

# The evaluation of secondary school students' knowledge about risk factors of cardiovascular disease

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## Abstract

The aim of the study was to evaluate the knowledge of teen-agers about risk factors of cardiovascular diseases (CVD) and the establishment of the field in his problem, which needs attention in realization of education programs addressed to secondary school students.

This paper presents outcomes of questionnaire study concerning knowledge of the factors promoting cardiovascular diseases occurrence, which took place in 2003 among secondary school 2nd class students. The questionnaire was filled by 167 people, 83 of them were girls and 84 boys.

Study revealed quite good knowledge of such risk factors of cardiovascular diseases, as: alcohol misuse – 86.2% of correct answers, smoking – 85.6% of correct answers. Obesity, family history of CVD, hypertension and sclerosis were pointed as a risk factor of cardiovascular diseases by 79.6%, 75.4%, 73.1%, 68.3% of students, respectively, and sedentary life with low physical activity 74.3%. The analysis of outcomes revealed unsatisfied knowledge of factors connected with the manner of nutrition. Consumption of cream butter was pointed only by 9.0% of students, and frequent eggs consumption – 21.0%, salted meals – 47.3%, irregular eating – 52.7%. Fat meat and animal fat consumption was best recognized risk among nutritional factors – 72.5% of correct answers.

None of students couldn't show all correct answers according to 14 included in questionnaire. Every fourth student didn't know even half of enumerated risk factors of cardiovascular diseases.

**Key words:** risk factors, cardiovascular diseases, the teen-agers.

## Introduction

Health behavior is created during childhood and adolescence, influenced by information and patterns delivered by parents, school and mass media [1-3]. The most efficient way of limitation of the epidemic of cardiovascular diseases (CVD) is limitation of risk factors during primary prevention, particularly including the population in young age [3-5]. The knowledge about risk factors of a disease in population should allow designing proper health promotion strategy [4].

The aim of the study was to evaluate the knowledge of II class of secondary school students about CVD risk factors and setting the field concerned with the prevention of cardiovascular diseases, which needs the great caution in programs addressed to the secondary school youth.

## Material and method

The study encompasses students of II class of secondary school in Brzeziny (district city in Łódź province), who were present at school from 15 to 19 of September 2003. Based on the date of birth we chose 183 people ending 14th year of life in the year of study. The questionnaire was filled by 167 students, among them 83 were girls (49.7%) and 84 were boys (50.3%). Absent students were excluded from the study, that is 16 people (8.7%), among them 6 boys and 10 girls.

Information that we analyzed we received by using a questionnaire enumerating 14 different features or types of behavior influencing CVD occurrence. Young people ought to point, which of these promote cardiovascular diseases.

We calculated the percent of identified by youth risk factors and we analyzed the knowledge of cardiovascular diseases risk factors, dividing them into three groups:

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**Table 1.** Number and percent of students recognized cardiovascular diseases risk factors

Risk factors	Students recognized factor	
	n	%
Alcohol misuse	144	86.2
Smoking	143	85.6
Stressing work	142	85.0
Obesity	124	79.6
Family history of CVD	133	75.4
Sedentary life with low physical activity	126	74.3
Hypertension	122	73.1
Fat meat and fat consumption	121	72.5
Sclerosis	114	68.3
Irregular eating	88	52.7
Slated meal	79	47.3
Male	70	41.9
Frequent eggs consumption	35	21.0
Consumption of cream butter	15	9.0

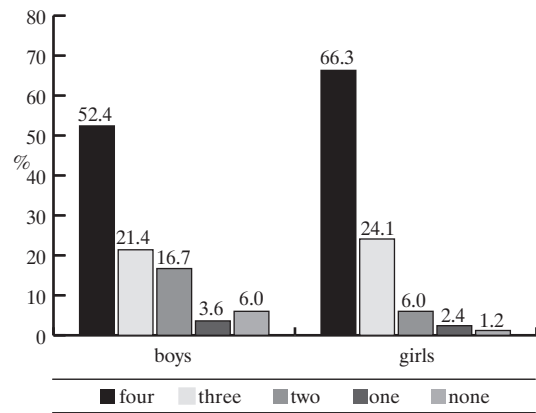
- a) factors connected with lifestyle such a alcohol misuse, cigarette smoking, sedentary lifestyle with low physical activity, stressing work;
- b) factors connected with manner of nutrition, in witch we mark out cream butter consumption, frequent eggs consumption, additional salting of meals, irregular eating, fat meat and animal fats consumption;
- c) remaining factors such a obesity, sclerosis, family history connected with heart diseases, male sex and high blood pressure.

**Results**

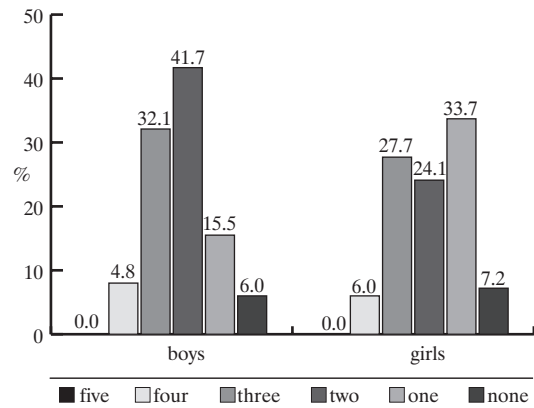
The highest percent of students – 86.2% people admit, that alcohol misuse is the enhancing risk factor of the cardiovascular diseases, among them girls pointed this factor more often than boys, 94.0% and 78.6% respectively – *Tab. 1*. Cigarette smoking as a risk factor of CVD was pointed by 85.6% of students, including 92.8% of girls and 78.6% of boys. Stressing work with cardiovascular diseases was identified by 85.0% of all students. Obesity was believed to be a CVD risk factor by 79.6% of examined students, family history connected with heart diseases – 75.4%, sedentary lifestyle with low physical activity – 74.3%, high blood pressure – 73.1%, and sclerosis – 68.3% of students. Most of students – 58.1% didn’t know, that male sex is a risk factor of cardiovascular diseases. Fat meat and animal fats consumption was believed to be a risk factor of CVD by 72.5% of students, and irregular eating by 52.7%. Factors as additional salting of meals and frequent eggs consumption were pointed by 47.3% and 21.0% of students, respectively, as favoring the occurrence of CVD. Only 9.0% of secondary school students considered that cream butter consumption could enhance the risk of cardiovascular diseases.

