

Healthy and Active Lifestyle of Czech Adolescents: Ideas for Changes in PE Curriculum

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Abstract

The role of PE in pupil's lifestyle is crucial and sometimes the only source of physical activity. Adolescents' interest in various and new kinds of PA and provoking thoughts about direction of PE towards promoting lifestyle physical activity is discussed. We present information about the level, structure and frequency of physical activity in Czech adolescents with the use of the IPAQ long version questionnaire. 1312 pupils (15-19-year-old) participated in our national survey. We obtained enough evidence about the decrease of the level of physical activity in youth mainly in their leisure time. PA in girls is more decreasing than in boys and organized PA declines with age in both genders. We present some challenging ideas for changes in the concept of PE curriculum.

Key words

Gender, motivation, vigorous PA, energy expenditure, education

Introduction

This study was presented at the 5th FIEP European congress and 2nd Serbian congress of P.E. Teachers in Nis in September 2009 (participants aged 15-24 year-old). Its Czech adjusted version to only high school pupils was published in *Ceska kinantropologie* in 2009, but for wider international audience we decided to publish this very important issue also in English.

Physically active lifestyle in an individual plays an important social and economical function in the whole society (SIEDENTOP - LOCKE, 1997) and has an indispensable effect in prevention of civilization diseases. Therefore one of the main aims of quality PE is to acquire pupils for lifelong realization of PA, teach pupils to understand and realize the value of PA as an inseparable part of one's health (ERNST - PANGRAZI - CORBIN, 1998) and to introduce physically active and healthy lifestyle (education for life). Le Masurier and CORBIN (2006) highlight the importance of quality physical education at schools for the development of lifelong interest in physical activities and in ten points justify the magnitude of REGULAR physical activity. KRETCHMAR (2006) elaborated these facts in detail and offers ten more points as an improvement that should complete previous statements. Regular physical activity not only creates conditions for life prolongation but also for quality

life and enjoyment of life. Further, he mentions that PE should mainly concentrate on two fundamental tasks – on promotion of health and on quality lifelong education in the sphere of regular realization of PA.

We know that it is easier to adopt certain lifestyle in younger age than to change it later. The most fundamental factor for children's education to physical activity is family environment and parental model. In addition, the school plays an important role in PA education (CORBIN, 2002) despite the fact that family habits remain on the prominent place influencing PA in children's leisure time. To develop physically active lifestyle demands continuous motivation of children (FABER – KULINNA - DARST, 2007; WEISS, 2000; WHITEHEAD, 1993) in order to avoid PA decline in later age. Firstly, physical activity is a natural need for a child. Later when the child begins to attend school and has school duties, motivation to PA becomes necessary. Childhood and adolescence are the most important periods of life for influencing the attitudes to PA (CORBIN, 2002; Department of Health, 2004). If a child participates regularly in organized PA there is an assumption that he/she will perform PA in adulthood. This prediction relationship is according to KRAUT et al. (2003) constant regardless of age or family status. If an adolescent feels confident when performing physical activity skills in PE and has positive experiences with realized physical activity then it is more probable that he/she will realize PA during adulthood (Department of Health, 2004).

We gathered enough facts about the role of PE in influencing the attitudes of children towards lifelong PA. The question is how to positively influence pupils and the change of their attitude in favor of physical activity and its development as a lifelong program.

PE teacher plays an essential role in influencing pupils' attitudes. He/she should create such a PE program where he/she should use the CHOICE as a means for addressing insufficiently active students and drawing them into decision process (CONDON - COLLIER, 2002). Pupils should have a chance to choose from physical activities on the basis of their own interests and preferences (BEYER, 2008). Results of studies show that a pupil who is interested in certain PA is usually motivated to actively participate in it. This enhances the development of his/her own "system" of lifelong PA (SIGMUNDOVÁ – FRÖMEL – HAVLÍČKOVÁ - JANEČKOVÁ, 2005; WARD – WILKINSON – GRASER - PRUSAK, 2008).

