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Risk Factors for Cardiovascular Diseases among Employees of Ilam University of Medical Sciences

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ABSTRACT

Aims Cardiovascular Diseases (CVDs) are the main causes of death and have the first place among other diseases throughout the world. Studying the situation of risk factors for CVDs seems necessary in Iran at various periods. The aim of this study was to determine risk factors for cardiovascular diseases (CVD) among the employees of Ilam University of Medical Sciences in order to design appropriate educational interventions.

Instruments & Methods In this descriptive cross-sectional study, which was conducted in 2017, 294 employees of Ilam University of Medical Sciences participated after presenting written consent forms. To collect data, a researcher-made questionnaire was designed and applied after verifying the validity and reliability (Cronbach's alpha greater than 0.8). Eventually, the data were analyzed, using SPSS 16 and appropriate statistical methods.

Findings Generally, 46.3% of the participants had a history of CVDs, 21.8% had a history of death caused by these diseases in their family, and 69.4% had a history of death caused by CVD among their relatives; 72.4% of the participants did not exercise daily and the mean daily exercise of participants was 8.08±1.51 minutes. Totally, 41.5% of the participants were taking solid oil, 78.6% were high-fat dairy consumers, and 41.2% consumed red meat more than twice a week.

Conclusion Performance of the participants in terms of physical activity and consuming fruits and vegetables, fish, red meat, and fatty foods is undesirable, indicating the unhealthy lifestyle of people and their exposure to CVDs.

Keywords Cardiovascular Diseases; Exercise; Nutrition; Employees

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Introduction

Cardiovascular Diseases (CVDs) are the main causes of death and have the first place among other diseases throughout the world [1-3], and they are among the most important health problems in developed and developing countries [4]. These diseases are the cause of death and health issues in Iran [3]. More than half of the health care budget of the government is now being spent on the costs caused by CVD [5].

CVDs take the lives of 17.9 million people every year, 31% of all global deaths [6], and it is anticipated that by 2025, the death rate of CVDs would reach to more than 35% to 60% in comparison to all death causes [7]. Meanwhile, according to the World Health Organization (WHO) report, it is anticipated that by 2030, 44.8% of all deaths in Iran will be caused by CVDs [8]. The number of these deaths is reported despite the fact that these diseases can be prevented considerably and early death caused by these diseases can be reduced by applying effective interventions to reduce risk factors [3]. CVDs have caused the loss of 1,414 years of life per 100,000 people in Ilam province, Iran [9].

The main behavioral risk factors of non-contagious diseases include smoking, unhealthy diet, physical inactivity, and alcohol consumption and physiological risk factors for these diseases include high blood pressure, high cholesterol, and overweight or obese [1]. A global outbreak of CVDs relates to lifestyle risk factors such as smoking, unhealthy diet, physical inactivity, and alcohol consumption [10, 11].

A study examining taking care of risk factors for non-contagious diseases has studied 5 risk factors, including daily smoking, low intake of fruits and vegetables, inactivity, overweight and obesity, and high blood pressure among people aged 15 to 64 years old in its last review around the country in 2009; This study indicated that 96.7% of people have at least one risk factor for CVDs and 21.64% of people aged 15 to 44 years old and 52.9% of people aged 45 to 64 years old have at least 3 risk factors out of 5 risk factors for CVDs; in other words, they are at high risk [3].

Studying the situation of risk factors for CVDs is necessary for Iran at various periods and foreign sources and information cannot be counted alone [12]. The basis of non-contagious diseases prevention are an identification of their main and primary risk factors and their prevention and control and the aim of this is the avoidance of epidemics as well as controlling them as much as possible where they take place [13].

Ilam University of Medical Sciences is one of the organizations that recruited the highest number of people in Ilam province and because these people have probably more knowledge about risk factors for CVDs compared to other groups, the researchers decided to study risk factors for CVDs among the mentioned employees in Ilam. In this way, they can estimate the situation of risk factors in other employees and use them to codify prevention and intervention programs.

The aim of this study was to determine risk factors for CVDs among employees of Ilam University of Medical Sciences in order to design appropriate educational interventions.

Materials and Methods

This descriptive cross-sectional study was conducted on the employees of Ilam University of Medical Sciences in 2017. The sample size was calculated 263, using the Cochran formula. The sample size was determined in each city commensurate with employees of each city and multistage and random sampling method was used. Finally, 294 people entered the study.

Inclusion criteria were permanent or non-permanent employment, lack of developing chronic diseases or those causing movement restrictions and completing informed consent form.

The tool to collect data was a researcher-made questionnaire that included two parts of demographics and behavioral questions. The demographic part included 15 questions and personal profiles of subjects were studied by these questions. The second part was designed to study the behavior of the subjects about exercise and nutrition. In this part, 3 questions about exercise and a questionnaire to evaluate the situation of intake or the lack of intake of 20 high-consumed foods effective in heart health plus their amount and intake period were studied.

In order to verify the content validity of the researcher-made questionnaire, comments of 20 specialists in the fields of health education, nursing, cardiology, physical education, epidemiology, and nutrition (out of the research team) were considered and the rates of Content Validity Ratio (CVR) to Content validity index (CVI) were calculated; the results showed the desirable value of CVR and CVI. The reliability of the tools was studied, using Cronbach's alpha coefficient with the score greater than 0.8, indicating the desirability of tools.

In addition, to keep the personal information confidential and get informed consent form, the research team received the necessary ethics license from Research Council and Medical Ethics Committee of Medical School of Tarbiat Modares University under code no. IR.TMU.REC.1394.148.

