

## **Dietary patterns, involvement in physical activity and body mass index of Romanian adults having cardio-vascular diseases**

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### **ABSTRACT**

Promotion of a healthy diet, an active lifestyle and appropriate body weight are important components of cardio-vascular disease prevention and control.

This study aimed to assess several dietary patterns, involvement in physical activity and body mass index (BMI) of Romanian adults hospitalized because of diagnoses of cardio-vascular diseases (CVD).

The study was performed in 2014 in 1 hospital setting from Cluj-Napoca, Romania. It involved 80 adult patients (45 to 78 years old) hospitalized with diagnoses of CVD. Anonymous questionnaire assessing several lifestyle related behaviours were filled in by the participants; based on their weight and height, the BMI was calculated.

The results show that 76.2% of the participants recognize the role of consumption of fruits and vegetables for cardio-vascular diseases prevention and control, but only 5% meet the recommendations of eating at least 5 portions of fruits and vegetables (around 400 g) daily. The majority of the subjects know that the consumption of animal fat increases the risk for cardio-vascular diseases, but, only one out of two patients declared their constant preoccupation for avoiding products rich in saturated fatty acids, such as animal fat, high fat dairy products and high fat meat. Around 80% of the participants know the risk of obesity for cardio-vascular diseases, but 81.2% have a BMI higher than 25. A percentage of 60% of the patients declared that they received general information from health care professionals about diet, physical activity and cardio-vascular disease prevention, while one quarter followed an educational program for this issue and only one out of ten patients followed a personalized program for losing weight.

Comprehensive educational and counselling programs for promoting healthy nutrition and achievement of an appropriate body weight are needed for Romanian adults having CVD

Key words: IgG, IgA, IgM, *Terminalia arjuna*, Hematological, Immunological

## INTRODUCTION

Atherosclerotic cardiovascular disease (CVD) is a chronic disorder developing insidiously throughout life and remains a major cause of premature death in Europe, being an important problem of public health. (1)

CVD is the main cause of death before the age of 75 for men in 11 countries out of 27 in the European Union: Bulgaria, Cyprus, Czech Republic, Estonia, Finland, Hungary, Latvia, Lithuania, Poland, Romania and Slovakia. For women it is the main cause in five countries: Bulgaria, Estonia, Latvia, Lithuania and Romania. (2)

The World Health Organization (WHO) has stated that over three-quarters of all CVD mortality may be prevented with adequate changes in lifestyle. (3)

Promotion of a healthy diet, an active lifestyle and appropriate body weight are important components of cardio-vascular disease prevention and control. (1-3)

The European Society of Cardiology makes the following recommendations with regard to nutrition and physical activity: (1)

- Consumption of at least 400 g of fruits and vegetables daily (around 5 portions of 80 g each).
- Inclusion in the diet of 30–45 g of fibre per day, from whole grain products, fruits and vegetables.
- Saturated fatty acids to account for <10% of total energy intake, through replacement by polyunsaturated fatty acids.
- Trans-unsaturated fatty acids: as little as possible, preferably no intake from processed food, and <1% of total energy intake from natural origin.
- Eating fish at least twice a week, one of which to be oily fish.
- Consumption of <5 g of salt per day.
- Maintaining an appropriate body weight (body mass index <25).
- Performing at least 2.5 hours of moderate physical activity per week.

Examples from different developed European countries proved that a comprehensive approach for healthy lifestyle promotion and CVD prevention could lead to significant improvement regarding the morbidity and mortality. (1, 4, 6)

The objective of this study is to assess several dietary patterns, involvement in physical activity and body mass index (BMI) of Romanian adults hospitalized because of diagnoses of cardio-vascular diseases (CVD).

## Methods

The study was performed in 2014 in the department of cardiology of 1 hospital setting from Cluj-Napoca, Romania (Medical Clinic I). It involved 80 adult patients aged 45 to 78 years old (62.5% man; 56.2% from urban areas) hospitalized with diagnoses of CVD.

Anonymous questionnaire assessing several lifestyle related behaviours were filled in by the participants. Approval for the study was received from the physician who was coordinating the department of cardiology and all participants were informed that their participation is voluntary.

