate was 3.84 in women. These ratios are the highest among 30 European countries and CVD is the most common cause of death in our country for both men and women (3). Almost all of them are modifiable, suggesting that most of CVDs are preventable. Furthermore, the most important way to reduce CVD incidence is through preventative methods which include modifying risk factors and education. Education with great awareness of nature, progression and treatment of CVD and especially early recognition of high risky patients for primary protection is very important topic of medical curriculum in medical faculties (4). Interim or final exams are used to assess their knowledge of CVD is sometimes may not give enough data for this topic. However, there is not enough data exploring students of healthcare faculties for perceptions, awareness and understanding of CVD. There are some collected data about knowledge of CVD among students of various healthy science faculties but among students faculties of medicine is scarce. It is also same for Turkey. The aim of this descriptive study was to assess the level of knowledge of CVD risk factors, namely high blood pressure and dyslipidaemia, obesity, smoking, physical inactivity, age, diabetes mellitus and genesis among medical students in Afyon Kocatepe University Faculty of Medicine.

## MATERIALS AND METHODS

This descriptive and cross-sectional questionnaire study was conducted between October-December 2016 with the participation of 310 students (168 students were in 1st grade and 142 in 3rd grade) studying in the Faculty of Medicine Afyon Kocatepe Univer-

sity who volunteered for the study. Data were collected by using a CARRF-KL questionnaire which was developed and tested for validity and reliability by the Arıkan et al (5). The scale consists of 28 items. While the first four items of the scale regard the properties of cardiovascular diseases, the likelihood of protection and the age factor, 15 items question the risk factors (items 5, 6, 9, 11, 12, 14, 18, 19, 20, 23, 24, 25, 27, 28) and nine items question the results of changes in risk behavior (items 7, 8, 13, 15, 16, 17, 21, 22, 26). The items in the scale were presented to the participants in a true false questionnaire composed of full sentences. The participants were asked to answer "Yes", "No", or "I don't know". Every "correct answer" corresponded to 1 point and every "wrong answer" or "I don't know" statement corresponded to 0 points. The highest possible score in the scale was 28 and items 11, 12, 16, 17, 24, 26 were scored so that affirmative answers gave 0 points while negatory answers gave 1 point (reverse coding). The total scores were calculated by giving 1 point to the rest of the affirmative answers. A higher score means a better level of knowledge. Arıkan et al. found the cronbach alpha value of the scale to be 0.76 (9). In this study the cronbach alpha value was found to be 0.743.

This study was approved by Afyon Kocatepe University Clinical Investigation and Ethics Committee (04.11.2016 date, 2016/3-43 number).

**Statistical Analysis:** Data were evaluated with the SPSS 16.0 program using percentages, average values, student's t-tests, Mann-Whitney U Test and one way analysis of variance (ANOVA).

## RESULTS

Although 10 students in 1st grade didn't answered the question about age and as expected mean age of 3<sup>rd</sup> grade was significantly more than grade 1<sup>st</sup> ( $p < 0,001$ ). Again 12 students in 1<sup>st</sup> grade and 7 students in 3<sup>rd</sup> grade didn't answered the question about gender selection option, there were similar rates of female and male students in each of grades ( $p = 0,118$ ). Mean score was significantly higher in 1<sup>st</sup> grade than 3<sup>rd</sup> grade ( $24,40 \pm 3,07 - 22,71 \pm 4,36$ ,  $p < 0,001$ ). The

first 1, 2, 3, 4 questions were about the properties of cardiovascular diseases, the likelihood of protection, and the age factor and after ANOVA analysis mean score in 3<sup>rd</sup> grade for these 1- 4 questions was significantly more than 1<sup>st</sup> grade ( $3,66\pm0,85-3,68\pm0,61$ ;  $F:4,169$ ;  $p=0,006$ ).

Questions 5, 6, 9, 10, 11, 12, 14, 18, 19, 20, 23, 24, 25, 27, 28 were about bad results on cardiovascular health of smoking, excessive intake of salt and high cholesterol, red meat, obesity, stress, grief, hypertension, diabetes mellitus and good results of quitting of smoking, in taking of vegetable, fruits. Mean score of answers of these questions were found interestingly significantly more in 1<sup>st</sup> grade than 3<sup>rd</sup> grade ( $13,64\pm1,89-12,15\pm2,62$ ,  $F:20,379$ ;  $p<0,0001$ ).

