Sporting lifestyle vs. 'cigarettes & coffee' lifestyle of Slovenian high school students

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ABSTRACT

Two different lifestyles of Slovenian high school students, which can be differentiated by their sporting activity, were studied on a sample of 681 high school students of both genders with an average age of 18 years. Some indicators of young people's lifestyle related to eating, drinking, smoking, daily routines, socialising and sporting activity were used to demonstrate their habits. Some other factors—gender, urbanisation of the environment and the education of parents—which could also influence the lifestyles of young people were also studied. The findings confirm the hypothesis that participation in sport has a significant impact on the formation of two quite opposing lifestyles in terms of unhealthy habits. The sporting lifestyle is, besides regular sporting activity (at least three times 45 minutes per week in addition to PE lessons), also characterised by regular eating habits and the infrequent intake of intoxicating substances. Although the consumption of these substances is largely related to partying, the results showed that students with a sporting lifestyle socialise and spend their weekend nights similarly to their peers, but in a less unhealthy way. In contrast, the so-called 'cigarettes&coffee' lifestyle is an antithesis to the sporting lifestyle when health risk factors are considered.

KEYWORDS: lifestyle, health, habits, high school, sport

Introduction

Depending on geographical, cultural and socio-economic origins, various distinctive lifestyles of young people in developed European countries are being created. Due to attractiveness of media and information technology which offer easy and immediate fulfilment and given technological advances that cause increased mobility, young people are more often choosing sedentary activities. As a result, they are increasingly becoming less active (Armstrong & Welsman 1997; Hardman & Marshall 2000; Dietz 2001) and are less often deciding to participate in sport (Novak et al. 1993; Kršnjakova & Pavlovičova 1995; Štihec et al. 2000; Jurak et al. 2003; Strel, Kovač & Jurak 2004; Brettschneider et al. 2004). In addition many young people eat irregularly, skip breakfast,

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seldom eat vegetables, do not consume carbohydrates in appropriate quantities and over-consume meat and sweets (Hurson & Corish 1997; Cruz 2000; Samuelson 2000; Gabrijelčič Blenkuš 2001; 2005; Brettschneider et al. 2004). Nearly one-fifth of young people smoke daily (Currie et al. 2004) and the proportion is even rising (Brettschneider et al. 2004), while nearly one third of young people drink on a weekly basis (Currie et al. 2004), and also the proportion of soft drugs consumers, particularly of ecstasy, is growing.

According to the findings of transverse studies, it can be concluded that changes in the lifestyles of young people in developed countries are manifesting themselves in increased skinfold (Strel et al. 2004), a higher proportion of the overweight population (Strauss & Pollack 2001; Wedderkopp et al. 2004; Currie et al. 2004; Strel et al. 2004; Strel, Kovač & Rogelj 2006) and in the deterioration of their motor potential, mainly endurance and strength (Beunen et al. 1992; Strel et al. 2004). The body weight rise in recent years has not led to a balanced increase of young people's aerobic capacities (Armstrong & Welsman 1994) and also other findings demonstrate a decline of results in activities which require young people's body movement (Wedderkopp et al. 2004; Strel et al. 2004).

The identified trends reveal cardiovascular risk factors which are one of the most common causes of mortality in the developed world. Several ongoing studies (Andersen, Henckel & Saltin 1989; Kemper et al. 1999) explain the importance of the mutual effects of risk factors compared to the less significant impact of isolated factors (Brettschneider et al. 2004). The level of sporting activity of young people is a very important risk factor of cardiovascular illnesses and lifestyles (Andersen, Henckel, & Saltin 1989; Brettschneider et al. 2004). A comparison of the sporting activity of Slovenian students in the last decade (Strel et al. 1993; Jurak et al. 2002a; Strel et al. 2004) shows that these days students are on average less active than in the past. Long-term comparisons of students' motor abilities (Strel et al. 2001; 2003a; 2003b; 2004; Strel, Kovač & Rogelj 2005; 2006) reveal the following trend: the proportions of both motor inefficient and very efficient populations are increasing, whereas the proportion of students with average motor abilities is decreasing. On the basis of such findings, we assume that sporting (in)activity defines two extensively practiced lifestyles.

Review of various authors and their findings (Sallis, Prochaska & Taylor 2000) about the correlation between sporting activity and some behavioural characteristics which define lifestyle—smoking, eating habits and drinking—point to inconsistent or uncharacteristic connections which vary slightly according to the developmental level of children (Brettschneider et al. 2004). To examine the correlations between sporting activity with lifestyle and the factors influencing this lifestyle the findings from our environment need to be observed. In the last few years, Slovenian researchers (Strel et al. 1993; 2004; Doupona 1996; Jurak et al. 2002; 2003; Kovač et al. 2005) have diagnosed positive correlations of sporting activity with parents' attitudes towards sporting activity, with the level of parents' education, with parents' socio-economic status, with academic results, with experiences with physical education (PE) in schools, with the level of motor abilities, physical and motor self-image and with computer work. Negative correlations of sporting activity have been diagnosed with TV viewing, gender (girls) and age. The use of mobile phones did not reveal any significant relationship with sporting activity.

Methodology

The sample consisted of 681 high school students of both genders with an average age of 18.06 years (±1.41 years) who attended thirteen high schools in different Slovenian towns. The age structure of the measured students was slightly influenced by the consent required for participation in the study. Older students were able to sign the consent form on their own, whereas the younger ones had to provide a written consent from their parents.

The participating students were distributed in three groups according to the level of their participation in sporting activities: the first group of 297 consisted of highly active students (at least three times of 45 minutes per week in addition to PE lessons in schools[1]), the second group of 250 students participated in sport activities occasionally (two times 45 minutes per week besides PE lessons) while the third group of 134 students hardly ever participated in sport activities (a few times a year or never).

Almost two-thirds of the students attended gymnasium programmes (63.1%), followed by students in technical from professional programmes (28%) and students from vocational programmes (8.8%). Among the gymnasium students the proportion of those from the so-called sports classes[2] was slightly higher.

Data collection methods

Data were collected from December 2004 to March 2005 in the high schools located in various Slovenian towns. A questionnaire was prepared for the purpose of the study. Mainly closed statements were formulated in relation to the questions and the usefulness of information. The participating students were informed about the purpose of the study and were asked to co-operate; their anonymity was assured. The selected variables and their abbreviations for individual groups are shown in Table 2.

