

Original article



## ANALYSIS OF STUDENTS' INFORMATION NEEDS IN CONDITIONS OF EPIDEMIC DISTRIBUTION OF CARDIOVASCULAR RISK FACTORS

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### ABSTRACT.

**Introduction:** An epidemic of cardiovascular disease has been observed in Bulgaria for decades. In order to reduce the risk of developing the disease, it is necessary to prevent risk factors, starting in childhood and continuing throughout life.

**Purpose, material and methods:** The aim of the study is to establish students' awareness of risk factors for cardiovascular disease and the nature and need for disease promotion and prevention. Sociological, documentary, statistical methods and method of graphic analysis of the obtained results are used.

**Results Conclusions:** More than 2/3 of study participants know the adjustable risk factors such as alcohol use, smoking, stress and fatigue, and approximately half have information about the negative effects of being overweight and high blood pressure. There is a need for additional information on the impact of other major biological risk factors, such as atherosclerosis, high blood sugar and diabetes mellitus, as well as the impact of unadjustable risk factors - age, gender and family history.

**Keywords:** risk factors, cardiovascular disease, information needs, students,

### INTRODUCTION

Epidemic spread is observed in cardiovascular diseases (CVD) and their risk factors, and the duration of the epidemic dates back decades. [1, 2, 3] The comparative characteristic with the indicators of the other countries of the European Union shows that Bulgaria is in a leading position in mortality from diseases of the circulatory system, including cerebrovascular disease. Data from the National Statistical Institute for 2020 shows that mortality from diseases of the circulatory system accounts for 60.6% of total mortality. The same diseases were the cause of 12.8% of all hospitalizations for the period and the cause of premature mortality in 75,586 (13.6%) deaths, with a predominance of males. [4] In this epidemic situation, the way to deal with the observed epidemic of cardiovascu-

lar disease is to take advantage of the only available vaccine - the prevention of risk factors. However, the beginning must be timely and permanent - to begin in childhood and continue throughout life.

### PURPOSE

To establish students' awareness of risk factors for cardiovascular disease and the nature and need for disease promotion and prevention.