Questions 7, 8, 13, 15, 16, 17, 21, 22, 26 were about again good results of cardiovascular health of quitting smoking and eating more fruits, vegetables, intaking of low lipid and carbohydrate, regular exercises, treatment of hypertension. Mean score of these question was significantly more in 1<sup>st</sup> grade than 3<sup>rd</sup> grade, too ( $7,11\pm1,35-6,89\pm1,72$ ;  $F: 58,650$ ;  $p<0,0001$ ).

## DISCUSSION

Faculty of Medicine students are among the future of health professionals who will play an important role in health protection and health promotion and it is important for them to have sufficient knowledge about CVD risk factors and to guide individuals in adopting healthy life style behaviors in order to provide CVD protection. Although their knowledge level on risk factors and evolution of CVD should be checked regularly by interim curriculum and final exams, our study intended to describe and compare that knowledge between students of 1<sup>st</sup> grade and 3<sup>rd</sup> grade in Afyon Kocatepe University Faculty of Medicine with cross-sectional questionnaire study. Total mean scores of CARRF-KL questionnaire between 1<sup>st</sup> and 3<sup>rd</sup> grade were significantly different which was interestingly higher in 1<sup>st</sup> grade ( $24,40\pm3,07-22,71\pm4,36$ ,  $p<0,001$ ). It was so interesting result because 3<sup>rd</sup> grade students learn further knowledge of CVD risk factors than 1<sup>st</sup> one. It was unexpected result of our study. These mean scores were higher than some studies like this which used CARRF-KL

questionnaire. In one of them was conducted by Gurdoğan et al. which comprised of 665 students from Nursing, Nutrition and Dietetics, and Physiotherapy and Rehabilitation departments of the health sciences faculty, mean score was  $17.86\pm2.83$  in that study (6). In another study which assessed 422 nursing students found the mean score  $19.08\pm6.05$  (7). Mean score was found  $13.05\pm6.93$  in another study in which 113 women who lived in rural area were surveyed with CARRF-KL scale questionnaire (8). Our study population was student at faculty of medicine so this range of mean score was reasonable. The first 1, 2, 3, 4 questions of this questionnaire were about the properties of cardiovascular diseases, the likelihood of protection, and the age factor in which significantly more score was determined in 3<sup>rd</sup> grade ( $p=0,006$ ). Higher CARRF-KL scale score level was better fitting with having a family history of cardiac disease than without aforementioned studies so in the first 4 questions showed us more enhancing of understanding of aging and genesis factors for CVD in 3<sup>rd</sup> grade(6,8). Questions 5, 6, 9, 10, 11, 12, 14, 18, 19, 20, 23, 24, 25, 27, 28 were about bad results on cardiovascular health of smoking, excessive intake of salt and high cholesterol, obesity, stress, grief, hypertension, diabetes mellitus and good results of quitting of smoking, in taking of vegetable, fruits. We found interestingly significantly more score in 1<sup>st</sup> grade than 3<sup>rd</sup> grade ( $p<0,0001$ ). Kumsar et al. found that CARRF-KL scores were significantly associated with grade, age, BMI, waist circumference, and diagnosed cardiac disease, hypertension, and diabetes in first degree female relatives ( $p<0,01$ ). CARRF-KL scores were not significantly associated with place of residence, presence of a chronic disease, and diagnosed cardiac disease, hypertension, and diabetes in first degree male relatives ( $p>0,05$ ). It was determined that students who were in second grade, who were obese, who had a waist circumference of 70-79 cm and who had a first degree female relative diagnosed with cardiac disease, hypertension and diabetes had higher cardiovascular disease risk factors knowledge levels (7).

Uysal et al. found that CARRF-KL scale level was higher for students who are tobacco/ci-

garette nonsmokers and do not use alcohol ( $p < 0,05$ ) which reflects the relationship that exists between knowledge and lifestyle behaviors and also levels were higher for students who regularly exercise 30-45 minute/day, have a normal BMI and waist circumference ( $p > ,05$ ), eat whole grains, lowfat, protein rich and low sodium meals ( $p < 0,05$ ) (9).

