

Health risk behaviour of elementary school children in Vojvodina

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ABSTRACT

Aim To determine frequency, mutual correlation of health-risk behaviours among elementary school children and their correlation with sources of health-related information and social behaviour models.

Methods Research was conducted in the form of cross-sectional study. A sample included students from 5th to 8th grades of elementary school. Data were collected by interviewing students with a questionnaire consisted of two parts: Risk Behaviour Scale and set of questions about sources of information, social behaviour models and socio-demographic characteristics. Risk Behaviour Scale measured the following health-risk behaviours: use of psychoactive substances (cigarettes, alcohol, illegal substances), risky behaviour in traffic, unsafe sexual behavior, inadequate nutrition and insufficient physical activity. Values $p < 0.05$ were considered as statistical significant.

Results Sample included 445 elementary school students aged 11 to 16. The most prominent health risk behaviours were unhealthy dietary habits, with 408 (91.1 %) students consuming fast food. Alcohol was the most frequent psycho-active substance used, in 261 (58.2 %) cases. Health-risk behaviours were more frequent among boys, older students, those with low school achievement and those who receive health-related information from peers and media. Statistically significant correlation between inadequate nutrition and physical inactivity was found ($p = 0.000$). Alcohol use was significantly correlated with the use of cigarettes ($p = 0.00$) and illegal substances ($p = 0.00$), risk sexual behaviour ($p = 0.00$), risk behaviour in traffic ($p = 0.00$) and physical inactivity ($p = 0.00$).

Conclusion All health-risk behaviours appeared at the same time in elementary school students and that could be a consequence of same individual and social factors which contribute to their occurrence.

Keywords: child health, risk factors, primary school

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INTRODUCTION

According to Disease Control and Prevention Centers, six major health risk behaviours which start from childhood and continue into adulthood are behaviours that contribute to unintentional injuries and violence, tobacco use, alcohol and other drug use, sexual risk behaviours, unhealthy dietary behaviours and physical inactivity (1).

Most researchers are interested in health risk behaviour among high school students, because they are most prone to these behaviours (2,3). Elementary school children are not usually included in youth health risk behaviour studies, although adolescence and risk behaviour typical for it begin much earlier, in elementary school period (2-4). Results of studies indicate that children adopt health-risk behaviours around the age of 12 (4). Number of children who smoke cigarettes, drink alcohol, consume cannabis and involve in sexual activity significantly increases and proportion of children who have healthy dietary habits and engage in regular physical activity decreases between the age of 13 and 15 (4-6). Although this is a global picture, the situation is similar in south-eastern European region. Children from that region smoke cigarettes and drink alcohol more often than their peers from north and western countries (4). On the other side, children from north and western countries consume illegal substances more frequently and have higher prevalence of overweight and obesity (4). However, there is evident expansion of overweight and obese children in south-eastern countries, too (4,7).

One of the main characteristics of elementary school period is the establishment of life habits, as those that improve but also those that compromise health. Habits form most easily and rapidly in early childhood and very often extend into adulthood (8). Habits are also most easily modified and changeable in early childhood (8). That is why children are more receptive for health education programs than adults (9). It is confirmed that both individual and social factors affect appearance of health-risk behaviours in childhood and adolescence (10,19). Great contribution to appearance of health-risk behaviours in elementary school period have social models – family and friends and sources of information (10). All these facts emphasize importance and

need for early monitoring of health-risk behaviours and factors that contribute to their progression (1-7, 12). These are essential steps toward preventing further expansion and consequences of health-risk behaviours among children (9).

The aim of this study was to determine frequency of health-risk behaviours (tobacco use, alcohol and other drug use), sexual risk behaviours, risky driving, unhealthy dietary behaviours and physical inactivity among elementary school children; inter-correlation of health-risk behaviours; correlation between health-risk behaviours and sources of health-related information and social behaviour models; correlation between health-risk behaviours and children's socio-demographic characteristics: gender, grade, school achievement and material status.

