Coll. Antropol. **36** (2012) 1: 79–86
Original scientific paper

High School Students' Body Weight Control: Differences between Athletes and Non-Athletes

Rita Mikulan[1] and Bettina F. Piko[2]

[1] University of Szeged, »Juhász Gyula« Teacher Trainig Faculty, Institute of Physical Education and Sports Sciences, Szeged, Hungary
[2] University of Szeged, Faculty of Medicine, Department of Behavioural Sciences, Szeged, Hungary

A B S T R A C T

Due to chronic dissatisfaction with body weight in youth, efforts to lose weight often lead to pathological dietary behaviours. Regular and heavy sports activity may contribute to the optimization of body weight, not only by elevating the energy utilization but also by increasing the health consciousness and the tendency to self-monitor. Research generally finds a beneficial role of extracurricular sports activity in body weight control. Therefore, we aim to analyze how regular, heavy sports activity (more precisely, competitive sports) may contribute to body weight control among two groups of youth: athletes and non-athletes. Our study was carried out using 347 adolescents; among them there were 91 athletes and 259 controls. The subjects completed self-administered questionnaires concerning their body weight control and dietary habits. We found that girls were less satisfied with their body weight and reported dieting more frequently with a greater emphasis on healthy dieting than boys. Sport influenced these strong gender differences only regarding healthy dieting, young male athletes laid a larger emphasis on healthy diets than their non-athlete counterparts, therefore their attitude became similar to that of female athletes and non-athletes. We conclude that despite the normal weight in high school students, episodes of dieting that might contribute to eating disorders were quite frequent. This was not influenced by the students' extracurricular sports activity. A greater monitoring of male athletes' and their friend's diet draw attention to the need for developing health education programs specific to boys.

Key words: *youth, athletes, healthy diet, sports activity, body weight control*

Introduction

Among factors affecting both physical and mental health, lifestyle factors have been identified as extremely important[1]. Health behavior, as a part of lifestyle, undergoes tremendous changes during adolescence and later youth[2,3]. Among these dynamic health behaviors, there are significant changes in nutritional behavior and body weight control[4]. In addition, the health effects of lifestyle factors can be studied by investigating the changes in body weight; one of the main characteristics of a healthy person is an optimal, relative stabile body weight, corresponding to age and gender[5].

On the other hand, sedentary lifestyle, poor eating behavior and excessive calorie consumption as well as body image distortion play a major role in most obesity[6]. The negative consequences of obesity on morbidity and mortality can be observed worldwide. The number of overweight children in the European Union is increasing with 1.3 million per year. By 2010, in the EU, 26 million children will be overweight including 6 million obese ones. In the US the situation is even worse, the proportion of obese boys increased from 5 percent to 13 percent, the rate of obese girls increased from 5 percent to 9 percent between 1966 and 1991[7]. More recently, 17.5 percent of American youth (aged between 12-19 years) are overweight[8]. Inactive lifestyle and health risk nutrition is noted as the probable reason for this poor health outcome at this age[9]. Clearly more research is needed to map the background of youth's body weight control. Therefore, body weight control has been in the focal point of our research and because literature suggests that this is closely related to sports activity, we aim to investigate this health behavior in light of youth's sports activity status[10].

While keeping healthy is an important motivation for adults to control their weight, for youth the main drive to

Received for publication January 16, 2012

control body weight is to develop a trendy body image[11]. Moreover, there are also gender differences in their body weight perception[12.] Girls are more frequently dissatisfied with their own body weight than boys. While girls tend to perceive themselves as being overweight or obese, boys often see themselves as underweight. So girls think about being thinner and worry about gaining weight more frequently than boys[13–15]. Although in different age group, in a study on college students, significantly more females (40%) considered themselves overweight in comparison to males[16]. Due to dissatisfaction with body weight, efforts to lose weight are quite frequent which may even lead to eating disorders. For example, in an English study of 2789 youth, 42 percent of the girls and 26 percent of the boys were actually on a diet[14]. In another study on examining the body weight control of young girls, 60 percent of the subjects wanted to lose weight and 16 percent of them were actually on a diet[17]. As the literature suggests, dieting is common among teens of varying weight status not only among those who are otherwise overweight[18,19].

