

## QUALITATIVE ANALYSIS OF OPINIONS, CONDITIONS AND EDUCATIONAL ENVIRONMENT IN RELATION TO PHYSICAL BEHAVIOUR OF ADOLESCENTS

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The aim of this study was to find and describe the possible causes of the interest, or lack of interest in adolescents in physical activity and physical education with use of qualitative analysis and to contribute to explication of other characteristics of physical behaviour. Further then to characterise "risky" behaviour of adolescents. Adolescents' opinions, the level of conditions and educational environment were gathered through semi-structured interviews and their following qualitative analysis with use of a paradigmatic model of axial coding of basic proven theory. Altogether 27 interviews with students from graduation classes were carried out following our four year long research project about physical activity. According to adolescents the principal cause of low level of physical activity is the lack of free time. School physical education is for most adolescents the only source of relatively intensive exercise. Favour of school physical education depends especially on the content of the lessons, the teacher's approach and the class team.

*Keywords: Physical activity, physical education, basic proven theory, interview, behaviour.*

### INTRODUCTION

Recently problems connected with the use of qualitative and quantitative research methods are being relatively intensively discussed by scientific workers in sociology, psychology, pedagogy, kinanthropology and other scientific branches (Abusabha & Woelfel, 2003; Blahuš, 1997; Poggenpoel, Myburgh, & Linde, 2001). Only two ways of researching exist according to logical positivism; first logical deduction covering mathematical and second empirical experience covering scientific disciplines, for instance: physics, biology, psychology, etc. (Caelli, 2002). Just qualitative research methods allow for a deeper understanding of physical behaviour, not only in adolescents, because they observe an individual in the natural environment and under natural conditions (Abusabha & Woelfel, 2003; Poggenpoel, Myburgh, & Linde, 2001). Because the relationship between physical activity in childhood or adolescence and physical activity in adulthood is known where physically active behaviour in childhood is associated with lower risk of inactive behaviour in adulthood (Gordon-Larsen, Nelson, & Popkin, 2004; Tammelin et al., 2003) it is necessary to search for the possibility of positive influence of physical behaviour already in childhood and adolescence.

### AIM

The aim of this study was to find and describe the possible causes of the interest, or lack of interest in ado-

lescents' physical activity and physical education with use of qualitative analysis and to contribute to explication of other characteristics of physical behaviour and, further then, to characterise "risky" behaviour of adolescents.

### METHODS

Qualitative analysis was a part of the four year long longitudinal monitoring of physical activity in youth. Basic information was obtained through informal interviews with teachers of physical education who taught, observing their associates, and at the beginning of the year 2004 by means of individual semi-structured interviews of selected students and their qualitative analysis with use of a paradigmatic model of axial coding of basic proven theory (Strauss & Corbinová, 1999). Questions concerned their relationship to physical activity, opinions on physical education lessons, conditions for physical activity in their place of residence, their way of spending leisure time, etc. Dialogues were recorded on dictaphone and afterwards rewritten word by word. In case of technical failure the dialogues were registered. Altogether 27 interviews with students of graduation classes at secondary grammar school (13 boys and 14 girls, aged 18.9 years) were carried out. Their selection was stratified. The requirement of choice was the participation in physical education lessons and student's agreement. In view of the relation to the longitudinal monitoring of physical activity the secondary grammar

school was chosen intentionally. The selected secondary grammar school does not belong among the prestigious schools in the region. Students were informed that interviews are anonymous and that they do not have to answer in case they do not want to. This partial research project was to contribute to an explanation of the lack of physical activity and the decrease in physical activity according to age (Sigmundová, 2005).

## RESULTS

Qualitative interviews were for lucidity transferred into the paradigmatic model according to Strauss and Corbinová (1999), (Fig. 1). The central observed term was physical activity and the possibility of its being influenced by teachers, school, family and students themselves. The most frequent paradigmatic models are described in Fig. 2. These models include the most frequently mentioned components of particular interviews.

Smoking (or "occasional" smoking) is a characteristic lifestyle feature for 63% of questioned students, only 30% of the students do not smoke at all. Drinking alcohol was stated by 74% of students, mostly irregularly (11% drink alcohol regularly, 63% occasionally).

