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THE AUTHENTIC AND INAUTHENTIC SPORT IN THE HERMENEUTIC AND PHENOMENOLOGICAL PERSPECTIVES

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Summary: The philosophical concept of hermeneutics presents the opposite pole of human mental activities than positivism. Phenomenology, together with hermeneutics, also presents a kind of opposition to the positivistic reduction of learning the world. This paper focuses on the topic of authenticity of sport from these two (hermeneutic and phenomenological) approaches. As a basic theoretical platform Martin Heidegger´s book *Time and Being* is used. The authors develop a specific kind of categorization of the social groups engaged in sport events via the ancient concepts of "TECHNÉ ATHLETIKÉ" and "TECHNÉ GYMNASTIKÉ". Two different phenomena: sport and "sport" are examined within the next part of the paper. There are some reasons mentioned in conclusions coming from the hermeneutic and phenomenological approach which help us to understand and accept the opinion that a kind of return to "techné gymnastiké" can support the authentic modes of being in human approach to sport.

Keywords: Sport; "sport"; TECHNÉ GYMNASTIKÉ; TECHNÉ ATHLETIKÉ; authenticity

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Introduction

The philosophical concepts of hermeneutics and phenomenology radically differ from positivism. While positivism focuses on the facts which are set in the objective way (everything which can be measured, weighted and expressed in the quantitative outputs of the scientific research), hermeneutics uses qualitative approaches of the scientific research.
The aim of hermeneutics is not to give an explanation but to reach understanding. Phenomenology also (together with hermeneutics) presents a kind of opposition to the positivistic reduction of learning the world. The way of thinking which is based on examining phenomena (from Greek FAINOMENON = phenomenon, occurrence) is in some contrast to Immanuel Kant´s philosophy which distinguishes between the phenomenal world of knowable things and the noumenal world which is not accessible for our experience. Phenomenology perceives phenomena of the world which do not lead to some incognizable substances but to the eidos which appears and can be examined by a specific method.
The contemporary phenomenological stream in philosophy comes from the original ideas of Franz Brentano and Edmund Husserl. Phenomenology was then developed with the concept of fundamental ontology founded by Martin Heidegger. However, the phenomenological method started to be applied not just in philosophy but in many social sciences and humanities. It is often used in sociology (Costelloe 1996), psychology *(Journal of Phenomenological Psychology*), aesthetics (*Journal of Aesthetics and Phenomenology*), jurisprudence (Kinneging 2001), or in some partial social analyses in postmodernism (Murphy 1989).

Within philosophical analyses of human movement (and sport, especially) phenomenology presents a very often used term. Many authors mention that it opens a new space for better understanding of sport and that philosophy of sport expects and welcomes this kind of analyses (Meier, 1983; Osterhaudt, 1974, 1978; Weiss, 1982). Unfortunately, some experts in kinanthropology are not patient and careful enough to get learnt the original philosophical reflections more in detail. They often use just secondary sources (Kerry & Armour, 2000). That is the main reason why the core of the phenomenological method is not understood properly. There are three main kinds of errors here: the confusion of phenomenology with immediacy, with an epistemologically subjectivist stance (phenomenalism), and with empirical research oriented towards objects in the world (Halák, Jirásek & Nesti 2014).

AUTHENTICITY IN MARTIN HEIDEGGER´S CONCEPT

One of the significant impulses, which can be brought by phenomenology into philosophical kinanthropology, is the topic of authenticity (from a Greek AUTHENTES = handmade created; credibility, or originality). To keep the meaning under which authenticity is understood in the philosophical context, we should mention Heidegger´s work of *Being and Time*. This book focuses on the difference between the ontical and ontological characteristics of being. Sometimes it is very difficult to express the original German ideas in English.

According to Heidegger, metaphysics has been exploring more through the ontic than the ontologic attributes of being. The ontologic characteristics have been omitted because of focus on the ontic analyses of being. The differentiation between the way how the entity exists (the ontic being) and the fact that it exists (the ontologic being) enables us to reach a better understanding of subjectivity and intersubjectivity of being, despite some possible confusions in the explanations of these approaches (O´Brien 2014). If ontic being is presented by any existing entity, the ontologic being does not mean anything objective and material, it is a projection (or simply an attribute of the ontic being). The difference between the ontic and ontologic touches any human being although not everybody really asks about this topic.

The ontologic being can be considered after we start to perceive that existence of the ontic being is not obvious. That means, after we get a surprise from the existence and after we ask: "why is there something rather than nothing?" This question is generally considered to be an important philosophical problem, as an American writer and philosopher Jim Holt tries to describe and explore in his book *Why Does the World Exist* (Holt 2012). The ontologic being grants a guarantee to any ontic being that it really exists. That is why some other thinkable ontic beings (stones, trees, animals etc.) definitely occur but they do not exist in the philosophical sense of existence (their being does not contain a question for themselves).

So, we are included in the question about our being. We ask because of ourselves and from the position of our situation. And, if our being is temporal, then the categorial determination of all human experience is done by its temporality. Our being is included in the present. The past means throwingness (we are thrown into the life situations which were not selected by us). The future means the possibility of scheduling (we can decide what we focus on and which way we want to live in).

The authentic existence (the way of life which is not limited with mere caring of things) is conscious of our mortality (being-to-death) and our open possibility to be

“ourselves”. The awareness of terminality of our being, leaning out to “nothingness” and self-transcendence – these conditions present a possibility to penetrate deeper layers of our being, to reach the level of the authentic existence.

The authentic possibility of being supposes being-towards-death as a significant possibility of Dasein (Being-in-the-World), which means a possibility to be focused on realization of this feature of Dasein in the modus of expectation. This way of being (existence as being-towards-death) is accessible just for human: an animal perishes, just man dies in the context of being-towards-death. Some ability to leave the inauthentic way of being (“the They”, in German original it is “Das Man”) means the ability to turn to one-self (Heidegger 2008).

The authentic experience is not related to care of corporeal things but it gives reference about transcendence to future – to our final definiteness. The perception of our mortality and relating to our very last limit enable us to schedule our possibilities of being. Any experience which is chosen this way gives evidence about the way how we manage our possibilities and how we exist in the authentic way. Only this terminality (knowledge of existence of our death) can help us to reach a better understanding of ourselves and a possibility to recognize the modus of our freedom. We are free in our being and in a care of it, in the possibilities how to schedule our lives, and in the modes of experience which we choose. If we fall into the “world of things” (a focus on “what is spoken”, “what is on”, “what is recommended” – that means falling into “the They”) we could not consider the “authentic” experience because we would not be related to the ontologic being but just to the ontic one.

The essential parts of the inauthentic being (and the inauthentic experience) are mediocrity, irresponsibility and indifference to the others. The authentic experience is characterised by a deep perception of terminality of the person in which this person (through the possibility to be one-self) intensifies his/her identity of thinking, speaking and acting. This helps to translation from impersonal superficiality (expressing in taking care of a subjective way of being) towards a personal responsibility for scheduling the future.

The existential feature of this “the They” is mediocrity. An average characteristic of what is done, what is worn, what is considered to be successful or unsuccessful. Mediocrity presents delimitation of (very personal) individuality, significant singularity and exceptionality under influence of the impersonal “the They”. The tyranny of fashion, advertisements, markets or a bureaucratic power which is presented in the contemporary Euro-American society documents a loss of authenticity. It is not ordered or wished by any concrete individual (even if there are some people who like these situations and use them for

their profit). It is a sign of dominance of something impersonal and indefinite. Through common everydayness we stay in the mode of indefinity. The intentional being "One´s Self" (Heidegger, 2008) presents a significant feature of authenticity. However, there is a key question here: How to find being One´s Self? Or, how to accomplish the famous instruction inscribed in the pronaos of the Temple of Apollo at Delphi which says "gnothi seauton", translated in English as "know thyself"? (Thompson & Matheson 2007).

THE ANCIENT CONCEPTS OF MOVEMENT CULTURE – "TECHNÉ GYMNASTIKÉ" AND "TECHNÉ ATHLETIKÉ"

One of the possibilities how to overcome the impersonal "the They" towards the authentic mode of being can be provided by movement culture (including sport activities). The Greek ancient culture knew two important terms used in the context of sport which characterize a relation of the ancient Greeks to body and physicality: gymnastics and athletics. (Here it should be stressed that a modern interpretation and understanding of the essence of those two sports gymnastics and athletics do not properly reflect the difference described in the text.) The ancient gymnastics could be perceived as a harmony of sport and movement culture (it means sport without any attribute), and as the authentic mode of sport influenced by a natural human power and its harmonical development.

"TECHNÉ GYMNASTIKÉ" was a kind of art in spite of the fact that it was based on physical skills. Omitting the fact that the sportsmen were naked (and that their nakedness supported the aesthetical understanding of motion and expressing of beauty), we can observe the reflection of the ideals of "TECHNÉ GYMNASTIKÉ" in many forms of modern recreational (or some competitive) sports. Harmony in human movement, perfectionalism and beauty of motion has been still presenting a very important motive there (Reid 2012a). This kind of perception and realization of those ideals can be labelled here as sport and we will understand this kind of movement activity as the authentic sport.

On the contrary, athletics was characterized by an effort to develop some parts of human body only without taking account of the holistic approach. The unilateral focus on performance (expressed in the form of a result) aimed against the idea of kalokagathia and overstepped the concept of movement culture and care of human body. Although this activity was also labelled as an art – "TECHNÉ ATHLÉTIKÉ" (the art of athletics) the unilateral characteristics of it is obvious. The same features can be observed in the case of modern professional sport (the elite sport) which is accompanied by corruption and protectionism (as well as "TECHNÉ ATHLÉTIKÉ" in the ancient Greece).

Some professional sportsmen in the period of Hellenism focused, instead of cultivation of the mind via physical exercises, on developing those parts of their bodies which were necessary for getting victory or breaking the record. In this effort, they were very like many modern sportsmen/women. As well as the ancient boxers, wrestlers, or pankrationists, many contemporary elite sportsmen/women neglect some body deformations. We should reject this approach, in the same way as did it the ancient poets, physicians and philosophers. That is why we will use the term "sport" for those activities and we will understand them as the inauthentic mode of movement activity.

Could we delimit the exact borders between sport and "sport"? We argue that our effort to reach this distinction is very problematic because this kind of delimitation is merging, confusing and blending. There is the only chance to follow the meaning and sense of the activities. The nature of the meaning which is devoted to movement activities answers the question whether we can speak about the world of sport or the world of "sport". There is quite a broad range of literature devoted to the problems of meaning in the world of movement activities (Lawrence 1989; Mandelbaum 2004; Pawlenka 2005; Kluck 2007; Cléret & McNamee 2012; Balçikanli 2014). In conclusion: the major values are included in the ideas of kalokagathia, areté, or fair play. Even the agonal character of competition, rivalry and strong competitiveness cannot break the ethical anchoring of human behaviour here. The values are concentrated around a rich individual experience and beauty of human movement.

However, which kind of values can we see in the other sphere of human movement – the world of "sport"? Here we can consider a long tradition of the ancient sport where we were meeting many different motives for engaging in sport activities. We could also meet different expectations of what those events could mean for any individual (Reid 2012b).

The categorization of the social groups engaged in sport events

There can be established four concrete kinds of meanings here laid in some activities which are accompanied by a strong desire for success, attention of public, unilateral load and financial transactions. The categorization is based on the engaged social groups and their preferences:

1. The Sportsmen

Here we could divide this group more in detail and classify the sportsmen per their motivation: Professionals who take sport as an ordinary job, those for whom sport is a way of self-presentation, the other ones who want to postpone the human limits (or just their own

ones), the individuals who look for the experience from the competition or the game, those who try to develop game strategies etc.

However, this kind of distinction is not relevant for our purposes. What is important is a kind of knowledge that for the sportsmen/women themselves can be very important of what kind their motivation is deciding (financial interests, self-presentation etc.) but for the meaning of the activity the kind of motivation presents just a marginal topic. The character of this group is minority. The motivation is not transferable to other groups. These modern heroes (stars, millionaires, objects of different fan clubs…) present and establish (through their sport activities) some possibilities how to develop a new meaning of movement activity which is related to their performance. Here new meanings appear and grow (via the sportsmen/women) which do not primarily belong to them and which differ motive by motive (per the way of answering the question why sportsmen/women accept challenges of "sport").

2. The Spectators and Fans

The participants of this group perceive "sport" as a show (spectacle), as an identification with a social group (club, team), as a form of spending their leisure time, or as a passive way of relaxing. Although it looks like the reactions of spectators and fans are decisive for the active sportsmen/women, this idea is much closer to illusion than to reality. Real interconnectedness and mutual dependence is, in fact, developed via the third group. The interest of spectators is to buy a spectacle and to pay for watching performance made by somebody else. The psychological and sociological aspects of this problem are very broad and they are described in detail within the literature devoted to the psychology of crowds (Le Bon 2009; Drury & Scott 2015 etc.). However, it is obvious that without salesmen and businessmen the interests of spectators cannot be satisfied.

3. The Businessmen

They deal and trade with human performance and human bodies and they offer them (as goods) to some other people. In general, there is no difference whether some small sums of money are paid during a weekend village football match, or if millions or billions of dollars are paid for TV broadcasting of the big sport events. The meaning of "sport" for this group consists just in a maximal financial profit. This is the reason why managers and sport functionaries are successful if they have good results in selling and buying sportsmen. The commercials and advertisements become compulsory and urgent components of "sport". The businessmen who are directly connected with the sphere of "sport" are tied to many other financial and business subjects which are not interested in "sport" at all. However, the high number of spectators and fans present a great opportunity for them to develop their business.

The offers of goods and services are not limited by business with sport instruments and equipment. They include a much broader spectrum of advertised and sold things (from drinks and food to cars, or even industrial buildings etc.). All of this is offered and sold within the events whose original sense should have consisted in the manifestation of beauty of human movement, fair sport competition and the ideals of harmonic personal development. For this group "sport" presents just background of their activities which can be easily replaced with any other settings where business can be handled.

4. The Unbiassed Public

The participants of this group give a meaning to "sport" by the fact that they do not attribute any special sense to it. There can appear some confusing points here, or misunderstandings and we can also meet some prejudice. The opinion of this group is often related to some clichés about the harmful effects of "sport" (a ball as a "round nonsense", wasting money on "useless things", "sport" as a highway to the "permanent invalidity" etc.). However, the unbiased public need not present just a lay community which is not interested in movement culture (of course, this situation is also quite often) but it can be consisted of the people who reject the practice of "TECHNÉ ATHLÉTIKÉ" and prefer "TECHNÉ GYMNASTIKÉ" – as an inspiring and profitable approach to human movement. These people can present the ones who very carefully distinguish between sport and "sport".

Conclusions

The authentic mode of sport is personalized by human being of a sportsman/woman and has got some essential attributes: subjectivity, creativity and playfulness. For this reason, the hypertrophic technologized management of the sportsmen/women by coaches can bring some negative effects. One of them can be a kind of hypostatization of a personality. This effect transforms a sportsman/woman into a "thinking thing" just practising a movement action. A high level of sport performance then can provide "just" a kind of pleasure and enjoyment coming from performance (in a form of the result) but not coming from sport activity itself, nor from a creative physicality of a sportsman/woman.

If we accept the idea that the substance of sport is formed by its ludity (playfulness), then the next question must be asked: Should a sportsman enjoy the play, or should he/she be just an object of the play which is ruled by somebody else? Here we can speak about some forms of dehonestation of sport (and "sport", especially). A typical feeling for these forms is

alienation coming from impossibility of sportsmen/women to identify themselves with the realized sporting activity. For this reason, this activity cannot be considered as personal and is lacking in the intrinsic motivation.

The above described four cases of different approaches to "sport", interconnected and interpenetrated one with another, do not have much in common with the idea of the harmonic human development and with the idea of common care of body and soul. While sport presents a significant and essential part of movement culture, "sport" is uncultured. And, a human body presents in its context just a solid, in the mathematical (or geometrical) way of understanding.

However, we should not be satisfied with this statement. If we would be able to offer some other ways how to find better meanings of human movement, if we take meaningful care of our bodies and if we refuse to play the role of businessmen or goods in the world of "sport", we can return to "TECHNÉ GYMNASTIKÉ" and save the world of sport together with its ideals. Then we can develop and enrich the complex of movement culture. It presents a very strong imperative for our postmodern, consumeristic and sedentary society.