All these problems are present in the Hungarian adolescent population. In a representative study of adolescents aged between 15–18 years in Budapest, 13.9% of boys and 13.3% of girls were overweight or obese due to unfavorable nutritional and lifestyle habits, such as lack of regular sports activity[20]. In addition, nearly 50% of them were not satisfied with their body and wanted to lose weight, and 20–30% of them were actually on a diet.

Social networks play a decisive role in the attitude formation of youth towards their own body image and their body weight control; the influence of parents and friends seems to be more important among girls than boys[21,22]. Health consciousness and the effort for keeping a healthy lifestyle of the social network had stronger influence on the appropriate attitude of youth than on their actual weight controlling behaviour[22].

The role of sports activity in youth's nutritional attitudes and behavior and their body weight control is crucial. The increased prevalence of obesity among adolescents worldwide is explained by widespread nutrition transitions to lipid-rich diets and a decrease in sports activity, especially among urban adolescents[23]. For example, a study of 593 youth in 34 countries of Europe confirmed the protective role of sports activity against being overweight and obese; in most of the countries the level of obese youth's sports activity was significant lower than those with normal weight[24]. The regular, intensive sports activity may play a role in the improvement of body weight not only because of elevated energy utilization but also due to a greater health consciousness and more active monitoring tendencies. Not surprisingly, these are often characteristics of dietary habits of young athletes. Sports participation could be associated with better dietary habits[25]. For example, athletes tend to eat more regularly, skip less breakfast, eat less fast food, consume more vegetables and fruits than their non-athlete counterparts, although consumptions of sweets and soft drinks are often similar in both groups[26,27]. Other studies indicated that physically active youth (that is, those youth engaging in some sports activity more than once a week) reported eating more fruit and vegetables and they consumed less soft drink than their physically inactive peers[28].

Based on the above literature review, we expect to observe a strong relationship between adolescents' extracurricular sports activity status (namely, being athlete or non-athlete) and their body weight control. More precisely, the main goal of the present study is to examine the role of (extracurricular) competitive sports (as a type of regular, heavy sports activity) on body weight control, healthy diet and dieting (as types of health behavior) among a group of Hungarian high school students.

Subjects and Methods

Three hundred forty-seven subjects were sampled during the first semester of 2007. Of this sample, 91 youth were registered athletes (aged between 14–21 years of age; X=17.6 years, SD: 2.7; 55 males and 36 females; mean BMI was 22.2, SD: 3.9) who visited the sports health care outpatient department of the town during the early part of 2007. The control group consisted of 256 high school students (aged between 14–20 years of age, X=16.8 years, SD: 1.3 years, 165 male, 94 female; mean of their BMI was 21.9, SD: 6.7). These high school students represented the entire school population of an average high school in the city of Szeged, Hungary. Descriptive statistics for the samples including age, gender and BMI can be found in Table 1.

Self-administered questionnaires were used to obtain information from students regarding dietary habits, weight perception, and evaluation of both their diet behaviors and their friends. Using a standardized procedure of administration, trained graduate students distributed questionnaires to non-athletes in each class and to athletes in the outpatient department, after briefly explaining the study objectives and giving the necessary instructions. Non-athletes completed the questionnaires during the class period. Participation was voluntary and confidential.

Body Mass Index (BMI) was calculated as body mass/body height^2 (in kg/m^2). Body weight control and dietary habits were measured by the following five short scales adapted from previous, validated research scales[28–30]. First, regarding dieting behavior, the students were asked: »How frequently have you gone on a diet in the past year? By »diet« we mean changing the way you eat so you can lose weight?«. The following response categories were provid-

TABLE 1
DESCRIPTIVE STATITICS FOR THE STUDY SAMPLES

	Athletes	Non-athletes
N	91 (55 male, 36 female)	259 (165 male, 94 female)
X age (SD)	17.6 yrs (2.7)	16.8 (1.3)
X BMI (SD)	22.2 (3.9)	21.9 (6.7)

Note. There were no statistical differences by Student's t-tests.

