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Cardiovascular disease risk in Turkish family health centers

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Cardiovascular diseases (CVDs) are the leading cause of death both worldwide and in Turkey. The risk of CVD increases among those who are middle aged and among people with certain sociodemographic factors related to that risk. The objective of this study was to determine the prevalence of the risk of CVD and assess the factors related to this risk among adults aged 40–65 years. The study consisted of 327 individuals (208 [63.6%] women and 119 [36.4%] men) from a family health center (FHC) in Antalya, Turkey, who volunteered to participate in the study. The average age of the patients was 52.7 years. This cross-sectional study was conducted between April and September of 2016. The risk levels of the participants were calculated using the HeartScore program in 4 categories (low, moderate, high, and very high risk). In addition, sociodemographic and medical data were collected from the participants, as well. It was found that 3.4% of the patients were at a very high risk, 8% were at a high risk, 22% were at a moderate risk, and 66.7% were at a low risk of CVD. Major variables increasing this risk included diastolic hypertension by 7.49 (3.77–14.88) times. The individuals who completed secondary and high school had 2.44 times greater risk compared with those who completed primary school and lower education; moreover, those who completed university and higher education had the 2.24 times greater risk. Cardiovascular risk screening is important for apparently healthy individuals. The HeartScore program is practical for nurses and other health care professionals in FHCs to estimate individuals' risk of CVD. (J Vasc Nurs 2019;37:117-124)

Cardiovascular disease (CVD) accounts for 31% of deaths worldwide.[1] Furthermore, cardiovascular-related mortality is increasing in many developing countries and transition countries. The Turkish Statistical Institute has reported that CVD ranks first with the rate of 40.3% among the causes of death in Turkey in 2015, thus pointing to a 0.3% increase based on the data of 2014.[2] Given that the mortality rate is high, it is important to determine the risk factors,[3] take necessary measures, and protect high-risk individuals.[4]

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Conflicts of interest: The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding: The authors disclosed the receipt of the following financial support for the research, authorship, and/or publication of this article. The authors are grateful to the Scientific Research Foundation at Akdeniz University for their financial support (TYL-2016–1207).

1062-0303/$36.00

https://doi.org/10.1016/j.jvn.2019.02.002

Within the scope of the Turkish Prevention and Control Program for Cardiovascular Diseases (2015–2020), it has been recommended that the CVD risk be calculated, appropriate intervention be planned for the risk score, cardiovascular risk among individuals 40 years of age and over be evaluated, and interventions according to individuals' risk scores in accordance with national and international guidelines be conducted.[5] In this context, it is recommended that family practitioners assess the cardiovascular risk of individuals above 40 years of age at least once and independently of their reason of visit. Family health centers (FHCs) offer the services of obesity monitoring, blood pressure follow-up, and serum lipid profile screening and sometimes distribute brochures regarding risk factors such as healthy nutrition, the salt consumption, and hypertension.[6] However, the risk of CVD is not periodically identified in FHCs throughout the country.[7]

Physicians and nurses working in FHCs have a unique position in terms of determining the risk of CVD and providing necessary counseling to individuals. They can use reliable, cost-effective, and user-friendly CVD risk screening tools to do this. What is more, the European Guidelines on Cardiovascular Disease Prevention in Clinical Practice (2012) recommends the Systematic Coronary Risk Evaluation (SCORE) system widely used in Europe. The SCORE system calculates the risk of CVD in individuals who appear to be healthy. HeartScore is the electronic counterpart of the SCORE risk charts published in 2003 in the European Guidelines on Cardiovascular Prevention. The HeartScore program calculates the risk of developing a cardiovascular incident within 10 years according to a patient's gender, age, smoking habit, blood pressure, cholesterol, and/or total cholesterol/HDL ratio.[8] Not only does it estimate coronary heart disease (CHD) but also predicts the entire atherosclerotic

risk of CVD.[9] HeartScore is both an electronic equivalent of risk tables and an interactive tool used in predicting the risks for heart attack and stroke in Europe and has been developed with the purpose of reducing the individual cardiovascular risk.

The objective of this study was to determine the prevalence of the risk of CVD and assess the factors associated with this risk among adults aged between 40 and 65 years registered at a FHC in the city center of Antalya, Turkey.

QUESTIONS OF THE STUDY

1) What is the frequency for risk levels of CVD in individuals between 40 and 65 years of age?
2) Is there any association between an individual's demographic and medical characteristics and risk stratification?