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PERFORMANCE MOTIVATION OF BRATISLAVA UNIVERSITY STUDENTS

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Summary: The aim of the Study was to broaden the findings regarding the performance motivation of the students of the universities in Bratislava segmented according to university type. The research sample comprised 248 undergraduates (males: n = 141; 22.40 years of age ± 1.62 and females: n = 107; 21.78 years of age ± 1.49). A standardised performance motivation questionnaire (PMQ) was used to measure performance motivation (Pardel, Maršálová & Hrabovská 1992). The Kolmogorov-Smirnov test was used to evaluate data normality, while the Kruskal-Wallis test and Mann-Whitney test were used to test the significance of the differences between individual independent selections. The results revealed significant differences in performance motivation ($H_{(5)} = 76.730$, $p = .000$, $\eta^2 = .307$), anxiety inhibiting performance ($H_{(5)} = 128.270$, $p = .000$, $\eta^2 = .591$) and anxiety supporting performance ($H_{(5)} = 95.754$, $p = .000$, $\eta^2 = .331$) among undergraduates of various types of schools. The students of the Faculty of Physical Education and Sport of Comenius University in Bratislava show significant differences ($p < .001$) in all of three dimensions of performance motivation in comparison with all of the other undergraduates segmented in accordance with various school types. Our findings can be explained by the more intensive sporting activity of the students of the Faculty of Physical Education and Sport, Comenius University.

Key words: performance motivation, anxiety inhibiting/supporting performance, university students

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Introduction

The word “motivation” is from the word “motivus” derived from the verb “movere” - to move (Kábrt 1996). Thus, we can assume that our behaviour is influenced by certain driving forces which we call motives. Rheinberg (2006) confirmed that motivation represents an inner strength that drives people and their activities. Murphy et al. (2002) view motivation as a general name for the fact that an organism’s behaviour is partly determined by its own quality or internal structure. The term “motivation” interprets various psychological reasons for behaviour, its subjective importance, and explains the observed variability of behaviour - why people are oriented towards different goals (Zimbardo 1983). Performance motivation represents a personality characteristic, a sufficiently stable tendency to achieve the best possible performance (Bedrnová, Nový et al. 2007). Performance motivation is identified as an individual’s need to achieve success in various activities, especially in competition with others. According to Abramenková et al. (1987), performance motivation is based on emotional associations connected to inner survival and human behaviour. People who are encouraged to be independent by their mothers at a very early stage of their lives achieve very high levels of performance motivation. People with a low level of performance motivation may have been encouraged to be independent too, however at a later age. It was also proved that people with a high level of performance motivation were rewarded for little steps towards independence, namely by a manifestation of physical affection. The influence of upbringing on performance is also proved by comparative anthropological research: frequent training towards independence from adults leads to a high level of performance motivation (Nakonečný 1992). According to Křivohlavý (2009), success has a mostly strengthening function. It leads to the development of positive aspects of personality as well as to a better quality of life, which is substantial and determining for a person in any given situation. Šerešová (2010) states that the more frequent and intense current mental states resulting from success include a higher stabilised aspiration level among athletes, which could have a positive influence on their performance, but which could also lead to deeper and more intense conflict due to potential failure. According to Gregor (1994), peak performances can be expected from athletes whose qualities (physical, technical, tactical) are enhanced by high performance motivation. In the conclusion of their study, Šmela, Pačesová, Kraček and Hájovský (2017) is stated that the level of performance motivation is determined by the level of sporting activity. The authors show significant differences between top, high performance athletes and non-athletes in all four dimensions of performance motivation, i.e., the more

intense the sporting activity, the higher the performance motivation. The theory suggesting a direct dependence between the level of sport activity and the level of achievement motivation was also supported by the studies conducted by Rathee & Singh (2011), Ibrahim & Gwari (2011), Ali (2010), Khan et al. (2010), Unierzyski (2003). Their results proved that the relationship between performance motivation and sport activity as follows: the higher the level of sport activity, the higher the performance motivation.

Methods

The research sample comprised 248 undergraduates (males: n = 141; 22.40 years of age ± 1.62 and females: n = 107; 21.78 ± 1.49 years old) from six faculties (the Faculty of Law of Comenius University in Bratislava - FoL CU BA, the University of Economics in Bratislava - UoE BA, the Slovak University of Technology in Bratislava - SUoT BA, the Faculty of Natural Sciences of Comenius University in Bratislava - FoNS CU BA, the Faculty of Arts of Comenius University in Bratislava - FoA CU BA, and the Faculty of Physical Education and Sport of Comenius University in Bratislava - FoPEaS CU BA). We characterised the research sample segmented according to school type by the level of engagement in sporting activities, which can be seen in Figure 1

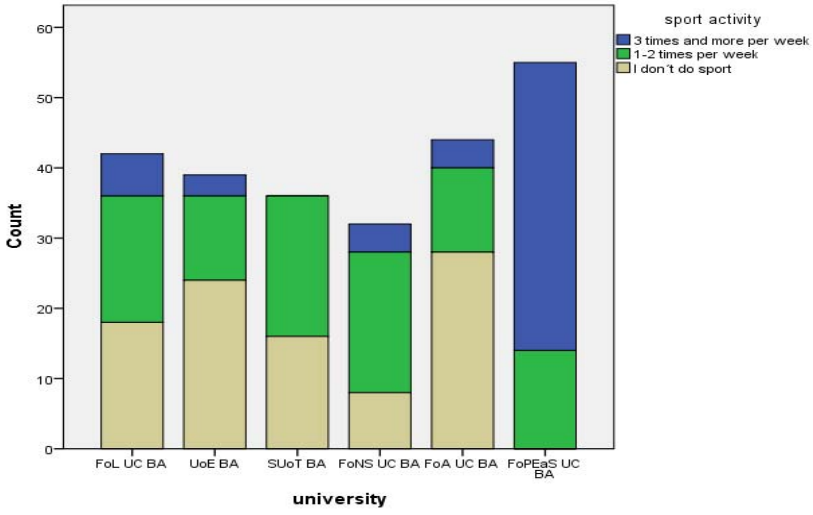

Figure 1
The level of engagement in sporting activities

Legend

FoL CU BA – Faculty of Law Comenius University in Bratislava
UoE BA - University of Economics in Bratislava
SUoT BA – Slovak University of Technology in Bratislava
FoNS CU BA – Faculty of Natural Sciences Comenius University in Bratislava
FoA CU BA – Faculty of Arts Comenius University in Bratislava
FoPEaS CU BA – Faculty of Physical Education and Sport Comenius University in Bratislava

Performance Motivation Questionnaire (DMV)

The performance motivation questionnaire contains 52 items, where the respondent evaluates the level of consent to the statement on the Likert scale. The questionnaire consists of three scales: the performance motives scale, the anxiety (weakening) inhibiting performance scale and the anxiety (facilitating) supporting performance scale.

1. The performance motives scale corresponds with the complex and multifaceted nature of the performance motives and consists of four aspects: the aspect of performance behavior, the aspiration aspect, the aspect of endurance at work, the aspect of time orientation in the future.
2. The anxiety inhibiting performance scale can be described as recognition of the weakening performance, loss of speed and activation in the states that cause tension in stressful, new and critical situations. In other words, the anxiety inhibiting performance can be characterized as a certain tendency to avoid situations that require a high performance in order not to experience the feeling of failure.
3. The anxiety supporting performance scale is characterized by a link between an average, in other words optimal sense of tension and the mobilization of activity as a favorable condition for a quality performance. In other words, we can define it as an effort to avoid failure (Pardel, Maršálová, Hrabovská 1992).

Statistical Methods

We used basic mathematical-statistical methods to process the results. We detected normality by using the Kolmogorov-Smirnov test. The Kruskal-Wallis test was used to test the significance of differences between the individual scales of the sample divided into groups according type of university. The significance of the differences between individual independent samples was tested using the Mann-Whitney U test. The significance level was set at $\alpha \leq .05$ and $\alpha \leq .01$. The importance of the relationship or dependence between two groups was expressed using the coefficient r., Pett (1997). Effect size, the coefficient η^2, effect size, expresses the effect of the independent variable (sport activity) on the dependent variable (performance motivation). The magnitude of coefficient $\eta 2$ is evaluated according Morse (1999) in the following ranges: $\eta 2 \geq .14$ (large effect), $\eta 2 = .06 - .14$ (medium effect), $\eta 2 = .01 - .06$ (small effect). For better interpretation, we have presented the results in box-plots.

Results

Performance motives scale

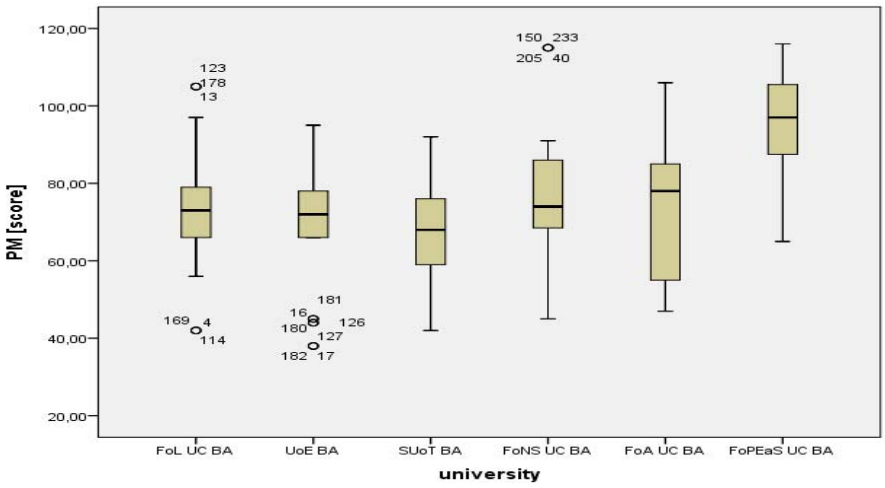

Figure 2
Score of the performance motives scale of undergraduates

Statistically significant differences were detected among the median values of subjects segmented according to school type: $H_{(5)} = 76.730$, $p = .000$, $\eta 2 = .307$. The effect size expressed by eta square is large. Statistically significant differences ($p < .01$) were detected between the FoPEaS CU BA student group and other student groups. In the dimension of performance motivation the students of FoPEaS CU BA scored a mean value of 96.27 ± 11.99 compared to the students of FoL CU BA 72.43 ± 15.44 points, UoE BA 68.92 ± 16.83 points, SUoT BA 68.22 ± 15.33 points, FoNS CU BA 77.13 ± 19.21 points and FoA CU BA 71.45 ± 18.76 points (Figure 2). The significance of the differences in performance motivation between individual school types can be seen in Table 1.

Table 1
Statistical significance of the differences between undergraduates in the performance motives scale dimension

	FoL CU BA	**UoE BA**	**SUoT BA**	**FoNS CU BA**	**FoA CU BA**	**FoPEaS CU BA**
FoL CU BA						
UoE BA	n.s.					
SUoT BA	n.s.	n.s.				
FoNS CU BA	n.s.	n.s.	n.s.			
FoA CU BA	n.s.	n.s.	n.s.	n.s.		
FoPEaS CU	**	**	**	**	**	

BA						

Anxiety inhibiting performance

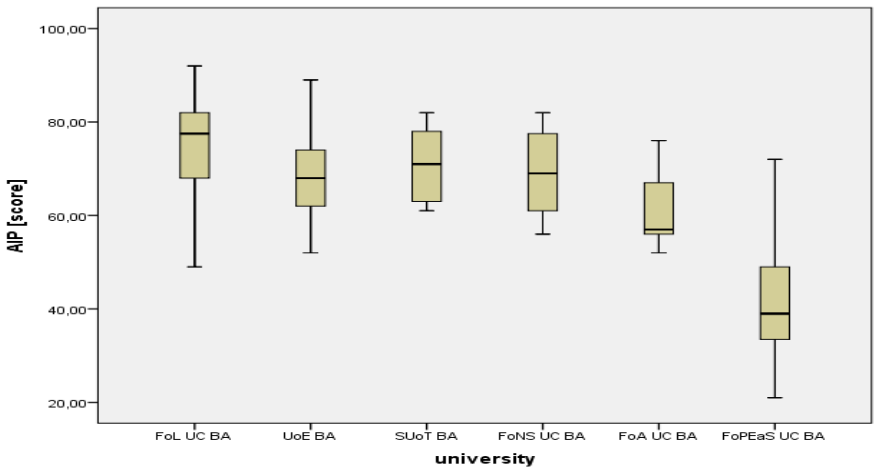

Figure 3
Score of the anxiety inhibiting performance of undergraduates

Statistically significant differences were detected among the mean values of subjects segmented according to school type: $H_{(5)} = 128.270$, $p = .000$, $\eta^2 = .591$. Effect size corresponds with large effect. Statistically significant differences ($p < .01$) were detected between the FoPEaS CU BA student group and other student groups. Statistically significant differences ($p < .05$) were also detected between FoA CU BA students and the students of FoL CU BA and SUoT BA. The lowest value was scored by the FoPEaS CU BA students: 41.18 ± 11.53 points. On the other hand, the students of FoL UC BA scored the highest value of 73.43 ± 12.00 points (Figure 3). The significance of the differences in anxiety inhibiting performance between individual school types can be seen in Table 2.

Table 2
Statistical significance of the differences between undergraduates in anxiety inhibiting the performance dimension

	FoL CU BA	**UoE BA**	**SUoT BA**	**FoNS CU BA**	**FoA CU BA**	**FoPEaS CU BA**
FoL CU BA						
UoE BA	n.s.					
SUoT BA	n.s.	n.s.				
FoNS CU BA	n.s.	n.s.	n.s.			
FoA CU BA	*	n.s.	*	n.s.		
FoPEaS CU BA	**	**	**	**	**	

Anxiety supporting performance

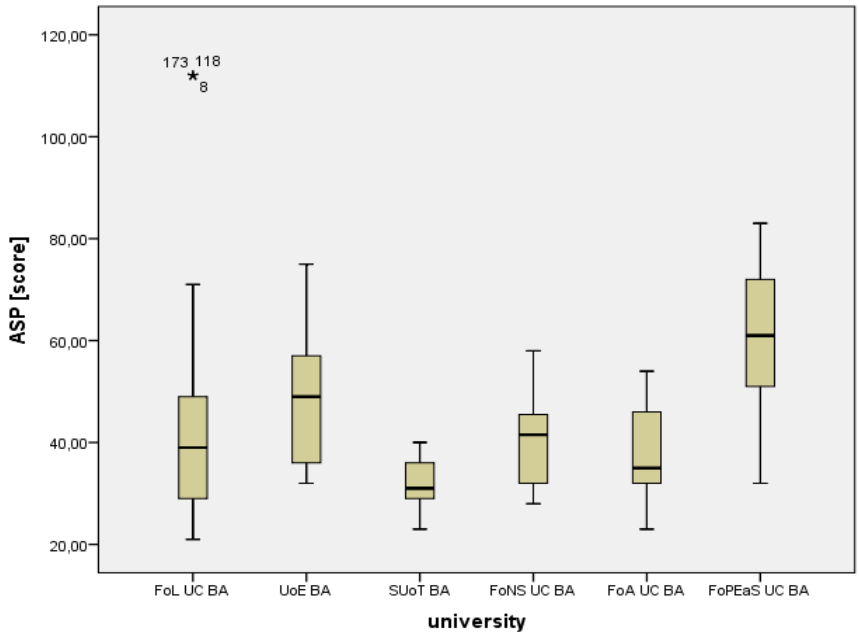

Figure 4

Score of the anxiety supporting performance of undergraduates

A statistically significant difference was also detected in the third dimension: ($H_{(5)}$ = 95.754, p = .000, η2 = .331) between the mean values of the responders' scores. The effect size is large (Figure 4). Statistically significant differences (p < .01) were detected between the students of FoPEaS CU BA and all of the other groups of responders segmented according to school type. A more detailed comparison of mean values expressed by statistical significance can be found in Table 3.