TABLE 2
BODY MASS INDEX (BMI) IN LIGHT OF THE BODY WEIGHT CONTROL VARIABLES BY GENDER

	Boys			Girls		
	X	SD	F-value and p-value	X	SD	F-value and p-value
»How frequently were you on diet last year«						
Never	21.1	3.8	F=18.2	20.0	2.5	F=4.8
Rarely	23.9	4.8	p<0.001	21.0	2.7	p<0.01
Every now and then	26.9	3.7		22.0	2.5	
Often/always	26.4	5.6		28.1	2.3	
»I'm thinking a lot about being thinner«						
Strongly disagree	21.3	3.1	F=10.4	19.3	2.2	F=3.8
Slightly disagree	21.7	2.9	p<0.001	19.8	2.4	p>0.05
Slightly agree	24.5	4.8		21.7	3.6	
Strongly agree	26.2	4.6		25.4	3.5	
»I worry about gaining weight«						
Strongly disagree	20.9	2.4	F=10.2	19.5	2.4	F=2.0
Slightly disagree	22.5	3.7	p<0.001	19.9	2.2	p>0.05
Slightly agree	23.7	3.9		21.7	3.5	
Strongly agree	24.2	4.0		23.9	3.4	
»How much care do you take over eating healthy food?«						
Not at all	21.7	3.9	F=0.9	21.4	3.5	F=1.0
A little	21.8	3.6	p>0.05	20.9	3.4	p>0.05
Quite a bit/very much	22.5	3.7		23.0	3.5	
»My friends take care over eating healthy foods«						
Not at all	22.2	3.9	F=1.0	21.2	3.9	F=1.4
A little	22.1	3.6	p>0.05	21.0	3.4	p>0.05
Quite a bit/very much	21.1	3.7		24.2	3.1	

Note. ANOVA tests.

ed: never = 1, rarely = 2, every now and then = 3, quite often =4, I am always on a diet =5. Second, regarding dietary behavior, we asked: »How much care do you take over eating healthy food?«. The following response categories were provided: not at all =1, a little =2, quite a bit =3, very much =4. The next two questions dealt with body image: »Do you agree or disagree with the following statements?: I am thinking a lot about being thinner; I worry about gaining weight«. Finally, regarding the estimated dietary behavior of the social network we asked the subjects: »How much do your friends take care over eating healthy food?« The following response categories were provided: not at all =1, a little =2, quite a bit =3, very much =4.

SPSS for MS Windows Release 15.0 program was used. To detect differences by gender and sports activity status, we compared subgroups of the sample (that is, all the girls *vs*. all the boys; athlete girls *vs*. athlete boys; non-athlete girls *vs*. non-athlete boys) and the data of athletes and non-athletes (all the athletes *vs*. all the non-athletes; athlete boys *vs*. non-athlete boys; athlete girls *vs*. non-athlete girls). Mann-Whitney U-test was used for testing statistical significance for comparative purposes, $p<0.05$.

Results

Table 2 shows Body Mass Index (BMI) in light of the body weight control variables by gender. Irrespectively of gender there is strong relation between BMI and frequency of slimming diet. Boys' body weight perception (namely, thinking about being thinner and worrying about gaining weight) is significantly depends on their BMI values. There were no significant relations between the other body weight control variables and BMI among girls. Taking care over eating healthy foods, however, did not show differences by BMI in either boys or girls.

Table 3 shows Body Mass Index (BMI) in light of the body weight control variables by sports activity status. Non-athletes' slimming diet strongly depends on their BMI values which is not the case in athletes. Likewise, there is significant relation between non-athletes' weight perception (namely, in case of the question »thinking a lot about being thinner«) and BMI. Among athletes, there are no relations between BMI and body weight control variables.