MATERIAL AND METHODS

Study design

The study was conducted as a cross-sectional design at the Akdeniz FHC, which is located in the district of Konyaaltı in the city of Antalya, between April and September of 2016.

Population and sample

The population of the study consisted of 2,390 individuals between the age of 40 and 65 years registered at the Akdeniz FHC. Purposive sampling was used in the study. The sample size was calculated by using the nonfinite population formula, based on the prevalence for the moderate risk of CVD (27.4%) obtained in the study conducted by Ünal et al, with individuals living in the region of Balçova. The minimum sample size was found to be 270 for this study.[10] All the individuals who visited the FHC twice per week between April and September were included in the study using the purposive sampling. A total of 339 people were contacted between the aforementioned dates, and 12 of them declined to participate in the study. The study was thus completed with 327 voluntary participants.

Participants

Inclusion criteria. The inclusion criteria were as follows: being aged between 40 and 65 years, having no known and diagnosed CVD, and being voluntary to participate in the study.

Exclusion criteria. The exclusion criteria were as follows: having a known and diagnosed CVD, diabetes mellitus, and chronic renal disease; having a history of bypass surgery; and having myocardial infarction, stroke, metabolic syndrome, and acute coronary syndrome. HeartScore classifies such individuals as having a very high risk of CVD.

Ethical considerations. To conduct the study, ethical approval from the Clinical Trials Ethics Committee at Akdeniz University (70904504/377), institutional permission from the relevant units of the Turkish Public Health Institution and Antalya Directorate of Public Health (49699457/771), and the informed consent from the participants were obtained.

Measures

Data collection tools. To determine the risk level of CVD, the program HeartScore was used. Moreover, a questionnaire was also used to obtain the demographic and medical information of the patients. The International Physical Activity Questionnaire (IPAQ Short Form) was used to determine their physical activity levels,[11] and the "Fagerström Test" was used on individuals who smoked.[12] Height and weight measurements were performed to determine the participants' body mass index. International protocol steps were followed in terms of height and weight measurements.[13]

The HeartScore program. HeartScore is the electronic counterpart of the SCORE risk charts published in 2003 under the European Guidelines on Cardiovascular Prevention. It is a web-based interactive tool used to predict and manage the risk of heart attack and stroke throughout Europe. After entering relevant risk factors such as gender, age, total cholesterol, systolic blood pressure, and smoking status, the program produces a graphical view of three bars, whereby the left bar is the patient's risk on the date of examination. It shows the patient's absolute risk of a CVD event within a 10-year period. According to the following HeartScore score, individuals are separated into four categories of risk:

1) Low risk if <1%.
2) Moderate risk if ≥2% to <5%.
3) High risk if ≥5% to <10%.
4) Very high risk if ≥10%.

The guidelines emphasize that individuals with low cardiovascular death risk should maintain the low risk, those with moderate risk should change their lifestyle with regard to the risk factors, those with ≥5% risk should receive intensive counseling, and those with high risk should change their lifestyle outright. If the risk level is >10%, medication should be more frequently administered.[14]

The Fagerström test. This test is used to evaluate nicotine dependence among smokers. Being developed by Fagerström et al, with the intention of determining the nicotine dependence, the test consists of six questions. Nicotine dependence is determined as being very low, low, moderate, high, and very high. As the dependence increases, the score obtained from the scale also increases.[12]

The IPAQ short form. The IPAQ Short Form is a self-report measure for both physical activity and sitting time (sedentary behavior). The short form (7 questions) provides information about walking, time spent for moderate and vigorous intensity activities, and time spent for sitting. The total amount of physical activity is converted into metabolic equivalents (MET minutes per week) in accordance with the guidelines for data processing and analysis of the IPAQ, whereby one MET is equal to the expenditure of energy while resting. There are three physical activity levels determined to categorize individuals as "inactive," "minimally active," and "very active."[11]

Height and weight measurement protocol

The researchers made anthropometric measurements to determine BMI. The steps to measure body weight included the following:

1) A digital scale was used to measure the body weight of the participants. It had a maximum capacity of 150 kg and was sensitive to 0.1 kg. Its digital calibration was not easily broken.
2) The scale was placed on flat and solid ground during the measurement.
3) The participants were asked to take their shoes off and to step on the scale; the value read on the scale was recorded as the body weight.
4) The scale was calibrated after every 10 measurements.