Table 3

Statistical significance of the differences between undergraduates in dimenzi anxiety supporting the performance dimension

	FoL CU BA	**UoE BA**	**SUoT BA**	**FoNS CU BA**	**FoA CU BA**	**FoPEaS CU BA**
FoL CU BA						
UoE BA	n.s.					
SUoT BA	n.s.	**				
FoNS CU BA	n.s.	n.s.	*			
FoA CU BA	n.s.	n.s.	n.s.	n.s.		
FoPEaS CU BA	**	**	**	**	**	

Discussion

Extensive research which has been conducted in the area of performance motivation has revealed significant differences between groups segmented according to a selected factor. The study by YE (2001), whose research sample comprised 2214 Chinese athletes differentiated on the basis of gender and sport activity type, showed significant differences of performance motivation between gender and type of sporting activity (individual vs. collective). The findings of the research of Vesković and Milanovič (2011) examining the relationship between the performance motivation and success of Serbian athletes indicated that athletes competing in individual sports defined higher goals to achieve their own satisfaction. In the study of Dureha, Moradhvaj, Yaduvanshi, Mishra (2010), the level of participation in foreign ice hockey tournaments was used as another criterion for the assessment of performance motivation. However, it did not reveal significant differences. The criterion of calendar age of adolescent Spanish athletes in the study of Castiollo, Duda, Balaguer, Tomás (2009) showed increasing performance motivation influenced by adolescence and the ability to better define success as well as opinions regarding achieving success. We can see the intention to differentiate respondents on the basis of school type in the study of Scholz (2011), in which he carried out a comparison of performance motivation of students of a sports grammar school and classic grammar school. The students of the sports grammar school showed a statistically significant higher performance motivation. Our findings correlate with this study: undergraduates who are more active in sport (FoPEaS CU BA) have higher performance motivation scores compared to those of other undergraduate respondents. We have not come across any research plans to segment undergraduates according to school type; therefore our study can be regarded as a pilot study. Sedláčková (2014), who compared the performance motivation of adolescents from the point of view of sporting activity, found significantly higher performance motivation among sporting adolescents compared to non-sporting adolescents. Our findings, which show higher performance motivation, higher anxiety supporting performance and lower anxiety inhibiting performance among the students of FoPEaS CU BA who engage in sporting activities more than three times a week, broaden our previous research (Šmela, Pačesová, Kraček & Hájovský 2017), which confirmed significantly higher performance motivation, anxiety supporting performance and lower anxiety inhibiting performance among elite athletes

compared to occasional athletes and non-athletes. The same conclusion, i.e., a higher level of achievement motivation with top sportsmen compared to non-elite athletes, was also made by Kavussanu & McAuley (1995) in their paper. Direct dependence between the level of sport activity and the level of achievement motivation was also supported by the studies conducted by Rathee & Singh (2011), Ibrahim & Gwari (2011), Ali (2010), Khan et al. (2010), Unierzyski (2003).

Conclusion

This study shows significant ($p < .01$) differences with a large effect size ($\eta 2 \geq .14$) in the performance motivation of undergraduates segmented according to school type. The students of FoPEaS CU BA exhibit significantly ($p < .01$) higher performance motivation, anxiety supporting performance or anxiety inhibiting performance compared to the students of all of the other school types. On the basis of the analysis of the studies in the Discussion section and more intense sporting activity of the students of FoPEaS CU BA, we believe that sporting activity itself is one of the decisive factors affecting the level of performance motivation of undergraduates.

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EXIT SCHOOL AND ITS OUTCOMES ON HEALTH-RELATED FITNESS

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Summary: School-based interventions are thought to be the most universally applicable and effective way to counteract low physical activity (PA) and fitness. Whereas Exit school it is not included. **Method**: For purpose, this controlled study verified the effect of Leaving school on the health relate to fitness among the unschooled. **Results:** Based on the validity of alpha health-related fitness test battery, the design of study and statistical processes applied within search limitation. Our results caution against school dropouts on levels of health relate to fitness among the unschooled. Admit in five motor abilities namely strength, speed, endurance, flexibility and coordinative abilities, according to present study. Reported in the benefit of student scholar as an active lifestyle. **Conclusion**: our results recommended all the Algerian dropouts -students to know the overall impact of participating and being involved in outdoor sport activities, subjected in this study as getting positive effects regarding active lifestyle, which in turn helps dropouts-students, to achieve a health-enhancing level of physical fitness and preventing them from disorders like obesity, laziness and stress related to life and their complication. A truth that leads us to recommended our teachers to understand the benefits of outdoor education sport or pro-socials activities contents as part of young people's educational experiences, to structure their free time in beneficial activities, including recreation, academic and cultural enrichment, opportunities for pursuit of individual interests and volunteer activities, especially before being expelled from their school.

Keywords: physical condition, Exit school, health and fitness.

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Introduction

School-based interventions are thought to be the most universally applicable and effective way to counteract low physical activity (PA) and fitness. Inspected by professionals worldwide via their valuations as key rooted throughout the program in both physical education and health education appropriate to meet the overall development of children and youth. Support in similar studies, as indicators serving to increase the physical condition of the general population (Jorgensen, Xu & Constanza 2010). As well as children, adolescents and young (Lebedinskiy, Koipysheva, Rybina, Kudryavtsev, Ermakov, Osipov & Sidorov 2017). Whereas these standards are absent when our students leave their school. Indicate by (Marnie 2004) that many more federal programs serve at-risk youth but do not have dropout prevention as a stated program goal. The case of this controlled study, which based their presumptuous on ALPHA Test to control the effect of leaving school on health fitness levels. Suggested in this study as a significant impact on their opportunities to participate in outdoor-sport, the conditions that can affect health outcomes including physical levels (Symeon & Lisette 2016). Support in several studies through their benefits related to mental health (Ken & Andy 2016), as well as social capital (John & Eric 2013).

From this perspective, our outcome in this study makes up by confirming the result of Algerian medical studies, which recommended the increase of the exercise in the Algerian community (Zerf 2016). Advanced by (Wenjiang 2012) in strengthen of sports activities to enhance the quality of follower life. Recommended by specialists in this topic built on the level of fitness to monitor changes in body composition via Algeria community, according to (Mohammed, Idris, Bagdad, Abelatif & Ali 2016). Support by the European Union via the standards of ALPHA Test to assess the health-related fitness status in children and adolescents. Acquainted by similar (Dragan & Ostojić 2013), as the ideal battery tests confirmed by (Jonatan, España-Romero, Castro-Piñero & Manuel 2017) in evidence of fat impact associated with the health of children and adolescents related to upper body composition connected to decrease of musculoskeletal fitness correlate to cardiorespiratory and motor fitness.

Methods

Study population and design

The research samples were elected by intentional manner included 32 students aged around 20 years, sex male. They were tested before and one year after they left school seats for the academic year 2015-2016 and 2016-2017, 3 months after the school entry. All participants were healthy with good habits without anything of mining medication on a regular basis. They were familiar with procedures and all participants provided their written consent. The study protocol was adopted by the Institute of PE. Piloted based on the ALPHA-Fitness Test Battery (Teenagers) (Ruiz, Castro-Piñero, España-Romero, Artero, Ortega, Cuenca, Jimenez-Pavón, Chillón, Girela-Rejón, Mora, Gutiérrez, Suni, Sjöström & Castillo 2011). The exact ages of the participants were obtained by multiplying the number of months. Pubertal status (Tanner stages) the examinees provided a medical certificate establishing achievement. Weight was measured in the standing upright position with electronic scales with a precision of 100 g. We determined standing height to the nearest 0.5 cm with the child's weight being equally distributed on the two feet, head back and buttock on the vertical land of the height gauge. We calculated BMI as the ratio of body weight to the square of height ($kg.m^2$) (Zerf, Atouti & Farouk 2017). Flexed Arm Hang test the total time in seconds is recorded - the timing is stopped when the participant's chin falls below the level of the bar or head tilts backwards to enable sec the chin to stay level with the bar- to calculi the levels of this test, we use 1 point for 40 sec. Standing broad jump the measurement is taken from the take-off line to the nearest point of contact on the landing (back of the heels). Record the longest distance jumped, the best of three attempts. 20 m shuttles run to test the participant's score is the level and number of shuttles (20 m) reached before they were unable to keep up with the recording. Record the last level completed. For 4 x 10 m shuttle run, we record the time to complete the test in seconds to the nearest one decimal place.

Statistical analysis

Based on the data tests and the data analysis procedures used in study consisted of the computation of the means, standard deviations, the dependent t-test and correlation paired samples. We have chosen the descriptive statistics where we have calculated the conditions

chosen for this experience. With a significance level was set at 0.05. Statistical procedures were done using IBM SPSS 21.0.

Results

Depending on the alpha health-related fitness test battery for children and adolescents and statistical processes applied within search limitation. Our results improve the benefits school-based interventions located in PE activities sport before a leaving school in comparison with their results after their leaving school. Record in the present study according to standards alpha health-related fitness test practised coordinated to the norms set by the European Union. Confirmed in the case of this study by the significance of the dependent t-test Table 1 and correlation list in Table2. In the benefit of school-based interventions as an effective way to counteract low physical activity (PA) and fitness, recorded in the present through less body fat associated with increased levels of physical performance record in the benefits of before leaving school. Advocate by BMI as an energy indicator relating total mass and height, which allow the comparison of athletic performance in various health & fitness tests (Suxing, Jing, Qi, Wen, Xiuyang et al. 2015). Where the most appropriate profiles report in this study support the benefits of school time structures as favourable conditions to realize optimal performance (Mohammed, Idris, Bagdad, Abelatif & Ali 2016). Confirmed by the validity of ALPHA Battery test, definite in similar (Robinson, Diogo, Jorge Enrique, Mikel & Felipe 2015) as reliable battery test administered by physical education teachers for assessing the levels of physical fitness in school environment. Suggested by European Union health authorities and schools as an ideal setting for monitoring youth fitness (Ruiz, Castro-Piñero, España-Romero, Artero, Ortega, Cuenca, Jimenez-Pavón, Chillón, Girela-Rejón, Mora, Gutiérrez, Suni, Sjöström & Castillo 2011). Evidence guide us to indicate that school-based interventions are thought to be the most universally applicable and effective way to counteract low physical activity (PA) and fitness, report in this study as markers physical lifestyles (Kelishadi, Gheiratmand, Ardalan, Adeli, Mehdi; CASPIAN Study Group 2007). State in the present as a missing practice among our expelled from school. Owing to their teachers who do not rely on outdoor education sport or pro-socials activities as part of young people's educational experiences, especially before being expelled from school. Indicated in the previous as positive practices (Wu, Han, Zhang, Luo, Hu & Sun 2017) for health and well-being of the individual in general (Mahdi, Masoud, Amin, Sadegh & Ali 2014).

Table 1

Characteristics and differences observed in the sample

		N	Mean	Std. Deviation	T	Sig.
Body mass index BMI	Before	32	21.16	0.79	-9.88	0.00
	After	32	24.49	3.36		
Flexed Arm Hang FAH	Before	32	6.25	3.49	14.64	0.00
	After	32	4.82	4.45		
Standing broad jump SBJ	Before	32	2.49	1.18	17.91	0.00
	After	32	1.84	1.17		
20 m shuttle run SR20 m	Before	32	7.49	.53074	7.86	0.00
	After	32	5.57	.45447		
4x10 m shuttle run SR4x10 m	Before	32	9.13	.45447	-6.82	0.00
	After	32	10.86	.45447		

Showed in similar (Ortega, Ruiz, Castillo & Sjostrom 2008) through the impact of lower-body power which was inversely related to strength score (with a handgrip, standing broad jump, and an indicator of muscle endurance) in adolescents. The case of this study record via the relation BMI and alpha health-related fitness Test Battery; listed in Table 2. Evidence confirmed by (Jonatan, España-Romero, Castro-Piñero & Manuel 2017) in effect of inactive lifestyle correlates with body fat gain associated with the health of children and adolescents. Reported in this actual study as strongly negative with alpha health-related fitness Test Battery in the benefit of less body fat record via Leave school in comparison with their lifestyle after their leaving school. As a missing practice to structure their free time in beneficial activities to increase their health-related fitness, according to Algerians studies subjections (Zerf, Mokkedes, Hamek, Houar & Bengoua, 2016) indicate in the case of this study in benefits of school-based PE lessons.

Table 2

Pearson Correlation between BMI and ALPHA health-related fitness test battery

Pearson Correlation	**BMI**	**FAH**	**SBJ**	**SR20m**	**SR4x10 m**
Body mass index BMI	1	-0.87**	-0.95**	-0.88**	0.66**
**. Correlation is significant at the 0.01 level (2-tailed).					
N	32				

Discussion

Built on the power and validity of alpha health-related fitness test battery as feasible tests to assess health-related physical fitness in adolescents, according to (Tejero-Gonzalez, Martinez-Gomez, Bayon-Serna, Izquierdo-Gomez, Castro-Piñero & Veiga 2013). Our results show that the benefits of School-based PE lessons curricular as healthy lifestyle activities sport among our scholar. Established in this study based on alpha health-related fitness test battery standards. Reported by similar (Manuel 2014) as valid battery test in school environments. Advanced (Moreno, Mesana, González-Gross, Gil, Ortega, Fleta, Wärnberg, León, Marcos & Bueno 2007) in its possibility to estimate adiposity amounts on health-related fitness via Spanish adolescents. Sustained in the present through BMI correlation with ALPHA health-related fitness test battery. Confirmed via adolescents with fatness that has lower levels of fitness than their peers (Rocío, David, Carlos, Verónica, Jonathan & Óscar 2013). Admit in the present study via upper body mass index (BMI) which affected muscle strength, endurance and cardiorespiratory functions among teenagers (Noha, Kader & Mohamed 2016). Reported in the case of this study thought Flexed Arm Hang - Standing broad jump -20 m shuttle run test - 4x10m shuttle run. In the benefit of PE curricular as healthy lifestyle activities sport among our scholar extra-curricular activities sports. Acknowledge advance by preventing studies (Lerner, Bornstein & Leventhal 2015) in more time sports activities related to outcomes that are more physical and health. Agreement in its important for people to know the overall impact of participating and being involved in outdoor sports activities (Wilson 2009). Accounted in the present study as benefits healthy fitness practice permitting to students who left school to maintaining an overall athletic body composition. As the desire to maintain healthy weight correlates to upper physical performance. Advance by similar via the overweight as a serious health concern in the development of the child's musculoskeletal system relative to muscle strength and body composition (Miyatake, Miyachi, Tabata, Sakano, Hirao & Numata 2012). Agreed in this study by the validity of alpha tests to control the impact of left school and its consequences on health-related fitness. Strategic indicate by specialists (Wenjiang 2012) in the benefits of sports activities to enhancing the quality of student or people life. Established in the present based on leaving school and its consequences on health-related fitness due to inactive lifestyle (Mahdi, Masoud, Amin, Sadegh & Ali 2014).

Conclusions

Our results raise the benefits of School-based interventions as the most universally applicable and effective way to counteract low physical activity (PA) and fitness. Support in the present by power and validity of alpha health-related fitness test battery. Sustained by European Union health authorities and schools as an ideal setting for monitoring youth fitness. Advance in similar, as markers of their lifestyles. The case of the present study, which required from our Dropouts students to adopt active lifestyle after their leaving school. To conclude, we recommended all the Algerian Dropouts -students to know the overall impact of participating and being involved in outdoor sports activities. Since their benefits raise on physical growth and development of teenagers, serving them to stating actives, fits and healthy, as well as it's preventing them from disorders like obesity, laziness and stress related to life and their complication. The case of our leavers recommended considering a sport and physical activity as a part of their leisure time. Evidence agreed in a higher level of physical activity and less time spent to increased health-related quality of life among leavers.

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INTERNAL LOAD OF ELITE MALAYSIAN YOUNG SOCCER PLAYERS IN SMALL SIDED GAMES WITH DIFFERENT PARAMETERS

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Summary: The aim of the study was to extend the knowledge about the internal load of elite young soccer players in small sided games with different parameters in the category under 19 years. The group consisted of 16 elite soccer players under the age of 19. This team competed in the first league of the same age category We have monitored the time spent by players in bio-energy load zones (percentage of maximum heart rate), in small sided games with 2 players against 2, 3 against 3, with the size of the playing field of 25 x 18 meters and 30 x 25 meters. We used basic mathematical and statistical characteristics and Wilcoxon t-test for non-parametric selections. Our study confirmed that in the category under 19 years is valid that the larger number of players (3:3) in small sided games, indicates the players to spend more time in bio-energy zones 4 and 5. Direct correlation also applies to the size of the playing field, depending on the time spent in the load zones 4 and 5. The larger dimension of the pitch indicates to more time the players spend in bio-energy load zones, which is considered to be focal for us. If we want to use them as a way of complex training program (game training), then the small sided games are suitable training strategy.

Key Words: soccer, internal load, heart rate, small sided games, category under 19 years

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Introduction

In soccer, there are a lot of technical means and different systems that allow us to better analyse the load of the player in the training and in the match (Prozone, Catapult, Panini Digital, LPM Soccer 3D). From these softwares we can get a lot of data, but we have to sort out them and extract only the ones that are relevant. The coaches should additionally use them and implement them into the coaching process of their teams. An important part of the training process is-the planning, which aims at optimizing the growth of sports performance. However, it is necessary to know the patterns of the training load. That is, the load (training stimulus) - stressor must be adequate to make adequate adaptation changes in the player's organism (Bada 2014). One training stimulus at a certain intensity becomes effective only when reaching relevant volume. This does not only apply to the development of motional abilities, but also to the improvement of the technical aspects of game activities. Only with an optimal number of repetitions of the motional coordination, which is characterized by the ideal process of motional activity (Holienka 2005), is strengthened. Randers et al. (2010) found that small forms of soccer have potential in themselves, as an alternative to non-specific means of gaining fitness. If the stressor is more specific, we expect more transfer (high-quality gaming activity) to the match. Owen (2014) also confirms this fact from the point of view of a professional player to whom this specific load has been regularly applied.