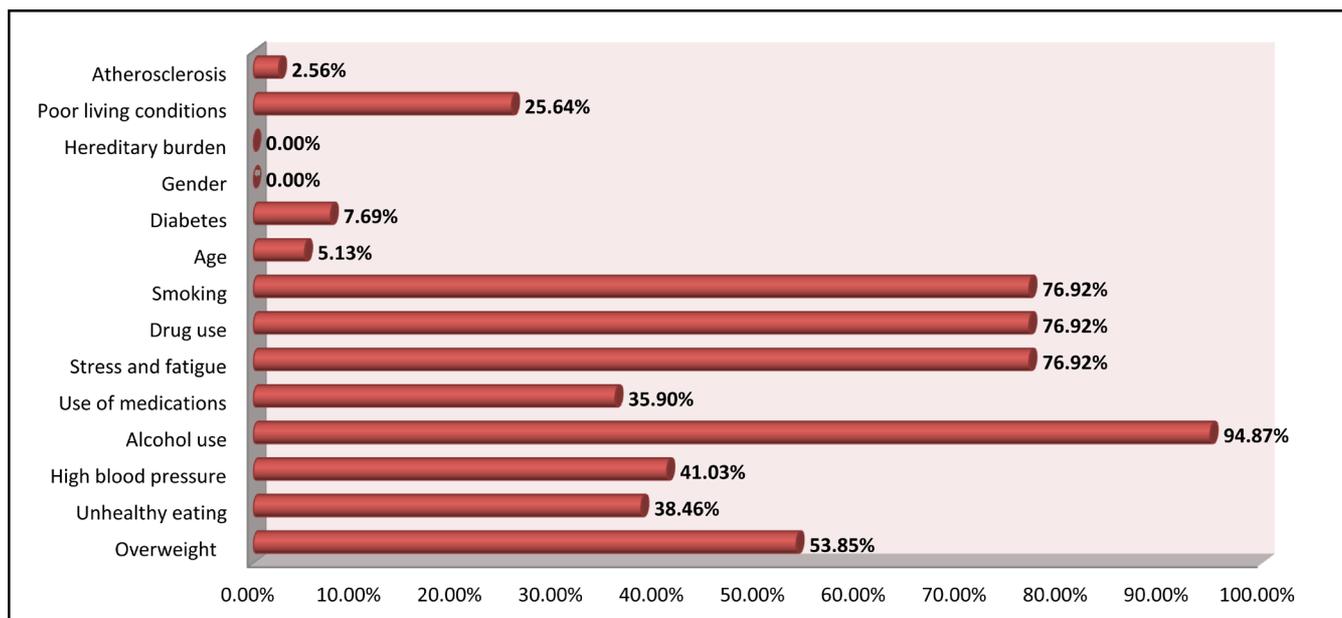
### MATERIAL AND METHODS

A sociological method was used to achieve this goal. A voluntary and anonymous survey was conducted in the period September 2021 – October 2021. It includes 117 students aged 13 to 16 from high schools in the cities of Sofia and Peshtera. We used our own tools – a questionnaire consisting of two panels. The first panel consists of questions related to the demographic characteristics of the respondents – gender, age, place of residence, school. The second panel contains 12 questions, of which 10 are closed and 2 are open. Closed questions have the possibility of more than one answer, and open questions are intended to specify the relevant data. Another documentary method was used, related to the study of the literature sources on the studied phenomenon, statistical method and method of graphic analysis of the obtained results. Statistical data processing and graphical presentation of the results were done using MS Excel 2007.

### RESULTS

Many of the problems in the health of our population are related to a system of determinants, living and working conditions, the physical environment and behavioral risk factors, which often originate from childhood and adolescence with a tendency to increase with age. [3, 5, 6] We studied the knowledge and information needs of the respondents about the risk factors that lead to damage to the heart and blood vessels.

**Fig.1.** Knowledge of risk factors for CVD



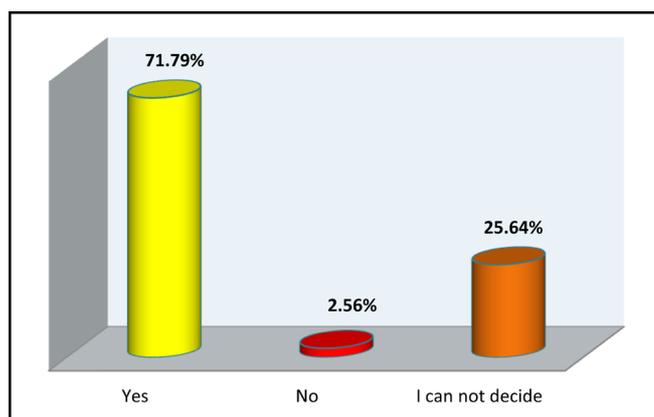
\*The percentages exceed 100, as some of the respondents indicated 2, 3 and more answers

A significant part of the surveyed students (94.87%) indicated the use of alcohol as a risk factor for CVD. Equal is the percentage of students who determine smoking, drug use, and stress as other risks of heart damage - 76.92%, respectively. More than half of the respondents (53.85%) know overweight as risk factors for heart health. Another 41.03% know high blood pressure as such risk factors. Every third student in the study group identifies as such an unhealthy diet (38.46%) and the use of medication (35.90%). The analysis of the data shows that every fourth (25.64%) believes that poor living conditions can also be a prerequisite for cardiovascular disease. It is noteworthy that the lowest are the relative shares of respondents who know diabetes mellitus (7.69%), age (5.13%) and high cholesterol and atherosclerosis (2.56%) as risk factors. None of the participants in the study indicated hereditary burden and gender as factors related to morbidity. (Fig. 1)

The need to promote health and prevent disease must be at the heart of the fight against CVD. They should be educated in childhood and adolescence when building healthy habits, skills and the need for a proper and healthy lifestyle in order to prevent the harmful effects of health risk factors. To the question “Do you think there is a difference between health promotion, disease prevention and disease?” the highest relative share (71.79%) gave a positive answer. Approximately a quarter (25.64%) of the respondents cannot tell, and only 2.56% of them answer negatively.

In order to study the knowledge of students who answered that there is a difference between the concepts of prevention, promotion and disease, we invited them to indicate what it means.

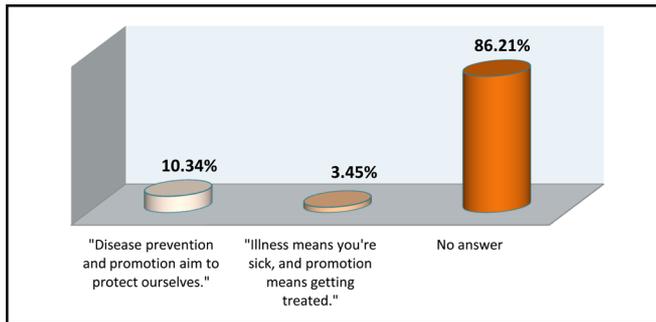
**Fig.2.** Knowledge of existing differences between health promotion, disease prevention and disease



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**Fig. 3** Students' knowledge of the meaning of the terms promotion, prevention and disease



The highest relative share (86.21%) did not answer the question, although they gave a positive answer and indicated that there is a difference between the concepts. Only one in ten children (10.34%) in the study group was informed that promotion and prevention aim to prevent disease, and the disease already exists. Although with a low relative share (3.45%), there are those who, despite their positive response, have the opinion that "The disease is when you are sick, and the promotion is to be treated." (Fig. 3) The analysis of the data shows that a quarter of the respondents cannot assess whether there is a difference between promotion, prevention and existing disease. The other respondents stated that there was a difference but did not know what it really was.