Data collection was done as a self-reporting method by samples and some trained questioners. The data were analyzed, using SPSS 16 software. In order to determine the descriptive objectives of the study, frequency calculation, mean and standard deviation were used.

Findings

Half of the participants were men and the rest of them were women. The mean age and job experience of them were 36.90±5.96 and 13.24±7.18 years, respectively (Table 1).

Generally, 46.3% of the participants had a history of CVDs, 21.8% had a history of death caused by these diseases in their family, and 69.4% had a history of death caused by CVD among their relatives (Table 2). About 72.4% of the participants did not exercise daily and mean of their daily and weekly exercise were 8.08±1.51 and 68.21±8.45 minutes, respectively; 41.5% of the participants were taking solid oil, 78.6% were high-fat dairy consumers, and 41.2% consumed red meat more than twice a week, while weekly intake of fish and seafood was two or more times daily only between 3.74% of participants and 9.9% of them used fruits and vegetables daily (Table 3).

The yearly mean of solid oil intake, high-fat dairy intake, red meat intake, fish intake, and fruits and vegetables intake was 105.79±182.58, 59.47±59.51, 127.99±7.13, 25.31±2.68, and 198.67±129.89, respectively.

Table1) Demographic information of the participants (N=294)

Variables	N (%)
Gender	
Male	147 (50.0)
Female	147 (50.0)
Marriage	
Single	43 (14.6)
Married	251 (85.4)
Education	
Diploma degree	33 (11.2)
Associate's degree	55 (18.7)
Bachelor's degree	170 (57.8)
Master's Degree	36 (12.2)
Job category	
Health care	246 (83.7)
Administrative	48 (16.3)
Smoking	
Daily	6 (2.0)
Sometimes	25 (8.5)
No	263 (89.5)
Hookah	
Daily	6 (2.0)
Sometimes	31 (10.5)
No	257 (87.5)

Table 2) CVD history among the participants (N=294)

Variables	N (%)
Family history of CVD	
Yes	136 (46.3)
No	128 (43.5)
I do not know	30 (10.2)
History of death from CVD in the family	
Yes	64 (21.8)
No	206 (70.1)
I do not know	24 (8.2)
History of CVD death in relatives	
Yes	204 (69.4)
No	90 (30.6)

Table3) Sports and nutrition status among the participants (N=294)

Variables	N (%)
Exercise daily	
Yes	81 (27.6)
No	213 (72.4)
Solid oil intake	
Yes	122 (41.5)
No	172 (58.5)
once a week	22 (7.5)
2-6 time a week	51 (17.3)
Daily	49 (16.7)
High-fat dairy intake	
Yes	231 (78.7)
No	63 (21.4)
Red meat intake	
Yes	288 (98.0)
No	6 (2.0)
Less than twice a week	56 (19.0)
Twice a week	111 (37.7)
More than twice a week	112 (38.1)
Daily	9 (3.1)
Fish intake	
Yes	277 (94.2)
No	17 (5. 8)
Once a week	266 (90.5)
Twice a week	7 (2.4)
3-6 times a week	4 (1.4)
Fruits and vegetables intake	
Yes	294 (100)
No	0
Once a week	5 (1.7)
Twice a week	69 (23.5)
3-6 times a week	191 (65.0)
Daily	29 (9.9)

Discussion

This study aimed at determining the situation of an appropriate educational intervention to correct lifestyle and reducing risk factors for these diseases among the participants. Removing or decreasing the main risk factors of CVDs can prevent more than 80% of these diseases. Some of these risk factors can be altered such as inappropriate physical activity or making changes in the environment lifestyle in the behavior or lifestyle of people [14].

The findings suggested that 46.3% of participants had a history of CVDs and 21.8% had also a death history caused by these diseases in their family. This can indicate the existence of congenital or genetic risk factors in this group; these factors are born with human and are unchangeable [3]. On the other hand, 69.4% of participants had a death history caused by CVD among their relatives and this shows the severity of disease in the society because these diseases are the first cause of death in Iran [15].

The amount of fish and seafood intake in a normal and balanced diet is twice a week [16], but in the present study, weekly intake of fish and seafood was twice or more just among 3.74% of the participants and 9.9% were using fruits and vegetables daily and this is thoroughly consistent with results in the report of health indicators in the Islamic Republic of Iran [17]. This can show the necessity of applying

appropriate intervention to correct lifestyle of people. The recommended amount of daily intake of vegetable is 3 to 5 and 2 to 4 units of fruit [3].

In this study, 72.4% of the participants did not exercise daily and the mean of daily exercise was 8.08±1.51 minutes, which is not desirable and it is consistent with the results of studies conducted by Moeini *et al*. [18], Momenan *et al*. [19], and Pirzadeh and Sharifirad [20].

Here, 10.5% of the participants were smokers and 12.5% were hookah users, which is less than what Abdi *et al.* reported, where 86.8% of employees were not smokers [21] and higher than what Charkazi *et al.* reported, where 94% of the participants stated that they were not smokers [22]. Weak results in the study by Charkazi could be due to his target group, who were teachers.

One of the limitations of this study was self–reporting, while relatively appropriate sample size and determining feeding behavior of employees were among risk factors for cardiovascular diseases.

It is suggested to apply educational intervention, according to the results of the study.

Conclusion

Performance of the participants in terms of physical activity and consuming fruits and vegetables, fish, red meat, and fatty foods are undesirable, indicating the unhealthy lifestyle of people and their exposure to CVDs.

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