In this work we tried to get information about the internal load of players in different small sided games (SSG) with different parameters and in different bio-energy modes of work and how long the players worked. In this direction should the future research be oriented (Hill-Haas 2011). Through the small sided games, we will achieve the improvement and stabilization of individual gaming activities (Gabbett, Jenkins & Abernethy 2009), their technical site (Gabbett 2006) and, last but not least, developing the creative potential of the player (Gamble 2004; Owen 2003; Gregson & Drust 2000; Little 2009). The conditions in the SSG allow creating multiple chains of game activities and game combinations that positively influence the orientation of players in the space, their activity and their emotionalism (Gregson & Drust 2000; Little 2009).Whether the training process or game load has a decisive role as an adaptive stimulus. A one-off load will cause a one-time training effect. Correct, appropriate and repeated load in the training process brings a cumulative training effect. We must also respect the genetic condition of the players, reflecting on the individual response of the organism to the applied load (Holienka et al. 2012). Adaptation is the result of repeated complex stimuli, reducing the

response of the organism to given stimuli. It also makes higher performance more economic. From a psychological and sociological point of view, we understand this process as creating certain relationships between personality and the environment. "Adaptation is both a process and a result" (Peráček 2001).

The controversial character of the game forces players to quickly switch from offensive activities to defensive and vice versa, thereby developing their current universal gaming capabilities. This player's ability is deliberately stimulated during various small sided games, when players have to cope with the time and space pressure that their opponent carries out (Engel et al. 2016).

By combining players' behaviour, their various movements in space, and alternating the burden, soccer becomes an unpredictable and highly variable complex of movement elements (Rienzi et al. 2000; Mohr et al. 2008). By properly altering the rules and content of SSG, we meet different goals and tasks. SSG, unlike game exercise, has a monolithic game play (Peráček 2004). In this age category learning improves and in training and enhancing certain physical abilities, the amount of repetition required to successfully handle a game task is reduced. Both motor and sensory motor development are approaching their final form (Vilímová 2002).

We monitored the internal load (heart rate) of players in pre-match games with a different number of players (2:2 and 3:3). We followed the lengths of the time slots during which the players worked in the individual bio-energetic modes of work and are presented in Table 1.

Table 1

Percentage distribution of load zones from maximum heart rate

Bioenergetic zone	
1. Recovery zone	0 % - 62 % HR max
2. Endurance zone	63 % - 73 % HR max
3. Intensive (Aerobic) zone	74 % - 84 % HR max
4. High-intensity (Threshold) zone	85 % - 95 % HR max
5. Maximum (Anaerobic) zone	96 % - 100 % HR max

In SSG, we emphasize the fulfilment of the theory of adequate coverage, either in terms of complexity or in terms of intensity of the training load or from both views at the same time (Peráček 2003). The small sided game (Peráček & Pakusza 2011) is a continuous game of play, a contradictory character, the players in it are forced to solve the tasks and the game situations in the attack and the defence in time and space disturbance. SSGs are aimed at improving and stabilizing techniques and tactics and developing creativity - it effects adaptively to the

situational unexpectation and continuous game play - verifying the resilience of individual and collective game performance (Peráček & Pakusza 2011; Hill-Haas et al. 2011).

Methods

The aim of the work is to gain knowledge about selected characteristics of the internal load of soccer players in small sided games with different parameters. The survey consisted of 16 elite players up to the 19 years (18.1 ± 2 years) category, with an average body height of 179.3 ± 8 cm and an average body weight of 73.8 kg ± 11.8 kg. The team participated in the 1st Slovak league of the older boys in the category up to 19 years.

Based on the Benson and Connolly tests (2012) we found the maximum heart rate (HR) of the players. Subsequently, using the Polar Team 2 Pro software, we analysed the heart rate of the players during the SSG duration. We have determined individual zones from the maximum heart rate of the players.

We used the Wilcoxon t-test for non-parametric files, to assess the effect of the number of players and the size of the small sided games on time spent in bio-energetics loading zones (zone 4. 85 % -95 % HRmax and zone 5. 96 % -100 % HRmax.) we used Effect size by Cohen – d (Sigmund & Frömel 2005).

Table 2

Cohen d - Effect size (Sigmund & Fromel 2005)

Small effect	0,2 – 0,5
Medium effect	0,5 – 0,8
Large effect	over 0,8

All statistical hypotheses were evaluated at the significance level of $p < 0.05$. This study was approved by the Ethics Commission of the Faculty of Physical Education and Sport of the Comenius University in Bratislava.

Hypotheses

H1 – We will find, in preparatory games 2:2, the significant differences between the time that players pass in the bio-energy zone 4. and 5. with different dimension of the playground (R1 – R2)

H2 – We will find, in preparatory games 3:3, the significant differences between the time that players pass in the bio-energy zone 4. and 5. with different dimension of the playground (R1 –

R2)

H3 – We will find, in preparatory games with dimension of playground 25 x 18 m, the significant differences between the time that players pass in the bio-energy zone 4. and 5. in preparatory games with different number of players (S1 – S2).

H4 – We will find, in preparatory games with dimension of playground 30 x 25 m, the significant differences between the time that players pass in the bio-energy zone 4. and 5. in preparatory games with different number of players (S1 – S2).

$S_1 (R_1) \leftrightarrow S_1 (R_2)$
$S_2 (R_1) \leftrightarrow S2 (R_2)$
$R_1 (S_1) \leftrightarrow R2 (S_1)$
$R_1 (S_2) \leftrightarrow R2 (S_2)$

S1 – 2:2 (four players excluding goalkeepers)
S2 – 3:3 (six players excluding goalkeepers)
R1 – 25 x 18 meters
R2 – 30 x 25 meters

The procedure of research

The research situation was in the measuring of the heart rate of soccer players during six repetitions in the 2:2 and 3:3 small sided games with a playground of 25 x 18 m (Fig. 1, Fig. 2). We have monitored the time they spend in designated load zones. The load interval was 2 minutes. The rest interval between repetitions was 4 minutes. We repeated both SSG six times. Players have been given instructions on the rules of the SSG (Players cannot pass the ball to their own goalkeeper. The team which gets the ball out of the pitch, loses the ball and the opponent goalkeeper stars the game.).

The values of player's heart rate were written to the collector sheet (Tab. 3).

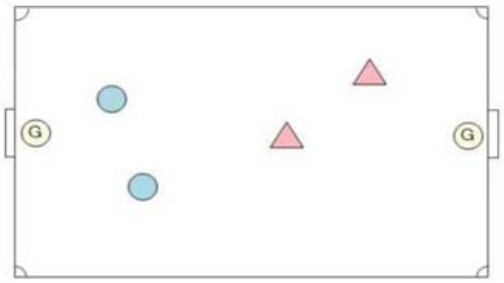

Fig. 1
Example SSG 2:2 - 25x18 m (30 x 25 m)

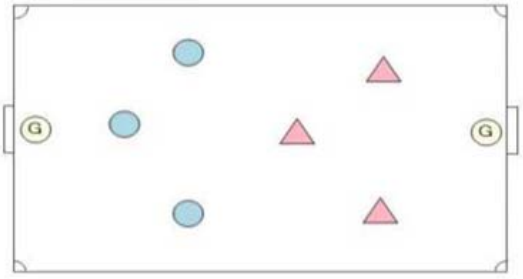

Fig. 2
Example SSG 3:3 - 25x18 m (30 x 25 m)

Table 3

Collector Sheet for HR recording

SSG	HRmax	Time in zones (s, %)									
25x18		0 % - 6 2% %		63 % - 73 %		74 % - 84 %		85 % - 95 %		96 % - 100 %	
		Time	Percent	Time	Percent	Time	Percent	Time	Percent	Time	Percent
1. repeat.											
2. repeat.											
3. repeat.											
4. repeat.											
5. repeat.											
6. repeat.											
Total											
Average											

Results

The comparison of SSG 2:2 with different dimensions of the pitch indicates that the smaller size of the playing field (25 x 18 m) is more intensive for the players, respectively they spend more time in the bio-energetics zone 5 (96 % - 100 % HR max) (33.04 % of the total time), during which SSG was played.

From the point of view of intensification, in the training process, bio-energetic zones 4 and 5 are the most important. We can understand them as game training. We have identified them as key, respectively for the training process in soccer interesting from the point of view of intensification. Comparison of the sum of the recorded times of zones 4 and 5 determines a small sided game with a playing field of 25 x 18 meters as a more efficient (Tab. 4), because players spend more than 4 % of the time as in SSG on a playing field size of 30 x 25 meters (n.s.). This conclusion we have confirmed by Cohen's d, when the effect of the size of the playing field reached the value d = 0.49, which means the upper limit of the small effect (Fig. 3). We can claim that SSG 2:2 with a size of 25 x 18 meters is more effective in terms of achieving the necessary intensity.

Table 4

Comparison of SSG 2:2 with different playing field dimensions

Dimensions of SSG	1st zone	2nd zone	3rd zone	4th zone	5th zone
25 x 18 m	1,88 %	6,23 %	13,73 %	45,07 %	33,04 %
30 x25 m	1,46 %	10,24 %	14,22 %	42,92 %	31,16 %

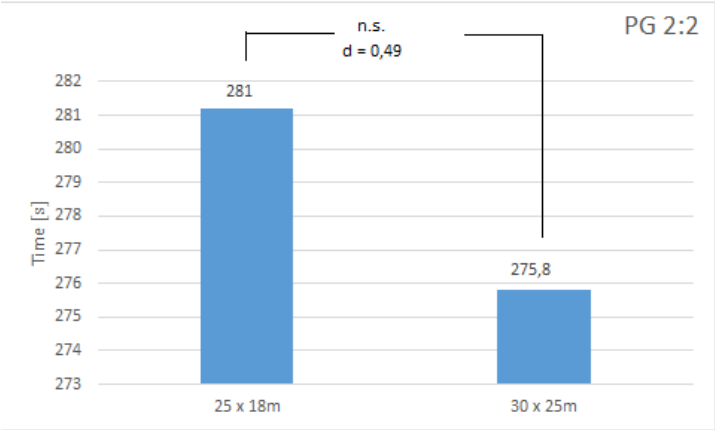

Figure 3
Comparison of SSG 2:2 with different playing field dimensions

Comparison of the dimensions in the small sided games with players 3:3 gave us the opposite result as SSG 2:2 (Tab. 4). In SSG with a size of 30 x 25 m, players perform game activities in load zone 5 by 12.4 % longer time than SSG at 25 x 18 meters. The total time in zones 4 and 5 was the difference of 4.4 % (n.s.). We confirmed (Fig. 4) the factual significance by mean Effect size (d = 0.31).

This means that SSG 3:3, measuring 30x25 meters is more efficient in terms of the achievable load intensity.

Table 4
Comparison of SSG 3:3 with different playing field dimensions

Dimensions of SSG	1st zone	2nd zone	3rd zone	4th zone	5th zone
25 x 18 m	2,97 %	9,10 %	11,85 %	41,67 %	34,42 %
30 x25 m	0,83 %	8,22 %	10,44 %	33,66 %	46,85 %

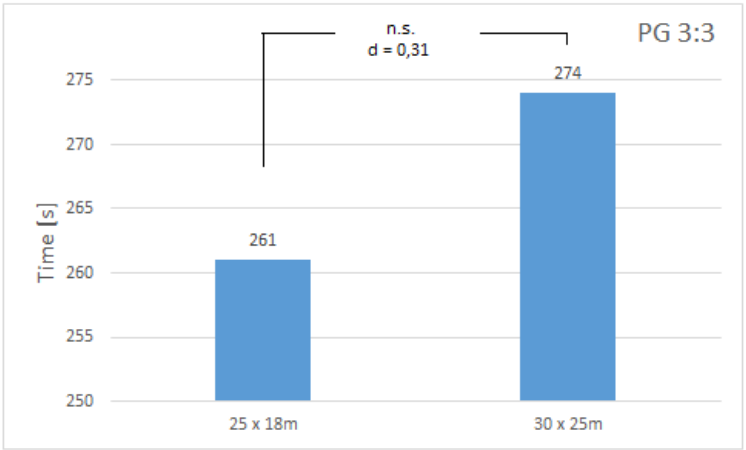

Figure 4
Comparison SSG 3:3 with different playground dimensions

When comparing SSG 3:3 with SSG 2:2, and the same size of the playing field (25 x18m) it is less effective in terms of load intensity (2:2). Summarising the key zones (No. 4 and 5), players completed 4.6 % more times compared to SSG with a 3:3 player (Tab. 5). Likewise, SSG 2:2 achieved an average rate of action (d = 0.33). But in terms of intensity, SSG with six players (3: 3) it is more effective (n.s.), because the players were more times in the most intensive zones (Fig. 5).

Table 5

Comparison of SSG with a size of 25 x 18 m with a different number of players

Players	1st zone	2nd zone	3rd zone	4th zone	5th zone
2:2	1,93 %	6,23 %	13,73 %	45,07 %	33,04 %
3:3	2,97 %	9,10 %	11,85 %	41,67 %	34,42 %

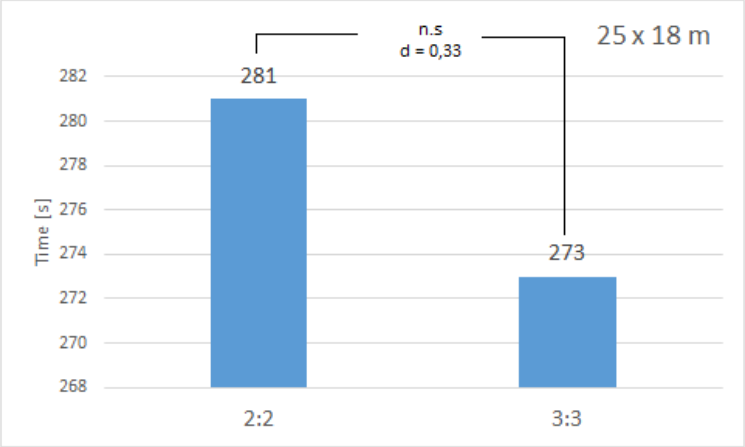

Figure 5

Comparison of SSG with a size of 25 x 18 m with a different number of players

SSG with dimensions 30 x 25 meters is more effective from the point of view of intensity training load with 3:3 players (Tab. 6). Summarising the two most intensive zones, the difference was only 6.5 % of the total duration of SSG (n.s.). *In SSG (3:3) players spent 46.9 % of the time in the highest load zone and compared to SSG (2:2) this represented a difference of almost 7.9 % of the total time (Fig. 6).*

Table 6

Comparison of SSG with a size of 30 x 25 m with a different number of players

Players	1st zone	2nd zone	3rd zone	4th zone	5th zone
2:2	1,88 %	8,25 %	13,28 %	37,66 %	38,96 %
3:3	0,83 %	8,22 %	10,44 %	33,66 %	46,85 %

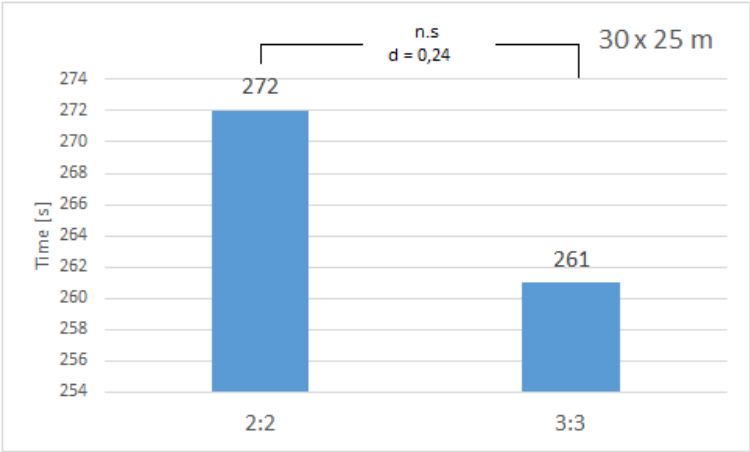

Figure 6
Comparison of SSG with a size of 30 x 25 m with a different number of players

Discussion

The players under 19 show that the most intensive game 96 % - 100 % of HR max) was SSG 3:3 with a dimension of 30 x 25 meters. According to this size and the number of players, they have reached 46.85 % in zone 5 (96 % -100 % of HR max), which is approximately 337 seconds out of a total of 720 seconds. Taking into account this number of players-participating-in this area of 30 x 25 m, it is necessary **to** use as much space as possible. In converts to single player, that represents an area of 94 m^2 (10 x 9.4 m). It is obvious that the players used the most of the field available and were able to put in their performance in terms of intensity, into the highest load zone.

