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## Health behaviour of adolescents in Slovenia: major results from 2010 and trends from 2002 to 2010

Z zdravjem povezana vedenja med mladostniki v Sloveniji: glavni rezultati iz leta 2010 in trendi od 2002 do 2010

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**Key words:** self-rated health; adolescents; behaviour; trends

**Ključne besede:** samoocena zdravja; mladostniki; vedenja; trendi

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### ABSTRACT

**Introduction:** Monitoring of health behaviours, especially of adolescents, is essential for the future of each nation. Over the last decades, many changes have occurred in all aspects of our lives, affecting the health and quality of life of all people, including children and adolescents.

**Methods:** The study is based on a quantitative research method. The survey was conducted on a representative sample of Slovenian 11-, 13- and 15-year-old adolescents, using a standardised international questionnaire (HBSC study – Health Behaviour in School-Aged Children). The survey was carried out with the assistance of school counsellors in the spring of 2002, 2006 and 2010 ( $n = 15.080$ ). For determining the correlation between two individual years, the chi-square test ( $\chi^2$ ) was used. The significance level was calculated using the statistical significance value of  $p < 0.05$ . Through the Cochran-Armitage trend test, it was established whether a trend existed for the selected indicators in the period between 2002 and 2010.

**Results:** There are some favourable trends, e.g. eating breakfast ( $p = 0.000$ ), tooth brushing ( $p = 0.000$ ), lower proportion of individuals who rate their health as poor ( $p = 0.002$ ) and experience several psychosomatic symptoms ( $p = 0.000$ ), but also unfavourable trends, e.g. decrease in physical activity ( $p = 0.023$ ), increase in early alcohol consumption ( $p = 0.000$ ), dissatisfaction with school ( $p = 0.000$ ) and bullying others ( $p = 0.000$ ).

**Discussion and conclusion:** The conclusions of the analyses can serve as a useful basis for further work and development of systemic measures to promote healthy behaviours and prevent risky and unhealthy behaviours among children and adolescents.

### IZVLEČEK

**Uvod:** Spremljanje vedenj, povezanih z zdravjem, še posebej mladostnikov, je ključno za prihodnost vsakega naroda. V zadnjih desetletjih so se zgodile številne spremembe na vseh področjih življenja, ki vplivajo na zdravje in kakovost življenja vseh, tudi otrok in mladostnikov.

**Metode:** Raziskava temelji na kvantitativni metodi raziskovanja. Uporabljen je bil standardiziran vprašalnik iz raziskave Health Behaviour in School-Aged Children na reprezentativnem vzorcu slovenskih enajst-, trinajst- in petnajstletnikov. Anketiranje je bilo izvedeno ob pomoči šolskih svetovalnih delavcev spomladi 2002, 2006 in 2010 ( $n = 15.080$ ). Za ugotavljanje povezanosti med posameznimi leti izvedbe raziskave je bil uporabljen hi-kvadrat test ( $\chi^2$ ). Raven statistične značilnosti je bila  $p < 0,05$ . S testom Cochran-Armitage so bili analizirani trendi za izbrane kazalnike v obdobju 2002–2010.

**Rezultati:** Rezultati kažejo nekatere ugodne trende npr. pri zajtrkovanju ( $p = 0,000$ ), umivanju zob ( $p = 0,000$ ), v zmanjšanju deleža tistih, ki svoje zdravje ocenjujejo kot slabo ( $p = 0,002$ ) in imajo veliko psihosomatskih simptomov ( $p = 0,000$ ). Neugodni trendi so npr. v upadu telesne dejavnosti ( $p = 0,023$ ), zgodnjem pitju alkohola ( $p = 0,000$ ), nezadovoljstvu s šolo ( $p = 0,000$ ) in trpinčenju drugih ( $p = 0,000$ ).

**Diskusija in zaključek:** Ugotovitve analize so lahko dobra osnova za nadaljne delo in sistemsko ukrepanje z namenom krepitev zdravih vedenj in preprečevanja tveganj in nezdravih vedenj pri otrocih in mladostnikih.

