



Thesis of PhD

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**RESEARCH ON HEALTH BEHAVIOUR OF ADOLESCENT
ATHLETES FROM PEDAGOGICAL AND PSYCHOLOGICAL
VIEWPOINTS**

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Introduction and theoretical sources of empirical examination

Our society can be characterized more and more by inactivity, binge eating and turning to stress busters, like smoking and alcohol consumption. They can all be referred to as health – risking behaviour models. This phenomenon is not only typical of adults, but also of adolescents. The long-lasting feature of this behaviour can be predicted based on some emerging signs. That is why it is necessary to learn as much as possible about adolescence and the surrounding environment.

This life period is accompanied and affected by a three-component (biological, cognitive and social maturation) process (*Trejos-Castillo and Vazsonyi, 2011*). Most significantly, physiological maturation can be restricted to growing and sexual maturation. In addition to these biological changes, we can also experience significant changes in forming cognitive abilities, since their problem-solving ability is developed by analyzing difficulties from several aspects. The third factor to be mentioned is the social life. It is mainly in this period when teenagers turn away from their parents and the role of peers becomes dominant (*Hamvai, Simai and Pikó, 2008*). Having read the lines above we can state that the adolescents go through a complex personality development which will basically determine their behaviour in adulthood, including health-related customs (*Dékány, Balázs and Pikó, 2010*).

Defining health is not an easy task to do, since it has a different meaning to everyone, moreover, we still do not have a universal term for it. Throughout history it has also undergone constant changes. In defining its modern concept a great role has been played by the WHO (World Health Organization). More and more essential content is included in it. People who intend to reveal its determining factors are also to be mentioned here (*Seedhouse, 1986; Antonovsky, 1987; Insel and Roth, 2007*). All in all, we can state that until the 17th century, a holistic aspect was the typical one, but afterwards, thanks to the development of sciences, the attention was more focused on the biological, and social factors of health (*Meleg, 2002*). We can categorize health influencing factors with the help of health-determinants. Lifestyle factors can form one closer group, while-in a broader sense-they are the social, economic and environmental factors. There have been several attempts to systemize health-determinants, resulting in various health models. Overall, it can be claimed that dynamism is more typical of the factors affecting health than static conditions.

Health-related behaviour of adolescents is about certain kinds of behaviour affecting health in a certain way. They are gradually and continuously built in the personality of the individual. So acquiring the rules is of vital importance at a very young age, especially in the

primary school. Research findings call the attention to the fact that parallel to the frequency of health-ruining behaviours, the number of health-protecting behaviour models decline (*Lohaus, Vierhaus and Ball, 2009*). Among these health-risking behaviours smoking is the most common. Sadly, it soon becomes a habit among adolescents. What is more, if they start smoking at an early age, then they have a greater chance of becoming addicted by their adulthood (*Chassin and co-workers, 1990; Gilvarry, 2000*). In this case the role of sport is a positive one, since according to many studies, sport correlates with smoking negatively (*Perret-Wattel, Beck and Legleye, 2002; Fredricks and Eccles, 2006*). One of the most health-risking behaviours is consuming alcohol. Adolescents first try alcohol at the age of 11-13, and similarly to smoking, the frequency of alcohol consumption also rises by age (*Csizmadia and Várnai, 2003*). Unlike smoking, in the case of alcohol consumption by athletes, the research findings are controversial (*Diehl, Thiel, Zipfel, Mayer, Litaker and Schneider, 2012; Peretti and co-workers, 2003*). Nevertheless, we should also mention factors like drugs, sexual attitude, and depression., which all raise awareness to the necessity of paying attention to the everyday life of adolescents. Among health -preserving behaviors we have to emphasize physical activity, since it has a positive effect on all the three dimensions (somatic, psychic, and psychosocial) of health condition (*Frenkl, 1993*). Besides, it is important to be informed about the eating habits of adolescents, or the self-evaluation of their health, their social support, as all of these have an influence on their health-related customs.

There is a strong connection between health-related behaviours and *coping*. The term can most precisely be defined as a process, in which coping with a stressful situation the individual behaves in a certain way to maintain or restore his balance. Both adaptive and maladaptive coping patterns are typical of adolescents; they are highly determined by environmental and individual socialization. Rationality is more typical of boys (*Pikó, 2001; Pikó and Keresztes, 2007a*), while girls demand social support (*Hutchinson, Baldwin and Oh, 2006; Frydenberg, 2008*).