**Fig. 1**

Paradigmatic model (Strauss & Corbinová, 1999, 72)

(A) CAUSAL CONDITIONS → (B) PHENOMENON → (C) CONTEXT → (D) INTERVENING CONDITIONS → (E) STRATEGY OF CONDUCT AND INTERACTION → (F) CONSEQUENCES

**Fig. 2**

Selected paradigmatic models of adolescents' physical behaviour

**1st interview - Boy**

(A) OTHER PRIORITY INTEREST → (B) LOWERING OF PHYSICAL ACTIVITY (PA) INTEREST → (C) TIME DEMANDS OF STUDY → (D) PREFERENCE OF OTHER INTERESTS TO PA → (E) PA ONLY IN SCHOOL PHYSICAL EDUCATION LESSONS (PE) → (F) LACK OF PA

**7th interview - Girl**

(A) TIME DEMANDS OF SCHOOL → (B) SMALL AMOUNT OF FREE TIME → (C) CONFLICT OF INTERESTS AND DUTIES - SCHOOL/PA → (D) POSITIVE RELATION TO PE LESSONS → (E) PA ESPECIALLY IN PE LESSONS → (F) THOROUGH PREPARATION TO SCHOOL/LACK OF PA

**11th interview - Girl**

(A) NEW PE TEACHER → (B) CHANGE OF TEACHER'S APPROACH → (C) MORE DIRECTIVE STYLE, LESS FAVOURED CONTENT OF PE LESSONS → (D) HEALTH PROBLEMS OF A FEMALE STUDENT DETERIORATING IN THE GYMNASIUM → (E) PASSIVE PARTICIPATION IN PE LESSONS, REQUEST FOR EXEMPTION FROM PE LESSONS → (F) ONLY OUT OF SCHOOL PA

**13th interview - Girl**

(A) LACK OF FREE TIME → (B) FINISHING OF OUT OF SCHOOL PA → (C) ABSENCE OF PHYSICAL BASIS FROM CHILDHOOD → (D) SMALL TO NONE INFLUENCE OF FAMILY ON PA + WORSE CLASS TEAM IN PE LESSONS → (E) AVOIDING PE LESSONS - "REGULAR NON-EXERCISING" → (F) LEVEL OF PA ON BORDER OF INACTIVITY

**14th interview - Girl**

(A) TIME DEMANDS OF SCHOOL → (B) LOWERING OF PA → (C) HEALTH LIMITATION → (D) POSITIVE RELATIONSHIP TO PA, PE LESSONS AS WELL AS HEALTH PE LESSONS → (E) PARTICIPATION IN HEALTH PE LESSONS AS WELL AS IN NORMAL PE LESSONS → (F) BALANCE - THOROUGH PREPARATION FOR SCHOOL/ENOUGH PA

**18th interview - Boy**

(A) POSITIVE RELATIONSHIP TO PA → (B) REGULAR PA → (C) POSITIVE RELATION TO PE LESSONS → (D) PARENTAL SUPPORT → (E) MAINTENANCE OF A STABLE LEVEL OF PA → (F) ENOUGH PA