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## Introduction

Even though young people (from 0 to 18 years) represent a minor part (18 %) of the Slovenian population (Statistični urad Republike Slovenije, 2012), they deserve special attention for several reasons. One of them is that young people are the future and the pillar of the society. During adolescence they develop their lifestyle and behaviours that characterise them through life and influence the course and quality of their lives, success and health (National Research Council and Institute of Medicine, 2004; World Health Organization, 2005, 2006) and also the health of the following generations (World Health Organization, 2005). Their health will affect the prosperity and stability of countries (World Health Organization, 2005). According to many researchers (Torsheim, et al., 2004; Moreno, et al., 2008; Nixon & McClain, 2010; Currie, et al., 2012), the health of children and adolescents is an important predictor of adult health and the entire population, and on the other hand, it is related to the achievement of the developmental tasks of adolescents, school success, relationships with parents and peers, etc.

Over the last decades, many changes have occurred in all fields of life, affecting the health and quality of life of all people, including children and adolescents. Child and adolescent health is becoming more dependent on social, community and environmental factors. Due to their insecurities (employment, schooling, etc.), increasing contradictions (between equality and differences, individuality and unpredictability, etc.) and increasing problems related to key areas of their lives, adolescents are becoming more and more vulnerable and sensitive. All this reflects in the health and social problems of adolescents. On the one hand, health is one of the most important values among adolescents, and on the other hand there are also many insecurities related to health (Ule, et al., 2000, 2003; Ule, 2008).

Monitoring of health and health behaviours, especially among adolescents, is of key importance for identifying and monitoring relevant health behaviours as well as planning, designing and implementing effective policies and programs and evaluating their effectiveness. Healthy adolescents are a good potential for a healthy society in the future, therefore it is necessary to monitor health and health related behaviour indicators, promote and strengthen health and adequately respond to the potential worsening of indicators and unfavourable trends. Not many periodic studies on the health of adolescents have been conducted in Slovenia, and the number of trend and inequality analyses providing an insight into the development of adolescents and their health through time is even lower (for example ESPAD 2011, Mladina 2000, 2010 survey). Therefore, this article will focus on the analysis of data collected in 2002, 2006 and 2010 on the population of 11-,

13- and 15-year-old adolescents ( $n = 15.080$ ), using the international questionnaire Health Behaviour in School-aged Children (HBSC).

### *Aim*

The aim of this article is to present health related behaviour in Slovenian school-aged children in 2010 and favourable and unfavourable trends in the period of 2002 - 2010 in order to identify the main issues of adolescent health behaviours to be addressed in future.

## Method

### *Research instrument*

The study is based on a quantitative research method. A representative sample of Slovenian 11-, 13- and 15-year-olds filled out the standardised international HBSC questionnaire, consisting of four types of indicators: social context, health outcomes, health behaviours and risk behaviours. The focus of the study was on dietary habits, tooth brushing, physical activity, tobacco, alcohol and cannabis use (only for 15 years old), sexual behaviour (only for 15 year olds), violence, self-rated health, injuries and some factors related to school (liking school and perceived pressure from schoolwork).

The HBSC study in 2010 included 43 countries – more information about the HBSC study is available at [www.hbsc.org](http://www.hbsc.org). The reviewed database created in accordance with the international methodology was forwarded to an international centre in Norway through a website application where the selected data were filtered according to the international validation rules.

### *Sample*

The classes are the primary sampling units. The data on all selected classes were collected with the assistance of schools and the Ministry of Sport and Culture. The representative sample included 11-, 13- and 15-year-olds for which a two-stage stratified random sampling was used. The first stage involved the sampling of primary and secondary schools and during the second stage the secondary schools were sampled in relation to their educational programme (grammar schools, technical secondary schools, vocational secondary and post-secondary schools). According to international methodology where the minimum sample size determined for each age group is 1500 individuals, we randomly selected 6.6 % of the total population of 11, 13 and 15 years of age in 2002, 9.7 % in 2006 and 13.1 % in 2010. The final database structure encompassed 4.514 adolescents in 2002, 5.130 adolescents in 2006 and 5.436 adolescents in 2010,

approximately half of which were boys (Stergar, et al., 2006; Jeriček Klanšček, 2007; Jeriček Klanšček, et al., 2011, 2013). The response rates were 92.1 % in 2002, 82.8 % in 2006 and 83.6 % in 2010.

No description of age is given in the text when we refer to all adolescents from 11 to 15 years of age and no description of sex when we refer to adolescents of both sexes. When a specific age group or sex group is described, it is always defined.