Health-related behaviours can also be connected to *personality*. The term itself can be defined in several ways, we can mostly identify with the definition of *Allport (1998)*: „*Personality is the dynamic organization of psychophysical systems within the individual which determine their typical behaviour and way of thinking.*” In the background of teenagers’ drug trying, we may see increasing risk-taking or seeking new experiences (*Lapsley and Duggan, 2001*). There is a difference between athletes’ and non-athletes’ personality. Athletes are less introvert or risk –taking (*Schaub and Szabó, 2007*).

Nevertheless, their psychoticism and extroversion values are significantly higher (*Francis, Kelly and Jones, 1998*).

We aim to spread this aspect by introducing an innovative theory (*the experince of Flow*), with the help of which we can make adolescents exercise daily with pleasure and joy. By this theory, activities leading to fulfilment play a central role in developing flow experience. All this results in the feeling of joy with a happy and quality life (*Csikszentmihályi, 1997*), which can be noticed in many areas (*school, family, sport, shopping, art,...etc.*). The primary focus of our research is on the experiences in school. Sadly, during classes and learning at home anti-flow experiences are more frequent than flow experiences (*Dániel, 2010*). *Oláh (2005)* emphasizes the role of the teacher in the frequency of the flow. However, it is not only the teacher, but the personality of the adolescents that determine the development of the flow experience (*Kiyoshi, 2004*). Furthermore, we examined the experience of flow in the field of sport, where its occurrence is more frequent. However, attention should be paid to the fact that anti-flow experiences like distress should not be common among adolescents who do sports (*Boris and Jan Gruhn, 1996*).

Aims of the empirical examinations, resarch topics, hypotheses

Our primary aim is to examine the health behaviour customs of adolescents doing and not doing sports. Our secondary aim is to learn more about factors influencing them. Thus, our main goal is to encourage a more efficient physical education. Our research focuses on four areas, raising the following questions:

I. Health behaviour prevalences of the adolescents

1. Is drug abuse gender-related?
2. Are there any differences regarding adolescents' drug usage?
3. Is drug abuse more typical of boys/girls in sport classes or normal classes?
4. Is depression more typical of boys/girls?
5. Is depression more typical in sports classes?

II. Connections between adolescents and social areas

1. Are there any gender or class differentiations in judging a teacher's behaviour?
2. Is the role of the family more supportive in sports classes?
3. Does the trainer really have an influential power to develop health behaviour?
4. Is health-related behaviour affected by teacher behaviour?

III. The role of personality traits in adolescents's behaviour

1. Is there any correlation between personality traits and depression?
2. Are there any class/ gender-related differences regarding personality traits?
3. Is there any correlation between personality traits and health behaviour?
4. Is the experience of flow more common in sports classes?
5. Is flow more typical of boys or girls during moving activities?
6. Is the development of flow influenced by personality traits?
7. Is health behaviour influenced by the flow?

IV. Innovative possibilities to enhance the efficiency of coping mechanism in adolescence

1. Is there any class-related difference regarding coping methods?
2. Is there any gender-related difference regarding coping methods?
3. Does the experience of flow promote more efficient coping?

We gave the following hypotheses to the research questions above:

I. Health behaviour prevalence

H1: We assume that the drug consumption habits of adolescents in sports classes are more favourable.

H2: We assume that the drug consumption of boys is more favourable than girls.

H3: We assume that girls and adolescents in sports classes tend to be more depressed.

II. Connections between adolescents and social areas

H4: We assume that the supportive behaviour of families towards sport is stronger in sports classes than in regular classes.

H5: We assume that both the trainer and the teacher have an influential power in developing health behaviour customs.

H6: We assume that the behaviour of the teacher differs in these two types of classes.

III. The role of personality traits in the behaviour of adolescents

H7: With regards to gender, there is a difference concerning the kinds of aggression and personality traits.

H8: Different personality traits have an influential power on health-related customs.

H9: We assume that in sport classes other personality traits are determining than in regular classes.

H10: We assume that in sports classes the experience of flow is more typical during a moving activity than in regular classes.

H11: We assume that the flow experience of boys is more common than with girls.