Data analysis methods

Standard procedures were used to calculate descriptive statistics and the distribution of the variables used. Discriminant analysis was used to analyse the differences between the groups of participating students according to the frequency of their sporting activity in chosen health-related variables. The t-test for independent samples and Pearson's χ^2 coefficient were used to analyse the significance of individual variables between the two groups of participating students (the most and least sportingly active). Correlations between the individual variables, according to their characteristics, were calculated with the use of Pearson's χ^2 coefficient and Pearson's correlation coefficient.

[1] A majority of high school curricula in Slovenia, apart from vocational schools, have 3 PE lessons per week (Kovač 2001). One school lesson lasts 45 minutes, which in total results in 135 minutes of PE per week.

[2] Sports classes are special classes formed for the purpose of managing school work and the training process of young sportspeople (Jurak et al. 2005).

Results

In relation to the frequency of participation in sports, the participating students were distributed in three groups for the purpose of this study (see Table 1). As expected, there are differences in these groups according to gender (p=.000) since girls are less sportingly active. Therefore, differences in variables were also studied after the influence of gender had been eliminated.

Frequency of out-of-school participation in sports			Groups of participating students				
Category	*f*	*%*	*Category*	*f*	*men*	*women*	*%*
Never	7	1.0	Rarely active	134	36	98	19.7
Few times a year	127	18.6					
Occasionally (1- to 2-times of at least 45 minutes a week)	250	36.7	Occasionally active	250	68	182	36.7
Often (3- to 4-times of at least 45 minutes a week)	127	18.6	Very active	297	152	145	43.6
Regularly (5- to 7-times of at least 45 minutes a week)	170	25.0					
Total	681	100.0	Total	681	256	425	100.0

Table 1: *Sporting activity of students and selecting the criteria for forming groups of participating students*

Discriminant analysis was used to analyse some of the students' habits which could determine their lifestyle. As presumed, it only revealed differences in analysed variables between the groups *very active* and *rarely active* (Function 1: l=.179, % of variance=89.4, can. corr.=.390, Wl=.830, χ^2=111.4, df=32, p=.000; Function at group centroids: rarely active =-.539, occasionally active =-.252, very active =.475). In forming the discriminatory function, the following variables had the strongest influence: frequency of smoking (-.620), coffee drinking (-.400), mid-morning snack (.395), lunch (.363), afternoon snack (.286), breakfast (.278) and consumption of energy drinks (.197). As the findings revealed one third of the students in the second group smoke and drink coffee every day and as a result of the analyses shown later, the two lifestyles explained by this discriminant function were named: sporting lifestyle and the 'cigarettes&coffee' lifestyle.

Further, analyses were made of individual variables which the discriminant analysis revealed as characterising lifestyle. Some variables could also be influenced by the gender of the participating students; therefore, a two-factor analysis of variance was carried out to find the total influence of both factors. The results showed there is no statistically significant influence of these two factors (the group of participating students according to sporting activity and the gender of a student) on any of the dependent variables. An analysis of the differences in individual variables between the students from the sporting lifestyle and the 'cigarettes&coffee' lifestyle groups is presented in Table 2.

Abbreviation	Variable	t	χ^2	df	Asymp. Sig. (2-sided)
Eating habits					
breakfast	Eating breakfast		30.203	1	.000
snack_m	Eating mid-morning snack		71.563	1	.000
lunch	Eating lunch		43.231	1	.000
snack_a	Eating an afternoon snack		20.168	1	.000
dinner	Eating dinner		16.418	1	.000
Sporting activity					
sport	Frequency of participation in sport activities	-8.194		334.845	.000
Consumption of drug substances					
smoking	Frequency of smoking	3.815		241.456	.000
marijuana	Frequency of consuming soft drugs: marihuana, ganja, khat	3.668		203.155	.000
ecstasy	Frequency of consuming ecstasy	2.317		150.532	.022
beer	Frequency of consuming beer	7.421		446	.000
wine	Frequency of consuming wine	3.631		446	.000
spirits	Frequency of consuming spirits	6.525		288.499	.000
coffee	Frequency of consuming coffee	9.938		244.139	.000
frq_drink	Frequency of consuming energy drinks	-1.133		446	.258
frq+alcho	Frequency of consuming energy drinks with alcohol	7.245		446	.000
Weekend daily rhythm					
wake	Time of getting out of bed	6.609		446	.000
sleep	Time of going to bed	3.057		446	.002
party	Frequency of partying on weekends during the school year	6.239		363.994	.000
Consumption of medicines					
medicine1	Consumption of general-relief medicaments, analgesics	3.288		435	.001
medicine2	Consumption of stomach-relief medicaments	2.752		192.35	.006
medicine3	Consumption of pain-killers	2.485		217.743	.014
medicine8	Consumption of anti-stimulants	1.961		205.374	.051
Self-appraisal of status					
healthy	Self appraisal of health status	-2.946		273.662	.003
fitness	Self appraisal of physical fitness	-6.044		446	.000
mental	Self appraisal of mental status	-2.769		446	.006
quality	Self appraisal of life quality	-1.449		275.585	.148
General characteristics					
gender	Gender of participating students		11.503	1	.001
academic	General academic results	-4.700		438	.000
educ_m	Mother's education	-2.803		438	.005
educ_f	Father's education	-1.807		293.279	.072
envir	Urban development of environment		.775	2	.679

Table 2: *Analysis of differences in some variables between the students from the sporting lifestyle and the 'cigarettes&coffee' lifestyle groups*

Statistically significant differences between the groups of participating students with individual lifestyles can be noticed (see Table 2). In general, it is possible to deduct from the habits influencing the health of young people that students in the sporting lifestyle group eat more regularly, tend to be more active in sport, consume less intoxicating substances (with the exception of energy drinks like Red Bull), stay out at night less often and consume fewer medicaments. The urban development of the environment and education of one's father are among those factors not related to the studied lifestyles. In comparison, young people whose mothers have a higher level of education and students with better academic results more often develop a sporting lifestyle. According to gender, boys are more likely to develop a sporting lifestyle.