It emphasizes that who knows better knowledge about CVD risk factors who does better lifestyle behaviors for protection of CVD. In another study which assessed 400 students revealed many students had enough knowledge of relationship between acute myocardial infarction and cardiac risk factors like smoking and obesity. What about status in hyperlipidemia, stress and other chronic diseases, in a study stress, hyperlipidemia, hypertension and lastly diabetes mellitus were found to be known as a cardiac risk factors in 27,0%, 15,5%, 13,8% and 3,8%, respectively (10). Yadav KD et al. reported that high cholesterol diet (87,5%) and high blood pressure (86,1%) were known as risk factors in a good percent among number of 144 students who were 15-19 years old in Kathmandu district (11). But in another report only 36,4% of 1<sup>st</sup> grade and 54,7% in 6<sup>th</sup> grade correctly answered a goal value for total cholesterol in apparently healthy subjects according to Joint European Guidelines but which showed still, 45,3% of graduating students did not answer correctly questions on hyperlipidemia topic (12). We think there is a still not enough knowledge level about these risk factors so we should stress on importance of lifestyle changes on dyslipidemia, hypertension, quitting smoking and escalating of regular exercise. Questions 7, 8, 13, 15, 16, 17, 21, 22, 26 were about again good results of cardiovascular health of quitting smoking and eating more fruits, vegetables, in taking of low lipid and carbohydrate, regular exercises, treatment of hypertension. Mean score of these question in were significantly more in 1<sup>st</sup> grade than 3<sup>rd</sup> grade again ( $p < 0,0001$ ).

We expected to find the more grade the more CARRF-KL scale score but interestingly 1<sup>st</sup> grade had more score, it is contrast to literature (6). Maybe we can have some opinion about these results during the studying in faculty of

medicine, knowledge and risk factors of CVD maybe be assessed regularly and improved by some adjusting efforts like lessons, multimedia shows, more practices at hospitals. It has been shown by literature that one fourth to thirty percent of the students do not have a sufficient cardiovascular disease risk factors knowledge level (7,10) (**Table 1**).

**Table 1:** Baseline characteristics and CARRF-KL Scores of answers according to grades.

Groups		N	Mean±Std. Deviation	Median (%25-%75)	p*
Female (n)	1st Grade	91 (58,3%)			
	3rd Grade	70(49,3%)			
Male (n)	1st Grade	65(41,7%)			p= 0,118*
	3rd Grade	65(41,7%)			
Age	1st Grade	150	18,57±0,69	18,00 (18,00-19,00)	p<0,001*
	3rd Grade	142	20,85±1,12	21,00 (20,00-21,00)	
Total	1st Grade	168	24,40±3,07	24,50 (23,00-26,00)	p<0,001*
	3rd Grade	142	22,71±4,36	24,00 (19,00-26,00)	
CARRF-KL Score of answer for questions of 1,2,3,4	1st Grade	168	3,66±0,85	4,00 (3,00-4,00)	p=0,006**
	3rd Grade	142	3,68±0,61	4,00 (3,00-4,00)	
CARRF-KL Score of answer for questions of 5,6,9,10,11,12,14,18,19, 20,23,24,25,27,28	1st Grade	168	13,64±1,89	14,00 (13,00-15,00)	p<0,0001**
	3rd Grade	142	12,15±2,62	13,00 (10,00-14,00)	
CARRF-KL Score of answer for questions of 7,8,13,15,16,17,21,22,6	1st Grade	168	7,11±1,35	7,00 (6,00-8,00)	p<0,0001**
	3rd Grade	142	6,89±1,72	7,00 (6,00-8,00)	

\*Student's t test (Mean ± Std. Deviation)

\*\*ANOVA with Tukey

## CONCLUSION

We found mean CARRF-KL scale score was higher in our study population than literature but 1<sup>st</sup> grade answered betterly to most part of questions than 3<sup>rd</sup> grade but totally results were unsatisfactory. Smoking is the best known risk factor in contrast to diabetes mellitus at least one. Knowledge regarding to chronic metabolic diseases like hyperlipidemia, diabetes mellitus should be stressed more efficiently.

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