H12: We assume that the personality traits influence the development of flow.

H13: We assume that the flow experience has an influence on the type of coping.

H14: We assume that in sports classes other coping patterns are preferred than in regular classes.

Methods and tools of the empirical examination

Our pattern was based on adolescents doing and not doing sport in three secondary schools. The institutions consisted of a regular school (*Szent József Secondary School, Technical School and College*), a sport-oriented one (*Csokonai Vitéz Mihály Grammar School of Debrecen*), and a mixed type, (*Irinyi János Grammar and Vocational School*). According to our preliminary plan, 500 students were involved in the survey, out of which 413 filled out the questionnaire adequately. 214 students were from sports classes (52%), 199 students (48%) were from a regular secondary school.

Tools used in the survey

1. *The questions in the poll concerning the social net and support of adolescents* are partly adapted from abroad (Carr, 2009), partly from Hungarian researches (Keresztes, Pluhár and Pikó, 2005).
2. While examining the *socio-economical status*, we made use of the validated index, which includes five categories: lower class, lower-middle, middle, upper middle and upper classes (Pikó and Fitzpatrick, 2007).
3. *While testing health behavior, we focused on smoking, alcohol consumption and binge drinking* (Kann, 2001). (1) "IN THE PAST THREE MONTHS to what extent have you paid attention to your eating, have you tried to eat in a healthy way?" (2) IN THE PAST MONTH how often have you taken part in intensive physical activities (like sport, work) for at least half an hour?" (3)"IN THE PAST THREE MONTHS how much have you smoked? /roughly/" (4) IN THE PAST THREE MONTHS how many times have you drunk alcohol?"(5) "IN THE PAST THREE MONTHS how many times have you drunk a lot of alcohol? /a couple of glasses/ In every case, the answers had to be given on a scale ranking from 1-6.

4. *While self-rating their health condition*, students had to rate their health condition on a scale from 1-6, comparing it to their peers (Pikó, 2000; Tremblay, Dahinten and Kohen, 2003).
5. *Depression*. We used the short form of Children's Depression Inventory, CDI, consisting of 27 statements (Kovács, 1992).
6. *Teacher behaviour*. The scale to measure educational attitudes consisted of 12 items (Jámbori, 2007), covering the teachers' rule-oriented behaviour (eg. "My teachers want me to follow their rules all the time."), and the support of the youngsters to be autonomous (eg. "My teachers encourage me to question certain things.").
7. *Personality traits I-II*. To examine the basic personality dimensions we used the Impulsivity-Risk-taking and Emphathy Questionnaire (Kozéki, 1994). The questionnaire consisting of 69 questions was developed for the 7-15 age group (each subscale is 23-23 items). For the measuring of additional four basic personality dimensions we also used a questionnaire especially developed for children (Hungarian Junior Eysenck Personality Questionnaire-HJEPQ) (Kálmánchy and Kozéki, 1988). The scale comprises 86 questions altogether.
8. *Self-efficacy*. We used the General Perceived *Self-Efficacy Scale* (Schwarzer and Jerusalem, 1995). The Hungarian adaptation of the scale was made by Kopp, Schwarzer and Jerusalem (1993). Altogether it consists of ten items. (eg. "I always manage to solve difficult problems if I really want it.").
9. *Aggression*. To measure aggression we used The Aggression Questionnaire by Buss and Perry (1992) analysing three subscales of it physical aggression (9 items), verbal aggression (5 items) and the psychic aggression (proneness to anger, 7 items).
10. *Experience of flow*. To measure the flow and anti-flow experiences we used the Flow questionnaire by Attila Oláh and his co-workers (1999, 2005), some elements of which were taken from the questionnaire by Csíkszentmihályi and Larson (1984), with the authors' agreement (Oláh, 1999). The speciality of the situation-reaction questionnaire is that it is fit to measure any life situation.
11. *Coping*. To measure coping we applied the Coping Method Preference Questionnaire developed by bottom-up way. Altogether, the eight factors consist of 80 items, which- after the reliability test- (Chronbach –alpha values) were reduced to 51 items.