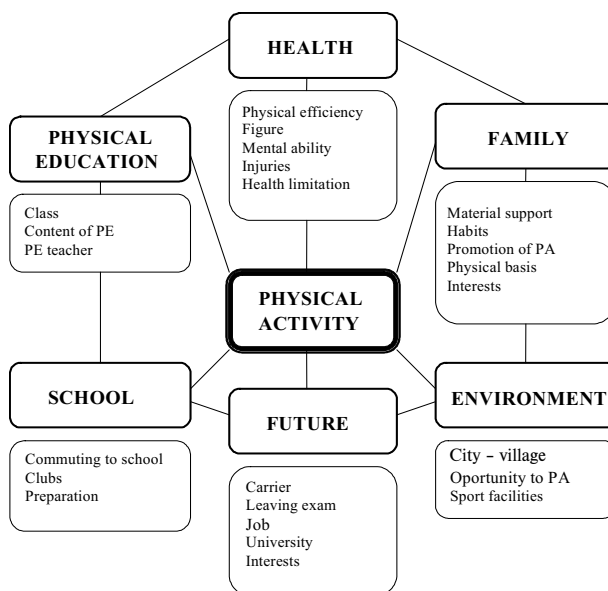
**23rd interview - Boy**

(A) TIME DEMANDS OF SCHOOL → (B) LOWERING OF OUT OF SCHOOL PA → (C) DEMOCRATIC APPROACH OF PE TEACHER → (D) POSITIVE RELATIONSHIP TO PE LESSONS, PA → (E) REGULAR PA, PE LESSONS CREATE 50% OF TOTAL PA → (F) ENOUGH PA

Almost half of the questioned students had come into contact with drugs (besides smoking and alcohol) in the sense of their own experience or direct testimony of giving a drug to somebody else and also the possibility of obtaining a drug if they were interested. The most known drug is namely marihuana (if I leave aside the smoking of tobacco products), "hard" (unacceptable in society) drugs are refused by adolescents, whose main attention is oriented to their coming school-leaving examination and the following entrance exams to university where two thirds of students (67%) want to study. Physical activity, although regarded as an important part of a healthy lifestyle is thus shifted aside and as the main reason students state a lack of free time (in 74% of the cases).

**Fig. 3**

The main categories (factors) influencing physical activity at the level of the school physical education system



Approximately half of the questioned students assume that in future they will practise sport regularly. Also physical education teachers and the content of physical education lessons have an indispensable influence on present and future physical activity. For 52% of questioned students school physical education is the only source of relatively intensive physical activity.

During the observation of the factors that influence physical activity of adolescents (Fig. 3) realise the influence of physical activity on health ("...I should practise sport much more but I do not have time.", "I think about being free from PE lessons, because I'm asthmatic... I don't like these lessons." "I'm one of those girls, who do exercises regularly, ..., at least I do something for myself.") but it is not a sufficient motivation to physical activity for them. At this age family influences physical activity of adolescents minimally ("I think since I'm 18

they should not tell me what to do. If I want they will pay it for me.”). The biggest influence they attribute to school in the sense of its time demand for preparation for lessons or vice versa as the only source of relatively intensive exercise (“I’d rather study than practise sport which would take much time”, “...I exercise only in school during PE lessons.”).

Fatigue after long lasting school classes adolescents (apart from some exceptions) again solve by inactive behaviour such as sleep, watching TV, reading or listening to music. Adolescents are mostly satisfied with their body figures nevertheless they would like to make some changes in this sphere (“...it should be better...”, “...I’m too thin, I could put on some weight but I cannot manage.”). Favour of school physical education is influenced mainly by a teacher and a class (relationship to physical education influences: “...definitely what we do in PE...”, “...I don’t know what because only four of us exercise in PE.”, “democracy works there...”, “...and one is not bored there...”).

## DISCUSSION

Qualitative analysis was, in this study, based especially on a semi-structured qualitative interview. The central topic of this paper was physical activity of adolescents, searching for causes of its lack, analysis of the environment including the educational one, etc. Because it is assumed that regular out of school physical activity or a high level of physical activity in adolescence positively influence physical behaviour in adulthood (Kraut, Melamed, Gofer, & Fromm, 2003; Telama, Yang, Laakso, & Viikari, 1997; Trudeau et al., 1999), we pay more attention to adolescents’ own opinions and direct information concerning their physical activity.

Similarly to what was found in the study by Brownson et al. (2001), our adolescents also indicate as a principal cause of the low level of their physical activity a lack of free time as the result of study demands at secondary grammar school. It is necessary to give warning that respondents were students of graduation classes preparing for school-leaving examinations. Similarly in the study of adolescent girls with a higher risk of inactive behaviour, Neumark-Sztainer et al. (2003) found two very strong factors that are associated with physical activity. First there is the lack of time that is inversely associated with physical activity and the second but positively associated factor is the support of parents, peers and teachers for physical activity. With regard to the finding that adolescents want to do more things at the same time the authors recommends teaching adolescents how to plan and manage their time schedules.