Table 4 shows the differences in body weight perception based on the following statement: »I'm thinking a lot about being thinner«. In groups divided by gender

TABLE 3
BODY MASS INDEX (BMI) IN LIGHT OF THE BODY WEIGHT CONTROL VARIABLES BY SPORTS ACTIVITY STATUS

	Non-athletes			Athletes		
	X	SD	F-value and p-value	X	SD	F-value and p-value
»How frequently were you on diet last year«						
Never	20.9	4.3	F=9	21.8	3.3	F=1.2
Rarely	22.1	3.8	p<0.001	23.1	4.4	p>0.05
Every now and then	23.3	4.6		23.9	5.5	
Often/always	29.2	3.8		21.3	3.3	
»I'm thinking a lot about being thinner«						
Strongly disagree	21.0	5.1	F=5.4	22.2	3.6	F=1.6
Slightly disagree	21.0	3.0	p<0.001	21.0	2.7	p>0.05
Slightly agree	22.6	4.3		23.4	3.4	
Strongly agree	22.6	4.6		23.3	3.5	
»I worry about gaining weight«						
Strongly disagree	20.7	5.1	F=3.1	21.6	3.9	F=0.8
Slightly disagree	21.5	3.5	p>0.05	22.3	4.0	p>0.05
Slightly agree	22.5	4.2		22.8	3.4	
Strongly agree	24.2	4.4		23.3	3.9	
»How much care do you take over eating healthy food?«						
Not at all	21.7	3.9	F=2.3	21.2	2.2	F=1.5
A little	21.4	4.6	p>0.05	22.9	3.0	p>0.05
Quite a bit/very much	23.5	4.8		21.5	2.2	
»My friends take care over eating healthy foods«						
Not at all	21.9	5.6	F=1.2	23.4	3.6	F=1.9
A little	21.4	4.6	p>0.05	22.2	3.5	p>0.05
Quite a bit/very much	23.6	5.0		21.2	3.4	

Note. ANOVA tests.

TABLE 4
COMPARATIVE ANALYSIS FOR BODY WEIGHT CONTROL VARIABLES I: »I'M THINKING A LOT ABOUT BEING THINNER«

	Boys	Girls	Non-athletes	Athletes	Non-athlete Boys	Non-athlete Girls	Athlete Boys	Athlete Girls	Non-athlete Boys	Athlete Boys	Non-athlete Girls	Athlete Girls
Strongly disagree	56.5	19.0	42.7	42.9	53.5	23.3	65.5	8.3	53.5	65.5	23.3	8.3
Slightly disagree	26.6	26.2	25.3	28.6	28.3	21.1	21.8	38.9	28.3	21.8	21.1	38.9
Slightly agree	14.0	29.4	19.8	20.9	15.1	26.7	10.9	36.1	15.1	10.9	26.7	36.1
Strongly agree	2.8	25.4	12.3	7.7	3.1	28.9	1.8	16.7	3.1	1.8	28.9	16.7
p-value	p<0.001		p>0.05		p<0.001		p<0.001		p>0.05		p>0.05	

Note. Mann-Whitney U-test.

(boys/ girls; non-athlete boys/non-athlete girls; athlete boys/ athlete girls) girls generally agreed with the above statement concerning thinness significantly more than boys. There were no differences between groups divided by status of sport activity.

Table 5 shows differences in weight perception based on the following statement: »I worry about gaining weight«. In groups divided by gender, again girls generally agreed with this statement about weight gain significantly more than boys. There were no differences between groups divided by status of sport activity (non-athletes/athletes; non-athlete boys/athlete boys; non-athlete girls/athlete girls).

Frequencies of slimming diet are shown in Table 6. In groups divided by gender, girls were more likely to be on a diet significantly more than boys. There were no differences between groups divided by status of sport activity.

In Table 7 we focused on participants' effort in eating healthy foods. In the group divided only by gender (all boys/all girls) girls' effort in eating healthy foods was significantly stronger compared to boys. In the case of athletes/non-athletes, the athlete's effort was significantly stron-

TABLE 5
COMPARATIVE ANALYSIS FOR BODY WEIGHT CONTROL VARIABLES II: »I WORRY ABOUT GAINING WEIGHT«

	Boys	Girls	Non-athletes	Athletes	Non-athlete Boys	Non-athlete Girls	Athlete Boys	Athlete Girls	Non-athlete Boys	Athlete Boys	Non-athlete Girls	Athlete Girls
Strongly disagree	53.7	22.2	41.5	44.0	51.6	23.3	60	19.4	51.6	60	23.3	19.4
Slightly disagree	19.6	11.9	15.0	22.0	18.2	8.9	23.6	19.4	18.2	23.6	8.9	19.4
Slightly agree	18.2	35.7	25.7	22.0	20.8	34.4	10.9	38.9	20.8	10.9	34.4	38.9
Strongly agree	8.4	30.2	17.8	12.1	9.4	33.3	5.5	22.2	9.4	5.5	33.3	22.2
p-value	p<0.001		p>0.05		p<0.001		p<0.001		p>0.05		p>0.05	

Note. Mann-Whitney U-test.