Major findings of the research results

I. Adolescents' health behaviour

Concerning different drug usage prevalences (**H1**) trying smoking and alcohol shows a high percentage in the sample and in special classes as well. Testing smoking in general classes we got a significant result. Early trying of smoking has also been confirmed by other research findings (*Ács and co-workers, 2003*). Regarding frequency (three months prevalences and the consumption of a bigger amount of alcohol) the proportion of “yes” answers is also high, but the significant differences lie only in the case of the three months prevalence in smoking (in regular classes).

Testing gender-related smoking habits (**H2**), earlier studies found no differences (3 months prevalences) (*Sándor, 2006*), which our sample has just partly proved, as in regular classes there is no difference, while in sports classes there is a significant one for the girls. Having tested gender-related alcohol consumption, no significant differences were found (*Sándor, 2006*) but while our sample -similarly to smoking- did not show significant differences in regular classes, it did in sports classes, among girls, again. These findings continue to back up ambivalencies of empirical results concerning alcohol consumption of athletes (*Taub and Blinde, 1992; Pikó, 2008*).

Regarding their self-evaluation of health we can state that students in sport classes form a more positive opinion about their health than those in a regular class. Regarding genders we found no significant differences, but it is worth mentioning that with both subsamples, it was the boys who considered their health better. Based on empirical examinations (*Pikó, 2002*) in our sample, it was also the girls who reached higher average points concerning depressive group symptoms (**H3**). However, while in normal classes there is no significant difference in genders, in sport classes we can speak about a strong ($p < 0,001$) correlation.

II. Relationship between adolescents and social areas

Similarly to moving /doing sports/ (**H4**) the motivating role of the social net can be considered as a strong one in our sample as well. While in lower classes the motivating force of the family is essential, in adolescence it is the peers who have a determining role (*Campbell, MacAuley, McCrum and Evans, 2001; Keresztes and co-workers, 2008*). In our case, the majority of the parents (mainly fathers) did some sports earlier, in sports classes with

a higher proportion. Unfortunately, when we asked about the current sport activity, in both subpatterns, this ratio reduced enormously. With a sibling doing sport the motivational force of the extended family seems to be less significant, not like the role of a friend who is into sport. We can find friends doing sports in both types of classes, but especially in sport ones. With gender-specific examinations we found no differences, nevertheless, it is characteristic of both subpatterns that boys have more friends in sports. Compared to other research results (*Hamar, 2005*), in our pattern higher frequency of sport activities was typical in the family, which can also contribute to the establishment of positive motivation, like the inactive love of sport. Parents give proper background to support their child's sporting habits, this way they become result-oriented with their child (more so in sport classes). Parents expect more results from boys than from girls. Thus, the influential power of peers can mostly be seen with boys and sport classes.

We intended to outline the attitudes of those using pedagogical means (**H5**) and also look into the differences in both types of classes (**H6**). Furthermore, we examined their correlations with sociodemographical, health behaviour and psychological aspects. In the study of *Jámboři (2007)* we can differentiate two kinds of pedagogical attitudes (rule oriented behaviour and that of supporting students' autonomous strivings). However, in our research we outlined a third type of pedagogical attitude as well. We found that rule-oriented behaviour can not only be reached through autoriter ways, but by developing a kind of democratic relationship (a kind of partnership attitude based on fair rule keeping). In this case we found no gender or social related differences. Regarding this factor however, we can state that students in the first class reached the highest score. Then it shows some decline class by class and rises again in the case of school-leavers/ graduating students. Good learners also reported on teachers being just, this finding corresponds with the results of previous researches (*Kamble and Dalbert, 2012*). Students in sports classes do not think that their teachers are just. In connection with health behavior, we cannot draw a cause-and-effect conclusion due to cross-sectional analysis. Although our data confirm that students judging their teachers' behaviour as just, cannot be characterized by harmful substance abuse, as they are less prone to aggressive behaviour (in our sample it applies to verbal and psychic aggression, not to a physical one), with higher self-efficacy.