#### DISCUSSION:

The analysis of the data shows that the participants in the study are well aware of the adjustable risk factors such as alcohol use, smoking, overweight, stress and fatigue, and together with them put the use of drugs. At the same time, students do not know other major risk factors, namely gender, age, hereditary burden, high cholesterol and atherosclerosis, diabetes. These data are probably due to the fact that in schools, quite reasonably, the emphasis is on the harm from the use of alcohol, tobacco and drugs, which helps to some extent to prevent CVD. At the same time, it is necessary to increase the health culture of students and to be informed about the influence of uncorrectable risk factors. Although they cannot be changed, learners need to know that combining them with an unhealthy and irrational lifestyle leads to a summation of risk factors and increases future cardiovascular risk, and hence the possibility of loss of activity, ability to work and possible disability.

Health promotion and disease prevention are at the heart of the fight against CVD. In order to be able to achieve the necessary self-regulatory behavior and to carry out adequate and timely prevention of CVD, it is necessary to know and prevent the risk of cardiovascular factors in a timely manner. Emphasis needs to be placed on the need for timely prevention from an early age in order to build healthy individuals with risk factors reduced to a minimum. Only a positive health attitude and behavior of the individual can lead to a reduction in the incidence of CVD in the future. It is no coincidence that the National

Health Strategy 2020 supports the thesis that "the individual can do more for his health and well-being than the best developed health system". [5] This requires a continuous health campaign aimed at raising awareness and proclaiming the benefits of preventing risky health behaviors and the need to prevent health risks and reduce cardiovascular morbidity. Children need to be convinced that a healthy lifestyle and avoiding the influence of risk factors will contribute to health and a longer life. One of the ways to have a positive impact on risk factors and lifestyle is awareness, educational needs and educational level.

To deal with existing health problems and the dominant behavioral risk factors, our population has a huge potential to cope when the beginning of health promotion and disease prevention is set in childhood. In order to be effective and achieve their goals, promotion and prevention must begin in the family and continue in school, which has a key role to play in promoting health in society. To achieve efficiency and sustainability of work and interaction it is necessary:

- Active educational interaction with children and adolescents to build a value system and attitudes, knowledge and skills for a healthy lifestyle.
- Continuing health education and use of interactive methods for upgrading training. This can be done by overlapping basic topics, repeating them periodically, as well as taking into account the age, knowledge and ability of children to perceive the information.
- Organizing and ensuring healthy choices in school, family and extracurricular activities.

Health care, health education and upbringing are the priorities of every country. Health education is informing adolescents about health and its protection and has an essential role in forming, maintaining and strengthening a positive attitude towards one's own health. [10] In order to achieve its goals, it is necessary to periodically study the information needs of children and adolescents, prepare an analysis of information needs and select specific activities to raise awareness on relevant topics.

#### CONCLUSIONS:

1. More than two-thirds of study participants are aware of modifiable risk factors such as alcohol use, smoking, stress, and fatigue. Approximately half have information about the adverse effects of being overweight and high blood pressure.
2. There is a need for additional information on the impact of other major biological risk factors, such as atherosclerosis, high blood sugar and diabetes mellitus, as well as the impact of unadjustable risk factors – age, gender and family history.
3. It is necessary to raise students' awareness of the nature and purpose of disease promotion and disease prevention and the need to start them in childhood and adolescence in order to reduce future heart risk and emphasize the possible summation of factors of risk and multiple increase of cardiovascular risk in the future.

Schools and medical professionals in school health play a key role in disease prevention, health promotion and

student awareness. The school is the place where students spend most of their time and is an organized environment in which action and control are possible. Medical professionals should be actively involved in the development of health education curricula, focusing students' attention not only on the short-term effects of their risky health behaviors but also on the long-term ones and the negative health effects of their cumulative impact. In the topics related to health education, it is necessary to include more in-depth information about the risk factors for CVD, both adjustable and non-adjustable, their possibilities for prevention and long-term benefits of that prevention. [8, 9]

Health education must be continuously enriched by:

- presentation of current health topics by conducting verbal health trainings;
- elaboration of information boards on the basis of the studied information needs of the students regarding the prevention of CVD, their periodic updating and placing

them in a prominent place;

- engaging students in the development of information boards and materials concerning the prevention of cardiovascular risk factors;
- conducting health events (for students and / or parents), affecting health problems, risky behavior and prevention of heart risk.

For the prevention of risk factors in school age, in addition to regular assessment and control of the health status of schoolgirls, health education and training, experts also advise conducting health surveys in order to obtain additional information. [10]

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