Apart from the lack of time to a small extent there appeared other reasons namely other interests, bad con-

ditions for the performance of physical activity, health problems, “nobody” to exercise with or lack of interest in physical activity. In a study by Brownson et al. (2001) the authors mentioned as further barriers to physical activity the feeling of fatigue, physically demanding work and the missing motivation for exercising. The authors recommended longitudinal study for clear definition of the effects of the above-mentioned determinants.

Physical activity is, among others, connected with health and also with behaviour influencing health. Adolescents do not perceive health only from the physical side but are also influenced by personal, socio-environmental, behavioural and mental factors (Vingilis, Terrance, & Seeley, 2002). In this study adolescents were questioned about their experience with smoking, alcohol and drugs. These characteristics of adolescents’ lifestyles are a frequent subject of research when a low level of physical activity is associated for instance with smoking, a low level of the consumption of fruit and vegetables and other risky behaviour (Kaplan et al., 2003). Similarly also Aarnio et al. (2002) in a questionnaire study of 5028 twins found that smoking, irregular breakfast, studying at vocational school and perceiving of actual current health as poor, are associated with inactive behaviour.

Altogether 63% of questioned adolescents stated that they smoke regularly or occasionally, “only” 37% of them labelled themselves as regular smokers, compared to 30% of adolescents who regard themselves as non-smokers. Kaplan et al. (2003) arrived at very different results when they studied adolescents of the Vietnamese ethnic group in the U. S. A. aged 12–17 years. They found that 84% of adolescents are non-smokers and they did not even try smoking and 77% of adolescents had not tried drinking alcohol yet. In this study, on the other hand, 74% of adolescents drink alcohol at least occasionally. A very low percentage of non-smokers (17.41%) was found by Chmelík et al. (2004) who from a questionnaire survey of a representative sample of the Czech population ( $n = 3549$ ) aged 14–24 years learnt that youth who regarded themselves as non-smokers devoted their time more frequently to physical activity of moderate to high intensity than those who regarded themselves as smokers.

Apart from smoking and alcohol almost half of the questioned students came into contact with drugs either directly or as “spectators”. Also they had the opportunity to obtain the drug if they were interested. In the centre of attention is especially marihuana but so-called hard drugs were refused by our questioned adolescents. Different legislation but mainly the way of its observance in our country and for instance in the U. S. A. contribute to the above mentioned differences.

Watching TV belongs among other risk factors of physical activity. Even if we did not note the high quan-

tity of time spent in front of the TV or PC monitor in the record of inactivity structure, this information is strongly influenced by the “honesty” and “conscientiousness” of respondents’ recording. Besides from qualitative interviews it follows that adolescents solve their fatigue after long-lasting school classes in most of cases (81%) again by inactive behaviour namely watching TV, sleep, reading or listening to music.

The risk of maintenance of inactive behaviour until adulthood is great (Gordon-Larsen, Nelson, & Popkin, 2004). The authors noted a distinct decline of physical activity in physically active adolescents, but less distinct is the change in the sphere of inactive behaviour (watching TV, video or spending time at the PC). Further they assumed that in adolescents who spent more than 14 hours a week in front of a TV set or PC monitor (which was noted in one fourth of adolescents), this inactive behaviour lasts until adulthood and beyond. In adolescents who did not pass this limit, only in 17% of them did an increase of this inactive behaviour appear in adulthood. They confirmed thus the decline of physical activity with age and considered inactive behaviour to be stable with regard to age.

Since we know from previous studies that watching television (or sitting in front of a PC) makes up even 25% (or even 27%) of the total time spent in daily physical inactivity by adolescents (Sigmund, Frömel, Sigmundová, & Sallis, 2003) and moreover that the proportion of physical activity to physical inactivity is 1 to 3, it is necessary to search for ways to support physical activity in adolescent youth.