TABLE 6
COMPARATIVE ANALYSIS FOR BODY WEIGHT CONTROL VARIABLES III: »HOW FREQUENTLY WERE YOU ON DIET LAST YEAR?«

	Boys	Girls	Non-athletes	Athletes	Non-athlete Boys	Non-athlete Girls	Athlete Boys	Athlete Girls	Non-athlete Boys	Athlete Boys	Non-athlete Girls	Athlete Girls
Never	81.5	45.2	42.7	42.9	80.1	44.4	85.5	47.2	80.1	85.5	44.4	47.2
Rarely	10.4	18.3	25.3	28.6	10.9	16.7	9.1	22.2	10.9	9.1	16.7	22.2
Every now and then	5.7	23.8	19.8	20.9	5.8	25.6	5.5	19.4	5.8	5.5	25.6	19.4
Often/Always	2.4	12.7	12.3	7.7	3.2	13.3	0.00	11.1	3.2	0.00	13.3	11.1
p-value	p<0.001		p>0.05		p<0.001		p<0.001		p>0.05		p>0.05	

Note. Mann-Whitney U-test.

TABLE 7
COMPARATIVE ANALYSIS FOR BODY WEIGHT CONTROL VARIABLES IV: »HOW MUCH CARE DO YOU TAKE OVER EATING HEALTHY FOOD?«

	Boys	Girls	Non-athletes	Athletes	Non-athlete Boys	Non-athlete Girls	Athlete Boys	Athlete Girls	Non-athlete Boys	Athlete Boys	Non-athlete Girls	Athlete Girls
Not at all	16.4	9.5	16.7	6.6	19.6	11.1	7.3	5.6	19.6	7.3	11.1	5.6
A little	63.9	36.1	57.9	51.6	60.8	53.3	47.3	58.3	60.8	47.3	53.3	58.3
Quite a bit/very much	26.3	35.7	25.4	45.8	19.6	35.6	45.5	36.1	19.6	45.5	35.6	36.1
p-value	p<0.05		p<0.01		p<0.01		p>0.05		p<0.001		p>0.05	

Note. Mann-Whitney U-test.

TABLE 8
COMPARATIVE ANALYSIS FOR BODY WEIGHT CONTROL VARIABLES V: »HOW MUCH YOUR FRIENDS TAKE CARE OVER EATING HEALTHY FOODS?«

	Boys	Girls	Non-athletes	Athletes	Non-athlete Boys	Non-athlete Girls	Athlete Boys	Athlete Girls	Non-athlete Boys	Athlete Boys	Non-athlete Girls	Athlete Girls
Not at all	45.8	32.5	45.6	27.8	51.9	34.4	27.8	27.8	51.9	27.8	34.4	27.8
A little	42.5	49.2	42.9	50.0	39.9	48.8	50.0	50.0	39.9	50.0	48.8	50.0
Quite a bit/very much	11.8	18.3	11.5	22.2	8.2	16.7	22.2	22.2	8.2	22.2	16.7	22.2
p-value	p<0.05		p<0.01		p<0.01		p>0.05		p<0.01		p>0.05	

Note. Mann-Whitney U-test.

ger than non-athletes' one. Non-athlete girls' effort was stronger than non-athlete boys' one, but athlete girls' and athlete boys' effort was the same. There was no difference between athlete and non-athlete girls. The effort of athlete boys was stronger than it was for non-athletes.

In table 8 participants' opinion about their friend's efforts in eating healthy food is shown reflecting answers to the following question »Do you agree with the following statement?: My friends take care of eating healthy foods.« In groups divided by gender, except athlete boy/athlete girl subgroups, girls said this statement was true more so than boys. Athlete boys and athlete girls responded similar. The effort of athlete boys' friends was considered to be stronger than non-athletes boy's friends. Athlete and non-athlete girls were on the same opinion about their friend's effort for eating healthy foods. In that group, divided by the status of sport activity (non-athletes/athletes), effort of athlete's friends was significantly stronger than non-athlete ones.