### *Procedures and statistical methods*

The study was approved by the Slovenian Medical Research Ethics Committee in October 2010. The survey was carried out with the assistance of school counsellors or teachers in the spring of 2002, 2006 and 2010. The research group guaranteed the anonymity and voluntariness of participation. All analyses presented in this paper were conducted using the filtered data. The data were analysed with the statistical analysis program SPSS v. 19. By using two-way and three-way contingency tables, the distributions of groups of adolescents were identified according to the individual observed variables in a specific year and between two years. For determining the correlation between two individual years of conducting the survey, the chi-square test ( $\chi^2$ ) was used to draw conclusions from the sample to the population. The significance level was calculated using the statistical significance value of  $p < 0.05$ . It was followed by the Cochran-Armitage trend test which established whether a trend for the selected indicators exists in the period 2002-2010. As SPSS does not allow for direct calculation of the Cochran-Armitage trend test, it was calculated using the linear-by-linear association derived from the chi-square test table and enabling the calculation of Cochran-Armitage statistics. The statistical significance value of  $p < 0.05$  was used again for the calculation of the significance level.

## **Results**

### ***Health behaviours in 2010 in the international context***

#### *Dietary habits, tooth brushing and physical activity*

Only 44 % of adolescents eat breakfast regularly during the weekdays, 40 % consume fruit at least once a day and only 25 % consume vegetables at least once a day. Regular breakfast consumption, and intake of fruit and vegetables decline with age. With regard to the proportion of adolescents who eat breakfast regularly, Slovenia ranks last among the countries included in the study, in all three age groups. This can be partially explained by the good availability of school-provided mid-morning meals.

37 % of adolescents often (at least once a day) consume sugar-sweetened beverages and 25 % often consume sweets. Frequent consumption of sugar-sweetened beverages and sweets increases with age. Sugar-sweetened beverages are more frequently consumed by boys than girls, and the opposite is true for sweets. Regarding the frequency of consumption of sugar-sweetened beverages, Slovenian adolescents rank significantly above the average of peers from other countries. In the age group of 11 years, Slovenia ranks second, in the age group of 13 years, third, and in the age group of 15 years, first.

Recommendations on regular tooth brushing (more than once a day) are followed by 64 % of adolescents, more girls than boys. The highest proportion of adolescents who brush their teeth regularly is among 11-year-olds and the lowest among 13-year-olds. In terms of regular tooth brushing, Slovenian adolescents rank close to the international average.

Only 20 % of adolescents in Slovenia implement the World Health Organization recommendations (World Health Organization, 2010) on regular physical activity (at least 60 minutes daily), more boys than girls. In terms of regular physical activity, Slovenian adolescents rank slightly above the international average. The proportions of individuals who are regularly physically active are however extremely low, especially in the group of 15-year-old girls, where only 10 % are regularly physically active.

#### *Tobacco, alcohol and cannabis*

In 2010, 29 % of adolescents reported to have smoked tobacco (at least one cigarette, cigar or pipe), more boys than girls. 8 % reported that at the time of the survey they smoked at least once a week or more; there were no differences regarding sex. Shares of those who had ever smoked and weekly smokers increased with age. 7 % of 11-year-olds, 27 % of 13-year-olds and 53 % of 15-year-olds reported having ever smoked and 0.3 % of 11-year-olds, 3 % of 13-year-olds and 19 % of 15-year-olds reported weekly smoking. Differences between boys and girls exist in smoking initiation at 11 and 13 years of age (more boys reported having ever smoked at both ages), but there are no other differences in smoking in any of the age groups. 24 % of 15-year-olds reported that they tried smoking (at least on puff) early, that is at the age of 13 or less. With regard to smoking, adolescents in Slovenia generally do not exceed the average of their peers in other countries.

In 2010, 12 % of adolescent reported weekly drinking (once a week or more) and 17 % reported being drunk at least twice in their lives (drunkenness). Shares of weekly drinking and drunkenness increased with age. 2 % of 11-year-olds, 7 % of 13-year-olds and 26 % of 15-year-olds reported weekly drinking; 1 % of 11-year-olds, 10 % of 13-year-olds and 40 % of 15-year-olds

reported drunkenness. 45 % of adolescents reported their first drinking at the age of 13 or younger and 17 % reported drunkenness at the age of 13 or younger. In general, alcohol use is more common among boys, but gender differences are decreasing; drinking habits of girls are becoming similar to those of boys. Alcohol use among 11- and 13-year-olds in Slovenia is close or equal to the average in other countries. On the other hand, alcohol use among 15-year-olds (particularly among boys) exceeds the average considerably and ranks Slovenia at around 10th place (out of 38 countries) in all monitored indicators of alcohol use.