EXAMINEES AND METHODS

The research was conducted in a form of cross-sectional study. The sample included children from 5th to 8th grade of six elementary schools in Sombor, Serbia. One class was randomly selected from each grade. Data were collected by interviewing students during one school class from September to November 2011. Study was approved by school boards for ethical issues whose members were: school principals, class teachers, pedagogues, psychologists and parents' representatives. After getting informed consents from school board, class teachers and children, students filled questionnaires. Survey was anonymous and it took students 15 minutes to fill in the questionnaire.

Instrument used in this research was the questionnaire constructed for the purpose of this study. It consisted of two parts: Risk Behaviour Scale and set of questions about sources of information, social behaviour models and socio-demographic characteristics.

Social behaviour models were measured by two questions whether participants thought that their family or friends too care of their health. Participants were offered two alternatives for these questions, "yes" and "no" (Table 1). Socio-demographic factors included in the questionnaire were gender, grade, school achievement and material status.

Risk Behaviour Scale consisted of 29 items grouped into five subscales that measure the following

health-risk behaviours: use of psychoactive substances –cigarettes (5 items), alcohol (7 items), illegal substances (3 items), risky driving (3 items), unsafe sexual behaviour (5 items), inadequate nutrition (4 items) and insufficient physical activity (2 items). The respondents were supposed to determine frequency of each health-risk behaviour on a four-degree Likert scales with the offered numbers having following meanings: 0 - no/never, 1 – sometimes, 2 - often, 3 - very often (Table 2).

Statistical analysis was performed using the program SPSS Statistics Base 14.0 for Windows. Demographic data of the sample, sources of health-related information, social behaviour models related to health and frequency of health-risk behaviour were presented by descriptive statistics and absolute and relative numbers. Pearson Correlation was used to examine inter-correlation of health-risk behaviours. Relationship between health-risk behaviours and gender and social behaviour models was analyzed using t-test. Relationship between health-risk behaviours and grade, school achievement and material status were examined by one-way ANOVA. The $p < 0.05$ were considered as statistically significant.

RESULTS

Sample included 445 elementary school students aged 11 to 15. Slightly more than half participants were male, 245 (54.7 %). Most students attended 7th or 8th grade, 265 (59.1 %). Majority of participants had "very good" (4) school achievement, 180 (40.2 %). Most students reported that their family had average material status, 393 (87.7 %).

Sources of health-related information and behaviour models are presented in Table 1.

Nutrition subscale had the highest mean score, which means that unhealthy dietary habits were the most prominent health risk behaviour among elementary school children ($M = 6.36$) (Figure 1). Although majority of students reported that they eat fruit, 391 (87.2 %), it is important to highlight that almost all students, 408 (91.1 %) consumed fast food, around third of them, 156 (34.8 %) did not have regularly all five meals, and use different methods such as diets, vomiting, laxatives and other drugs for the control their weight, 122 (27.2 %).

Table 1. Sources of health-related information and behaviour models

Sources of health-related information and behaviour models		Number (%) of examinees
Sources of health-related information	Family	253 (56.5)
	Teachers	7 (1.6)
	Media	13 (2.9)
	Health professionals	125 (27.9)
	Friends	4 (0.9)
Total		402 (89.8)
Do you think that your family takes care of health?	Yes	433 (96.7)
	No	7 (1.6)
Total		440 (98.3)
Do you think that your friends take care of their health?	Yes	374 (83.5)
	No	67 (15.0)
Total		441 (98.5)

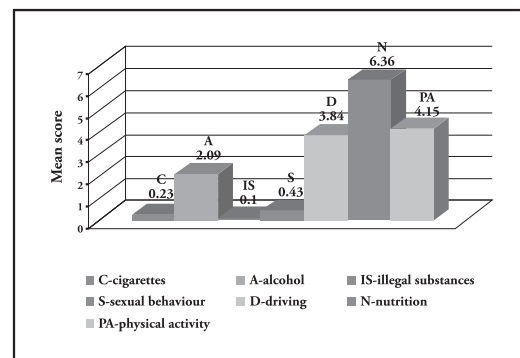


Figure 1. Mean scores on each subscale of Health Behaviour Risk Scale

Besides nutrition, Physical activity subscale also had one of the highest scores. Although more than half of participants, 374 (54.9 %), were engaged in regular physical activity, almost all, 387 (85.9 %) children spent more than one hour daily watching TV or playing computer games.