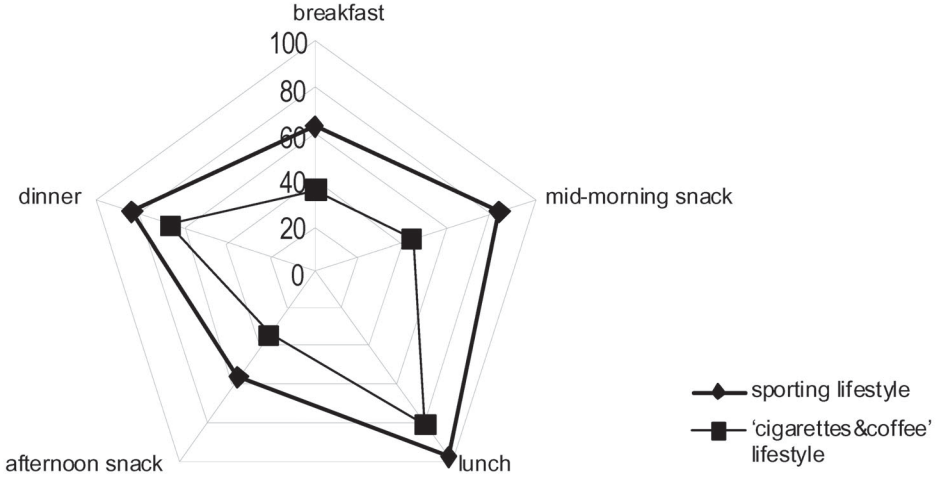
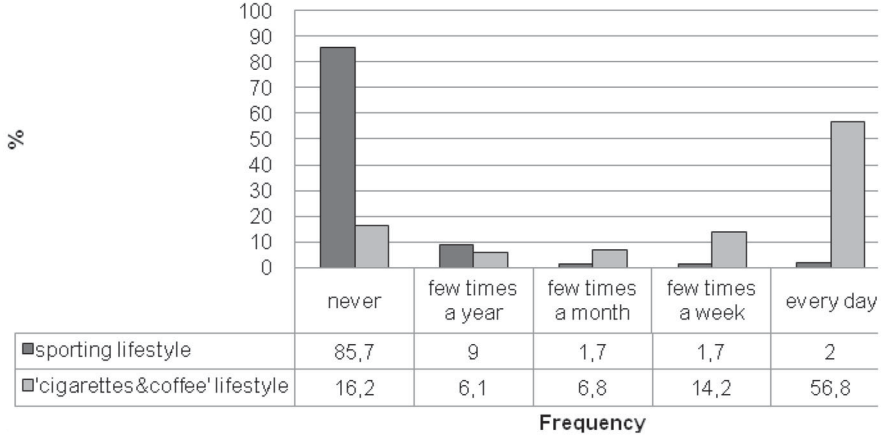


Fig. 1: *Differences in the consumption of meals between the students from the sporting lifestyle and the 'cigarettes&coffee' lifestyle groups*

A comparison of daily eating habits shows that students in the sporting lifestyle group eat more regularly than students in the 'cigarettes&coffee' lifestyle group (Fig. 1). The proportion of students who eat five meals per day is 13.5%; almost all of them belong to the sporting lifestyle group. Girls of both groups skip dinner significantly more often (sporting lifestyle $p<.000$; 'cigarettes&coffee' lifestyle $p<.016$).



	never	few times a year	few times a month	few times a week	every day
sporting lifestyle	85,7	9	1,7	1,7	2
'cigarettes&coffee' lifestyle	16,2	6,1	6,8	14,2	56,8

Fig. 2: *Differences in smoking between students from the sporting lifestyle and the 'cigarettes&coffee' lifestyle groups*

More than 63% of the students never smoke. There are no significant differences between genders (p=.183). More than 66% of the boys and 61% of the girls are non-smokers. Figure 2 clearly illustrates how the smoking habit most significantly determines the discriminant function which separates the two lifestyles. Namely, the majority of young people in the 'cigarettes&coffee' lifestyle group smoke every day, compared to the majority of young people from the sporting lifestyle group who do not smoke at all (p=.000). More tan 17% of all participating students smoke every day. The higher frequency of smoking also has a negative correlation with better academic results (r=-.252) and more frequent participation in sports (-.291) at the .01 level of statistical significance.

Smoking is strongly correlated with even more unhealthy habits, particularly coffee drinking (r=.482), the consumption of various alcoholic drinks and the consumption of soft drugs (r=.399). 16.2% of the participating students consume soft drugs such as marijuana. Slightly more than a tenth of young people (11.4%) consume this type of drugs a few times a year, 2.3% of the population consumes it up to three times a month, while 2.6% of young people are weekly users. In contrast to smoking, the differences between the groups are not so diametrically opposed. More than 12% of young people in the sporting lifestyle group consume soft drugs compared to almost 28% in the group of 'cigarettes&coffee' lifestyle. The difference is even smaller (p=.022) in the consumption of soft drugs as the proportion of users is just 1.8% according to statements by the participating students. It is interesting that academic results (r=-.010) and parents' education (father r=.001 and mother r=-.063) do not have an impact on the consumption level of such drugs. Similarly, differences between genders in the consumption of soft drugs and ecstasy were not detected.

Drinks consumed	Group of participating students	Never	1-3-times a month	1-3-times a week	4-6-times a week	Every day
Beer	Sporting lifestyle	51.7	37.0	10.0	1.3	0.0
	'Cigarettes&coffee' lifestyle	17.6	55.4	20.3	5.4	1.4
	All participating students	47.0	40.7	10.0	2.0	0.3
Wine	Sporting lifestyle	47.3	40.7	11.0	1.0	0.0
	'Cigarettes&coffee' lifestyle	33.1	44.6	19.6	1.4	1.4
	All participating students	45.6	41.8	11.1	1.1	0.3
Spirits	Sporting lifestyle	50.3	44.3	4.7	0.3	0.3
	'Cigarettes&coffee' lifestyle	17.6	69.6	11.5	0.0	1.4
	All participating students	41.8	50.8	6.6	0.3	0.5
Coffee	Sporting lifestyle	46.7	23.0	15.3	7.7	7.3
	'Cigarettes&coffee' lifestyle	18.9	9.5	14.2	14.9	42.6
	All participating students	34.3	18.7	16.1	9.7	21.3

Table 3: *Analysis of differences in the consumption of various drinks between the sporting lifestyle and the 'cigarettes&coffee' lifestyle groups in %*

An analysis of differences in the habits of drinking alcoholic drinks (Table 3) shows that young people with in the sporting lifestyle group consume alcohol less often. Almost 11% of young people in this group never drink any alcohol, compared to only 0.4% of young people from the 'cigarettes&coffee' lifestyle group. Differences in coffee drinking are even more obvious and are similar to the differences in smoking. One fifth of young people drink coffee every day; this percentage is twice that for the students in the 'cigarettes&coffee' lifestyle. The analysis between genders shows that in both groups girls drink beer and wine significantly less often than boys.