The shortest time in zone 5 (96 % - 100 % of HR max) was recorded in SSG 2:2 with a field dimension of 25 x 18 meters. In this SSG, players have performed 33 % of the total time. In absolute figures it represents 238 seconds of total time (720 s).

Most of the time elite players under the age of 19 passed in zone 4 (85 % -95 % of HRmax) in SSG 2:2 with a playing filed size of 25x18 meters. This value represents 45.07 % (325 seconds) of the total time (720 s). The shortest time in this zone was in SSG 3:3 with a playing filed-size of 30 x 25 meters (33.7 % - 243 seconds).

We have noticed that players in this age category are able to produce the same amount of intensity in each SSG that we've we have chosen, that exactly stimulate the required load, by which we want to influence the players to improve all game activities. The sum of the target load

zones (4 and 5) for each SSG has represented a minimum value of 76 % (SSG 2:2 – 30 x 25 m). We found that SSG 2:2 (30 x 25 m) and SSG 3:3 (25 x 15 m) stimulate players in terms of time in key bio-energy zones almost identically (difference of 3.8 seconds). As a result, in terms of planning and managing the training process, the coach can manipulate the number of players and dimensions and will in the same time stimulate players in terms of intensity comparatively. Our findings are very important in practice, especially if we do not have the same number of groups and we want to follow the specified training load.

Owen, Twist, and Ford (2004) report that differences in SSG with different numbers of players and also with varying playing filed dimensions, affect the heart rate. Just like us, they were trying to find a SSG that would approach in terms of the pulse rate of the players during the match. They say that during SSG 1:1 and SSG 2:2 they have a more intense heart rate than heart rate during a match. SSG 2:2 are considered in terms of intensity the most intense to the size of 25x20 meters, which is approximately our size (25 x 18) at SSG 2:2. In the training process, we also have chosen training instruments that often exceed the intensity of the match. The reason is that the player's organism has adapted to the training load in the match. Consequently, if there is a stimulus in the match, which will be above standard in its bio-energetic requirements, the player's organism will respond appropriately, because it has been repeatedly in the training process with such a stressor.

Abrantes et al. (2012) analysed the internal load of young soccer players in 3:3 and 4:4 small sided games and found similar results to ours most of the time; players spent 85 % - 90 % of the maximum heart rate in the bio-energetic load zones.

Owen et al. (2011) found statistically significant differences between small sided games and large sided games in terms of heart rate. SSGs have been in the 85 % -95 % and 96 % - 100 % zones for longer periods of time than players in SSG with more players. With the results of the authors Owen et al. (2011) who say that with the increasing number of players the intensity of the load decreases, we cannot fully agree on. Because of the playing field dimension of the 30 x 25 meter with a higher number of players (3:3), the intensity has increased. With the results of Owen et al. (2011) we identify only in SSG with dimensions of 25 x 18 m.

One of the factors that greatly affect the heart rate of the players ~~is~~ are the rules. Haas et al. (2010) point to the discovery that even minor changes of the rules in small sided games can significantly affect physiological, spontaneous and time-movement reactions in young elite soccer players. Another possibility to encourage intensification of the training load could be motivation. Authors Rampinini et al. (2007) in their study describes the intensity of the stress in the training process with the influence of the factors such as coaching. They found that coach´s

encouragement affects the load intensity by approximately of 7 %.

Conclusion

Our small sided games in both groups of players (2:2, 3:3) reached a submaximal and maximum load, where the managing of the training process is becoming an effective from the point of view of the game training and developing tendencies not only in the elite youth but also in senior soccer. It turns out that it is possible, applying specific training stimulus of a complex character, to create a necessary gaming load for players in terms of adequate coverage (both in intensity and in complexity of the training load) despite the fact that the statistically non-significant relationship of our hypotheses.

In the summary, small sided games with a different number of players cause ~~elite~~ players of this age category to have a greater response to the player´s organism in terms of time spent in the major bio-energetic zones.

This knowledge can be used by trainers in the management and operational planning of the training process. We think that similar training stimulus could help the coaches adequately operate with the training stimulus in elite soccer players of this age category.

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HEALTH OF ADULTS THROUGH PRISM OF PHYSICAL ACTIVITY

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Summary: The aim of the research was to find out the realization of the physical activity among the middle-aged adults by the association with their health, retrospective of the factor contributing to the transfer of the physical activity to the adulthood. The monitored group consisted of 742 respondents of the middle-aged adults from the Southern Districts of Slovakia, of which 403 were the women (age = 37.2 ± 3.04 years) and 339 were the men (age = 36.5 ± 4.54 years) as the selection was deliberate. The monitoring was conducted by the three stages in 2014, through the so-called "Egészség és mozgás" - "Health and Movement" standardized, anonymous questionnaire, which consisted of 60 questions. Our findings point to the stated facts. The findings found the relationship between the health and fitness among the men (r = 0.8300), as well as among the women (r = 0.7193). The relationship between the physical activity and the feeling of health was recorded only among the men (r = 0.8921), while the relationship between the health problems and the feeling of health was also found among the men (r = 0.739), as well as among the women (r = 0, 6714). At the same time, the men perceive the importance of the physical activity, in terms of their health condition (r = 0.8791) more intense than the women. The physical education was significantly (χ^2 = 112.47, p < 0.01) among the men (67.6 %, n = 229), opposite to the women (33.7 %; n = 136) contributed to the transfer of the physical activity from the school environment to the adulthood. The stated findings show that the targeted education of the population, even from the childhood with the other effective, preventive measures is very important.

Key words: Adulthood, education, physical activity, physical education, health.

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Introduction

A current lifestyle of a human being has acquired a hypokinetic character, which has been manifested in the human beings movement regime, where an inadequate recommended volume of a physical activity generates favorable inputs and impulses to emergence of "civilization diseases", which have far-reaching consequences for a health of the human being (Prasad & Das 2009). Corbin & Pangrazi (2003) in this context, suggest that not only the volume of the physical activity of the human being is reduced but also the intensity as well.

The issues about a physical ability, in relation with the health, are at the beginning of our millennium one of the most up-to-date issues of a modern society. Foreign and domestic studies confirm that we have less movement than previous generations, as a result of which a level of the physical abilities decreases, a resistance of an organism to the diseases is reduced, an immunity of the organism is disturbed with a consecutive origin of health disorders, which results in economic consequences for a country itself, in terms of social and health insurance companies. The physical activity, in relation to a quality of life, lifestyle and health, shows close relationships (Nowak 1997). Pate & O'Neill (2008) agree with the stated facts, as well as suggest that a lack of physical activity significantly influences not only the physical ability and performance of the human being but also his/ her work performance and health condition (Borbély & Müller 2008; Blair et al. 2010; Nemček 2016; Nemček & Simon 2016).

In Slovakia is recorded a decline of the physical ability, not only among school but also among adult population, which is associated with a rising character of the health disorders. This is also evidenced by the health insurance statistics, where more than 60 % of the human beings target to a treatment of cardiovascular diseases, 20 % to a treatment of respiratory diseases, 15 - 18 % to a treatment of metabolic diseases, which have a rising tendency in the last two decades, not excluding disorders of musculoskeletal system (Pedersen 2009; Tomková & Palaščáková-Špringrová 2013; Gurín et al. 2016; Bendíková et al. 2016; Nemček 2017a, b).

A prevalence in Slovakia has recorded vertebrogenic diseases since 1990, which IASP (1990) defines as acute and chronic recurrent, persistent and painful spine conditions of degenerative or functional etiology, where a back pain is a symptom, not the disease itself, occurring in a childhood and an adolescence, manifesting in an adulthood as the vertebrogenic diseases which:

- are the main cause of the human beings incapacity for the work at 35 - 45 years of age,

- are placed in the 5th - 6th place in a cause of hospitalization,
- 60 - 90 % of the population had or have had vertebrogenic problems,
- within rehabilitation ambulances, 70 % of the patients in Slovakia have difficulties with the spine. This is the serious economic problem.

In Slovakia is currently 1.5 to 2 million overweight or obese human beings, of which up to 10 % (around 200 000) suffer from the highest degree of a disability and severe morbid obesity. The overweight and obesity with aging among men and women are increasing and by the age of 64, on average 47 % of the human beings have the overweight and 20 % of the human beings have the obesity. Risk factors of overall cholesterol have in Slovakia 43 % of the men and 40 % of the women of a productive age. The evident is increasing trend of a morbidity, based on diabetes mellitus II, in which since 2000 the number of treated diabetics increased by 27 %. The most vulnerable age group is between 50 - 69 years of age. At the age of 36 - 45 years, a hypertension is reported among 28 % of the men and 16 % of the women, as joint and spinal pains are ranging from 50 % to 80 % of the adult population. A cause of an ascending trend of the mentioned diseases among the adult population is: lack of physical activity, unhealthy eating, obesity and stress.

One of the priority tasks, which is throughout the life of human being is a health care (WHO 2005), while from each side is information "attacking" us about the healthy lifestyle. Despite, the lifestyle, in which there is no movement, has become an all-society problem, not excluding the adult population. The health is a category, which protection is also written in legislation. In Slovakia, it is the Act No. 355/2007 on Protection, Support and Development of Public Health The health has a multi-factor bio – psycho – social basis. While in the past, the health has been determined predominantly by an influence of biological patterns, it is now more and more clearly conditioned by social factors. The health cannot be obtained as genetically given unchangeable status. The genetic basis is only a biological potential, which can evolve in a positive or negative direction.

Bendíková (2014) states that a basis of this situation is an understanding of an importance of the health benefits and essence of the physical activity, in terms of its monitoring and subsequent intervention in a school environment, through a prism of physical and sport education, which directly and indirectly creates space for a diversification and realization of an innovative content of classes. A liberalization of the contents of a curriculum of the physical and sport education puts teachers of the physical and sport education increased demands, even in a selection of new and nontraditional physical activities, and thus the space to diversify an offer of the physical activities (Bendíková 2016a). A benefit, should be classes

within the school educational curriculum of varied character (exercises with fitballs, overballs, expanders, bosu balls, flowin, pilates, zumba, floorball, badminton, rope and so on), which has a positive effect on the physical, functional, social and psychological development of a pupil (Bendíková 2016b).

The school through the education process of the physical and sport education in qualitative and quantitative terms has one of decisive positions in influencing the physical preferences of the pupils, even in a later period of life (Telama & Yang 2000; Cuddihy et al. 2002; Müller et al. 2008; Antala 2009; Cardon et al. 2012; Dobay 2015; Rozim & Marko 2015; Madarász & Bácsné 2016; Nagy & Müller 2016a,b; Szőköl 2015).

Economic calculations show that investing of 1 euro into the physical and sport education for children and youth in schools will save 3 euros in a future, needed for a treat of the health disorders and civilization diseases, resulting from the physical inactivity (Klein, Hardman 2008).

Aim

To find out the realization of the physical activity of respondents in a monitored group in relation to their health, as well as a factor that is involved in a transfer of the physical activity to the adulthood.

Methods

Participants and procedure

The monitored group consisted of 742 respondents of the middle-aged adults from the Southern Districts of Slovakia (Komárno, Nové Zámky and Dunajská Streda), of which 403 were the women and 339 were the men as the selection was deliberate. The educational level of the respondents was secondary and academic, where all of the respondents were actively working in private and national spheres. None of the respondents was partially or totally retirement based on disability. At the same time, everyone was in marriage (with 1 and maximal 3 children). The primary characteristic of the monitored group is presented in table 1. The empirical research was conducted in 2014, by three primary stages, through distribution and collection of questionnaire data, which core was to process and evaluate qualitative and quantitative results, followed by presented interpretations.

Table 1
Characteristics of the monitored group (n = 742)

Monitored group	n	Age (years)	Height [cm]	Weight [kg]
Women	403	37.2 ± 3.04	167.9 ± 3.2	65.3 ± 6.8
Men	339	36.5 ± 4.54	179.6 ± 6.3	89.1 ± 7.9

Measurement taking

In terms of methods of data acquisition, a method of content analysis of the study of literary sources of various important foreign and domestic databases, as well as an interrogative method, so-called "Egészség és mozgás" - "Health and Movement", anonymous, standardized questionnaire, which consisted of 60 questions, was used. The stated questionnaire was based on the stated primary monitored determinants of quality of life and lifestyle of the monitored group: primary, personal information, area of the health, area of the physical activity, area of lifestyle and risk factors.

(Note: The stated questionnaire was published under the title SF-36: -Health Survey Questionnaire Short Form in 1992. The questionnaire was expanded in 1995 and 1996, as well as prepared and expanded to analyze the physical activity under the title IPAQ Short Last: -International Physical Activity Questionnaire, which was in 2003.)

Data analyses

The obtained data were processed by percentage frequency analysis (%) and Chi-Quadrate-Test of a good match (χ^2 $p < 0.01$, $p < 0.05$), which was followed by the evaluation of the significance differences in the answers on the individual questions in the questionnaire, between the genders, as well as Pearson Correlation Coefficient (r $p < 0.01$, $p < 0.05$) to evaluate the relationship between the selected, monitored determinants among the monitored group, with an usage of Cohen Table. We also used the methods of logical analysis and synthesis, with usage of the inductive and deductive techniques and comparisons.

Results

Beginning with the aim, we present part of the results, which are a subject for further, exact processing. The presented results cannot be generalized but it is necessary to understand them in their overall context as orientative and basic, from the point of view of the health prevention (Dobay & Bendíková 2016).

The realization of the free time physical activities of the adults is currently a rarity because of their busyness. In the monitored group, significantly ($p < 0.01$) even 56.3 % (n = 191, $\chi^2 = 103.2323$, df-4) of the men and only 31 % (n = 125) of the women mentioned that like to do the physical activities in their free time as a way of active rest, whereas 7.4 % (n = 25) of the men and 22.8 % (n = 92) of the women do not like to do any of the mentioned and do not care about it (3.2 %; n = 13 of the women; 9.1 %, n = 31 of the men). The mentioned physical activities are not done by up to 14.4 % (n = 58) of the women and only 1.5 % (n = 5) of the men, while rather 28.5 % (n = 115) of the women and 25.7 % (n = 87) of the men like to do the physical activities. The positive fact is that within the monitored group of the men, up to 91.1 % (n = 309) are trying to devote to the physical activities in their leisure time. Among the women, it is about one-third less (62.7 %, n = 253).

The structure of the leisure time physical interests within the monitored group of the women points to a stability, especially in the most popular and less popular physical activities realized in the leisure time. From the various physical activities, the women are particularly interested in various forms of dance, such as aerobics (16.45 %, n = 114), zumba (13.71 %, n = 95) and pilates (4.47 %, n = 31), as well as health activities based on the spine (8.08 %, n = 56) and the physical activities of the health character for relaxation in general (8.8 %, n = 61). Among the women are thus dominated the physical activities, which are focused on their aesthetic perception of the movement and are characteristic from a psychological point of view. The other physical activities within the active rest include a swimming (12.12 %, n = 84) and running (11.11 %, n = 77), which are offered in relation to the environment. A cycling (13.85 %, n = 96) also belongs to the very popular type of physical activity among the women. Among the monitored group of the men, the most popular and performed physical activities in the leisure time include a football (soccer) (16.74 %, n = 107), strengthening (15.49 %, n = 99), cycling (15.34 %, n = 98), running (13.93 %, n = 89) and swimming (12.05 %, n = 77). Less popular physical activities are a basketball (6.73 %, n = 43), tennis (5.16 %, n = 33), walking (Nordic Walking) (4.85 %, n = 31), volleyball (4.85 %, n = 31) and skating (4.69 %, n = 30). The findings point to and confirm the fact that the women tend to look for the physical activities of an individual character, mainly of aesthetic focus, without direct contact ($\chi^2 = 33.2323$, $p < 0.01$), while the men prefer dynamic and conditioned physical activities ($\chi^2 = 36.3239$, $p < 0.01$).

A frequency of performed physical activities among the monitored group of respondents was the following (table 1). 33 % (n = 112) of the men and 28.5 % (n = 115) of the women performed physical activities irregularly, while 21.5 % (n = 73) of the men and

15.6 % (n = 63) do not perform any physical activities at all. On the other hand, performing the physical activities more than 3 times a week was done by 9.4 % (n = 32) of the men and 5.2 % (n = 21) of the women with 4.2% of the difference in the women's disadvantage. Performing the physical activities 1 time a week was done by 29.2 % (n = 99) of the men and 23.3 % (n = 94) of the women (5.9 % of the difference in the women's disadvantage). Significantly ($\chi^2 = 57.3878$, $p < 0.01$, df-5) up to 20.1 % (n = 81) of the women performed physical activities regularly, 2 times a week, while performing the physical activities 3 times a week was done by 7.2 % (n = 29) of the women. The men with 0.3 % of the difference performed the physical activities 2 times a week (3.5 %; n = 12) and 3 times a week 3.2 % (n = 11).