Most students, 314 (70 %) enjoyed fast driving. Almost half of them, 192 (42.9 %) did not wear seat-belt regularly, and 70 (17 %) were driven with someone who was under influence of alcohol.

More than a half, 261 (58.5 %) participants have used alcohol, 146 (32.8 %) used it before the age of 11, and 41 (9.6%) have experienced heavy drunkenness. Cigarettes were smoked by 15 (3.3%) participants and eight (2 %) students stated that they have used cannabis and other ille-

Table 2. Pearson correlation (r) between health risk behaviours

Pearson correlation -r (p)							
	Cigarettes	Alcohol	Illegal substance	Risky driving	Sexual behaviour	Nutrition	Physical activity
Cigarettes	1.000 (.)	.530 (.000*)	.400 (.000*)	.109 (.012*)	.325 (.000*)	.014 (.383)	.119 (.007*)
Alcohol	.530 (.000*)	1.000 (.)	.220 (.000*)	.314 (.000*)	.451 (.000*)	.019 (.353)	.263 (.000*)
Illegal substance	.400 (.000*)	.220 (.000*)	1.000 (.)	.072 (.067)	.359 (.000*)	-.029 (.274)	.056 (.121)
Risky driving	.109 (.012*)	.314 (.000*)	.072 (.067)	1.000 (.)	.169 (.000*)	.251 (.000*)	.293 (.000*)
Sexual behaviour	.325 (.000*)	.451 (.000*)	.359 (.000*)	.169 (.000*)	1.000 (.)	.014 (.391)	.071 (.072)
Nutrition	.014 (.383)	.019 (.353)	-.029 (.274)	.251 (.000*)	.014 (.391)	1.000 (.)	.321 (.000*)
Physical activity	.119 (.007*)	.263 (.000*)	.056 (.121)	.293 (.000*)	.071 (.072)	.321 (.000*)	1.000 (.)

*statistically significant correlations between health-risk behaviours (p<0.05)

gal substances.

Sexually active were 35 (7.8%) elementary school students and nine (3.2 %) did not use contraceptives. About half of sexually active students, 16 (3.5%) practiced one-night sexual relationships and seven (1.5%) have done it under the influence of alcohol.

Coefficients of Pearson correlation (r) showed statistically significant relations (p<0.05) between health risk behaviours (Table 2).

Analyzing relation between health-risk behaviour and participants' socio-demographic characteristics, it was confirmed that boys were engaged more frequently in following health-risk behaviours: cigarette use (p=0.001), alcohol use (p=0.00), sexual behaviour (p=0.001), risky driving (p=0.00), and inadequate nutrition (p=0.022). Besides that, students from 7th and 8th grade also showed more health-risk behaviours relating to alcohol use (p=0.00), risky driving (p=0.032), risk sexual behaviour (p=0.00) and physical inactivity (p=0.001).

Students with low school achievement were more likely to use cigarettes (p=0.04), alcohol (p=0.00) and engaged in risk sexual behaviours (p=0.00).

The students who perceive their material status as poor were more prone to risk of sexual behaviour (p=0.003) and the usage of illegal substances (p=0.045). On the other side, children who

perceive their material status as average or rich, behave more risky in traffic (p=0.026).