Height measurement steps:

1) A portable stadiometer was used to measure the height of the participants.
2) They took their shoes off, and they stood upright.
3) Their heads, shoulders, backs, hips, calves, and heels were attached to the stadiometer; the device's slide was taken down, and the value read was recorded as the height.[13]

Cholesterol measurement protocol

Researches measured cholesterol levels of the participants using the ***Accutrend Plus*** GCT (Diabetes & Cholesterol & Triglyceride) measuring device, given that it is an easy and portable system for health care professionals. The test strips were used for the quantitative determination of the total cholesterol in capillary whole blood, whereby capillary blood from the fingertip is made to drip on the strip, and whereupon the cholesterol result appears on the screen within approximately three minutes.[15]

A sufficient correlation was reported between the measurement taken from the capillary using the ***Accutrend Plus*** device and the measurement taken from the venous blood in the laboratory ($r \geq 0.80$, $P < .001$),[16] whereby the ***Accutrend Plus*** device was ideal for both cholesterol screening and determination of the risk of CVD.[16–18]

Blood pressure measurement protocol

1) Arterial blood pressure measurements were performed after allowing the participants to rest for 10–15 minutes, by taking their systolic blood pressure (SBP) and diastolic (DBP) from their right arm, in a sitting position.
2) SBP and DBP were measured using a calibrated sphygmomanometer (Erka Perfect Aneroid, Germany). The SBP and DBP values were then recorded based on Korotkoff sounds.
3) The individual was asked to avoid exercising, eating, intaking caffeine, and smoking half an hour before their blood pressure being measured.
4) The measurement was evaluated on both arms, and the average was recorded. Concurrent measurement was made only if the SBP/DBP had a difference above 20/10 mmHg in each of the three repeated measurements.[19]

Statistical analysis

The data of the study were evaluated using the licensed Statistical Package for the Social Sciences (SPSS) v.22.0 packaged software and supported by the Statistical Consultancy Unit at Akdeniz University. Factors affecting the CVD risk were examined in univariate analyses using the Chi-square, Kruskal Wallis, and Mann-Whitney U tests. Independent variables with a *P*-value of <.25 found in the univariate analyses were included in the logistic regression analysis. The Hosmer-Lemeshow test was used for the model fit. In the tests, the alpha level was accepted as 0.05 for the statistical significance limit.

The power and effect size of the tests were calculated as post hoc in the G Power 3.1 program. The power and effect size of the test were calculated at a confidence interval of 95% and a significance level of 0.05.

RESULTS

Table 1 shows the sociodemographic characteristics of the participants. On examining irreversible CVD risk factors, it was observed that the age average of the participants was 52.71 ± 6.26, majority of them were in the age range of 46 and 61 years, 36.4% were male, and 48.3% had a family history of CVD (Table 1).

While very high and high risk of CVD (3.4% very high risk, 8% high risk) accounted for approximately one-tenth of the participants (11.4%), approximately two-tenths of participants (22%) had moderate risk, and approximately six-tenths of the participants (66%) had low risk.

Table 1 shows the details of the CVD risk level of the participants alongside the related factors. The risk factors that were included in the score alongside other risk factors were examined separately from one another. The variables determining the risk of CVD in HeartScore were included in the table to display the descriptive data.

It was determined that 31.8% of the individuals receiving treatment due to the diagnosis of hypertension had systolic hypertension, which thus affected the risk level ($P = .018$). Also, the test had a high power in the large effect size. In addition, the individuals diagnosed with hypertension had a hypertensive blood pressure value.

The sociodemographic characteristics of the participants such as level of education, perceived income status, marital status, and family history were not statistically significant in terms of the risk of CVD.

No statistically significant difference was found in the CVD risk levels of the participants in terms of BMI values, physical activity levels, or nicotine dependency levels.

On examining the variables affecting the risk of CVD, employment status, whereby the age factor was influential, was not included in the logistic regression analysis. However, given that both high and low DBP are influential factors, they were both included in the logistic regression analysis[20] (Table 2).

It was observed that the patients with a high DBP (27.6% of them) had a high CVD risk level (Table 1), although DBP is not as a variable in the HeartScore program. It was determined that there was a high correlation (r: 0.914, *P*: .001) between the SBP and DBP values of the participants.

The variables included in the multiple logistic regression model in Table 2 included marital status ($P = .067$), educational level ($P = .219$), physical activity level, ($P = .147$), and DBP ($P < .001$).