Discussion

The main goal of the present study was to examine the weight control of adolescents in light of their sports activity status. We anticipated that extracurricular sports activity would associated with dietary behavior, namely, there would be differences between athletes and non-athletes in a high school student population regarding healthy dieting and weight control. On one hand, we examined their weight controlling behavior, such as worrying about gaining weight or thinking about being thinner as well as dieting. On the other hand, we asked them about their own diet control and their friends' watching for a healthy diet. Previous studies reported that a number of youth, especially those being overweight and obese, think that their body does not follow the trend suggested by the media and they should go on a diet to reach the desired body shape[8,11,19,23].

The BMI of the subjects in our study was optimal: the average BMI of athletes was 22.2 and for non-athletes it was 21.9. Despite their optimal body weight, both genders worried about gaining weight, but girls worried more than boys, which of course is similar to findings reported previously[13–15,17]. This difference was not influenced by the sports activity status. The frequency of being on a slimming diet was influenced by gender in a similar manner.

Students' dieting behavior was positively correlated to BMI both among girls and boys, that is, no gender differences may be detected in the relationship between body weight and dieting. Whereas boys' worrying about gaining weight was related to their BMI, this was not the case for girls. This finding is in coherence with previous data suggesting that independently of body weight women are more dissatisfied with their body and tend to go on a diet more often as compared to men[31–33]. It was reported that overweight and obesity contribute to the increase in the prevalence of risky dietary habits and dissatisfaction with body weight[18,19]. Our findings show that this tendency occurs even despite optimal BMI and regular sports activity, especially among girls.

We have also studied adolescents' diet control; that is, taking care over eating healthy food. Youth's risky dietary behavior involves, among others, high caloric intake, frequent eating between meals, skipping main meals, low fiber content of food (vegetables and fruit intake), refined foods and fast food[23]. The results of studies of athletes' eating behavior usually show more favorable dietary habits among them[12,23–25]. Our results suggest that girls take more care for eating healthy foods than boys. In addition, there is no significant difference in dietary behaviors of those who are overweight and those who reported being normal weight[34–35].

The effort for eating healthy food can be increased by regular sports activity: athletes – irrespectively of gender – take more care over eating healthy foods than non-athletes. This increased attention can be especially observed in case of athlete boys compared to non-athlete ones. They take similar care over eating healthy foods as athlete and non-athlete girls.

In our study we also asked adolescents' judgment of their friend's diet control. Previous findings support the importance of social network in helping determine youth's diet control[19,21]. Our data show that evaluation of friend's efforts for eating healthy foods is similar in case of the athlete and non-athlete girls and athlete boys and athlete girls. The evaluated level of non-athlete boys' friends was the lowest. Thus we can say that friends of athletes are judged to take more care of eating healthy foods than those of non-athletes.

Overall, our findings suggest students' effort to maintain a healthy diet is irrespective of BMI. In addition, among athletes BMI is not associated with variables under study. These results are in concordance with previous studies that BMI is not the main predictor of dieting behavior and worrying about gaining weight among athletes, athletes' body weight control could be related to level of satisfaction with their sports achievement[36–37]. Similar conclusion came from the results of the study of female US International Synchronized Figure Skating Teams' dietary intake, body image and weight concerns: the greater the dissatisfaction with physical and emotional self, the larger the discrepancy between current versus desired body shape[38].

Conclusion

After investigating youth's weight control, we have observed that dissatisfaction with body weight, dieting frequencies, and diet control attitude regarding eating healthy food is more common among girls than boys. Sports activity status (whether one is participating in competitive extracurricular sports activity or not) influenced these strong gender differences only regarding diet control; young male athletes placed a larger emphasis on watching for a healthy diet than their non-athlete counterparts, therefore their attitude became similar to that of female athletes and non-athletes.

The results from this study must be interpreted carefully since we have analyzed self-reported, cross-sectional data. However, the reliability of such self-assessments has been found to be strong when analyzing youth's sports activity and diet control[30]. Therefore, the most important contribution of this paper is that it pro-

vides a comparison of groups of registered athletes and those who do not engage in extracurricular sports activity in a high school student population and that it includes a gender perspective in these comparisons. Our findings suggest that future research should include a gender perspective in analyzing the interrelationship between sports activity and diet control.