Nevertheless deteriorating situation and negative trends (increasing obesity and inactivity) cannot be saved via PE. To change PE concept cannot be enough, there should be a change not only of the school system ("school life") but also of the attitude of the whole society. Yet, it is a very long way that should start with the change of PE concept at schools so that in future the attitude of whole society to lifelong physical activity is changed, too. According to BEYER (2008) to offer enough PA to students in order to enhance their motivation for PA realization is one of the many possibilities how to improve quality PE program. Another challenge is to enhance the level of PA in students who participate in PE lessons and change their

orientation from fitness (and performance-related component) to physical activities (CORBIN, 2002). The most critical part of quality PE is the acquisition of physical skills and such PA during which a pupil feels self-confident and also motivated that he/she would continue being physical active for the whole life.

Physical Education in the Czech Republic is a compulsory subject at elementary and secondary schools as well as at vocational training schools. Two PE lessons are compulsory (one lasts 45 minutes) and at some schools it can be even three PE lessons (it is up to head-master). It equals to 2.5-3-75% of time during school days per week (without sleeping time – 8hours in average) which is compulsory for pupils and should be devoted to PA. It is evident that without another after-school PA minimal criteria for health maintenance could not be reached (60 minutes of moderate PA per day) (Department of Health, 2004; US Department of Health and Human Services, 2008).

Aims and tasks

The aim of this study is to inform about healthy lifestyle of Czech adolescents from the viewpoint of physical activity and find out whether they meet recommendations about PA. In order to establish recommendations for the changes in PE curriculum it was necessary to complete contemporary curricular findings about present state characterizing the level and structure of PA during an adolescent week program in the Czech Republic.

Methods

Overall, data from 1312 adolescents aged 15-19 years (578 boys and 734 girls) were entered into analysis of the research completed in 2007. We used the „International Physical Activity Questionnaire“ long Czech version (www.ipaq.ki.se) for monitoring of weekly amount and type of PA. Participants filled in the questionnaire anonymously in cooperation with parents or distributors and were chosen on the basis of random selection from the whole Czech Republic. Complete methodological procedure was presented in the study by FRÖMEL et al. (2007). Statistical analysis was processed using software STATISTICA8CZ and fundamental statistical characteristics (means) are illustrated in graphs.

Results and discussion

Time spent with PA in school increases with age both for girls (Figure 1) and boys (Figure 2). In boys this trend is rather expressed by convex shape of function. Time spent with leisure time PA decreases; leisure time PA is mostly performed by 16-year-old girls and boys. In 17-19-year-old girls, time spent with PA after school is stable. There is evident the decline in boys, the least time devoted to leisure time PA is in 19 years because of future preparation for final leaving exams. PA during transport increases in girls while rather decreases in boys. Boys spent time sitting

during school days on average 379 minutes (i.e. 6 hours and 19 minutes), and girls spent sitting in average 405 minutes (i.e. 6 hours and 45 minutes). This difference is statistically significant ($F=8.24$; $p<0.01$) but the effect size was not confirmed (MORSE, 1999). During the weekend the difference in sitting was not significant between girls (163 minutes) and boys (165 minutes).

18.1 % of girls and 11.1 % of boys participate at least once a week in organized PA (twice a week 18.0 % of girls and 20.8 % of boys; three times a week 11.6% of girls and 15.9% of boys; four times a week 4 % of boys and 6.6 % of girls and five and more times a week 5.2 % of girls and 9.9 % of boys. 43.2 % of girls and 35.8 % of boys do not participate in any organized PA but may be physically active in another way.