Table 1

The frequency of physical activity (n = 742)

Frequency of Phys. activity	**does not practice**		**irregularly**		**once a week**		**twice a week**		**3 times a week**		**more than 3 times a week**	
Sex/ multiplicity	n	%	n	%	n	%	n	%	n	%	n	%
womem (n = 403)	63	15.6	115	28.5	94	23.3	81	20.1	29	7.2	21	5.2
men (n = 339)	73	21.5	112	33.0	99	29.2	12	3.5	11	3.2	32	9.4
$\chi 2$	57.3878, $p < 0.01$											

An intensity of physical activities is very important from the point of view of the health of human beings, as well as the above mentioned frequency. That is why we were interested in the fact. Similarly, among the men (52.2 %, n = 177) and women (49.1 %, n = 198) dominated the median intensity of physical activities. At the same time, the men 30.7 % (n = 104) were reported with the high intensity and only 17.1 % (n = 58) were with the low intensity of physical activities. For the women, the situation was the opposite. The low intensity was dominated by 35.2 % (n = 142) and the high intensity of the physical activities was only in 15.6 % (n = 63). We observed the significant difference ($\chi^2 = 41.309$, $p < 0.01$, df-2) among the genders at the low intensity of performed physical activities (table 2).

From the point of view of a time volume, which the respondents devoted to the physical activities, we found that the highest percentages among the women (46 %, n = 189) represented the physical activity in a duration of 60 minutes, while the men performed the

physical activities significantly over 1 hour (37.1 %, n = 126) ($\chi 2 = 60.0832$, $p < 0.01$, df-4) (table 3).

Table 2

Intensity of physical activity (n = 742)

Intensity physical activity	**high intensity**		**medium intensity**		**low intensity**	
Sex/ multiplicity	n	%	n	%	n	%
womem (n = 403)	63	15,6	198	49,1	142	35,2
men (n = 339)	104	30,7	177	52,2	58	17,1
$\chi 2$	41.309, $p < 0.01$					

Table 3

The volume of physical activity in adults (n = 742)

The time volume	**15 min**		**30 min**		**45 min**		**60 min**		**more than 60 min**	
Sex/ multiplicity	n	%	n	%	n	%	n	%	n	%
womem (n = 403)	36	8,9	67	16,6	59	14,6	189	46,8	52	12,9
men (n = 339)	26	7,6	42	12,3	33	9,7	112	33	126	37,1
$\chi 2$	60.0832, $p < 0.01$									

The way of performing the physical activities among the monitored group, both the men (68 %, n = 231) and the women (53 %, n = 214) with the highest percentage representation labelled the answer "in an organized group", significantly ($p < 0.01$) in favor of the men ($\chi 2 = 22.3299$, df-3). The answer "in a nonorganized group" labelled 20 % (n = 67) of the men and 25 % of the women (n = 101). Only 7 % (n = 24) of the men and 9 % (n = 36) of the women labelled the answer, "Individually," while the answer "I do not care" was chosen by 5 % (n = 17) of the men and 13 % (n = 52) of the women.

Significantly more men (45.7 %; n = 155, $\chi^2 = 177.8421$, $p < 0.01$; df-4) than women (12.2 %, n = 49) evaluated their health "excellent". 29.2 % (n = 99) of the men and 17.1 % (n = 69) of the women labelled the answer "very good". 36.5 % (n = 147) of the women and 19.2 % (n = 65) of the men rated their health as "good," while 2.7 % (n = 9) of the men and 8.2 % (n = 33) of the women rated it negatively. "Not good" was reported in 3.2 % (n = 11) of the men and 26.1 % (n = 105) of the women.

The higher percentage representation and significantly ($p < 0.01$) more men (54.9 %, n = 187) than women (21.6 %, n = 87) reported that they had no health problems (33.3 % difference in favor of the men; $\chi 2 = 132.1577$, df-3). On the contrary, the health problems had 10.9 % (n = 37) of the men and 26.8 % (n = 108) of the women. The answer "more less, no,"

was reported more (28.6 %, n = 97) among the men than the women (23.8 %, n = 96). At the higher percentage representation, the answer "mostly yes" was picked 27.8 % (n = 112) of the women and 5.6 % (n = 19) of the men. This suggests that the men had fewer health problems than the women. Among the men, we found the relationship between the physical activity and evaluation of the health status (r = 0.9420), which means that those who performed the physical activities also rated their health better (men vs. women). Even the feeling of the good health was significantly ($p < 0.01$) more among the men (52.8 %; n = 179, $\chi 2 = 31.7832$, df-3) than the women (37.7 %, n = 152), with 15.1 % of the difference in the women's disadvantage. In the same way, we also found among the men the relationship between the performed physical activity and feeling of health (r = 0.8921) but also between the health problems and feeling of health (r = 0.739), as well as the women (r = 0.6714).

A physical fitness 31.5 % (n = 107) of the men and 9.6 % (n = 39) of the women was rated as "excellent", with 21.9 % significant difference ($\chi 2 = 103.84$, $p < 0.01$, df-4) in men´s advantage, while "very bad" was reported more among the women (22.1 %, n = 89) than the men (5.3 %, n = 18). 29.1 % of the men and 24.6 % of the women labelled the answer "good" condition", while "satisfactory" was reported in 32.3 % of the women and 13.2 % of the men. 20.9 % of the men and 11.4 % of the women picked the answer "quite good". Based on our findings, we found the relationship between the health status and physical fitness among the men (r = 0.8300), as well as the women (r = 0.7193).

Currently, significantly more ($\chi^2 = 33.6871$, $p < 0.01$, df-4) of the men, up to 50.4 % (n = 171) and only 3 % of the women (n = 121) reported the answer "yes" and perceived the physical activities as a significant factor of the health. The men, at the same time, perceived the importance of the physical activities, in terms of their health status (r = 0.8791) much more intense than the population of women in the monitored group. While, the women reported the answer "rather yes", in 40.4 % (n = 163) and 29.8 % (n = 101) of the men, this means 70.4 % (n = 284) of the women and 80.2 % (n = 272) of the men had positive perception of these factors for the health of human beings On the other hand, 12.7 % (n = 51) of the women and 9.7 % (n = 33) of the men, do not paid the attention to the importance of the mentioned facts. "Rather not" was chosen by 13.6 % (n = 55) of the women and 7.4 % (n = 25) of the men and "was one" was chosen by 2.7 % (n = 9) of the men and 3.2 % (n = 13) of the women. At the same time, the men perceived the evaluation and level of their physical condition through the importance of performing physical activities (r = 0.791).

A retrospective view of the respondents on the importance of physical and sport education in their lives pointed to the fact that significantly ($p < 0.01$) found that the women

perceived the importance of physical education in health at 35.2 % (n = 142) ($\chi 2 = 26.2498$), while the men from the point of view of creation of the relation to the physical activities was 28.9 % (n = 98) and performance in 26.3 %. The answer "creation of relation to the physical activities" was reported only in 27.5 % (n = 111) of the women. It means that the women perceived the physical and sport education through the health, while the men through the creation of relation to the physical activities, which they are performed within the active rest, even currently (56.3 %, n = 191) than the women (31 %, n = 125).

The popularity of physical and sport education among the respondents of both genders also confirmed our expectations, where only one third (30 %, n = 121) of the women enjoyed physical and sports education, while among the men it was more significantly ($\chi 2 = 37.5297$, $p < 0.01$, df-3), even up to 51.6 % (n = 175), with 21.6 % of the difference of the men´s advantage. 30.5 % (n = 123) of the women did not like the physical and sport education, as well as 18 % (n = 61) of the men, which is 12.5 % less. The answer "sometimes" was picked up by 22.8 % (n = 92) of the women and 17.1 % (n = 58) of the men. The laxity of the popularity of the mentioned subject was reported by 16.6 % (n = 67) of the women and 13.3 % (n = 45) of the men.

In the same was, the popularity of physical and sport education, even the activity of respondents in the physical and sport education classes was significantly higher among the men ($\chi^2 = 26.9684$, $p < 0.01$, df-3) than the women. Being active in the physical and sport education classes was 41.6 % (n = 141) of the men and only 27.5 % (n = 111) of the women, while 16.8 % (n = 57) of the men and 15.1 % (n = 61) of the women were considered as inactive. "Rather active" was 40.9 % (n = 165) of the women and 34.8 % of the men (n = 118). 6.8 % (n = 23) of men and 16.4 % (n = 66) of the women were included in the group "rather not" active. It mentioned means that the men enjoyed the physical and sport education classes, as well as actively participated ($r = 0.8363$), not as the women. Compared to current findings, it is very similar, boys are more active than girls.

Discussion

Our findings point to a number of facts and relationships between a human health and a realization of a physical activity in relation to a lifestyle. If in the past the physical activity had limited a strength, a speed and an endurance, we would need it as a factor of a survival and a balance between a physical and a mental determinants of maintaining an active health.

Therefore, in this context, it is necessary to show on politics of Health 2020, which is based on four priority areas, where each one focuses on investments to the health through a life cycle and creation of opportunities for strengthening responsibilities of citizens for their own health, which is directly confirmed in our findings and pointed to an educational transfer towards the health through the physical activity as a suitable form of a prevention. It means that well-chosen and realized physical activity aimed at promoting the right lifestyle and the responsibility of human beings for their health as can help to manage epidemic of so-called civilization diseases (obesity, oncological diseases, cardiovascular diseases, hypertension, skeletal disorders, metabolic diseases, etc.). Such seemingly not medical, but public health measures will help to prevent a growth of the new civilization diseases and to improve a current state of the human health because the physical activities are by their content, extent and influence of complex biological, psychological and social, as well as cultural health phenomenon.

Conclusion

Based on the aim of the current study, we found that:

- the relationship between the health status and fitness among the men (r = 0.8300) and among the women (r = 0.7193),
- the relationship between performed physical activity and feeling of health (r = 0.8921) but also between the health problems and feeling of health among the men(r = 0.739), as well as among the women (r = 0.6714),
- the men at the same time perceived the importance of physical activity, in terms of their health (r = 0.8791) much more intense than the women,
- the men perceived the evaluation and level of their physical condition through the importance of performing the physical activity (r = 0.791).

From the point of view of the health, we strongly confirm the difference in the health status ratings among the men, where we confirm the relationship between the physical activity and health status, as well as the physical activity and fitness among the men. Significantly, we confirm the difference performing of the physical activities among the genders, in terms of the frequency, intensity, volume and content. The physical and sport education plays the

significant role among the men in the transfer of physical activity from the school environment to the adulthood.

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PERFORMANCE LEVELS OF FEMALE STUDENTS IN COMBINED TRACK-AND-FIELD EVENTS

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Summary: The authors have evaluated the combined track-and-field events performed by the female students of the Faculty of Physical Education and Sport of Comenius University in Bratislava (CU FPES) in the years 2013 – 2017. The combined track-and-field events are an obligatory part of the final Athletics examination in the teacher-training study program. The selected disciplines reflect the first day of the men's decathlon with the exception of the last one, which is replaced by 800 m. The number of points in the combined event enters into the overall assessment of the subject Didactics of Athletics II together with an oral examination. The authors analysed not only the total number of points in the pentathlon but also in the individual disciplines and their percentage share in the final result. They have discovered that the shot put and high jump are among the most stable disciplines. The greatest variance of the percentage share in the overall number of points was observed in the 100 m dash, 800 m and in the long jump. The performance of a high number of students (almost two-thirds) came below the average performance in the particular year as expressed in points.

Keywords: combined track-and-field events, CU FPES female students, physical performance, final athletics examination

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Introduction

The combined track-and-field events, or the modern pentathlon, are very popular with the audience nowadays. Ryba et al. (2002) note that the combined track-and-field events require an exceptional athletic versatility and they are the only athletic disciplines in which the final performance is expressed in points.

The assessment of the practical part of the Theory and Didactics of Athletics (in the past also Athletics IV, Didactics of Athletics II) as one of the mandatory subjects during the study at the Faculty of Physical Education and Sports of Comenius University in Bratislava (CU FPES) has undergone a number of modifications. These were prompted especially by the number of hours per semester allocated to the subject. A modified pentathlon has been in use since 2008. The disciplines reflect the first day of the men's decathlon with the exception of the last one, which is here replaced with an 800-metre run. The combined events form a part of the overall assessment together with an oral examination. Whereas in the past (Lednický 2003), with the minimum limit of 1,600 points, a deteriorating trend was recorded in the performance, the period observed in this study is characterised by a stabilisation of the average performance (2013 – 2017). The minimum number of points to meet the performance criteria is 1,500 points, which comprises 25 % of the overall grade of the subject. A bonus of 1 % is granted for each 25 points exceeding this limit to further the students' motivation to achieve the best performance possible. The students' performance is notably affected by the level of physical education at primary and secondary schools. According to findings (Koštial, Dremmelová & Sedláček 2001), the number of students who did not participate in a regular training process was growing; they only became familiar with some disciplines (e.g. high jump, shot put) upon commencing studies at this faculty. The credit system, however, did not prove to be an incentive for the students to attempt to perform at their best in the individual disciplines. We often witnessed a situation when the final discipline was only run to earn the necessary number of points, in order to meet the 1,500 limit, or when a student started the discipline, but did not finish it because she'd already achieved the required limit after four disciplines. An important change in the assessment of the subject was the regulation which established that only the students taking the teacher-training program have to perform the final combined track-and-field events and the oral exam. These students usually do not devote themselves to a regular training process to such an extent as the students of the coach-training program, and hence their performance is lower. On the other hand, there are several

students in the individual groups, even ones with the Conditioning Coach specialisation, whose physical condition is better. At the Bratislava CU FPES the subject Athletics has always been evaluated comprehensively, the final grade calculated on the basis of the physical performance in the combined track-and-field events and theoretical knowledge demonstrated at the oral examination.

Purpose

The purpose of this study was to analyse the changes in the performance of the female students of the teacher-training program at the Bratislava CU FPES in the combined track-and-field events in 2013 – 2017 and to indicate changes in the share the individual disciplines contribute to the overall result.

Tasks

1. To analyse the results of the combined events performed by the CU FPES female students in the years 2013 – 2017.
2. To ascertain and compare the percentage share of the individual disciplines in the overall result of the combined event.
3. To determine the numbers of students with a result worse than the average performance in the particular year.

Methods

We observed the students' performance in the years 2013 – 2017, carrying out ex post facto research to solve these tasks. The groups observed were formed by students who had fulfilled the minimum requirement, that is 1,500 points, or who had a slightly lower performance recognised, given their health and/or other problems. Each group comprised between 13 and 21 students and basic mathematical and statistical characteristics were used when processing the results. The number of female students following a teacher-training program is lower than the number of male students, but it did not change in any substantial way (Lednický & Doležajová 2016). However, most of them (70 – 75 %) were working on this specialisation while studying another programme alongside (Coaching and Teaching or Sports and Health).

Results

In the course of the period observed we researched the share of the individual disciplines in the overall result (Table 1). The average values have shown that as far as the percentage share is concerned, the most stable discipline is the shot put. The difference between the highest and the lowest contribution to the grand total of points was less than 1 %. The greatest difference was between the average values displayed in the 800 m (a difference of 5.9 %).

Table 1

The average (x), maximum (max) and minimum (min) percentage share of the individual track-and-field disciplines in the overall result and the number (n) of female students tested in the observed period

Discipline	**% share**	**2013** (n = 21)	**2014** (n = 17)	**2015** (n = 16)	**2016** (n = 16)	**2017** (n = 13)
100 m	x	23.3	24.2	23.6	22.1	25.3
	max	27.5	32.8	29.1	32.3	31.7
	min	17.5	17.8	16.2	14.4	15.5
long jump	x	18.6	18.8	17.5	15.6	17.5
	max	24.9	22.5	22.0	21.0	28.7
	min	12.2	14.8	12.1	9.2	8.3
shot put	x	21.1	20.9	19.3	20.2	21.1
	max	27.5	25.8	24.7	33.1	26.6
	min	16.5	15.9	13.1	13.8	16.6
high jump	x	20.0	17.3	19.8	20.4	20.1
	max	28.2	30.1	23.7	24.9	28.8
	min	15.4	0 / 11.9	15.2	14.0	15.3
800 m	x	17.0	18.9	19.9	21.6	15.8
	max	33.9	37.5	26.1	36.7	33.9
	min	1.4	0 / 9.9	10.9	7.2	8.1

However, more precise information about the performance is provided by the maximum and minimum percentage shares in the overall result. From Tab. 1 it follows that some students earned more than one-third of the points in a single discipline. The minimum values of the share fell as low as zero in some cases (in the high jump, in a case when no valid successful attempt was recorded, and in the 800 m). In such cases we also provided the second lowest share of the discipline in the overall result. As for the endurance discipline, given the low values of the minimum share it is obvious that in many cases the students strive

only to meet the required limit in the combined events and often adapt the quality of the run in the last discipline to the number of points still needed.