We used another project to outline the pedagogical attitudes of trainers, examining their discrepancy in terms of the branch of sport (individual or team), gender and health behaviour. The main focus of the survey was put on the age-group (66% of the sample is

between the ages of 12-14) where trying drugs is the most common, particularly we concentrated on a segment where daily sport (can) mean a kind of lifestyle. According to our results, team players characterize their trainers mostly by authoritarian attitudes who expect them to follow the rules, which results in less substance abuse. This kind of pedagogical attitude and drug usage custom has already been justified in case of parents (*Pettit, Laird, Dodge, Bates and Criss, 2001*). Based on our study, control, attention and forcing the rules also seem to reduce the chance of drug usage. Those in individual sports characterize their trainers by free-style educational attitude, which results in no significant correspondence in any drug usage. Even though, those pursuing individual sports consider their health as better than team players. In their research *Mikulan and Piko (2012)* reported on contradicting results. The possible cause of the background is that their sample comprised different clubs. Our sample consists of one club, so there is likelihood that the same educational system is typical of this particular sport club. While examining the health-related customs of athletes, results partly correspond with the results of ordinary adolescents, since girls doing sports (individual branch) recorded in greater number that they had already experienced smoking, and they smoked significantly more in the past three months. As for the alcohol consumption, we should pay more attention to boys (team sport), as several of them recorded the trying and consumption of it in the last three months. Although there is no significant difference in evaluating their health condition, it turned out that in both sport groups it was the boys who assessed their health as better.

III. The role of personality traits in adolescents' behaviour.

First of all (**H7**), we looked for connections between the group syndrome of depression, the different forms of aggression (physical, verbal and psychic), impulsivity and other personality traits (risk-taking, empathy, self-efficacy). On average, the depressive symptoms of girls reached the highest score, and so did their level of empathy. Regarding aggression, the difference can also be detected in terms of physical aggression. The self-efficacy of boys positively correlated with verbal and physical aggression, however in case of girls it correlated negatively, which may refer to the fact that anger goes along with the lower level of self-efficacy. Moreover, with both sexes self-efficacy shows a negative correlation with depression. The connection between empathy and physical aggression is negative as well. However, this kind of analysis does not confirm the reason-effect connection. We may think that the low level of empathy can make one behave physically aggressive. Taking risks

positively correlated not only with impulsivity but with scales of aggression. In case of boys the relationship with depression is negative. Based on earlier research results (*Vigil-Colet and Codorwill-Raga, 2004*), in our sample a two-sided correlation can be justified between the impulsive personality trait and the urge to be aggressive, but between the depression and impulsivity, there is only justification with girls (*Paaver, Kurrikoft, Nordquist, Orehad and Hano, 2008*). In addition, while in case of girls it shows positive correlation with all forms of aggression, in case of boys it correlated only with psychic aggression. Evaluating the multivariate analysis, we may conclude that out of the personality traits influencing forms of aggression with both sexes impulsivity can be considered as a risk factor. Adolescents who can be characterized by symptoms of depression tend to be more impulsive (*Dvorak, Louis and Malone, 2013*). In case of girls it is confirmed by empathy, which goes along with higher scores of depression. At the same time, self-efficacy and risk-taking are less typical of adolescents who tend to be depressed. Considering all forms of aggression, impulsivity can be justifiable as a risk factor, regardless of sex, while taking risk had no effect on it. The lack of empathy was mostly seen related to physical aggression with both boys and girls. /Psychological aggression with boys, verbal aggression with girls./

In contrast with earlier national surveys (*Lukács, 2006*), students in sport classes in the samples reached higher impulsivity and risk-taking scores (**H9**), which are supported by international results (*Schrot, 1995*). In terms of impulsivity and risk-taking there were no significant differences between sexes, although international literature points to the fact that: Risk-taking is more characteristic of boys than impulsivity (*Eysenck, Pearson, Easting and Allsopp, 1985*). As for multi-variety substance abuse impulsivity had the greatest influence to enhance chances (logistic regression analysis), while in case of girls risk-taking can also be regarded as a factor enhancing chances to smoke (**H8**). Though it must be mentioned here that mainly it is not about taking risks, but seeking experiences and confirmation of emotions. Self-efficacy as a personal trait can be related to higher risk-taking (also to empathy among girls). Although among athletes risk-taking and impulsivity were also typical, higher self-efficacy was not shown among them. However, we must also point out that self-efficacy with alcohol consumption proved to be a defendant factor, reducing chances. This result contradicts the results of certain researches (*Urbán and Varga, 2003*).