This study is focusing on the following information included in the questionnaire:

- Opinions of the participants regarding the role of nutritional habits, physical activity and body composition for CVD prevention and control.
- Consumption of fruits and vegetables. The questionnaire investigated the number of days/week when they consumed fruits and vegetables in the last week previous to the hospitalization and number of portions of fruits and vegetables consumed with each occasion, a portion being considered the equivalent to approximately 80 g; for fruit, a serving was defined as a whole fruit (e.g., medium apple), three-fourths cup (178 mL) fruit juice, or one-half cup (120 mL) cut-up fruit. For vegetables, a serving is defined as 1 cup (240 mL) raw leafy vegetables (e.g, lettuce), one-half cup other vegetables, or three-fourths cup vegetable juice. Based on the results, the medium number of portions of fruits and vegetables consumed per day was calculated.
- Behaviour with respect to frequency of consumption of several animal fat products in the last week previous to the hospitalization
- Behaviour with respect to avoidance of high fat dairy products and meat in the last week previous to the hospitalization

- Behaviour with respect to frequency of consumption of fish in the last week previous to the hospitalization
  - Involvement in moderate physical activity including walking in the last week previous to the hospitalization (number of days/week and number of minutes per each day; based on the results the number of hours/week were calculated)
  - Declared weight and height; based on their weight and height, the BMI was calculated ( $\text{weight}/\text{height}^2$ ).
- Cut-off values for body mass index were considered as follows: (1)
- Underweight (BMI <18.5)  
Normal (BMI 18.5-24.9)  
Overweight (BMI  $\geq$ 25)  
Obese (BMI  $\geq$ 30)
- Changes in the lifestyle related behaviour after the diagnoses of CVD and sources of information with regard to nutrition, physical activity and weight management

## Results

Table 1 shows that 80% of the participants know the risk of obesity for cardiovascular diseases and 86.3% are aware of the fact that the consumption of animal fat increases the risk for cardio-vascular diseases. 76.2% of the participants recognize the role of consumption of fruits and vegetables for cardio-vascular diseases prevention and control, but only half know that the consumption of foods high in dietary fibres contributes to the prevention of CVD. Two thirds of the participants recognise the role of physical activity in CVD prevention.

A percentage of 60% of the patients declared that they received general information from health care professionals about diet, physical activity and cardio-vascular diseases prevention, while one quarter (26.2%) followed an educational program for this issue and only one out of ten patients followed a personalized program for losing weight.

After the diagnoses of the CVD, 42.5% of the participants declared that they have tried to loose weight, 67.5 % have made changes in their alimentary habits, while 45% have tried to perform more physical activity.

In the moment of the performance of the survey 81.2% had a BMI higher than 25 (see table 2).

With respect with alimentary habits only 5% followed the recommendations of eating at least 5 portions of fruits and vegetables daily (around 400 g daily), half of the patients declared that in the last week before of hospitalization did not eat traditional products mainly containing pork fat, one out of two patients declared that in the last week before hospitalization they had a constant preoccupation for avoiding high fat dairy products and high fat meat, while two thirds (66.2%) consumed fish at least 1-2 times/week. The recommendations of performing at least 2.5 hours of moderate physical activity including walking per week were met by 48.7% of the participants.

## Discussion

The results of the study show that many CVD patients are aware of the importance of alimentary habits and physical activity for prevention and control of CVD and two thirds have tried to improve their alimentary habits, while one out of two patients tried to improve their physical activity after the diagnoses of CVD. Nevertheless, the consumption of fruits and vegetables is low, while the constant preoccupation for avoiding food products with high content of saturated fatty acids is found only around half of the participants. A good fact is that two thirds of participants are consuming fish 1-2 times/week. Only half of the participants are performing physical activity in accordance with the recommendations. Moreover, our data show that only one quarter of the patients participated in a structured educational program for healthy lifestyle, in many cases the participants beneficiating only of some information offered by health care professionals, which might be too short, rapid and without enough elements which could help the patients to make healthy nutritional choices. Future studies should investigate in more details the factors which influence the nutrition and physical activity related behaviour of CVD patients, in order to develop appropriate educational messages and activities.

The majority of the participants know the risk posed by being overweight and almost

half of them tried to lose weight after the diagnoses, but the majority continue to be overweight. In fact, only one out of ten patients followed a personalized program for losing weight, which might be the consequence of limited access to these types of programs, despite their declarative preoccupation for their body weight. Studies from other countries also underline the fact that the translation of recommendations into practice and developing of information, education and counselling activities in order to motivate different population groups to have an appropriate body weight and adopt a healthy lifestyle remains a challenge. (7-14)

This study is subject of several limitations. First it is an exploratory study with a limited sample size, which did not allow the analyses of results based on gender, age or residence. Second, it did not investigate in details the alimentary habits and the factors which influence them.

Despite these limitations, the study is offering information about opinions and practices regarding nutritional habits, physical activity and body composition of Romanian CVD patients hospitalised in a big university centre, issues which were insufficiently studied until now. It underlines the need for education, counselling and support of CVD patients with regard to maintaining appropriate body weight and healthy alimentary and physical activity related behaviours.

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