An overview of habits of staying out at night on weekends during the school year indicates a quite high rate. On average, young people go to bed at 00.50am (±2h28'). Students from the 'cigarettes&coffee' lifestyle group stay out much later (01.45am ±2h26'),

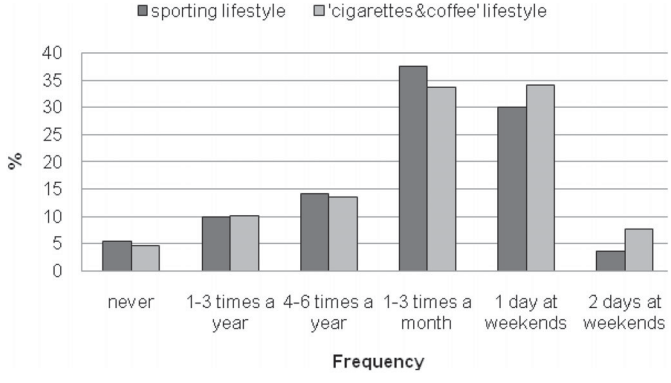


Fig. 3: *Differences in the frequency of partying on weekends between students from the sporting lifestyle and the 'cigarettes&coffee' lifestyle goups*

whereas those in the sporting lifestyle group are near to the average (00.55am ±2h50'). Staying out late is a reason for students getting out of bed on the weekend after half past nine in the morning (9.37am ±2h28'). The length of sleep is similar for all participating students although the students from the 'cigarettes&coffee' lifestyle group get out of bed an hour later (10.24am ±1h20') than their counterparts in the other group (9.29am ±1h24').

Going to bed late at night has a strong correlation with the amount of partying on weekends (r=.206-.277). Students go out on weekends on average one to three times a month. Although the differences between the groups are statistically significant, young people from the sporting lifestyle group also party quite often on weekends. All of the unhealthy habits of students have a high negative correlation with this variable (r=.145 to .406).

More than 22% of students never consume energy drinks such as Red bull, Shark, Bull Dog etc. On average, students consume these drinks a couple of times a year, although 44.2% of young people consume them at least once a month. There are no differences between the groups of participating students, yet the correlation of this habit with gender is strong as boys consume these drinks more often. As expected, this variable is also highly correlated with the variable frequency of partying (r=0.351). The effects of energy drinks are stronger in combination with alcohol, even though it has been found that students seldom mix energy drinks with alcohol (the mean on a 6-level scale, where 0=never, 5=always, was 1.25±1.31).

In order to observe whether lifestyle influences the well-being of young people we studied how frequently young people take certain medicaments and how they rate various aspects of their health status. Young people from the 'cigarettes&coffee' lifestyle group take general-relief medicaments (p=.001), stomach-pain-relief medicaments (p=.006), and painkillers (.014) significantly more often than the students from the other group, whereas the consumption of anti-stimulants is close to statistical significance (p=.051).

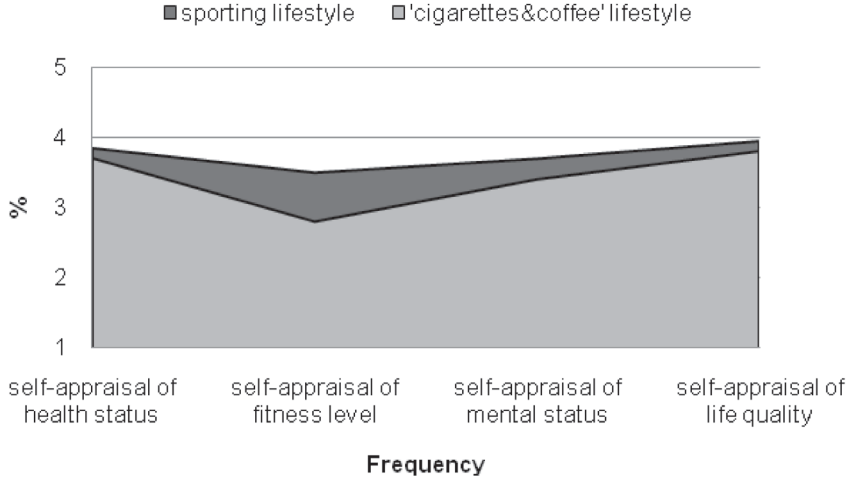


Fig. 4: *Differences in self-appraisals of general feeling between the students from the sporting lifestyle and the 'cigarettes&coffee' lifestyle groups*

Lifestyle also influences how the participating students appraise specific aspects of their general feelings (ranking: 1 – very poor, 5 – very good), although the subjective influence of appraisal according to the criteria of the individual can be noticed, presumably deriving from the individual's particular value system (Fig. 4). In this way, young people in the sporting lifestyle group value their health status, fitness levels and mental status higher, whereas there are no noticeable differences between both groups in the appraisal of life quality.

Discussion

Results of the study confirm the expectations that a large proportion of young people is living one of the two diverse lifestyles which differentiate according to sporting activity. Due to the larger proportion of students in sports classes included in the sample, it is presumed that the proportion of young people with a sporting lifestyle is slightly lower than it was found in the study. The study indirectly confirms findings about the trends of Slovenian students' motor abilities which are in correlation with different lifestyles of young people (Strel et al. 2005; 2006); there is a growing number of motorically inefficient and very efficient students, the number of students with average motor abilities is decreasing.