The personality traits examined so far have been extended too (Extroversion, Neuroticism, Psychoticism and social conformity), also the research of flow and anti-flow experiences have been involved during moving activities. Gender-related tests show (**H11**)

that mainly the boys experience frequent flow, while there is no significant difference in anti-flow experiences. Analysing personality dimensions, we may conclude that adolescents in sport classes (those who do sports competitively) are more open, sociable, risk-taking, impulsive, and extrovert than their peers in regular classes. These findings are confirmed by certain studies (eg. *Kirkcaldy, 1982b*), while other studies do not support them. (*Schaub and Szabó, 2007*). Students in sport classes experience more flow while moving but at the same time distress is more characteristic of them (**H10**). In the background we may find the urge to perform, which may go along with worrying, thus having an influence on their achievements (*Boris and Jan Gruhn, 1996*). Students in sport classes can be more characterized by commitment to society and more flow. According to some empirical studies- *Boris and Jan Gruhn (1996)*- there is no difference between athletes and non athletes, concerning neuroticism. Nevertheless, as some studies show, those who do sports have lower scores than those who do not (eg. *Kirkcaldy, 1982b*).

However, in forming the experience of flow this personality dimension plays a central role (emotional stability-lability). The more labile the adolescent is (high neuroticism), the less chance he/she has to experience flow. The major role of emotional stability (low neuroticism) is confirmed by several international surveys. (*Ullén and co-workers, 2012*) Although in regular classes extraversion is lower, but when it appears, the possibility of flow is higher, while emotional lability (high neuroticism) triggers anti-flow experiences (boredom, apathy). Beside high neuroticism, impulsivity also influences the development of anti-flow experiences in sport classes. But psychoticism can also be essential in forming apathy and distress. Risk-taking has a negative correlation with distress, which is characteristic of not only sport classes but of regular ones as well. The background cause of anti-flow experiences may be impulsivity, since beside neuroticism it is also connected to psychoticism, resulting in anti-flow experiences. Moreover, impulsivity has a positive relation with risk-taking, which can also trigger anti-flow experiences. It is also to be considered that impulsivity and risk-taking are simultaneously present; these personality traits are tightly connected, both make you search diversity and excitement (*Adams, Kaiser, Lynam, Charnigo and Milich, 2012*). The relationship between risk-taking and extroversion is even stronger (*Batta, 2002*), which is also confirmed by our findings. These three personality traits have to be in the high focus of attention, since their presence is necessary to develop flow, though their dominant role can lead to anti-flow experiences (**H12**). Impulsivity can also be related to social conformity, their relationship is significantly negative in both classes, so the more impulsive one is, the less he

or she can meet social expectations, even though social conformity may result in more common experience of flow. However, in both classes, it is in positive correlation with empathy, but this correlation is stronger in normal classes, which plays an indirect role in developing flow.

IV. New possibilities in enhancing the efficiency of coping mechanisms with adolescents

Students in regular classes make less use of the tension control adaptive coping strategy. The same is true for applying maladaptive strategies like resigning and emotion emptying in contrast with students in sport classes. Although only few studies aim to reveal the relationship between sport and coping (*Gandreau and Blondin, 2004*), based on previous research results we can state that adaptive coping strategies are more typical of athletes. Empirical tests (*Oláh, 2005; Hasmpel, 2007; Muna, Said, Hussain, Ali and Abdulquavi, 2013*) call attention to the fact that boys prefer adaptive, problem-oriented coping methods, while girls prefer emotional- oriented maladaptive coping strategies. However, our sample just partly justifies these results, as boys are more characterized by emptying emotions, that is, emotion-focused coping is typical. Whereas with girls, besides emotion-based strategies (distracting attention, emotional focus, seeking support), we can also find problem-oriented coping strategy. Other earlier studies also proved that boys and girls differ less in problem- and emotion-oriented coping methods than we had expected before (*Frydenberg and Lewis, 1991; Pikó, 2001*). Results examining the relationship between different coping strategies and the experience of flow suggest that sport classes can be characterized by problem-oriented coping methods. This goes along with the more frequent experience of flow (*Oláh, 2005*), while in regular classes this coping style may set back the emergence of distress. In sport classes the development of flow is negatively influenced by the scale of emptying emotions. In regular classes tension control strategy can be stimulating to develop flow. On the other hand, several of the emotion-focused scales (distracting attention, seeking support, resignation) stimulate the anti-flow experiences. Meanwhile, coping based on distracting attention can trigger distress, coping based on seeking support back the development of boredom. According to *Oláh (2005)*, when experiencing distress and apathy, the demand for support is very important (the positive relationship between distress and seeking support may refer to that.) In our sample we experienced it only in regular class with distress.