According to the multiple logistic regression analysis, the variables of educational level [p(model) = 0.026] and DBP [p(model) < 0.001] were observed to be statistically significant. The risk of the CVD level increased by 2.24 times in correlation with university education level and by 7.49 times in correlation with diastolic hypertension. Diastolic hypertension was a variable that dramatically increased the risk of CVD by 7.49 times (3.77–14.88). According to the model, the risk of CVD was 7.49 times greater among individuals with diastolic hypertension than normotensive individuals and 2.02 times greater in prehypertensive ones. It was determined that the risk of CVD was 2.44 times greater among secondary and high school

TABLE 1

RISK OF CVD AND THE RELATED VARIABLES

Descriptive Characteristics	*Risk of CVD*[§] *Low Risk*	*Moderate Risk*	*High Risk*	P *value*[*]	*Effect Size*	*Power of the Test*
Age (mean ± SD)	50.12 ± 5.21	57.43 ± 4.64	58.71 ± 5.12	¶		
	n (%)	n (%)	n (%)			
Gender						
Female	169 (81.2)	28 (13.5)	11 (5.3)	¶		
Male	49 (41.2)	44 (37.0)	26 (21.8)			
Educational level						
Those with a primary level of education and below	70 (72.9)	20 (20.8)	6 (6.2)	4.126 .389	0.30	0.99
Those with secondary school and high school education	87 (63.0)	32 (23.2)	19 (13.8)			
Those with bachelor's degree and higher education	61 (65.6)	20 (21.5)	12 (12.9)			
Employment status						
Employed	66 (75.0)	15 (17.0)	7 (8.0)	**46.928**	**0.74**	**1.00**
Retired†	37 (38.9)	38 (40.0)	20 (21.1)	**<.001**		
Housewives and unemployed	115 (79.9)	19 (13.2)	10 (6.9)			
Perceived level of income‖						
Income < expenditure	36 (72.0)	10 (20.0)	4 (8.0)	1.186	0.15	0.56
Income = expenditure	160 (66.1)	54 (22.3)	28 (11.6)	.880		
Income > expenditure	22 (62.9)	8 (22.9)	5 (14.3)			
Marital status						
Married	191 (65.2)	66 (22.5)	36 (12.3)	3.605	0.26	0.99
Single	27 (79.4)	6 (17.6)	1 (2.9)	.165		
Family history of CVD						
Yes	107 (67.7)	32 (20.3)	19 (12.0)	.620	0.67	1.00
No	111 (65.7)	40 (23.7)	18 (10.7)	.733		
Hypertension diagnosis						
No	177 (71.1)	46 (18.5)	26 (10.4)	¶		
Yes	41 (52.6)	26 (33.3)	11 (14.1)			
SBP (n = 78)						
Normotensive (<120)	17 (70.8)	7 (29.2)	0 (0)	¶		
Prehypertension (120–139)	17 (53.1)	11 (34.4)	4 (12.5)			
Hypertension† (≥140)	7 (31.8)	8 (36.4)	7 (31.8)			
DBP (n = 78)						
Normotensive (<80)	17 (68.0)	8 (32.0)	0 (0)	**10.719**	**0.86**	**0.99**
Prehypertension (80–89)	14 (58.3)	7 (29.2)	3 (12.5)	**.030**		
Hypertension† (≥90)	10 (34.5)	11 (37.9)	8 (27.6)			

(*Continued*)

TABLE 1

CONTINUED

Descriptive Characteristics	*Risk of CVD*[§] *Low Risk*	*Moderate Risk*	*High Risk*	P *value**	*Effect Size*	*Power of the Test*
SBP (n = 327)						
Normotensive (<120)	117 (80.7)	21 (14.5)	7 (4.8)	¶		
Prehypertension (120–139)	82 (62.6)	35 (26.7)	14 (10.7)			
Hypertension† (≥140)	19 (37.3)	16 (31.4)	16 (31.4)			
DBP(n = 327)						
Normotensive (<80)	120 (79.5)	23 (15.2)	8 (5.3)	**39.882**	**0.85**	**1.00**
Prehypertension (80–89)	71 (65.7)	27 (25.0)	10 (9.3)	**<.001**		
Hypertension† (≥90)	27 (39.7)	22 (32.4)	19 (27.9)			
Cholesterol						
Good (<200)	94 (74.6)	24 (19.0)	8 (6.3)	¶		
Borderline (200–239)	81 (66.9)	31 (25.6)	9 (7.4)			
High† (≥240)	43 (53.8)	17 (21.2)	20 (25.0)			
Smoking						
No	160 (71.4)	43 (19.2)	21 (9.4)	¶		
Yes	58 (56.3)	29 (28.2)	16 (15.5)			
Nicotine dependence (n = 103)‡						
Low dependence	33 (56.9)	16 (27.6)	9 (15.5)	.134	0.06	0.11
Moderate dependence	14 (53.8)	8 (30.8)	4 (15.4)	.998		
High dependence	11 (57.9)	5 (26.3)	3 (15.8)			
BMI (categories)						
Normal weight (18.5–24.9)	47 (70.1)	14 (20.9)	6 (9.0)	4.460	0.31	0.99
Overweight (25–29.9)	108 (65.5)	33 (20.0)	24 (14.5)	.347		
Obesity (30 or greater)	63 (66.3)	25 (26.3)	7 (7.4)			
Physical activity level						
Inactive	152 (69.7)	47 (21.5)	20 (9.1)	3.737	0.29	0.99
Minimally active	65 (61.3)	24 (22.6)	17 (16.0)	.154		