From the aspect of unhealthy habits it can in general be said that sporting activity is an important predictive factor of the two quite opposing lifestyles. The sporting lifestyle is—along with regular participation in sports—also defined by regular eating habits and the infrequent consumption of intoxicating substances. Despite the quite high correlation of these substances with partying, it can be noticed that 'sportspeople' do not give up socialising with their peers as they also stay out late on weekends, albeit in a less unhealthy way. On the other side, in the terms of the health risk factors the so-called 'cigarettes&coffee' lifestyle is an antithesis to the sporting lifestyle. In line with findings on the mutual influence of these factors (Brettschneider et al. 2004), it can be seen that such lifestyle is characterised—apart from irregular sporting activity—by regular smoking and coffee drinking, irregular eating habits, frequent drinking and staying out late at night.

Participation in sport has such a strong correlation with all the variables that gender does not have a significant influence on the differences between the groups of participating students. According to the studied habits, a significant influence of gender was expected in some variables (for example in eating habits). The findings of this study about the patterns of nutritional meals are slightly more positive than the findings of authors from HBSC[3] in Slovenia (Gabrijelčič Blenkuš 2004), although both studies came to the conclusion that students consume fewer meals per day than recommended. The HBSC study showed that only 42% of boys and 37% of girls eat breakfast regularly, 80% of young people eat lunch every day and 61% of boys and 43% of girls eat dinner. Differ-

[3] Health Behaviour in School-aged Children Study

ences between the studies can be explained by the characteristics of the present sample. Nevertheless, authors have come to similar findings to the present research, stating that girls skip breakfast and dinner. According to Gabrijelčič Blenkuš (2001), young people with regular eating habits also consume nutritionally more balanced food and have a better physical self-image. A comparison with European peers (Brettschneider et al. 2004) shows that young people from the present sample eat slightly more regularly although quite a few eating patterns are very similar; young people do not eat enough fruit, vegetables and fish; girls also do not eat enough dairy products and meat; they also eat sweets and salty snacks too often and consume fizzy drinks and drinks with a low fruit content (Gabrijelčič Blenkuš 2001; Brettschneider et al. 2004). Important information related to food and energy intake is that the proportion of the overweight children according to the BMI (25-30kg/m^2) has increased in the last decade (Bučar Pajek, Strel & Kovač 2004). Approximately 15% of boys and 10% of girls reach these values in the high school stage (Strel et al. 2004). The main reason for this status is insufficient sporting activity (Jurak et al. 2003; Strel et al. 2004), despite the fact that young people in Slovenia are given more school PE lessons than their European counterparts (Hardman 2002). Girls try to monitor their body weight more often by limiting their food intake rather than by increasing their energy expenditure (Gabrijelčič Blenkuš 2001).

Given the findings that a large share of students does not have suitable regular nutrition, the HBSC findings on the structure of young people's nutrition and the findings that the amount of food intake is not the key problem of obesity, a serious question arises about the possibility of improving the status of students' eating habits through an adequate distribution of food intake and meal quality.

The problem of smoking that proved to be a very important factor of an unhealthy lifestyle will have to be dealt in another way. An increase in smoking has been observed in most EU countries, apart from Sweden where an intensive anti-smoking campaign seems to be successful (Brettschneider et al. 2004). In Sweden, only 11% of girls and 4% of boys aged 15 are daily smokers (Currie et al. 2004). Findings from the 2003 ESPAD[4] research for Slovenia showed that the proportion of 15-year-old smokers remained on the same level as in 1999 and 1995 (Jerman 2003).

The present research revealed that the frequency of young people smoking confirms the picture painted in previous researches carried out in Slovenia in recent years. Videmšek et al. (2003) found that 14.6% of boys and 11.2% of girls of the high school population smoke. The HBSC research revealed that Slovenia has one of the highest share of 15-year-old people smoking in Europe (Currie et al. 2004). The findings show that a staggering 23.2% of girls and 22.5% of boys of this age smoke every day. Even more alarming are findings of the ESPAD research indicating that 28% of 15-year-old students are daily smokers (Jerman, 2003). The present research findings (17.6% of students smoke every day) are closer to the European average than the HBSC research and the findings by

[4] The European School Survey Project on Alcohol and Drugs.

Ažman (2004) who found that 18.8% students in the last year of gymnasium high school smoke every day. Differences in the results of various researches can be attributed to the different samples involved, which are a result of the age structure of students as the frequency of smoking increases in this period (Currie et al. 2004). Nevertheless, findings in many European countries similarly point to a strong negative correlation between smoking and sporting activity in this age period (Ferron et al. 1999; Schmidt 2002; Sasco et al. 2003; Ažman 2004).

Regarding the alarming data on the availability of ecstasy and similar drugs, the present research revealed that a relatively small proportion of young people consume narcotic substances. As these substances are illegal, it is possible that the answers underestimated the true extent of their use due to a fear of being caught. The findings on the consumption of alcoholic drinks are quite different.

The HBSC research findings (Currie et al. 2004) show that 15-year-old students in Slovenia consume alcoholic drinks slightly more often (weekly: 41.5% of boys and 26.4% of girls) in comparison to the European average (35.4% of boys and 25.2% of girls). Compared to the findings of the present research, 15-year-old students in Slovenia drink beer and wine more often and spirits less often (EU: 12.4% of boys and 9.7% of girls) than their European counterparts. The very different findings of several European countries (Currie et al. 2004; Brettschneider et al. 2004) lead to the conclusion that the consumption of alcohol is largely connected with culturally-determined behaviour.

The current research findings about the smaller consumption of alcoholic drinks by young people with a sporting lifestyle differ partly from the findings of Brettschneider et al. (2004), which are based on an analysis of several similar studies. Namely, these authors found no constant positive or negative effect of young people's participation in night clubs. The nightlife characteristics of the participating students from the selected sample can be attributed to their high average age, although the findings of previous studies (Jurak et al. 2002a) also show that students have a distinctive nightlife pattern on school-free days. Young people with a sporting lifestyle also party and socialise with their peers, even though their way of partying is different. They get drunk less often, they smoke less often and they very rarely use soft drugs.