Among 15-year-olds, the use of cannabis was present in a considerable proportion. 23.2 % of 15-year-old adolescents reported ever having used cannabis and 10 % reported the use of cannabis at least three times in the last 12 months, in both cases more boys than girls. Cannabis use among 15-year-olds in Slovenia considerably exceeds the average of their peers from other countries and ranks Slovenia in the top 10 countries (out of 37).

### *Sexual behaviour*

Among 15-year-olds, 28.5 % already had sexual intercourse, more boys than girls. Almost three quarters (72 %) used a reliable birth control method during the last intercourse; in this respect, no gender differences were noted. The proportion of sexually active 15-year-olds was slightly above the average of their peers in other countries. In condom use, Slovenian adolescents exceeded the international average and were close to the average in contraceptive pill use.

### *Violence*

14 % of adolescents were involved in a physical fight at least three times in the past year; 8 % bullied others at least twice in the last few months and 21 % were victims of bullying at least once in the last few months. The highest proportions of those who are involved in physical fights, bullied others or were victims of bullying were among 13-year-olds and the lowest among 15-year-olds. Boys were more often involved in violence. Regarding the extent of fighting and bullying, adolescents from Slovenia ranked close to the average of peers in other countries, but they ranked below average with regard to being a victim of bullying.

### *Self-rated health and injuries*

The majority of adolescents (90 %) rate their health as excellent or good, and only a minority consider it poor, which ranks Slovenia highly among other countries. Girls more often rate their health as poor, and the proportion of adolescents who rate their health as poor increases with age.

The majority of adolescents (87 %) are satisfied

with their life, which ranks Slovenia above the international average – in the top half of the countries. Boys are more satisfied with their life than girls, and life satisfaction declines with age.

The data show that approximately 17 % of adolescents experience multiple psychosomatic symptoms (e.g. stomach-ache, back pain, feeling low, irritability, nervousness, insomnia, etc.), more girls than boys. The proportion of adolescents who experience multiple psychosomatic symptoms increases with age. With regard to the proportion of adolescents with multiple psychosomatic symptoms, Slovenia ranks last among the countries in all age groups, which means that Slovenian adolescents experience fewer psychosomatic symptoms than their peers. Less favourable is the fact that 29 % of adolescents experience feelings of depression and 33 % of them have a low health-related quality of life.

The number of injuries reported by Slovenian adolescents in the last year exceeds the average in other countries. Approximately 47 % of respondents had been injured at least once. Injuries were more frequently experienced by boys than girls and by 13-year-olds, while 15-year-olds experienced the fewest injuries.

### *School*

Slightly over a quarter (28 %) of adolescents in Slovenia like school a lot and 12 % do not like school at all. Girls are more likely to claim that they like school a lot. Slovenian 11- and 13-year-olds like school far less than their peers in other countries, and 13-year-olds even rank among the top five of those who dislike school most. On the other hand, Slovenian 15-year-olds like school more than their peers from other countries and rank the 5th among those who like school most.

Almost half of Slovenian adolescents (49 %) report having been pressured by schoolwork (a lot or fairly). No gender differences were noted. In comparison to other countries, Slovenian adolescents feel more pressured by schoolwork than their peers in other countries and rank well above the international average.

### ***Favourable and unfavourable trends from 2002 to 2010***

Favourable trends were observed in Table 1:

- regular breakfast consumption during the weekdays, with the exception of 15-year-olds; however, favourable changes arise primarily from the first half of the decade, while in the second half of the decade, no changes were noted;
- regular tooth brushing, with the exception of 13-year-olds and 11-year-old girls, where no changes were observed;

Table 1: *Favourable trends in health behaviours among 11-, 13- and 15-year-olds*Tabela 1: *Ugodni trendi v vedenjih, povezanimi z zdravjem med 11-, 13- in 15-letniki*