Summary

Our results are in accordance with examinations claiming that adolescents meet different kinds of health-destroying substances at earlier and earlier age. Consequently, more frequent consumption can be predicted. However, the fact that there is no difference in drug usage between genders has just partly been proved. According to our subsample in sport classes difference can be observed in trying smoking and the frequency of alcohol consumption, which is more characteristic of girls. Knowing this fact, it comes as no surprise that boys assess their health better than girls, in spite of the fact that significant difference was found only in sport classes.

Our findings confirm the earlier research results suggesting that the motivational force of the family is a highly influential factor in establishing the sporting habits of adolescents. The role of the father is especially significant, but mothers take on a primary function, as well. However, the common sports activities in families appeared more intensively, compared to previous research results, thus meaning a powerful motivational basis and giving hope. Our research also raised awareness of the fact that peers, mainly best friends, typically determine the sports motivation, but sadly, they have the same role in forming drug consumption habits. Our research also outlines the pedagogical attitudes of teachers and trainers and their roles in forming health-related customs. Our findings correspond with previous research results according to which assessing justice is an important factor in the process of socializing both in school and in the world, thus having a direct influence on health behaviours of adolescents. Based on our results, we can claim that adolescents who judge their teachers' behaviour as fair are less characterized by harmful drug usage or aggression, however, their self-efficacy is higher. Besides teachers, trainers also have an essential role, since according to our results continuous control, forcing rules (authoritarian pedagogical attitude expecting to keep the rules) is followed by less drug abuse. In our research, we touched upon the topic of health-related customs, both with individual athletes and team players, which does not correspond with the results of other empirical examinations. However, the results make it obvious that the specificity of branches of sport lies not only in the game- and system of rules, but in the health behaviour of individuals. Furthermore, in this research we can observe the speciality of drug usage of girls, as we had indicated earlier.

Besides the importance of other factors, it has also been confirmed that the inner world of adolescents has a vital role in forming health-related customs. Empathy, which is more

characteristic of girls, enhances the proneness to depression, which complies with the results of earlier studies, while the lack of it can be related to physical aggression. It can also be stated that impulsivity as a personality factor highly influences the aggressivity of adolescents, which reveals itself not only in the sample, but between sexes. As our results show, besides aggressivity, the boosting effect of impulsivity has been justified.

Our results confirm that self-efficacy personality factor serves as a defensive factor in alcohol consumption, which has not been indicated by any other empirical results. In case of adolescents, these phenomena are much more typical, that is why during education it would be necessary to acquire the basis of self-control and effective managing of aggression. To achieve this goal the knowledge of teachers should be extended in the fields of impulsivity, aggression and depression. In the analysis we involved additional personality factors, our results partly correspond with earlier research results and partly contradict them. In our sample, boys report about more impulsivity and risk-taking than girls, while international results confirmed the superiority of boys, especially in the field of risk-taking. The result was not the same with impulsivity. Nevertheless, we can claim that those who do sports are more open, sociable and extrovert; also, impulsivity and risk-taking are more characteristic of them. Our results confirm earlier research findings, which say that our personality dimension plays a determining role in developing flow (social conformity, low neuroticism, empathy) and anti-flow (high neuroticism, psychoticism, risk-taking) experiences. Students in sport classes experience flow more frequently, but anti-flow experience, like distress is also more common among them, so bigger attention should be paid to them.

It has also been found that students in sport classes can be characterized by applying adaptive coping strategies, (tension control), as for the maladaptive strategies, they apply mixed coping mechanisms, like resignation and emptying emotions. On the other hand, emotion-focused coping strategies are more typical of those in normal classes. The results of gender-related differences can only be partly related to previous research results, as there is no deep abyss between girls and boys in problem solving, or emotion-focused problem-solving; moreover, it is the mixed method typically used by them. Problem-centered mechanisms have a positive effect in both types of classes, as they stimulate the flow in sport classes, while among the anti-flow experiences they delay the development of distress in regular classes. At the same time, several of the emotion-focused coping types result in the forming of anti-flow experiences, however, among them the attention distraction (distress) and support seeking (boredom) can block certain anti-flow experiences.

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