One of the possibilities is to respect preferences of different physical activities. The examined adolescents state that they do not have much time for exercising. If they organise some time and at the same time they have the possibility to realise a preferred physical activity they would like to participate (according to the statement of a student “so I would do it”). Together with the origin of new types of sports and physical activities adolescents are newly interested apart from classical ball games, in swimming, dancing, baseball and floor ball, in adrenaline sport or “rope activities”. Tammelin, Näyhä, Hills and Järvelin (2003) found that a higher presumption for maintenance of a high level of physical activity till adulthood is especially found in boys with more frequent participation in out of school physical activity focusing on ball games, endurance activity or resistance exercises. In girls it is the participation in individual sports namely jogging, athletics, cycling, and gymnastics. Regardless of gender, adolescents’ participation is, in relatively intensive endurance sports, associated with a high level of physical activity in adulthood or with participation in endurance sports, also in adulthood. The authors further state that participation in sport at least once a week

in girls and twice a week in boys is associated with high participation in physical activity in adulthood.

Kaplan et al. (2003) drew attention to different effects of out of school activities on risky behaviour between boys and girls and they emphasise that girls’ out of school physical activity does not enhance their risky behaviour in contrast to boys. In the existing situation they explain that boys’ activities are more competitive, and the presentation of risky behaviour (for instance smoking) signalises success or dominance.

Another factor of physical activity can be the economic situation of the family. Our questioned adolescents (apart from exceptions) do not feel any limitation from the financial side when choosing physical activities but Tammelin et al. (2003) claimed that low incomes can narrow the possibilities of children’s participation especially in financially demanding sports. Together with economic level they put into context also a lower level of education that is associated with a higher probability of inactive behaviour, which is a bad model for children. The authors place emphasis on promotion of physical activity in adulthood through being self-interested in one’s juvenile years, further on positive experience, obtaining a wide scale of skills and the enhancement of motivation to habitual physical activity.

A unique opportunity to participate in regular physical activity but also to obtain necessary skills is offered by physical education lessons (MacKay, Fingerhut, & Duran, 2000). In this study only one fourth of people questioned stated that they practise sport at least three times a week. On the contrary in the remainder of the questioned people the main source of relatively intensive exercise is just physical education lessons. It seems that regular and thorough preparation for school lessons is an definitely limiting factor of out of school physical activity and physical education classes remain the main source of relatively intensive physical activity then. One of the possible and at the same time a systematic solution to physical activity enhancement in youth at secondary schools is to add at least one physical education lesson a week. This physical education lesson should have an optional character respecting the necessities and wishes of a wide range of students. The extracurricular character of the lesson should contribute also to creating co-educational and different age groups of students.

Favour of physical education in our observed boys depends mainly on the teacher’s approach. Boys appreciate a democratic approach that enables them to intervene in the content of physical education lessons or to find a compromise (“...democracy works there only sometimes – we have gymnastics and so on.”). The liberal approach of the teacher is very negatively appreciated especially if the lesson is not properly prepared (“he diddles it”). A freer teacher’s approach together

with a worse class also do not contribute to favour of physical education ("I'm keen on sport but only in our PE class I cannot manage because only a few exercise. At primary school it was quite OK. This class is worse, the girls do not want to exercise and withal it would be better if they did exercise.", "Only a few of the students exercise so we can play almost nothing.", "I do not exercise regularly, I don't know, I don't want to exercise. I do not even know why I do not want to. Three fourths of the people do not exercise and only three of the students exercise..."). On the other hand a too directive approach is also not positively appreciated. In some cases girls indicated that they are even worried.

In the Czech Republic physical education instruction has got a different character than abroad, mainly thanks to non-coeducational physical education (in most the cases) and the multiple specialties of physical education teachers. The existence of multiple specialties of the teachers simplifies thematic integration and the possibility of using deeper knowledge of the second certified subject in physical education.

Whether co-educational physical education is more beneficial than non-coeducational regarding the level of physical activity cannot be clearly said, even though McKenzie, Prochaska, Sallis and LaMaster (2004) defended co-educational lessons by finding that girls in non-coeducational physical education lessons compared to boys definitely spend less of the time of the lesson in exercising, whereas in co-educational lessons the time spent exercising in girls is of moderate to higher intensity than in non-coeducational lessons. In the Czech Republic, co-educational instruction is normally present during the first grade at primary schools, in higher grades, co-educational instruction of physical education is, as a rule, quite rare.