Indicator	2002 (%)			2006 (%)			2010 (%)			Trend 2002- 2010 in 11-15 (p)	
	Age	11	13	15	11	13	15	11	13		15
Regular breakfast		*43.5	*36.0	*38.2	51.2	**37.2	39.5	***53.2	***41.3	***36.7	0.000
Tooth brushing		*58.8	58.8	*55.3	62.6	**58.7	61.2	***65.0	62.0	***63.6	0.000
Ever smoking		*13.5	*38.5	*64.9	8.9	**31.7	54.2	***7.3	***27.2	***53.1	0.000
Weekly smoking		* 1.3	* 5.1	*29.3	0.4	2.6	18.1	*** 0.3	*** 3.1	***19.4	0.000
Cannabis –three times in the last 12 months		/	/	*16.8	/	/	**7.1	/	/	***10.0	0.001
Victims of bullying		*24.7	*24.5	16.3	**28.9	**28.6	15.9	***21.1	***24.3	16.1	0.008
Poor health		9.4	11.2	17.0	**10.2	11.9	14.6	*** 6.8	10.2	***13.7	0.002
More psychosomatic symptoms		*21.5	24.8	*25.9	**16.2	**23.2	21.6	***13.6	***16.8	***19.3	0.000
On a diet		10.7	14.9	17.6	11.1	14.3	14.4	10.9	13.2	14.7	0.001

Legend/Legenda: % - percentage/odstotek; p - statistical significance/statistična značilnost

\*Statistically significant differences between 2002 and 2006/Statistično značilne razlike med 2002 in 2006; \*\*Statistically significant differences between 2006 and 2010/Statistično značilne razlike med 2006 in 2010; \*\*\*Statistically significant differences between 2002 and 2010/Statistično značilne razlike med 2002 in 2010

Table 2: *No statistically significant differences in health behaviour from 2002 to 2010 among 11-, 13- and 15-year-olds*Tabela 2: *Statistično neznačilne razlike v z zdravjem povezanimi vedenjih od 2002 do 2010 med 11-, 13- in 15-letniki*

Indicator	2002 (%)			2006 (%)			2010 (%)			Trend 2002- 2010 in 11-15 (p)	
	Age	11	13	15	11	13	15	11	13		15
Sweets		34.0	29.1	25.2	35.7	25.5	23.4	34.2	28.0	23.1	0.335
Sweet beverages		*34.1	*27.9	*21.3	**53.2	**44.3	**39.8	36.7	28.7	22.5	0.726
Sexually active		/	/	25.9	/	/	**23.9	/	/	28.5	0.067
Fighting at least three times in the last 12 months		*20.1	14.0	9.7	**15.4	**16.8	10.7	***14.9	***15.7	10.1	0.548
Satisfied with life		90.4	84.5	82.4	89.2	85.6	82.5	89.9	85.8	85.0	0.198
Injury		*48.8	*46.7	*46.1	**37.4	**41.4	**34.2	46.5	***50.0	43.1	0.841
Regular fruits		45.2	37.5	33.0	48.0	40.8	32.8	***49.4	38.8	31.6	0.447
Regular vegetables		*27.7	25.2	*24.2	**27.7	22.2	20.9	***29.3	24.0	21.7	0.127
Weekly drinking		3.0	*6.9	26.5	**3.5	**9.3	28.2	2.3	7.4	26.7	0.094
Drunkenness at the age of 13 or younger		/	/	16.1	/	/	**14.2	/	/	17.3	0.226

Legend/Legenda: % - percentage/odstotek; p - statistical significance/statistična značilnost

\*Statistically significant differences between 2002 and 2006/Statistično značilne razlike med 2002 in 2006; \*\* Statistically significant differences between 2006 and 2010/Statistično značilne razlike med 2006 in 2010; \*\*\*Statistically significant differences between 2002 and 2010/Statistično značilne razlike med 2002 in 2010

- decrease in the use of tobacco products among adolescents (ever smoking, weekly smoking), which is almost exclusively a consequence of favourable changes in the first half of the decade. In the second half of the decade, practically no changes

in the frequency of smoking were observed, with the exception of an increase in the proportion of smokers among 15-year-old girls and a decline in the proportion of 15-year-olds with early smoking initiation;

- decrease in cannabis use among 15-year-olds, which is exclusively a consequence of favourable changes in the first half of the last decade;
- decrease in the proportion of adolescents who were victims of bullying, as a result of decrease in 11- and 13-year-olds but not 15-year-olds;
- decrease in the proportion of adolescents who rate their health as poor. The proportion has decreased in girls and in the 11- and 15-year-old age groups;
- decrease in the proportion of adolescents who regularly experience psychosomatic symptoms;
- decrease in the proportion of dietary behaviour in total (not among different age groups), especially in girls, while among boys, an increase was observed.