We may conclude that despite the normal body weight of high school students, episodes of dieting that may contribute to eating disorders are quite frequent. Previous findings support that a distorted body image may serve as a marker for individuals at risk for eating disorders[16]. Furthermore, our findings suggest that this is not influenced by the students' extracurricular sports activity. A greater monitoring of male athletes' and their friends' diet draw our attention to the need for developing health education programs specific to boys. Finally, our findings support further need for medical anthropological analysis of youth's body image and body weight control in light of their BMI and sports activity.

Acknowledgements

This study was supported by the ETT 012/09 grant of the Ministry of Health Care (Hungary). The authors wish to thank Professor Kevin M. Fitzpatrick, Ph.D. (University of Arkansas, Department of Sociology and Criminal Justice, Fayetteville, AR, USA) for his useful comments on the paper.

REFERENCES

1. LICENCE K, Child Care Health Dev, 30 (2004) 623. — 2. RODHAM K, BREWER H, MISTRAL W, STALLARD P, J Adolesc, 29 (2006) 261. — 3. HORVAT V, MIŠIGOJ-DURAKOVIĆ M, PRSKALO I, Coll Antrop, 33 (2009) 99. — 4. NEUMARK-SZTAINER D, STORY M, J Am Diet Assoc, 98 (1998) 446. — 5. HARE SW, PRICE JH, FLYNN MG, KING KA, J Commun Health, 25 (2000) 5. — 6. COLE TJ, BELLIZZI MC, FLEGAL KM, DIETZ WH, Br Med J, 320 (2008) 1240. — 7. KOSTI RI, PANAGIOTAKOS DB, Centr Eur J Publ Health, 14 (2006) 151. — 8. CENTERS FOR DISEASE CONTROL AND PREVENTION, Overweight and obesity. accessed July 31, 2007. Available from: URL: http://www.cdc.gov/ nccdphp/ dnpa/obesity/index.htm. — 9. FITZGIBBON ML, STOLLEY M, J Am Diet Assoc, 106 (2006) 518. — 10. PETERNEL L, SUJOLDŽIĆ A, Coll Antropol, 33 (2009) 205. — 11. HORACEK TM, BETTS NM, J Am Diet Assoc, 98 (1998) 1464. — 12. SYMONS DOWNS D, DINALLO JM, SAVAGE JS, KRAHNSTOEVER DAVIDSON K, J Adolesc Health, 41 (2007) 38. — 13. MIKULAN R, PIKO B, Hung Rev Sport Sci, 9 (2008) 8. – 14. VINER RM, HAINES MM, Int J Obes, 30 (2006) 1514. — 15. ZABORSKIS A, PETRONYTE G, Cr Med J, 49 (2008) 233. — 16. SCIACCA JP, MELBY CL, HYNER GC, BROWN AC, FEMEA PL, J Commun Health, 16 (1991) 159. — 17. COOK J, MACPHERSON K, Can Fam Phys, 53 (2007) 679. — 18. CROW S, EISENBERG ME, STORY M, J Adolesc Health, 38 (2006) 569. — 19. NEUMARK-SZTAINER D, STORY M, RESNICK MD, J Am Diet Assoc, 98 (1998) 1449. —20. ANTAL M, REGŐLY-MÉREI A, NAGY K, BÍRÓ L, GREINER E, BARNA M, BALAJTI A, DOMONKOS A, Táplálk Allerg Diét, 6 (2001) 15. — 21. HUTSCHINSON DM, RAPEE RM, Behav Res Ther, 45 (2007) 1557. — 22. KELLY AM, WALL M, EISENBERG ME, STORY M, NEUMARK-SZTAINER D, J Adolesc Health, 37 (2005) 391. — 23. SCHNEIDER D, Soc Sci Med, 51 (2000) 955. — 24. JANSSEN I, KATZMARZYK PT, BOYCE WF, Obes Rev, 6 (2005) 123. — 25. IGLESIAS-GUTIERREZ E, GARCIA-ROVES PM, RODRIGUEZ C, Can J Appl Physiol, 30 (2005) 18. — 26. CUPISTI A, D'ALESSANDRO C, CASTROGIOVANNI S, Int J Sport Nutr Exerc Metab, 12 (2002) 207. — 27. PIKO B, MIKULAN R, Hung Rev Sport Sci, 49 (2008) 140. — 28. ASZMANN A, Health behaviour of school-aged children, a WHO cross-national study, Hungarian national report 2002 (OGYEI, Budapest, 2003). — 29. NEUMARK-SZTANIER D, WALL M, PERRY C, STORY M, Prev Med, 37 (2003) 198. — 30. LUSZCZYNSKA A, GIBBONS FX, PIKO BF, TEKÖZEL M, Psychol Health, 19 (2004) 577. — 31. VINER RM, HAINES MM, TAYLOR SJ, HEAD J, BOOY R, STANSFELD S, Int J Obes, 30 (2006) 1514. — 32. WANG Y, LIANG H, CHEN X, BMC Publ Health, 9 (2009) 18. — 33. OLMSTED MP, McFARLANE T, BMC Women Health, 4 S1 (2004) 5. — 34. KANT AK, Obes Res, 10 (2002) 1259. — 35. FIELD AE, WOLF AM, HERZOG DB, CHEUNG L, COLDITZ GA, J Am Acad Child Adolesc Psych, 32 (1993) 1246. — 36. BEALS KA, HILL AK, Int J Sport Nutr Exerc Metab, 16 (2006) 1. — 37. BONCI CM, BONCI LJ, GRANGER LR, JOHNSON CL, MALINA RM, MILNE LW, RYAN RR, VANDERBUNT EM, J Athletic Training, 43 (2008) 80. — 38. ZIEGLER PJ, KANNAN S, JONNALAGADDA SS, KRISHNAKUMAR A, TAKSALI SE, NELSON JA, Int J Sport Nutr Exerc Metab, 15 (2005) 550.