BMI = body mass index; CVD = cardiovascular disease; DBP = diastolic blood pressure; SBP = systolic blood pressure; SD = standard deviation.

Bold values means that P < .05, P < .01.

*The Chi square test was used for statistical analysis.
†The difference is due to this group.
‡The Fagerström Test was used.
§Owing to the low number in very high category (n = 11), the high and very high categories were combined.
‖The level of income was self-reported.
¶Given that this variable is a risk factor in HeartScore, no analysis was done.

graduates than those with a primary level of education and below and 2.24 times greater among those having a bachelor's degree and higher education. When examining the predictability rate of the model according to these variables, the predictability rate of the moderate and high risks was calculated as 30%, whereas the general accuracy rate was calculated as 73.2% (Table 2).

DISCUSSION

When the risk levels of the participants were examined, it was found that approximately six-tenths of them (66.7%) had a low risk, approximately two-tenths (22%) had a moderate risk, and one-tenth (11.4%) had either a high or very high risk. In a similar Turkish study involving office workers, it was found

TABLE 2

THE MOST EFFECTIVE VARIABLES ON MIDDLE AND HIGH RISK OF CVD

Descriptive Characteristics	*B*	*SE*	P	*Odds Ratio*	*95% CI*	
					Lower	*Upper*
Marital status						
Single	—	—	.000	—	—	—
Married	0.51	0.49	.29	1.67	0.63	4.43
Educational level						
Those with a primary level of education and below	—	—	.000	—	—	—
Those with secondary school and high school education	0.89	0.33	**.008**	2.44	1.26	4.73
Those with bachelor's degree and higher education	0.81	0.36	**.026**	2.24	1.10	4.58
Physical activity level						
Inactive	—	—	.000	—	—	—
Minimally active	0.35	0.26	.18	1.42	0.84	2.41
DBP						
Normotensive	—	—	.000	—	—	—
Prehypertension	0.70	0.29	**.017**	2.02	1.13	3.60
Hypertension	2.01	0.35	**<.001**	7.49	3.77	14.88
Constant	−0.72	0.25	.004	0.483		
Hosmer-Lemeshow test* $X^2 = 4.051$, $P = .774$						

Multiple logistic regression (method = Enter): B = regression coefficient; CI = confidence interval; SE = standard error.

BMI = body mass index; CVD = cardiovascular disease; DBP = diastolic blood pressure; SD = standard deviation.

Percentage of accuracy: 73.2%, predicted medium and high risk rate = 30%.

Dependent variable: risk of CVD; moderate and high risks are encoded as 1, and low risk is encoded as 0.

Independent variables: marital status, educational level, physical activity level, and DBP.

Bold values means that P < .05, P < .01.

*According to the Hosmer-Lemeshow test, the statistical significance of >0.05 indicates that the test is consistent.

that 13.4% had a moderate risk of CVD and 7.5% had a high risk of CVD. In a Greek study, the risk of CVD was calculated using HeartScore, 14.6% of participants had a moderate risk, whereas 10.7% had a high or very high risk of CVD.[21] In a Danish study involving 1,156 individuals between the age of 50 and 60 years,[22] 21% of participants were found to have a high risk of CDV. These results show that the risk of CVD in apparently healthy individuals is similar throughout the community.

Several studies have reported that there is a possible correlation between socioeconomic factors such as level of education and employment status and the risk of CVD.[23–26] In one study, the incidence of CVD was found to be the highest among unskilled manual workers.[27] Another study reported that the risk of CVD was associated with occupation, whereby white collar workers were about 1.6 times as likely to be diagnosed with CVD as blue collar workers.[28] In the same study, the high-risk level of CVD among retired individuals was also higher than those who worked as well as housewives (Table 1). This was associated with those retired being of an older age.