Statistically significant association between health-risk behaviours and sources of health-related information was noted: students who received most health-related information from their friends and media used alcohol (p=0.005), behaved more risky in traffic (p=0.044), and more frequently engaged in risk sexual activities (p=0.013).

There was no statistical significant difference between health-risk behaviours and social behaviour models.

DISCUSSION

Results of this study confirmed that all health-risk behaviours start from early childhood. However, they were not equally frequent in elementary school period. The most prominent health-risk behaviour in this period certainly was inadequate nutrition, so unhealthy dietary habits established in early childhood increase prevalence of overweight and obesity among children (11,12). There was evident increase in number of overweight and obese children in Serbia as a result of inadequate dietary habits, too (7). Results of this research where the most children (more frequently boys) consumed fast food, confirm this statement. Consumption of fast food is one of the main indicators of nutrition quality (13). Most participants in this study stated that they

did not have regularly all five meals a day. It could be explained by modern lifestyle of school children which is full of different obligations and their intention to control weight by avoiding meals (4,7). As a confirmation of that, about one third of elementary school children in this research reported that they used different methods to control their weight. Other studies also indicate that this behaviour occurs in elementary school period (1,4,14). One of the reasons why children have unhealthy dietary habits could be lack of awareness about importance of adequate nutrition for health. However, the study in Vojvodina showed evidence of discrepancy between nutrition knowledge and behaviour of elementary school children (15).

Majority of participants in this study reported that they often engaged in different physical activities. Despite that, majority of them also often spent more than one hour daily watching TV or playing computer games, which is consistent with results of other studies (1,4). Sedentary lifestyle in childhood is associated with increased prevalence of overweight and obese children (16).

Most children in this study reported that they enjoyed fast driving and significant number of them did not use seat-belt regularly and were driven by someone who was under the influence of alcohol. Other studies confirmed occurrence of risk behaviour in traffic among young adolescents, which is expected with regard to developmental stage of elementary school children, characterized by sensation seeking and rejecting social rules (1,8,10).

This study confirmed the results of other researches that use of psycho-active substances begins in elementary school period (1,4,17,18), the alcohol was most frequently used and a significant number of our population experienced heavy drunkenness begun to use alcohol and became cigarette smoker before they were 11. This could be a consequence of exposure to social models that promote these behaviours from children's earliest years and availability of alcohol and cigarettes in their closest environment (6,19). Certain number of students reported that they have used cannabis and other illegal substances. Use of psycho-active substances in early adolescence could be a part of this developmental

period characterized by intensive sensation seeking, experimenting with new things and tendency to break social rules (8,10,19).

According to this study, a certain number of children started sexual activity in elementary school period that is consistent with results of other researches (1,4). About half of students in this study who were sexually active did not use protection during sexual intercourse, practiced one-night sexual relationships and sexual intercourse under the influence of alcohol. These data are specially worrying because of all possible consequences of these behaviours on adolescents' reproductive health (20).

The results of this study confirmed results of other studies that the use of alcohol and cigarettes, risk behaviour in traffic, risk sexual behaviours and inadequate nutrition were more frequent among boys (1,4,17). That is an expected finding because boys have more tendency to break social norms and experiment with risky activities than girls in elementary school period (8). It has been shown in this research that frequency of alcohol use, risk behaviour in traffic and risk sexual behaviour increased and level of physical activity decreased with age. This could be consequence of exposure to more risk factors and less influence from parents and teachers as going through adolescence (1,4,7,8,10).

This research showed that students with lower school achievement more often used alcohol and cigarettes and practiced risk sexual activities. This is probably a result of lower awareness and higher predisposition to violate social norms (8,10). In this study students who perceived their material status as poor were more likely to use illegal substances and engage in risk sexual behaviours. This could be explained by possibility that those children were from marginalized social groups characterized by low awareness about consequences of these behaviours. On the other side, students who perceived their material status as rich were more prone to behave risky in traffic. Material conditions probably give more opportunities for those children to have and drive expensive vehicles.