B. F. Piko

University of Szeged, Faculty of Medicine, Department of Behavioral Sciences, Szentharomsag street 5, 6722 Szeged, Hungary
e-mail: pikobettina@yahoo.com

INDEKS TJELESNE MASE SREDNJOŠKOLACA: RAZLIKA IZMEĐU SPORTAŠA I NE-SPORTAŠA

SAŽETAK

S obzirom na kronično nezadovoljstvo mladih na indeks tjelesne mase, napori koje ulažu da izgube tjelesnu težinu često vodi patološkim ponašanjima u prehrani. Redovita i teška sportska aktivnost može pridonijeti optimizaciji tjelesne težine, ne samo podižući trošenje energije nego i povećavajući svjesnost o zdravlju i tendenciju samokontrole. U istraživanju se općenito korisnim pokazala uloga izvannastvanih sportskih aktivnosti za kontrolu tjelesne težine. S obzirom na to, težili smo analizirati kako redovita, teška sportska aktivnost (preciznije, natjecateljski sportovi) mogu pridonijeti kontroli tjelesne težine između dvije grupe adolescenata: sportaša i ne-sportaša. Ispitivanje je izvršeno na

uzorku od 347 adolescenata; od toga 91 sportaša i 259 kontrolnih pojedinaca. Ispitanici su popunili upitnik o vlastitim prehrambenim navikama i kontroli težine. Rezultati pokazuju kako su djevojke manje zadovoljne s vlastitom tjelesnom težinom te da se češće odlučuju na odlazak na dijetu s većim naglaskom na zdravu prehranu u tom periodu, za razliku od dječaka. Sport je bio jedini faktor razlike u prehrani s obzirom na spol. Mladi sportaši više su pažnje su posvećivali zdravoj prehrani od svoj vršnjaka koji se ne bave sportom. Zaključak istraživanja je da unatoč normalnoj tjelesnoj težini srednjoškolci često imaju problema s prehrambenim navikama. Na to nisu utjecale izvansportske aktivnost kojima su se bavili učenici. Rezultati studije pokazuju kako je potrebno posvetiti veću pažnju potrebi razvoja programa zdravstvene edukacije posebno namijenjene dječacima.