The total number of points of the average performances was stable over the level of 1,700, with the exception of year 2015 (Table 2). This result, however, was only achieved thanks to some individuals who earned a number of points markedly higher than the average result of the whole group. The minimum values are around the required limit of 1,500 points every year with the exception of the years 2016 and 2017, when even a worse result was accepted. The smallest performance difference (p_d) in the results occurred in 2017 (p_d = 509 points). On the contrary, the greatest difference occurred in 2015 (p_d = 932 points).

Table 2

The average (x), maximum (max) minimum (min) number of points in the women's combined events; the range of variation (p_d) the number (n) of female students tested in the observed period. In some cases a lower score was allowed due to health issues (*).

	2013 (n = 21)	**2014** (n = 17)	**2015** (n = 16)	**2016** (n = 16)	**2017** (n = 13)
x	1,722.5	1,732.5	1,862.6	1,778.1	1,703.2
max	2,090	2,103	2,449	2,324	1,962
min	1,510	1,526	1,517	1,439*	1,453*
p_d	580	577	932	885	509

For the 100-metre dash we recorded the difference of 3.2 % between the highest and the lowest share in the total result of the combined events in the observed period. The average performance was awarded around 400 – 444 points, that is the performances themselves were around 14.9 to 15.3 s. The best performances differed markedly (13.2 s; 14.1 s), the worst being 16.1 to 16.7 s. It is interesting that in the past this discipline (Doležajová & Lednický, 2015) had a much greater share in the overall result (27.7 % in 2009) in the women' pentathlon. We recorded the greatest difference between the best and the worst performances (3.3 s) in 2016, the smallest (2.0 s) in 2013.

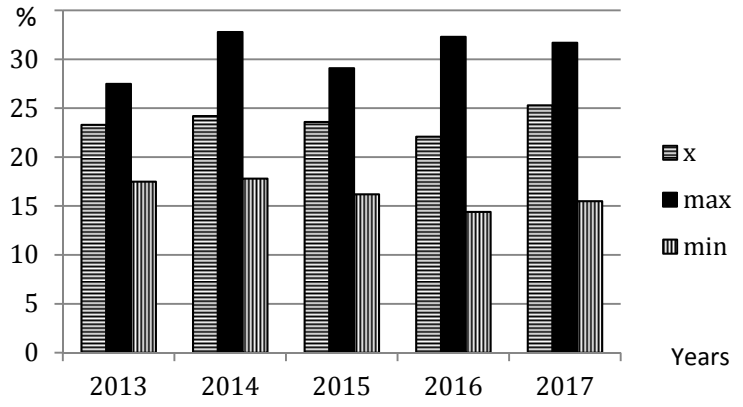

Figure 1
Average (x), maximum (max) and minimum (min) point values in the 100-metre dash

The long jump, also due to its technical exactingness, has a lower percentage share in the pentathlon result (17.5 – 18.8 %). In a single attempt, the students fail to combine the correct run-up with the take-off without an over-step or without leaping from too far behind. The performances often do not correspond to the results in the 100-metre dash. For instance, we recorded 13.2 s for 100 m, but the same student only achieved 434 cm in the long jump. At the same time, this discipline carries a great weight as far as points are concerned (Ryba & Jón 2002). The average performance was around 400 cm. The best performance in the observed period was 492 cm in 2015; the worst was 322 cm in 2016. The greatest performance difference was 136 cm, occurring in the years 2015 and 2016.

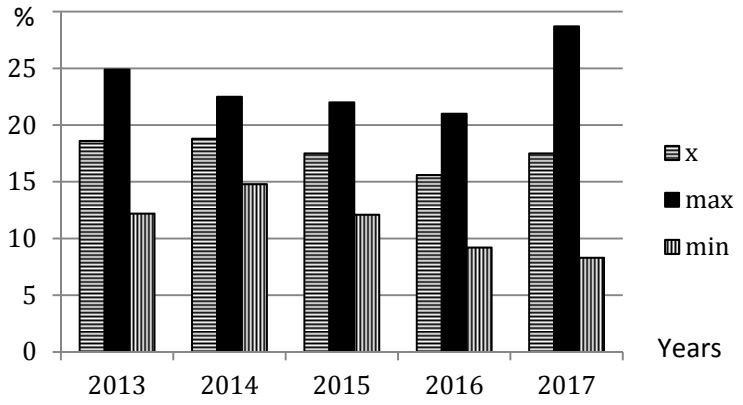

Figure 2
Average (x), maximum (max) and minimum (min) point values in the long jump

The most dramatic difference between the best and the worst performances was as much as 229 points in 2016, which represents 357 cm. Its share in the overall performance is consistent around 19.3 – 21.1 % (Table 1). As far as performance is concerned, it was around

the average level of 730 – 740 cm. The best performance in the observed period was 9.42 m in 2017 and the worst was in 2016, when a throw of only 5.61 m was recorded.

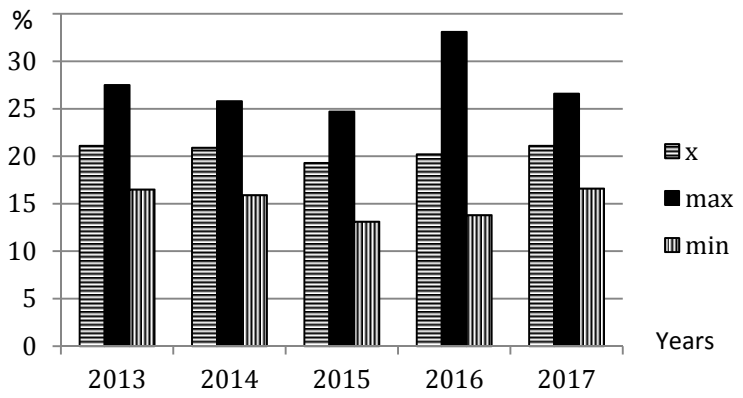

Figure 3
Average (x), maximum (max) and minimum (min) point values in the shot put

The high jump belongs among the disciplines, in which there is no great difference between the best and the worst performances, that being in the region of 238 to 390 points. The average performance (120 cm) is markedly influenced by failed attempts at the basic height of 110 cm. The most successful attempt came over 140 cm every year, with the exception of 2017. The share of this discipline (Table 1) was stable around 20 %; this discipline displayed the second smallest variance in the share (2.1 %).

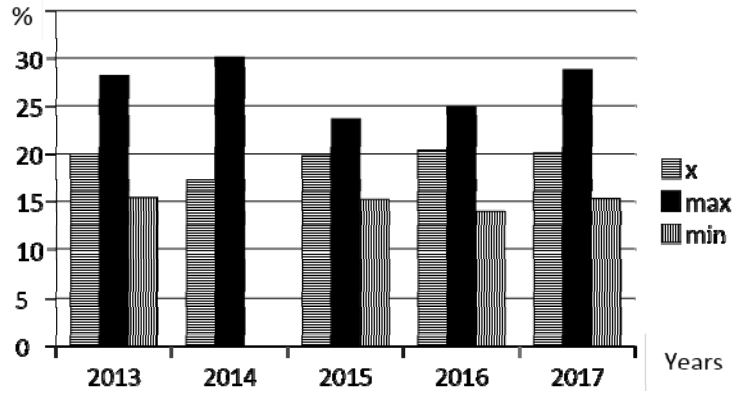

Figure 4
Average (x), maximum (max) and minimum (min) point values in the high jump

When calculating the difference we excluded the zero values of the students who, due to various reasons, did not finish the discipline. In the years 2013 and 2016 the difference was more than 500 points, in the other years it was around 350 points. The average performance was in the range of 3:00 – 3:20 min. The greatest difference between the best and the worst performances (2:30 minutes) was recorded in 2017. The average share in the overall result

changed markedly (difference of 5.9 %), but we have also recorded results in which one-third of the total number of points earned was made up in particular by points received for the 800 m.

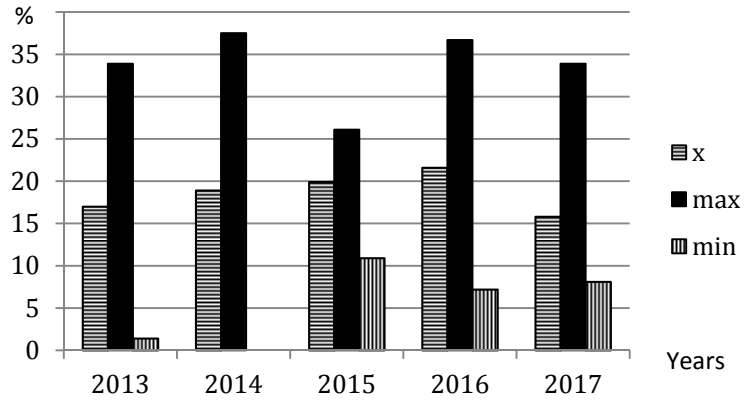

Figure 5
Average (x), maximum (max) and minimum (min) point values in the 800-metre run

Although the average performances in the combined track-and-field events were at the level of around 1,700 points, this level was achieved thanks to outstanding performances of some individuals. Table 3 shows the numbers of students in each year whose results were worse than the average performance in the given year.

Table 3
Average performances in the combined track-and-field events and the number of students whose performance was worse than average, the total percentage of worse than average performances (%) and the number (n) of female students tested in the observed period

	2013 (n = 1)	**2014** (n = 17)	**2015** (n = 16)	**2016** (n = 16)	**2017** (n = 13)
Average performance	1722	1732	1862	1778	1703
Number of worse performances	12	11	9	11	8
%	57.1	64.7	56.3	68.8	61.5

Discussion

The results of the track and field showed to the students the state of their physical condition and their level of mastering the techniques of the individual athletic disciplines. These factors are the prerequisites of independently teaching classes and demonstrating the exercises to one's own students. We are also aware that the differences in the performance

are heavily influenced by the interest of the best ones in each group to achieve the best result possible instead of just meeting the required limit.

Besides the prerequisite of strength in long jump, the shot put also requires an adequate level of mastering the technique. That is why the female students make use of the option to throw from the lateral or the frontal position only. We may say that, as far as the percentage expression of the points earned is concerned, it belongs among the most stable disciplines (the difference between the highest and the lowest share was 0.9 %).

The preparation for the track and field also faces the problem of insufficient number of hours allocated to it, which tends to result in a poor mastering of technique in the more demanding disciplines. Problems have been recorded especially in field disciplines. The most discussed discipline is the 800-metre run: although it carries a great weight in points, many students could not overcome the unpleasant feelings of endurance load and their performance was below average. For some, the resulting total number of points from a combined event served as a good basis for receiving a high final assessment grade of the subject. The 800-metre run is one of the less popular, but better valued parts of the combined events. From this also follow great differences in the points earned, which changed from year to year. There were also cases, however, when even students earning a high number of points did not prove to possess sufficient theoretical knowledge at the examination, which then led to them being awarded an average grade in total. But there have also been the opposite situations when a student with a minimum basis following the track and field received a final grade higher than the average namely thanks to the oral examination.

We are thus certain that to replace the 400-metre run with the endurance run was the right thing to do. Thanks to this discipline even those students who did not achieve excellent results in the speed-strength disciplines earned the required limit of 1,500 points. Despite the fact that the analysis of this discipline in the teaching process and the sports practice has been dealt with by several authors (Jílek 2009; Rošková 2013, 2014; Vindušková 2015), mutual comparison of the results is complicated, given the variety of the individual disciplines in the combined event. Despite the teachers' efforts to motivate the students by granting additional points for a better performance in the combined event, most of them were happy to meet the minimum required norm.

Conclusions

1. Following the analysis of the performance level of the CU FPES students in the combined track-and-field events we can say that the credit form of studies did not provide an impulse towards an improvement of performance. The tested students displayed general performance problems, and even motivation issues.
2. The level of performance in the combined track-and-field events was constant, on the level of around 1,700 points, but this result was achieved thanks to excellent performances of some individuals.
3. In the individual disciplines, the performance was approaching the level of credit requirements, but there were also cases when the students did not achieve this level in the field events and had no strong discipline to compensate for this failing.
4. The effort to increase the students' motivation by awarding an additional 1 % for each 25 points so that they would make an effort to achieve their best performance often produced no effect; every year there were students who after meeting the limit of 1,500 points decided not to follow through with the final discipline.
5. This fact reflected in the number of those who achieved a performance worse than the average. In some of the years their share was as high as 68 %.

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EMOTIONS TOWARDS PHYSICAL EDUCATION LESSONS OF HEARING IMPAIRMENTS PUPILS ATTENDING SPECIAL ELEMENTARY SCHOOLS

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Summary: The purpose of this study was to map and analyse the emotions among the pupils attending special schools for children with hearing impairments (HI) towards physical education (P.E.) classes. The main objective was to compare the emotions of their feelings during the P.E. lesson and when the P.E. lesson is cancelled. We analysed the data of 73 pupils attending five grades (from 5th up to 9th) of two special elementary schools (at Hrdličkova Street; n = 37 and at Drotárska cesta Street; n = 36) in Bratislava (Slovakia). The research sample consisted of 45 boys and 28 girls in average age 13.5 ± 1.4 years. 48 % of pupils were deaf, 36 % of them were hard of hearing and 16 % were hearing but with hard communication and learning disorders. A non-standardized questionnaire (Antala et al. 2012) was used as a primary research method. Two of the selected questions were related to the emotionality towards P.E.lessons. The data were differentiated from the point of view of the gender and schools. A comparison of the emotions of pupils with HI pointed out a difference consisting in a significantly higher level of positive emotions during P.E. classes among boys ($p < .05$) and students attending special school at Hrdličkova Street ($p < .05$). A statistically significant difference was not discovered in the emotions when P.E. class was cancelled neither among genders nor schools. In general, pupils receiving special education show very high positive emotions of the feelings during P.E. lessons but on the other hand they are happier than disappointed when P.E. lesson is cancelled. This will not only increase the positive emotions towards P.E. lessons but also allow physical activities to become a regular part of pupils' leisure activities as well as long term sport activities.

Key words: physical education lessons, special education, deaf and hard of hearing, feelings, positive and negative emotions

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Introduction

The key factor that affects the success of shaping positive attitudes towards the regular life-long performance of a physical activity is the pupils' level of inner motivation. This is influenced, among other things, by their family background, the educational institution that they attend and the educator's competencies (Smoleňáková & Bendíková 2017). Compulsory physical education (P.E.) classes can be considered as an integral part of their education, and the most effective form of physical activity (Gerhatová 2001; Bendíková 2014). An important precondition is the pupils having a subjective feeling of satisfaction, feeling of positive emotional reactions. A number of P.E. tasks and open-air sports have the potential for eliciting positive or negative emotional reactions, because of the physical and psychological challenges inherent in the activity (Robazza et al. 2006).

The significance of the feelings and emotions towards P.E. classes is known for a longer period. Sýkora (1988) speaks about the need to increase positive emotions and the attractiveness of P.E. lesson by tools such as exercise with music accompaniment, including competitions and games into P.E. lessons, clarifying meaning and way achieving goals, controlling and self-assessing the positive results and so on, as important factors of activation, stimulation and motivation. Since then, the situation has significantly changed in society and in education as well but the emotionality of P.E. classes is still a topical question. This is an important part of the process at a particular lesson, but as well it has a great meaning to create positive relation to movement, sport, and gain relationship to lifelong physical activity (Digelidis et al. 2003; Čillík 2012).

It is therefore essential to create at the P.E. classes the atmosphere of joy, emotions, that can significantly affect the quality of the course and the quality of educational process in general, but mainly interest and perspective relationship towards long-term physical activity (Biddle, Gorely & Stensel 2004). Joy is the one of the most natural and the most pleasant emotions. It gives us a sense of satisfaction and therefore we try to focus our activities in such a way as to reach the results produced a sense of happiness and joy. Joy can be aroused e.g. good physical well-being and satisfaction of human organic needs. Joy is reflected not only in the physical status, in good activity of all human organs but, above all, lead to optimal bark excitability of brain hemispheres, so they also make mental work easier (Spray, Biddle & Fox 1999). Positive emotions towards P.E. classes affect not only the effectiveness of the classes themselves, but also the course and quality of education in other teaching lessons. It is then

important to accept such assumption, the meaning of emotionality of the P.E. classes is extensive, exceeding the scope of P.E. class itself and educational and teaching process at all kinds of schools including special schools.