A surprising finding by Strel et al. (2004), declaring a positive connection between the frequency of consuming energy drinks and the frequency of sporting activity in young people, was not confirmed in the present research. The age structure of participating students is partly a reason because it calls into play individual factors influencing the consumption of such drinks. Presumably, primary school sportspeople are more familiar with the effects of such drinks on one's ability in sport; therefore, they are more inclined to consume such drinks. At high school, however, some other reasons beside sporting ability influence the consumption of such drinks; these motives are similar for those who practice sport and those who do not. Still, it is worrying to know that, apart from the quite frequent consumption of coffee, 80% of students consume energy drinks occasionally and one tenth of them do so on a weekly basis. Energy drinks contain caffeine which can have damaging consequences for the young organism; as a result, larger amounts of caffeine are classified as banned substances in sport (Osredkar 1997).

Unhealthy habits also have—in addition to long-term consequences (cardiovascular illnesses, cancer, type II diabetes, asthma, and osteoporosis)—also short-term effects on the organism. They manifest themselves as general sickness, stomach cramps and pains in various parts of the body. Therefore, the findings about the more frequent use of medicaments by young people within the 'cigarettes&coffee' lifestyle group confirm the logic behind the damaging effects of such a lifestyle. Simultaneously, they indicate the costs for individual people and a strain on the national health budget (SORS[5]). Findings from developed countries (Colditz 1999; Katzmarzyk & Janssen 2004) show that physical inactivity is responsible for around 2.5% of the total costs of the health budget. Looking at the treatment of cardiovascular illnesses which occurred due to inactivity, the proportion is around one-third of the total costs. Considering these findings, some of the current proposals for amending the health law in Slovenia are quite unreasonable. Namely, these proposals place some sports in the health risk factor category, putting them on equal terms with unhealthy habits; consequently, the insurance premiums for people participating in such sport will increase. A similar pattern is being followed in the setting of life insurance policies where the only question being asked is if people participate in so-called risky sports and not how frequently they participate at all. Calculations from several developed countries, which also include sporting injuries, point to the direct medical costs of physical inactivity ranging from USD 104 to USD 1.305 per capita (Oldridge 2006).

Taking into consideration certain changes in other areas of the law and the non-implementation of some regional laws and regulations (a discouraging tax policy for companies' investments in sport, the non-provision of tax relief for sport services, non-implementation of health insurance for sportspeople, the reduction of PE lessons in high schools, the discouraging tax policy for carrying out voluntary work in sport, the law that limits civil gatherings in sport, the non-implementation of regulations for protecting sports financing stemming from the lottery etc.), it can be concluded that by doing this the government is sending entirely the wrong message to members of society about lifestyle quality. Therefore, it is not surprising young people seek validation of the quality of life. Young people with an unhealthy lifestyle are insufficiently aware of the consequences of their habits and judge the quality of their life merely through their current social contacts which they experience in such a lifestyle.

Conclusion

The present research shows that, during the crucial developmental period, sport is an important element of a healthy lifestyle from point of view of forming one's self-identity. Sport can positively encourage the way young people spend their free time, it is also a way of life or form of social identification of Slovenian people in post-modern society (Petrović et al. 2001; Kovač, Starc & Topič 2005). In addition, under the influence

[5] Data from the Statistical Office of RS (http://www.stat.si/novica_prikazi.aspx?id=301) show that in 2004 the average Slovenian household spent EUR 352 on alcohol, tobacco products and narcotics, EUR 259 on health services and products and EUR 110 on sports services.

of technological development the role of the family in the socialisation process has been reduced in the last few decades and one's peers have become a much more important factor in the formation of lifestyles (De Knop et al. 1996; Brettschneider et al. 2004). With the suitable encouragement of wider society and under the influence of one's peers a young person can develop a sporting lifestyle which manifests itself via different opinions, free-time activities and cultural directions. It can be concluded that the present governmental measures in Slovenia, despite declaring themselves differently, are in fact not pursuing this path. The following measures are suggested.

Tendencies to reduce PE lessons at school have to be stopped. The government as a founder of schools should create better conditions for PE lessons in high schools as this is still one of the reasons for the short supply of already insufficiently frequent sporting programmes (Jurak, Kovač, Strel & Starc 2005). Reductions in some vocational programmes which have already been implemented and future similar tendencies are particularly dangerous given the findings about the poor morphological structure and motor efficiency of girls in these programmes (Kovač 2006). These girls should be familiar with the possibilities of neutralising future professional loads through regular physical activity. This group of girl students is also the most vulnerable, according to our and foreign findings (La Torre et al. 2006) about the importance of the effect of one's mother's education on the lifestyle of young people. Due to university entry requirements, it can be presumed that this is a group of future mothers with a lower education for which there are significant correlations with the unhealthy lifestyles of their children. From the societal point of view, these students should be the recipients of the most detailed analysis of the planned implementation of physical activity.

Young people's nutrition should be improved. The present study and the studies by Gabrijelčič Blenkuš (2001; 2004) show that excessive food intake is not a problem in Slovenia, but the unsuitable way of eating and the quality of food. Together with inappropriate motor patterns this is manifested in increased skinfold (Strel et al. 2004). To improve the status in this area, high schools should offer their students an organised nutrition plan which would include several meals per day, similar to primary school.

Simultaneously, partner-like co-operation involving schools, the Ministry of Education, the Slovenian Institute for Education, the Institute of Public Health, the Slovenian Olympic Committee and local sporting environment should instigate projects informing about and promoting a sporting lifestyle. In co-operation with sports clubs, schools could also offer the possibility of out-of school sports practice (perhaps in schools' sports halls), where students could design exercise contents themselves (see Jurak, Kovač & Strel 2002a; 2002b).

Since the discussions about the new draft of law on sport is still ongoing, it is wise to open up questions about the government's systematic approach to sport and to define policies which will encourage members of society to practice a sporting lifestyle. A cost-benefit economic analysis of sport should serve as a basis for debate on the actual effects of sport on society and the consequential formation of policies relating to this question.

References

Andersen, Lars, Poul Henckel & Bengt Saltin. 1989. Risk factors for cardiovascular disease in 16-19-year-old teenagers. *Journal of Internal Medicine 225*: 157-163.

Armstrong, Neil & Joanne Welsman. 1997. *Young people and physical activity.* Oxford: Oxford University Press.