### *No significant changes from 2002 to 2010*

In the last decade, no changes were observed among Slovenian adolescents in Table 2:

- rare consumption of sweets and sugar-sweetened beverages (once a week or less frequently), with the exception of 15-year-old girls, where a decrease in rare consumption of sweets was observed;
- share of 15-year-old boys that already had sexual intercourse, while the share increased in 15-year-old girls;
- extent of fighting, but not in all age groups, extent of fighting is increasing among 13-year-olds and decreasing among 11-year-olds;
- self-rated life satisfaction, except in girls, where an increase in the proportion of those who report high satisfaction was observed;
- number of individuals injured (with the exception of 13-year-olds, where the trend is unfavourable);
- regular consumption of fruit and vegetables (with the exception of 11-year-olds, where the trend is favourable)

- weekly drinking and drunkenness at the age of 13 or younger.

Unfavourable trends were observed in Table 3:

- regular physical activity. It is to be noted that a decrease also occurred in groups for which the highest proportions were observed in the past, i.e. in boys and 11-year-olds;
- proportion of girls who had experienced drunkenness, especially 15-year-olds. Among 15-year-olds, there was also an increase in the first drinking at the age of 13 or younger;
- proportion of adolescents bullying others, in both boys and girls. The increase is not present in all age groups but stands out in 13- and 15-year-olds.
- proportion of adolescents dissatisfied with school.

## Discussion

The main challenges reflected in the findings of this study are related to different fields and aspects of adolescents' lives. Despite some favourable trends in the area of healthy lifestyle choices, infrequent breakfast consumption, infrequent vegetable and fruit consumption, frequent soft-drink consumption and decline in physical activity were noted. Slovenia is one of the few countries with organised mid-morning snacks for all pupils, and skipping breakfast is not as alarming as perhaps in some other countries with no mid-morning snack available. According to researches, skipping breakfast results in poor school performance and is related to a higher percentage of smoking, alcohol and drug use and a sedentary life-style (Keski-Rahkonen, et al., 2003; Basch, 2011).

Table 3: *Unfavourable trends in health behaviours among 11-, 13- and 15-year-olds*

Tabela 3: *Neugodni trendi v zdravjem povezanimi vedenji med 11-, 13- in 15-letniki*

Indicator	2002 (%)			2006 (%)			2010 (%)			Trend 2002- 2010 in 11-15 (p)	
	Age	11	13	15	11	13	15	11	13		15
Physical activity 1 h		*30.2	*19.8	16.3	23.1	**15.7	13.9	***25.5	20.1	15.4	0.023
Early alcohol consumption		/	/	*28.5	/	/	**40.7	/	/	***45.1	0.000
Bullying others at least twice in the past couple of months		* 4.5	* 5.6	5.9	6.1	8.9	** 6.9	5.0	*** 9.7	*** 8.7	0.000
Unsatisfied with school		*14.9	*31.9	*13.7	**24.0	**44.1	**18.7	***30.4	***52.1	***24.6	0.000

Legend/Legenda: % - percentage/odstotek; p - statistical significance/statistična značilnost

\*Statistically significant differences between 2002 and 2006/Statistično značilne razlike med 2002 in 2006; \*\* Statistically significant differences between 2006 and 2010/Statistično značilne razlike med 2006 in 2010; \*\*\*Statistically significant differences between 2002 and 2010/Statistično značilne razlike med 2002 in 2010

Regular consumption of fruits and vegetables during adolescence is of great importance, because they contain substances necessary for growth and development that have an impact on the reduction of disease risk and improve health (Van Duyn & Pivonka, 2000). The consumption of sweet-drinks is also alarming, as they involve poor supply of essential nutrients and increase the risk of developing obesity and other chronic diseases. Regular physical activity is essential for both physical and mental health (Penedo & Dahn, 2005; Hallal, et al., 2006; Iannotti, et al., 2009) and is also related to school performance and obesity.