The evaluation of secondary school students’ knowledge according to the number of identified types of behavior enhancing the risk of CVD occurrence was done by setting together risk factors in groups. All four CVD risk factors connected with lifestyle were pointed by 59.3% of students (66.3% of girls and

**Figure 1.** The distribution of the amount of CDV risk factors connected with lifestyle, known by girls and boys



**Figure 2.** The distribution of the amount of CDV risk factors connected with nutrition, known by girls and boys



52.4% of boys) – *Fig. 1*. Less then every fourth person, that is 24.1% of girls and 21.4% of boys, knew three of four enumerated types of behavior. Two of four behavioral risk factors were pointed by 16.7% of schoolboys and 6.0% of schoolgirls. About 3% of people recognized only one feature connected with improper lifestyle (2.4% of girls and 3.6% of boys). However, 1.2% of girls and 6.0% of boys didn’t know any of risk factors of CVD.

The study revealed that secondary school youth don’t know the risk connected with nutrition. No one, among boys and girls, pointed all five enumerated in questionnaire features of improper nutrition – *Fig. 2*. Girls more often pointed one, and boys two factors in this group. Eleven people (6.6%) couldn’t show any one risk factor of CVD connected with nutrition.

*Tab. 2* presents the number of recognized by youth cardiovascular diseases risk factors, according to the sex of respondents. None child pointed all enumerated in the questionnaire factors enhancing occurrence of CVD. Ten or more among 14 factors were recognized by 40.7% of students. Half of factors (that is 7) or less knew 24.6% of students. In an examined group there was no person, who knows only one factor.

**Table 2.** Number of recognized cardiovascular diseases risk factors, according to sex of respondent

Number of recognized risk factors	Girls		Boys		Together	
	n	%	n	%	n	%
0	0	0.0	0	0.0	0	0.0
1	1	1.2	1	1.2	2	1.2
2	0	0.0	1	1.2	1	0.6
3	0	0.0	5	6.0	5	3.0
4	3	3.6	0	0.0	3	1.8
5	3	3.6	3	3.6	6	3.6
6	4	4.8	3	3.6	7	4.2
7	8	9.6	9	10.7	17	10.2
8	17	20.4	9	10.7	26	15.6
9	17	20.4	15	15.9	32	19.2
10	9	10.8	20	23.8	29	17.4
11	10	12.0	13	15.5	23	13.8
12	9	10.8	4	4.8	13	7.8
13	2	2.4	1	1.2	3	1.8
14	0	0.0	0	0.0	0	0.0
Total	83	100.0	84	100.0	167	100.0

## Discussion

In the 90's there have been edited descriptions, which evaluated the knowledge of CVD risk factors. Such studies were performed, inter alia, among students of selected academies in Warsaw [9], future graduates of medicine departments in Bydgoszcz and Szczecin [10] and also among primary school students in the district Łódź-Górna [11]. In one of those studies, the one in which students of 3rd year of academies in Warsaw participated we found, that 62.4% of students considered that lifestyle is a factor enhancing CVD [9]. The study performed with secondary school students revealed, that 14-year-olds knowledge in this theme was little less because 59.4% of all students pointed all four enumerated in a questionnaire behavioral factor enhancing the risk of cardiovascular diseases occurrence. It is worth noticing, those secondary school students better than academy students [9] knew inalterable risk factors, especially sclerosis – 68.3% and positive family history – 75.4%, which were pointed by 36.9% and 65.2% of academy students, respectively.

Participating in the study youth emphasized cigarette smoking (85.6%) as a CVD risk factor as often as academy students from Warsaw (85.0%) and future graduates of medicine departments in Bydgoszcz and Szczecin (82.5%), which knowledge in this theme was evaluated in the years 1996-1998 [9,10].

Examined secondary school students, aged 14, showed greater knowledge about CVD risk factors than students of the last years of primary school (aged 13-14) from the district Łódź-

Górna [11]. In quoted paper stated, that knowledge of behavioral CVD risk factors has had 48.4% of boys and 44.0% of girls, but in our study 52.4% of boys and 66.3% of girls recognized all four CVD risk factors connected with lifestyle. Youth from Łódź, just like examined secondary school students, the most rarely among all factors pointed cream butter consumption as a risk factor enhancing the risk of CVD occurrence, and however the knowledge of this factor in both groups was differing. The knowledge in this theme had 29.7% of students from Łódź and 9.0% of students from Brzeziny, respectively.

## Conclusions

1. The performed study revealed unsatisfied knowledge of cardiovascular diseases risk factors among secondary school students. None of students could point all fourteen enumerated factors. Only 40.7% of students knew ten or more of them.

2. Examined youth showed quite good knowledge of health threats, arising from improper lifestyle, however we noticed, that unsatisfied knowledge about risk factors connected with nutrition.

3. There is a need of including risk factors enhancing cardiovascular diseases issues, particularly in the field of nutrition, in health educational process of students in Poland.

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