In the observed sample of this study, one group of students appeared that was, for organisational reasons, taught co-educationally. Most of the girls viewed the presence of boys in lessons positively. But a reproach appeared that playing some sport games together with boys could be dangerous ("For instance when we play with boys our 'life' is at stake", "...with boys it is dangerous to play basketball."). Boys valued co-educational lessons rather negatively. They missed the proper degree of enthusiasm in games and also the less frequent insertion of typically boys' sports ("I'd like to have the lesson only with boys in order to play more games."). McKenzie, Prochaska, Sallis and LaMaster (2004) presented different findings when girls during co-educational instruction felt disadvantaged against boys. In our case the unequal representation of boys and girls could effect

the evaluation of co-educational physical education lessons. There were definitely fewer boys than girls.

Our country is not the only one in which the problem of participation in physical education lessons hasn't been solved.

Students who do not want to attend these lessons normally try to obtain exemption from physical education or they participate in the lessons only passively. Hassandra, Goudas and Chroni (2003) studied a similar problem of the relationship to inner motivation. They found two groups of factors of inner motivation supporting participation in physical education, namely individual and socio-environmental factors including the content of physical education, teachers, classmates, school equipment, physical behaviour of the family, support of the family, participation in out of school physical activities, media, cultural values and social prejudices.

School physical education cannot provide to all young people a healthy recommended amount of physical activity, but that is not its priority and main aim. School physical education should establish the foundation for future physical activity and a positive relationship to physical activity and lead students towards a physically active lifestyle. Not everybody is physically talented but for everybody it is possible to find some physical activity he/she inclines to which suits him/her.

## CONCLUSIONS

According to adolescents a principal cause of the low level of physical activity is a lack of free time.

School physical education is, for most adolescents, the only source of relatively intensive exercise.

Favour of school physical education depends especially on the content of the lessons, the teacher's approach and the class.

For searching for possible causes of and decline in physical activity it is useful to use quantitative combined with qualitative methods of research.

For enhancement of favour of physical education lessons they recommend applying teaching styles enabling students to have more influence on the content of the lessons and increase the responsibility of students for the successful course of the lessons.

For most adolescents the only source of relatively intensive exercise is school physical education and that's why it is necessary in newly originated school programmes to promote an increase in the number of physical education lessons that will include physical activity.

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# KVALITATIVNÍ ANALÝZA NÁZORŮ, PODMÍNEK A EDUKAČNÍHO PROSTŘEDÍ VE VZTAHU K POHYBOVÉMU CHOVÁNÍ ADOLESCENTŮ

(Souhrn anglického textu)

Cílem této studie bylo užitím kvalitativní analýzy najít a popsat možné příčiny zájmu, resp. nezájmu adolescentů o pohybovou aktivitu a tělesnou výchovu a přispět k objasnění dalších charakteristik pohybového chování. Dále pak charakterizovat „rizikové“ chování adolescentů. Názory adolescentů, úroveň podmínek a edukačního prostředí byly zjišťovány pomocí semi-strukturovaných rozhovorů a jejich následné kvalitativní analýzy užitím paradigmatického modelu axiálního kódování zakotvené teorie. Celkem bylo realizováno 27 rozhovorů se studenty maturitních ročníků v návaznosti na čtyřletý výzkum pohybové aktivity. Hlavní příčinou nízké úrovně pohybové aktivity je dle adolescentů nedostatek času. Školní tělesná výchova je pro většinu adolescentů jediným zdrojem intenzivnějšího pohybu. Obliba školní tělesné výchovy závisí zejména na obsahu vyučovacích jednotek, přístupu učitele a třídním kolektivem.

**Klíčová slova:** pohybová aktivita, tělesná výchova, základní prokázaná teorie, rozhovor, chování.

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## **Scientific orientation**

Explorational activity in the field of kinanthropology with an orientation to longitudinal monitoring of physical activity.

## **First-line publication**

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