Another factor related to the risk of CVD in this study was the level of education. The individuals who completed secondary and high school had 2.44 times greater risk than those who completed primary school and lower education; moreover, those who completed university and higher education had the 2.24 times greater risk (Table 2). In the literature, there are different results concerning the correlation between educational level and the risk of CVD.[28,29] In one Turkish study, the classification of educational level was similar to that of the present study and whereby it was observed that the CVD was higher among those with either a secondary-high school and university education than among those with a primary school education, just as our own results reveal. These results reflect Turkey's profile.[30] However, previous studies pointed to the fact that those with a lower level of education had a higher prevalence for CVD and the CVD risk factors (SBP and DBP, smoking, and

BMI).[31,32] This divergence in terms of results in the literature may be due to differences in how educational level is classified. On the other hand, DBP may be a confounding factor in logistic regression analysis in the present study. When the DBP was excluded in the logistic regression model and the analysis was repeated, no statistical significance was obtained. Therefore, the effect of educational level on the risk of CVD should be carefully examined.

On examining the variables affecting the risk of CVD in this study, the most important variable was found to be DBP at 7.49 times. Likewise, DBP was observed to show a high correlation with SBP (r: 0.914, *P*: .001), which was an important finding in terms of the risk of CVD. Similarly, other studies have emphasized that DBP and isolated diastolic hypertension are indicators of a risk of CVD among younger ones, whereas SBP is the predominant risk indicator among older ones.[33,34] Although the HeartScore program used in this study had only included SBP for risk calculation, other risk calculators such as the Framingham Risk Score, the American Heart Association Heart Risk Calculator, and Arteriosclerotic Cardiovascular Disease Risk Estimator are included to calculate DBP as well. Thus, the DBP value is a non-negligible risk factor when calculating the risk of CVD using HeartScore. In addition, it was observed that individuals diagnosed with hypertension had a hypertensive blood pressure value, which thus may be associated with the fact that individuals ignore the antihypertensive treatment and necessary lifestyle changes.

In this study, it was determined that 31% of the participants smoked, 18% were highly addicted to smoking, 26% were moderately addicted, and there was no difference between the addiction levels of individuals, all of whom being in either low-, moderate-, or high-risk groups. In a study conducted in Turkey, smoking habits were found to be higher among socially disadvantaged groups, especially in males with low levels of education. In this case, it may be considered that social determinants play more of a role in smoking habits than the risk of CVD.[35]

Limitations of this study

The HeartScore program guidelines recommend that physicians measure cholesterol through blood drawn from the vein. In the FHC, the cholesterol is measured from the capillary, given that individuals would not voluntarily allow their blood to be drawn in venous blood-letting, thus entailing that the test expenditures would not be met. This may be considered as being one limitation, albeit a screening test rather than a diagnosis. Moreover, in the literature, the cholesterol measurements that are performed with blood drawn from the capillary are compatible with venous blood measurements at the rate of 80%–94%.[16–18] Single-centered study design and the fact that no random sampling could be made as the personal data of the individuals registered to the Akdeniz FHC could not be used were considered as the another limitations of this study.

CONCLUSIONS AND RECOMMENDATIONS

One of the most striking results of the study was that the high and very high CVD risk made up 11.4% of the participants and those with a moderate risk made up 22% of the sample population. The major variable related with the risk of CVD was DBP. What is more, individuals with a high level of education (bachelor's degree and higher education, high school, and secondary school) had a higher CVD risk than those with primary level of education and below. These results suggest that DBP should also be considered when assessing CVD risk. Appropriate suggestions point out that the HeartScore program for the risk of the CVD level is useful when it comes to managing modifiable CVD risk factors. In this respect, it is important to consult and support individuals, especially in terms of managing those modifiable risk factors that cause a high risk of CVD. Including the HeartScore or a similar calculator as part of the FHC's Information System for screening of CVD risk in the population may in turn prove to be beneficial.

ACKNOWLEDGMENTS

This study was presented at the Second Congress of Cardiovascular Prevention in Pre-Elderly and Elderly Individuals in 2017 and also was based on the first author's master thesis under the supervision of the second author. The author(s) disclosed the receipt of the following financial support for the research, authorship, and/or publication of this article. The authors are grateful to the Scientific Research Foundation at Akdeniz University for their financial support (TYL-2016-1207).

SUPPLEMENTARY DATA

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jvn.2019.02.002.

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