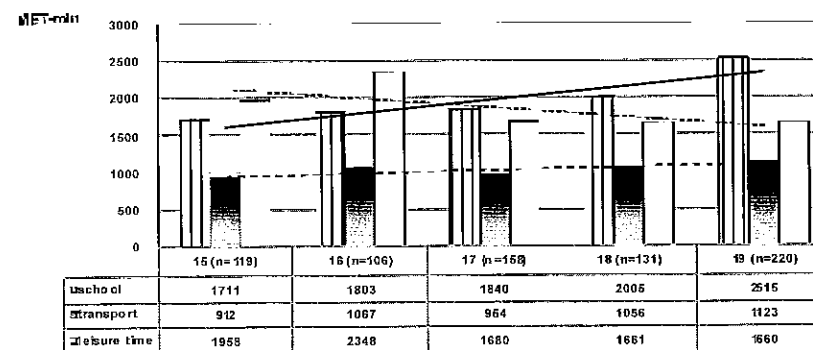


Figure 1 Structure of PA (in MET-minutes) per week in 15-19 year-old girls (n=734) divided according to age

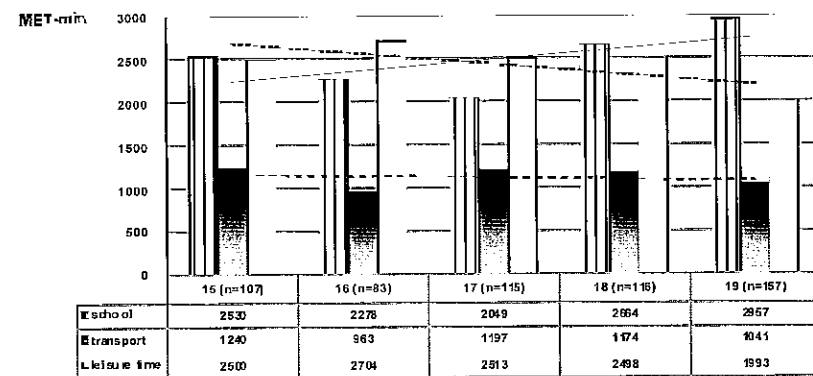


Figure 2 Structure of PA (in MET-minutes) per week in 15-19 year-old boys (n=578) divided according to age

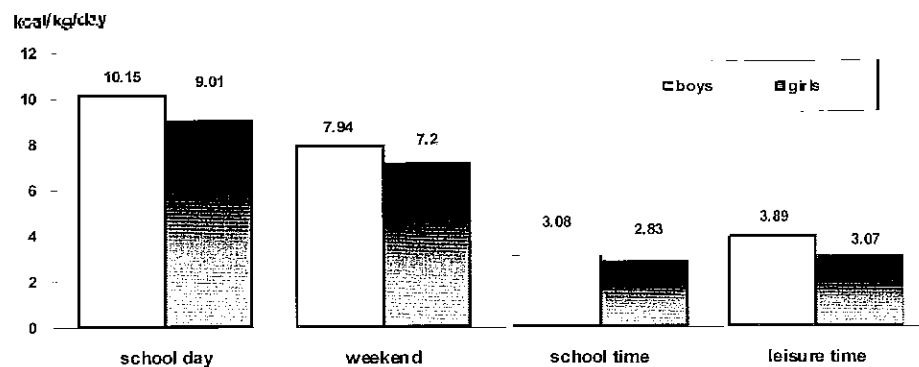
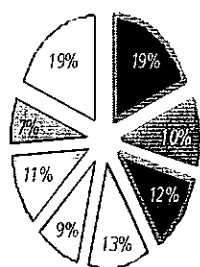
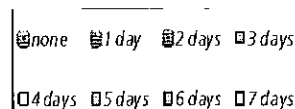


Figure 3 Energy expenditure during PA in boys (n=578) and girls (n=730) in different period of times

Boys perform more physical activities than girls (Figure 3), preferably in the leisure time and in school days. The smallest difference was found in school time between boys and girls.