Armstrong, Neil & Joanne Welsman. 1994. Assessment and interpretation of aerobic function in children and adolescents. *Exercise and Sport Sciences Reviews 22*: 435-476.

Ažman, Darja. 2004. Kajenje in šport v prostem času pri osnovnošolcih in srednješolcih. Rado Pišot et al. (eds.), *Child in motion.* Koper: Univerza na Primorskem, Znanstveno-raziskovalno središče, pp. 9.

Beunen, Gaston, Johan Lefevre, Albrecht Claessens, Roeland Lysens, Hermine Maes & Rolnad Renson. 1992. Age-specific correlations analyses of longitudinal physical fitness in men. *European Journal of Applied Physiology and Occupational Physiology 64*: 538-545.

Brettschneider, Wolf-Dietrich, Rolf Naul, Neil Armstrong, Jose Diniz, Karsten Froberg & Lauri Laakso. 2004. *Study on young people's lifestyle and sedentariness and the role of sport in the context of education and as a means of restoring the balance. Final report*. Paderborn: EC, Directorate-General for Education and Culture, Unit Sport.

Bučar Pajek, Maja, Strel, Janko, Kovač, Marjeta. 2004. Changes of body mass index and prevalence of obesity for schoolgirls, aged 7 to 10 years. In: Katarina Vidmar Nair (ed.), *4. Škerljevi dnevi – Programme and abstracts: man between autonomy and the environment.* Ljubljana: Društvo antropologov Slovenije, pp. 75-76.

Colditz, Graham. 1999. Economic costs of obesity and inactivity. *Medicine & Science in Sports & Exercise* 31(11 Suppl): S663-667.

Cruz, Jose. 2000. Dietary habits and nutritional status in adolescents over Europe—Southern Europe. *European Journal of Clinical Nutrition* 54(Suppl 1): 29-35.

Currie, Candace, Chris Roberts, Antony Morgan, Rebecca Smith, Wolfgang Settertobulte, & Oddrun Samdal. 2004. *Young people's health in context. Health behavior in school-aged children (HBSC) study: international report from the 2001/2002 survey*. (Health policy for children and adolescents, no. 4). Copenhagen: World Health Organization Regional Office for Europe.

De Knop, Paul, Lars-Magnus Engstroem, Berit Skirstad & Maureen Weiss. 1996. *Worldwide Trends in Youth Sport.* Champaign: Human Kinetics.

Dietz, William. 2001. The obesity epidemic in young children. Reduce television viewing and promote playing. *British Medical Journal* 322(7282): 313-314.

Doupona, Mojca. 1996. *Socialno demografska struktura mater in oèetov šoloobveznih otrok in njihov odnos do športa*. Unpublished doctoral dissertation, University of Ljubljana, Ljubljana.

Ferron, Christine, Francois Narring, Michel Cauderay & Patric Michaud. 1999. Sport activity in adolescence: associations with health perceptions and experimental behaviors. *Health Education Research* 14(2): 225-233.

Gabrijelčič Blenkuš, Mojca. 2001. Nekatere prehranjevalne navade ljubljanskih srednješolcev s poudarkom na razliki med spoloma. *Zdravstveno varstvo*, 40(Suppl): 135-143.

Gabrijelčič Blenkuš, Mojca 2004. *Zdrava prehrana in gibanje za otroke in mladostnike.* Retrieved October 10 from: http://www.zzv-ce.si/aktualno/gradivo_za_medije/ gradivo2004/ pomoc_uciteljem_najstnikom.php. Celje: Zavod za zdravstveno varstvo Celje.

Hardman, Ken & Joe Marshall. 2000. *World-wide survey of the state and status of school physical education. Final report*. Manchester: University of Manchester.

Hardman, Ken. 2002. *European physical education/sport survey. Reports of summary of findings*. Strasbourg: Council of Europe.

Hurson, Moira. & Claire Corish. 1997. Evaluation of lifestyle, food consumption and nutrient intake patterns among Irish teenagers. *Irish Journal of Medical Science 166*(4): 225-230.

Jerman, Tjaša. 2003. *Razširjenost tobaka, alkohola in drugih drog med ljubljanskimi srednješolci v letu 2003.* Ljubljana: Zavod za zdravstveno varstvo Ljubljana. Retrieved January 15, 2006 from: www.zzv-lj.si/c-sm/RAZISKAVE/ESPAD-Anja.doc

Jurak, Gregor. 2005. *Športno nadarjeni otroci in mladina v slovenskem šolskem sistemu.* Ljubljana: Fakulteta za šport, Inštitut za kineziologijo and Založba Annales.

Jurak, Gregor, Marjeta Kovač & Janko Strel. (2002a). Spending of summer holidays of Slovenian secondary school children. *Acta Universitatis Carolinae, Kinanthropologica* 38(1): 51-66.

Jurak, Gregor, Marjeta Kovač & Janko Strel. 2002b. How Slovene primary school students spend their summer holidays. *Kinesiologia Slovenica* 8(2): 35-43.

Jurak, Gregor, Marjeta Kovač, Janko Strel & Gregor Starc. 2005. Analysis of the Excuses from PE Classes Attendance. *Šport* 3(53) (Suppl): 13-20.

Jurak, Gregor, Marjeta Kovač, Janko Strel, Matej Majerič, Gregor Starc & Tjaša Filipčič. 2003a. *Sports activities of Slovenian children and young people during their summer holidays*. Ljubljana: University of Ljubljana, Faculty of Sport.

Katzmarzyk, Peter & Ian Janssen. 2004. The economic costs associated with physical inactivity and obesity in Canada: an update. *Canadian Journal of Applied Physiology* 29: 90-115.

Kemper, Han, Bertheke Post, Jos Twisk & Willem Van Mechelen. 1999. Lifestyle and obesity in adolescent and young adulthood: results from Amsterdam Growth and Health Longitudinal Study (AGAHLS). *International Journal of Obesity Related Metabolic Disorders* 23(Suppl 3): 34-40.

Kovač, Marjeta, Gregor Starc & Mojca Doupona Topič. 2005. *Šport in nacionalna identifikacija Slovencev.* Ljubljana: Fakulteta za šport, Inštitut za kineziologijo.

