

HEALTH RISK FACTORS IN SERBIAN ADOLESCENTS – AVAILABLE SURVEY DATA

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Summary

Background: Adolescence as transitional period from childhood to adulthood is marked with numerous changes: intensive growth and development, psychological and biological maturation. These changes directly or indirectly affect health-related behaviours that may represent risk factor for adolescent health. Surveys are needed not only to identify health risks in adolescents but also to better understand context in which they occur allowing for evidence-based health promotion and prevention.

Methods and Objectives: Data were obtained from available nationally-representative studies: Health interview survey (2000, 2006, 2013, 2019) and Health behaviour in school-aged children survey (2018 and 2022). Data on diet habits, frequency of intake of different food items, nutritional status, frequency, and intensity of physical activity were reviewed.

Results: According to available survey data, overweight and obesity prevalence among adolescents is on the rise: HBSC data show increase from 17.2% in 2018 to 18.9% in 2022 while National Health Interview Survey 2019. shows that 26.4% of adolescents aged 11-15 are either overweight or obese. Despite the fact that according to both surveys majority of adolescents regularly eat breakfast, less than 40 % meet recommendations for daily intake of fruit and vegetables. More than one third of adolescents eat sweets and drink soft drinks at least once a day. At the same time available surveys confirm that sedentary lifestyle dominates adolescent lives with less than third of the adolescents meeting recommended one hour of physical activity daily.

Conclusions: Survey results highlight health risk factors that require further public health action and call for multisectoral cooperation.

Keywords: health, risk factors, health promotion, survey, youth

Introduction

The World Health Organization (WHO) defines an adolescent as any person between ages 10 and 19 [1]. Adolescents make up about 16 percent of the global population [2], and according to the data from the Statistical Office of the Republic of Serbia in 2023 in Serbia there were 654,091 adolescents 10-19 years of age, i.e., about 10% of the population [3].

Adolescence as transitional period from childhood to adulthood is marked with numerous changes: intensive growth and development, psychological and biological maturation. These changes include changes in certain habits and behaviour patterns, adopted in early childhood, such as habits related to nutrition and physical activity [4].

That is why surveys aiming to identify health risks in adolescents but also to better understand context in which they occur allow for evidence-based health promotion and prevention. Data obtained from available nationally-representative studies were used: Health interview survey (2000, 2006, 2013, 2019) and Health behaviour in school-aged children survey (2018 and 2022). Data on diet habits, frequency of intake of different food items, nutritional status, frequency, and intensity of physical activity were reviewed.

Nutrition and eating habits in adolescence

Adolescent eating habits significantly affect nutrition and health status, and the adoption of healthy diet habits is of particular importance not only because of the direct impact on growth and development in this life stage but also due to long-term impact on health status in adulthood [5]. Different mediators influence adolescent dietary intake making this life stage sensitive in terms of nutrition [6]. Change in eating habits is evident, characterized by skipping meals, snacking, eating at least one meal outside home, higher intake of sugary soft drinks, sweets, and salty snacks, with a decrease in the intake of vegetables, fruits, and milk and dairy products [7]. Adolescence is considered risk period for weight gain due to hormonal and metabolic changes that lead to changes in body composition, insulin sensitivity, and behaviour related to diet and physical activity [8,9]. Overweight and obesity are more common in adolescents than underweight, with the prevalence rising over the past few decades [10]. This increase in prevalence increases different overweight/obesity related comorbidities such as type 2 diabetes, early onset metabolic syndrome, hypertension, cardiovascular diseases [9]. Obesity is also linked to negative psychosocial outcomes such as low self-esteem, depression, eating disorders, poorer quality of life and increased risk of becoming obese adults including risk of ill health and premature mortality in adult life [11].

According to data from the National Health Survey (NHS) 2019, 26.4% of adolescents aged 11-15 in Serbia are either overweight or obese [12]. Data from Health Behaviour in School-aged Children Survey (HBSC) also show prevalence increase from 17.2% in 2018 to 18.9% in 2022 [13,14]. Overall prevalence of overweight (including obesity) according to HBSC 2022 data was higher among boys (24.6%) than girls (13.8%) and decreases with age [14]. Eventhough data show that majority of adolescents regularly eat breakfast (96.1%) [12] gender and age differences exist with a higher proportion of younger adolescents and boys eating breakfast every day [13,14]. At the same time less than 40 % of Serbian adolescents meet recommendations for daily intake of fruit and vegetables [12,13,14]. More than one third of adolescents eat sweets at least once a day, girls more often than boys (38.7% vs. 30.3%) [14]. Daily consumption of sugary soft drinks increases with age with higher prevalence among boys (21.5% vs. 16.4%) [13,14].

Physical (in)activity and sedentary behaviours in adolescence

Regular physical activity in adolescence is not only necessary for optimal growth and development, but also represents cornerstone in the prevention of deformities of the skeletal system and the occurrence of overweight and obesity. In recent decades, there has been a steady decline in the frequency of physical activity among children and adolescents while majority don't meet recommended 60 minutes of physical activity daily [15,16]. On average 24% of adolescents across Europe, central Asia and Canada are highly inactive, while sixty per cent of adolescents met the WHO recommendation for participating in vigorous physical activity (VPA) at least three times a week [17]. At the same time sedentary behaviours dominate adolescents' lives nowadays. The proportion of Serbian adolescents reporting daily 60 minutes of moderate to vigorous physical activity is low (31.5%) [14]. Bboys are significantly more often physically active than girls with the highest prevalence among 11-year-old boys (49%) [14, 17]. Daily physical activity levels decrease with age which is especially notable in girls – only 16% of 15-year-old girls met recommendations for daily physical activity in 2022[14].

Conclusions

Adolescence presents an opportunity to influence diet and physical activity that impact present and future health outcomes, yet we are skinny on interventions that work. Effective change is unlikely to happen without multidisciplinary prevention programs defined in public health policy and at the same time taking into consideration and fostering family environments and schools not only as

educational, but also societal institutions. Programs that target both the environment (such as provision of healthy and nutritious food, safe neighbourhoods, and opportunities for physical activity and sports participation) and critical periods during the life-course are required.

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