Various forms of risk behaviours are frequent in adolescence which is a period of trying out new roles and behaviours, pushing limits and gaining roles among peers. For some adolescents, risk behaviours are transitional, while for others they represent a long-lasting behaviour or behaviours with short and long-term consequences. Risk behaviours in the population represent a significant burden to society and individuals and contribute to inequalities in health and mortality. Our study shows that risk behaviours are present in significant proportions among adolescents in Slovenia, which is also confirmed by other studies (Hibell, et al., 2012). Proportions of adolescents engaging in risk behaviours increase with age (Currie, et al., 2012). Most of the indicators of risk behaviours were close or above the average of other countries. In the recent period, we do not record many favourable trends in risk behaviours among adolescents, which is confirmed also by other studies (Hibell, et al., 2012) and shows the need for prompt action, especially in the area of alcohol, tobacco and cannabis use. Special care is required in the field of alcohol use, especially early initiation and drunkenness among girls, bullying others and sexual behaviour. Early sexual activity, initiated while young people are still developing emotionally and cognitively, may increase the risk of unwanted and unplanned pregnancy or sexually transmitted infections. Negative outcomes related to sexual health can be reduced if we ensure that young people do not engage in sexual relationships before they are (developmentally, psychologically, etc.) ready to do so. Early implementation of comprehensive education on sex and relationships is recommended, as it is more likely to be effective if delivered before young people start sexual activity.

Alcohol use and drunkenness are, like in most other countries, culturally and socially acceptable behaviours, deeply rooted in the social forms of behaviour and socialising of all generations. Therefore, it is not surprising that it is also present in Slovenian children and young people. We should note that in the eyes of young people, risk behaviours are associated with many positive experiences such as pleasure, a feeling of relaxation, excitement and a sense of maturity and independence as well as courage and strength (Kolšek, 2000; Ramovš & Ramovš, 2007; Zalta, et al., 2008; Bajt

& Zorko, 2009), advertised also in the marketing of the relevant industry. It is of a great importance how our society, the government, people in the adolescents' environment and important adults (parents, teachers) prevent and respond to young peoples' risk behaviours, which measures are implemented to decrease engagement in risk behaviours and, where relevant, how effectively we ban or limit marketing activities of relevant industries.

The results also show that adolescents in Slovenia are mostly satisfied with their lives. The majority of them rate their health as good, they are relatively successful in coping with stressors and report fewer psychosomatic problems than their peers in other countries. These results are encouraging and uniquely difficult to explain. They may also reflect the fact that in 2010 the rate of poverty in Slovenia was still relatively low. On the one hand, compared to other segments of the population, the impact of the crisis and the adverse socio-economic circumstances are usually perceived subsequently by children and adolescents, and so these impacts will be stronger in the years to come. On the other hand, it is interesting that Slovenian adolescents feel more pressured by schoolwork compared to the average in other countries. That is related to expectations and requirements of parents and teachers and has an impact on the subjective perception of health, lower quality of life and liking school to a lesser degree (Vieno, et al., 2007).

The results of the study are not surprising and are a consequence not only of individual and national but especially global societal, social, family, professional, technological and other changes, causing not only new ways of thinking but also new value systems and ideals that will certainly be reflected in the following four-year survey's period. The survey findings can be generalised; their only limitation is that they do not include drop-outs, but as they are not very numerous in Slovenia, they would probably not significantly affect the presented results.

## Conclusion

There are problematic issues and trends in the field of health related behaviour among adolescents in Slovenia, and we should strive to implement all necessary effective policies and programmes to improve their health. However, the health of adolescents is not only a matter of individuals or their closer environment (e.g. family, school) or of the health sector but a matter of the entire society, including all sectors that create the conditions, structures and environments that either support and strengthen the health of adolescents or not. Therefore, it is of great importance to establish mechanisms and structures at the governmental level for setting common priorities and goals in the field of health and well-being, monitoring the achievement of goals and assessing the measures in terms of their

impact on health and (in)equality in health among children and adolescents. In Slovenia, the relevant legislation, measures, strategies and programs that are in the process of adoption or already in force should be evaluated from the perspective of their impact on the health (physical and mental) of children and adolescents and reduction of inequalities.

Only those measures shall be adopted and put into effect, which have been proven to support healthy choices, healthy environments, equal conditions and opportunities for all. The relevant decisions, practice, or policy should cause no adverse impact and be cost-effective also in the long run. The implementation of measures and legislation must be subject to control, and appropriate actions must be taken in the event of violation.

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