Kovač, Marjeta. 2001. Physical education. In: Anderja Barle Lakota, Mateja Gajgar & Mira Turk Škraba (eds.), *The development of education. National report of the Republic of Slovenia by Ministry of education, science and sport.* Ljubljana: Ministry of Education, Science and Sport, pp. 89-92.

Kovač, Marjeta. 2006. When social becomes biological: The effect of different physical education curricula on motor and physical development of high-school Girls.

Kršnjakova, S. & M.Pavlovičova 1995. Structure of children's free time activities. In: Ludovit Komandel (ed.), *Proceedings of the international conference Physical Education and Sports of Children and Youth.* Bratislava: Slovak Scientific Society for Physical Education and Sports, Faculty of Physical Education and Sport, Comenius University, pp. 64-66.

La Torre, Giuseppe, Daniele Masala, Elisabetta De Vito, Elisa Langiano, Giovanni Capelli, Walter Ricciardi & PHASES (PHysical Activity and Socio-Economic Status) collaborative group. 2006. Extra-curricular physical activity and socioeconomic status in Italian adolescents. *BMC Public Health 2006* 6: 22.

Oldridge, Neil. 2006. Costs of physical inactivity. In: *Abstract book of 11th World sport for all congress. Physical Activity: Benefits and Challenges*. Havana: Cuban Olympic Committee: pp. 9.

Osredkar, Jože. 1997. *Doping in šport.* Ljubljana: Olimpijski komite Slovenije - Združenje športnih zvez, Ministrstvo za šolstvo in šport.

Petrović, Krešimir, Franci Ambrožič, Jakob Bednarik, Herman Berčič, Boris Sila & Mojca Doupona Topič. 2001. Športnorekreativna dejavnost v Sloveniji 2000. *Šport* 49(3): 20.

Sallis, James, Judith Prochaska & Wendell Taylor. 2000. A review of correlates of physical activity of children and adolescents. *Medicine and Science in Sport and Exercise* 32(5): 963-975.

Samuelson, Gosta. 2000. Dietary habits and nutritional status in adolescents over Europe. An overview of current studies in the Nordic countries. *European Journal of Clinical Nutrition* 54(Suppl 1): 21-28.

Sasco, Annis, Ray Merrill, Geerard G. Benhaim-Luzon, & G. Fryer. 2003. Trend in tobacco smoking among adolescents in Lyon, France. *European Journal of Cancer* 39(4): 496-504.

Schmidt, Holger. 2002. Sport, Alkohol, Tabak und illegale Drogen in der Entwicklung von Jungendlichen zu jungen Erwachsenen. *Zeitschrift für Gesundheitspsychologie* 10(1): 36-48.

Strauss, Richard & Harold Pollack. 2001. Epidemic in childhood overweight, 1986-1998. *Journal of the American Medical Association 286*: 2845-2848.

Strel, Janko, Marjeta Kovač & Gregor Jurak. 2004. *Study on young people's lifestyles and sedentariness and the role of sport in the context of education and as a means of restoring the balance. The case of Slovenia*. Ljubljana: University of Ljubljana, Faculty of Sport. Retrieved June 30, 2004 from: http://www.sp.uni-lj.si/didaktika/ english.htm.

Strel, Janko, Marjeta Kovač & Aleš Rogelj. 2005. *Podatkovna zbirka Športnovzgojni karton—poročilo za šolsko leto 2004/2005 in nekatere primerjave s šolskim letom 2003/2004*. Ljubljana: Zavod za šport Slovenije.

Strel, Janko, Marjeta Kovač & Aleš Rogelj. 2006. *Podatkovna zbirka Športnovzgojni karton—poročilo za šolsko leto 2005/2006 in nekatere primerjave s šolskim letom 2004/2005*. Ljubljana: Fakulteta za šport.

Štihec, Jože, Damir Karpljuk, Mateja Videmšek & Miran Kondrič. 2000. How do Slovene fourth grade primary schools students spend their summer holidays? *International Journal of Physical Education* 37(2): 70-74.

Videmšek, Mateja, Jože Štihec, Damir Karpljuk & Darja Debeljak. 2003. Sport activities and smoking habits among the youth in Slovenia. *Acta Universitatis Palackianae Olomucensis. Gimnica* 33(2): 23-28.

Wedderkopp, Niels, Karsten Froberg, Henrik Hansen & Lars Andersen. 2004. Secular trend in physical fitness and obesity in Danish 9-years old girls and boys. An Odense School Child Study and Danish substudy of the European Youth Heart Study. *Scandinavian Journal of Medicine & Science in Sport* 14(3): 150-155.

POVZETEK

Na vzorcu 681 srednješolcev in srednješolk, s povprečno starostjo 18 let, smo proučevali dva različna življenjska stila, ki se razlikujeta glede na športno dejavnost mladih. Za vpogled v navade mladih smo uporabili nekatere indikatorje življenjskega stila, ki se nanašajo na prehranjevanje, pitje, kajenje, vsakodnevne navade, druženje in športno dejavnost. Vključili smo tudi nekatere druge dejavnike, ki bi lahko vplivali na življenjski stil mladih, kot so npr. spol, urbaniziranost življenjskega okolja in izobrazba staršev. Izsledki potrjujejo predvidevanje, da ima ukvarjanje s športom pomemben vpliv na oblikovanje dveh nasprotnih življenjskih stilov v smislu nezdravih navad. Športni življenjski stil zaznamujejo, razen redne športne dejavnosti vsaj trikrat na teden po 45 minut izven ur športne vzgoje v šoli, tudi redne prehranjevalne navade in zgolj priložnostno uživanje opojnih substanc. Kljub temu, da uživanje teh substanc pogosto povezujemo z zabavo mladih, so izsledki pokazali, da so tudi mladi s športnim življenjskim stilom zelo družabni in preživljajo svoje noči ob koncu vikendov podobno kot njihovi vrstniki, vendar na manj nezdrav način. V nasprotju z njimi pa mladi, ki so razvili t.i. 'cigaretno-kavni' življenjski stil, z vidika dejavnikov zdravstvenega tveganja, predstavljajo antitezo športnega življenjskega stila.

KLJUČNE BESEDE: življenjski stil, zdravje, navade, srednja šola, šport