

## The prevalence of smoking as a risk factor for cardiovascular diseases among children and teenagers of Bishkek city

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### Abstract

The results of an anonymous survey among 1039 schoolchildren of Bishkek city to study the prevalence of smoking as a risk factor for cardiovascular diseases are presented. As a result, there is a tendency to an increase in the prevalence of tobacco use in the modern population of teenagers and a decrease in the age of the smoker. This is an unfavorable risk factor for the development of chronic pathologies of the organism of the younger generation.

**Key words:** survey, schoolchildren, smoking, cardiovascular diseases

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### Introduction

One of the current problems among the younger generation is the mass spread of tobacco smoking, alcohol use, narcotic and toxic substances use (1). According to the World Health Organization (WHO), annually smoking causes about 7 million deaths in the world (2).

Smoking is one of the main risk factors for the development of cardiovascular diseases, has a significant impact on the decline in the quality of teenagers' life (3). The risk of premature death and the development of cardiovascular diseases as a result of smoking is exceptionally high compared with other types of risk behavior (4).

The results of the study of health behavior of school-aged children (HBSC), conducted by WHO in 2013–2014 in Armenia and Greenland, show that 12% of boys and 11% of girls aged 15 years smoke at least once a week (2). According to Pavlova et al. (5), 66% of Russian teenagers have smoking experience, and 35.4% of them smoke regularly.

There has been no targeted research on the prevalence of major risk factors, including smoking among children and teenagers in Kyrgyzstan. Nevertheless, in the republic the death rate of the population from cardiovascular diseases remains high, which is 51% of all deaths of population.

The aim of the study was to study the prevalence of smoking as a risk factor for the development of cardiovascular diseases among teenage schoolchildren of Bishkek city.

### Methods

An anonymous survey was conducted among schoolchildren in grades 5–11 of secondary schools in Bishkek city. The sample consisted of 1039 schoolchildren aged 11 to 18 years. The questionnaire included 37 questions for schoolchildren in grades 5–8 and 42 questions for schoolchildren in grades 9–11, including questions related to smoking, drinking alcohol and psychoactive substances. The survey was conducted in Kyrgyz and Russian languages, respectively, the language of instruction in each school.

Children aged 11 to 14 years old were 637 (61.3%) and 15–18 years old - 402 (38.2%) children. The average age of the children surveyed was  $14.3 \pm 9.1$  years.

### Results and discussion

According to the analysis of the data obtained, 28 children aged 11–14 years (grades 5–8) tried to smoke and 19 of them are currently continuing to smoke. In the older group of the surveyed (15–18 years old), 57 children who tried to smoke were identified, of whom 10 continue to smoke. Thus, the number of schoolchildren related to smoking was 85 (8.1%), and who continue active smoking was 29 (2.8%).

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**Table 1. Prevalence of smoking among teenage-schoolchildren**

Category	11-14 year olds		15-18 year olds		Total
	boys	girls	boys	girls	
Tried to smoke	17 (1.6%)	11 (1.1%)	42 (4.1%)	15 (1.4%)	85 (8.1%)
Continue smoking	3 (0.2%)	0	8 (0.7%)	0	11 (1.1%)
Smoke every day	11 (1.1%)	5 (0.5%)	2 (0.2%)	0	18 (1.7%)

As can be seen from Table 1, boys aged 11-14 years who tried to smoke were 17, which is 1.6%, and girls - 11 (1.1%). The number of teenage boys aged 15–18 years who tried to smoke was 2.5 times more than in the younger group, who accounted for 4.1% (42 children). Girls in the older group who tried to smoke were 15 (1.4%), which is slightly different from the younger group of children.

The smoking boys are ahead of the girls: 59 (5.7%) boys answered yes to the question “did they try to smoke?” against 26 girls (2.5%), “did they continue to smoke?” - 11 (1.1%) and against 0, “smokes every day” - 11 (1.2%) and against 5 (0.5%). However, the question “do they continue smoking” did not receive answers from all children.

When analyzing the answers of the interviewed children, the fact of daily smoking of 16 children, schoolchildren of grades 5-8 against 2 teenagers, schoolchildren of grades 9-11 was revealed. This result seems to be associated with not entirely reliable responses among children in the older age group.

### Conclusion

The results of the study indicate a fairly high frequency of tobacco use in the modern population of teenagers. The spread of smoking among schoolchildren occurs regardless of the age and gender of the schoolchildren. This is an unfavorable risk factor for the development of serious pathology of the internal organs of the younger generation.

The smoking of schoolchildren and the high mortality rate of the population from cardiovascular pathologies indicate the need for targeted research to study other risk factors and take measures to prevent the development of heart disease since childhood.

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