19% of youth is without vigorous PA

41% of youth does not meet frequency guidelines for vigorous PA (3x20 minutes)

Figure 4 Number of days in a week when pupils (in percents) practice vigorous PA

41% of adolescents from our survey (Figure 4) do not meet recommendation for vigorous PA per week (3x20 minutes). For health maintenance there is recommendation (US Department of Health Services, 2008) to combine vigorous PA (3x20 minutes) and moderate PA or walking (5x30 minutes). 88.9% of Czech adolescents (n=1167) do not meet this combination according to completed IPAQ questionnaires.

On the basis of partial results and previous findings (FRÖMEL et al., 2007) we can derive *facts desirable to be respected when teaching pupils to lifetime PA that come from mentioned findings:*

- Health and fitness situation in children and youth deteriorates
- The scope of children's physical skills narrows
- The amount of PA decreases with age. The greatest decline is evident in vigorous PA.
- Boys perform more PA than girls, mainly in leisure time
- Boys and girls perform more PA in school days than at weekends
- Engagement in organized PA decreases with age
- Sport decreases with age in the structure of PA
- Walking still prevails in the structure of PA
- PA guidelines (3x20 minutes of vigorous PA and 5x30 minutes of moderate PA or walking per week) are met only by 11.1% of Czech adolescents.

Successful leading of pupils to lifelong PA is on the general level mainly dependent on efficient combination of:

- Awareness of own physical behavior (lifestyle) regarding benefits and risks,
- Mastering *knowledge* about the meaning and the role of various PA within healthy lifestyle, in context with other healthy factors and other social, intellectual, mental factors etc. (ensuring relevant *literacy*)
- Mastering *self-controlling skills* as for instance determination, overcoming obstacles that consequently lead to independency and ability to decide about physically active life (CORBIN, 2002)
- Possibility of *choice* of PA (choice is a significant part of autonomy and autonomy is an important part of adherence and practicing of lifelong PA), pupils' participation in conducting of PE lessons, in decision-making process,
- Enhancement of *motivation* for PA participation from the individual view and possibilities,
- Promotion and support of *opportunities* of physical activities for girls,
- Maximally support *self-realization* in PE lessons,
- Strengthening proper physical behavior, *habit* of regular PA,
- Experiencing *feelings of satisfaction* from PA, pleasant climate, advantages of social contacts during PA etc.
- Suitable *environment* that stimulates physically active lifestyle.

Conclusion

The aim of this study was to inform about lifestyle of Czech adolescents in connection with physical activity and find out whether they meet PA recommendations. We found out that PA during transport is quite stable in both genders. PA in schools (within school recesses and shift among classrooms) increases with age. The alarming fact is that PA in leisure time decreases with age for both genders. Time spent sitting during the school days correlates with the school curriculum (timetable), and during weekend it declines by two thirds. The recommended amount of PA for health maintenance (vigorous and moderate PA or walking) is not met by 88.9% of Czech adolescents according to IPAQ questionnaires. For that reason we suggest considering thought-provoking ideas for changes in PE concept:

- Give a priority in curriculum to typically lifelong PAs or create conditions for the future engagement in lifelong PA. Support of lifelong activities must be a priority in PE lessons.
- The teacher cannot achieve all the aims of PE lessons within only two PE lessons per week. It is evident that these aims (educational, instructional and health) are constantly in mind of a teacher but why not to concentrate mainly on the most cardinal? We cannot teach all pupils how to practice all sports but we are able to bring them close to such a PA that they can realize during whole life.
- How to deal with coeducational PE in terms of lifelong PA support? Search for compromises?
- Do we have a chance to improve trends in contemporary approaches to preventive medicine? Do we repeat the development in western countries in trends of overweight and obesity in children and youth?
- Do we have examples of good system of teachers' interests in healthy conditions, physical fitness, regular participation most pupils into daily PA etc.? Is there a possible legislative support? (an example of Poland in qualification growth of teachers)
- What the concept of diagnosis, assessment, testing, classification etc. in PE lessons should be promoted regarding lifelong PA support?
- How will the pupil's role in education process change after realization of these ideas?

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