The students from this study reported both the family and professionals as the most common sources of information about health, which is consistent with the findings of other authors

(21). Sources of health-related information were found to be significant factors that contribute to health-risk behaviours among children in this study. Students who reported friends and media as most common sources of health information more frequently used alcohol, behaved more risky in traffic and practiced riskier sexual activities. This is a specially worrying result considering that some studies show that adolescents' knowledge about different health topics is not at a sufficient level (22,23).

Health-risk behaviours of elementary school children from this study were interrelated showing the existence of general predisposition of elementary school children to be engaged in risky behaviours. A tendency for breaking social rules and experimenting with new ones in adolescence, a specific transitional period between childhood and adulthood, predispose children to practice risk behaviours (8,10).

Limitations of this study were the applied instruments and procedure of data collecting. Specific and sensitive nature of this problem increased the possibility of giving socially desirable answers. Besides, teachers' presence during filling of the questionnaires could enhance even more the stu-

dents' tendency to give socially desirable answers.

Conclusively, this study has shown that all health-risk behaviours start from elementary school period and confirmed importance and need for introducing health promotion and education programs from early childhood, in the aim of maintaining and improving young population health. Future studies should clarify all personal and social factors that contribute to health-risk behaviours among children in order to create adequate and effective preventive programs.

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TRANSPARENCY DECLARATIONS

None to declare.

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Zdravstveno-rizična ponašanja dece osnovnoškolskog uzrasta u Vojvodini

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SAŽETAK

Cilj Ispitati učestalost, međusobnu povezanost, kao i povezanost zdravstveno-rizičnih ponašanja dece osnovnoškolskog uzrasta s izvorima informisanja o zdravlju i socijalnim modelima ponašanja.

Metode Istraživanje je sprovedeno kao presečna studija, a uzorak su činili učenici od petog do osmog razreda osnovnih škola u Somboru. Podaci su prikupljeni anketiranjem učenika pomoću upitnika koji se sastojao iz dva dela: skale rizičnih ponašanja i seta pitanja koja su se odnosila na izvore informisanja o zdravlju, socijalne modele ponašanja i sociodemografske karakteristike. Skala rizičnih ponašanja registrovala je sledeća rizična ponašanja: upotrebu psihoaktivnih supstanci (cigareta, alkohola i ilegalnih supstanci), rizična ponašanja u saobraćaju, rizična seksualna ponašanja, nepravilnu ishranu i nedovoljnu fizičku aktivnost. Vrednosti $p < 0,05$ uzimane su kao statistički značajne.

Rezultati Uzorkom je obuhvaćeno 445 učenika, uzrasta od 11 do 15 godina. Najučestalija rizična ponašanja bile su nepravilne navike u ishrani, pri čemu je 408 (91,1%) učenika konzumiralo „brzu hranu“. Najčešće korišćeno psihoaktivno sredstvo bio je alkohol, pri čemu ga je konzumiralo 261 (58,2%) dece. Zdravstveno-rizična ponašanja bila su učestalija u dečaka, starijih učenika, dece s nižim školskim uspehom, kao i onih koji informacije o zdravlju najčešće primaju od vršnjaka i medija. Utvrđena je statistički značajna povezanost između nepravilne ishrane i fizičke neaktivnosti ($p=0,00$). Konzumiranje alkohola značajno je povezano s upotrebom cigareta ($p=0,00$), ilegalnih sredstava ($p=0,00$), rizičnim seksualnim ponašanjima ($p=0,00$), rizičnim ponašanjima u saobraćaju ($p=0,00$), kao i fizičkom neaktivnošću ($p=0,00$).

Zaključak Sva opisana zdravstveno-rizična ponašanja pojavljivala su se udruženo u osnovnoškolskom uzrastu, što ukazuje na mogućnost da su posledica delovanja istih individualnih i socijalnih činilaca.

Ključne reči: zdravlje dece, faktori rizika, osnovna škola.