Čillík (2012) in his study surveyed positive and negative emotions of pupils attending regular Slovak elementary schools by two questions that inspired us to find out the same emotions but in the group of pupils attending special elementary school for children with hearing impairments (HI). He found, that at P.E. classes predominate positive emotions. Primary school pupils feel positively at the P.E. lessons in 70.6 % and only 4.4 % of pupils attending regular Slovak schools displayed negative emotions. Approximately 2/3 pupils of primary and secondary school of his research feel at P.E. lessons always good or mostly always good. Emotions and feelings among pupils with different kinds of disabilities have already been investigated by Kurková, Nemček & Labudová (2015). They found out that those pupils who are deaf and hard of hearing (D/HH) have a good feeling about them while in P.E. classes, but pupils with visual disabilities expressed having a higher evaluation of their feelings.

The results of Čillík's (2012) investigation show that with rising age, feelings at P.E. classes increasing negative emotions. He further found, that 30.4 % of elementary school pupils enjoyed themselves when P.E. lesson is cancelled, 26.4 % of pupils were indifferent about it and 43.1 % of pupils of his survey were confused. For secondary school pupils was this ratio even higher, when 53.2 % students were happy when P.E. was cancelled, 29.3 % students were indifferent about it, and only 17.5 % of students were irritated. The factors that cause this phenomenon are several and are necessary analyse them in more detailed, say author (Čillík 2012).

Another investigation of feelings and emotions towards P.E. classes at special schools was done by Kurková & Nemček (2016) who have found out significant differences between the students with three different kinds of disabilities with regards to their opinions in the case that for some reason a regular P.E. lesson is cancelled. The happiest group in their study were the students with physical disabilities, those who are always happy (25.7 %) or happy very often (12.9 %) if a P.E. lesson is cancelled. Secondly the students with physical disabilities were followed by the students who are D/HH. The results of their research clearly showed that the students with visual disabilities expressed the highest degree of pity that a P.E. lesson was lost, in comparison with other students with disabilities, which can be supported by the very significant differences seen in the opinions expressed by different groups of students (Kurková & Nemček 2016). The scientific work of other authors confirms the positive

attitude and high popularity of P.E. classes (Görner & Starší 2001; Antala & Labudová 2008; Bartík 2009; Kurková 2010). The objective of this study is to analyse the emotions of pupils attending special elementary school for children with HI at the P.E. lessons and when a P.E. lesson is cancelled.

Methods

Participants

The research sample comprised 73 pupils attending five grades (from 5th up to 9th) of two special elementary schools in Bratislava (Slovakia). The elementary boarding school for children with HI located in Hrdličkova Street was represented by 37 pupils and the elementary boarding school for children with HI located in Drotárska cesta Street was represented by 36 pupils. The research sample consisted of 45 boys and 28 girls in average age 13.5 ± 1.4 years. 48 % of pupils were deaf, 36 % of them were hard of hearing and 16 % were hearing but had hard communication and learning disorders.

Pupils were informed of the purpose of the research and the procedure for filling out the questionnaire, which was to be completed in the presence of their head teacher and the researcher. At the schools we set up a procedure that ensured that pupils who are D/HH and used sign language properly understood all the questions in the questionnaire. Upon previous agreement and explanation of the purpose of the questionnaire, the actual questions were signed by a teacher who had perfect command of sign language and to whom the pupils were familiar. We proceeded by asking each item individually and then fact-checking to make sure that the pupils individually understood the questions. Consent of the legal representatives of the pupils at both schools regarding the pupils' participation in the study was obtained well in advance.

Data collection

A non-standardized questionnaire (Antala et al. 2012) was used to collect the data, of which two questions were selected that were related to the feelings and emotions towards P.E. classes. These questions included the pupils' emotions: a) how they feel at the P.E. lesson (Question 1: I feel at the P.E. lesson: Always good, Mostly good, I don't care about it, Mostly bad, Always bad); b) how they feel, when a P.E. lesson is cancelled (Question 2: If a P.E. lesson is cancelled: I am always happy, I am often happy, I am indifferent about it, I usually get upset, I always get upset). In questions the pupils expressed their subjective opinions

using a 5-degree scale. 1 was the highest level of positive emotions and 5 was the highest level of negative emotions.

Data analysis

Statistical analysis was undertaken using IBM SPSS version 23.0 for Windows. The data were differentiated from the point of view of the gender and schools. The data were quantified on mean and percentage basis. Pearson chi-square test was used to determine the differences between the groups. The level of statistical significance was set to $p < .05$.

Results

The results show mostly positive emotions towards P.E. lessons in pupils receiving special education when 19.2 % are feeling at the P.E. always good and 38.4 % of them mostly good. On the other hand only 10.9 % of special schools pupils showed the negative emotions when 8.2 % of them are feeling at the P.E. lessons mostly bad and 2.7 % always bad.

The results show statistically significant difference in the emotions towards P.E. expressed by pupils' feeling at the P.E. lessons from the point of view of the respondents' gender ($p < .05$). Even though girls receiving the special education have a good feeling about themselves while in P.E. classes, boys expressed having a higher positive evaluation of their feelings (Figure 1). The cross-group comparison of the emotions towards P.E. among boys and girls attending special elementary schools for children with HI proved to be statistically important. This may serve as evidence of the suitability of the educational environment for boys; nevertheless, this result does not provide enough data to satisfactorily stipulate the quality of education and learning, i.e. the character of the topics taught and level of actual inclusion in class.

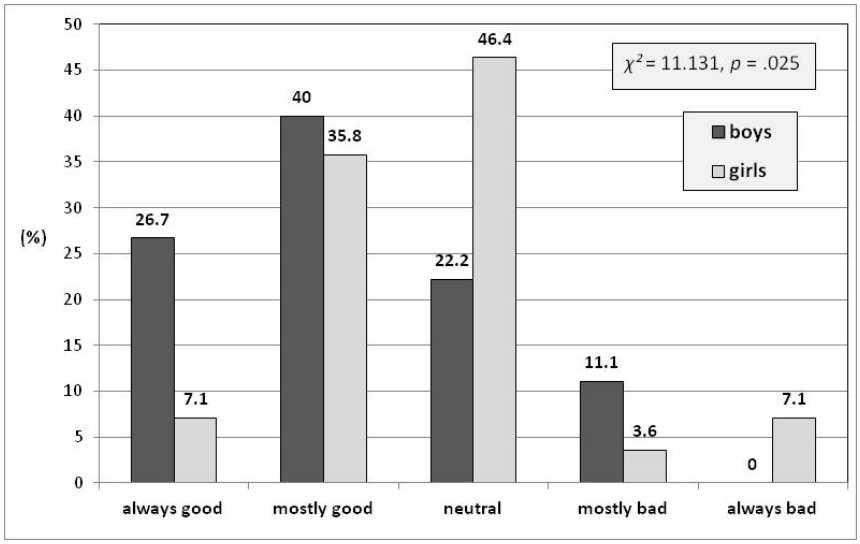

Figure 1
Feelings of pupils during P.E. lessons (gender comparison)

Having analysed emotions in pupils receiving special education we found out significant differences between two special schools for children with HI ($p < .05$). Even though pupils attending special elementary school at Drotárska cesta are feeling at P.E. lessons mostly good (50.0 %), pupils from special elementary school located in Hrdličkova Street expressed having a higher positive evaluation of their feelings, because 32.4 % of them are feeling at P.E. lessons always good and 27.1 % mostly good (Figure 2). Higher negative emotions were displayed by pupils from the special school located at Drotárska cesta (16.7 %) comparing expressed negative emotions of pupils from Hrdličkova Street special elementary school. Those pupils presented higher status of neutral emotions at P.E. lessons (35.1 %) than pupils receiving special education at Drotárska cesta (27.7 %).

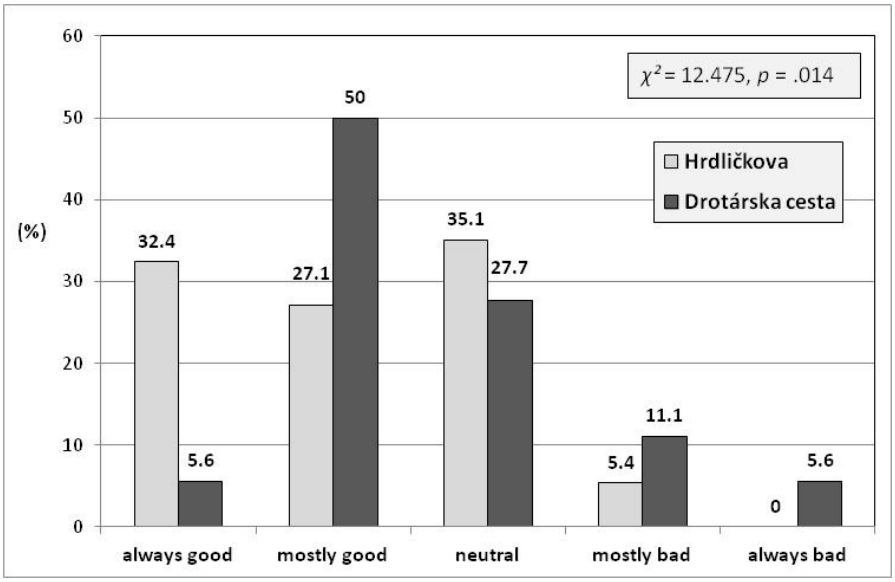

Figure 2
Feelings of pupils during P.E. lessons (school comparison)

The results further show the highest level of indifference in pupils receiving special education in the case that for some reason a regular P.E. lesson is cancelled. 50 % of pupils attending two elementary special schools for children with HI expressed neutral emotions (by saying: "I don't care about it") if a P.E. lesson is cancelled. Answering this question, pupils presented higher level of positive emotions when 22.2 % of them are happy very often and 16.7 % were always happy when P.E. lesson is cancelled. Only 6.9 % pupils were upset and 4.2 % very upset if a P.E. lesson is cancelled.

There were no significant differences between boys and girls attending special schools with regards to their emotions in the case that for some reason a regular P.E. lesson is cancelled (Figure 3). Happier group were girls, who are happy very often (32.1 %) and always happy (14.3 %) if a P.E. lesson is cancelled. With regards to this kind of happiness, they are followed by boys, since 17.8 % of them are always happy or happy very often (15.6 %). On the other hand, this group shows little bit higher level of indifference towards such a situation (51.1 %) comparing girls (50.0 %). Higher degree of negative emotions to a cancelled P.E. lesson was declared by boys, since 8.8 % of them feel upset and 6.7 % always upset if a P.E. lesson is cancelled.

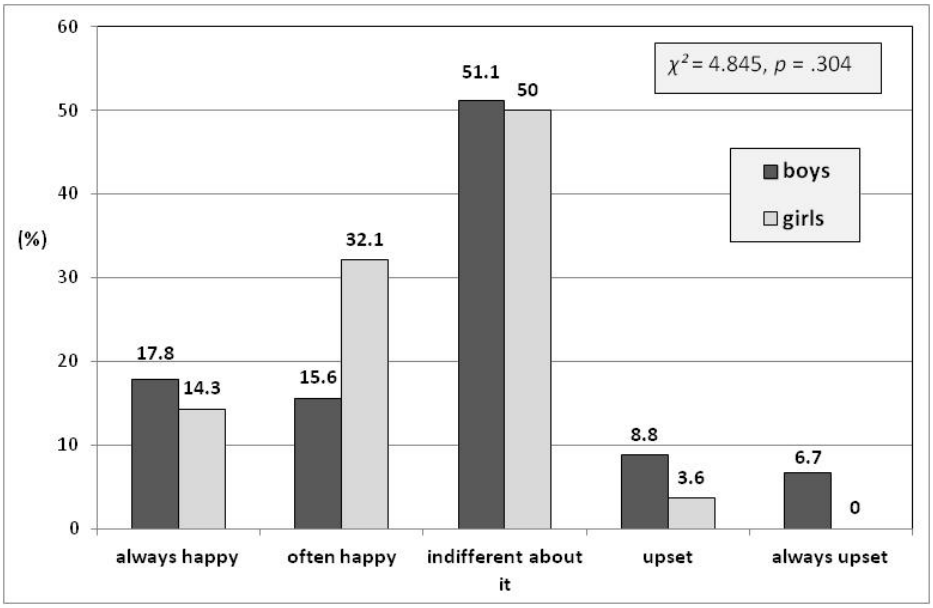

Figure 3
Reaction of pupils when a P.E. lesson is cancelled (gender comparison)

Having evaluated emotions in pupils receiving special education we did not find significant differences between two special schools for children with HI with regards to their reaction when a P.E. lesson is cancelled. Even though pupils attending special elementary school at Drotárska cesta showing higher level of positive emotions when 30.6 % are often happy and 16.7 % always happy when a P.E. lesson is for some reason cancelled comparing pupils attending special school at Hrdličkova Street (Figure 4). Those pupils display higher level of indifference (56.8 %) comparing pupils attending special school located at Drotárska cesta (41.6 %).

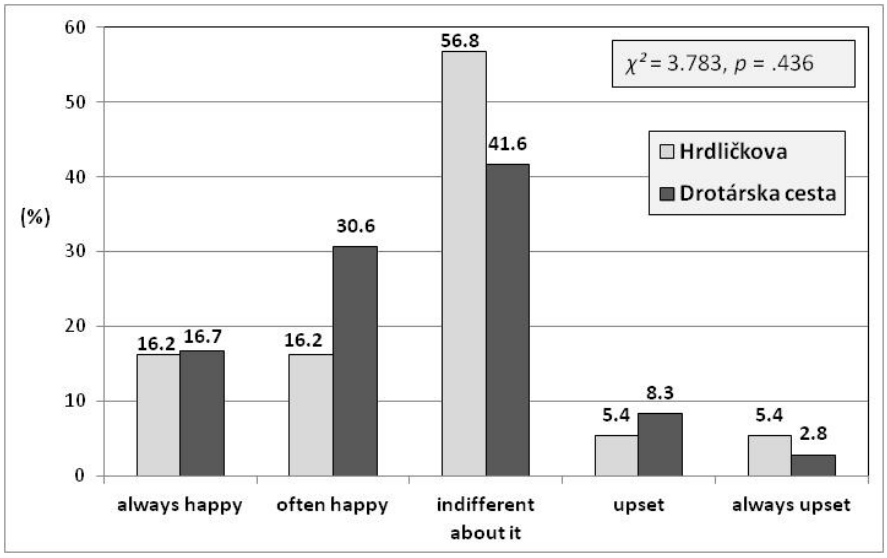

Figure 4
Reaction of pupils when a P.E. lesson is cancelled (school comparison)

By comparing the mean values of the responses provided by students attending special elementary schools for children with HI, higher level of positive emotions about feelings during P.E. classes was stated by boys (2.178 points of the mean score) as opposed to girls (2.678 of the point score) and pupils attending special school at Hrdličkova Street (2.054 points of the mean score) comparing pupils receiving special education at the school at Drotárska cesta Street (2.611 of the point score).

Evaluating the mean scores of the responses about their reactions when a P.E. lesson is cancelled, higher level of positive emotions was expressed by girls (2.429 points of the mean score) as opposed to boys (2.711 of the point score) and pupils attending special elementary school at Drotárska cesta (2.500 points of the mean score) comparing pupils receiving special education at the school at Hrdličkova Street (2.676 of the point score) (Table 1).

Table 1
Mean score of emotions towards P.E. classes

Question about	Gender		School	
	Boys	**Girls**	**Hrdličkova**	**Drotárska c.**
Feelings of pupils during P.E. lesson	2.178	2.678	2.054	2.611
Total	2.370			
Reaction of pupils when a P.E. lesson is cancelled	2.711	2.429	2.676	2.500
Total	2.597			

Discussion

Developing a habit of engaging in regular physical activity is a gradual and unforced process that must respect a pupil's physical readiness and interests. Those findings were supported by research studies conducted by Nagyová (1995) and also Novotná, Kariková & Vladovičová (2007). Those studies proved that there are both various positive and negative emotions that affect pupils in P.E. class.

The aim of this study was to map the feelings and emotions of 5th up to 9th grade pupils attending special schools for children with HI towards P.E. lessons.

The results of current study show mostly positive emotions towards P.E. lessons in pupils receiving special education when 19.2 % are feeling at the P.E. always good and 38.4 % of them mostly good. Authors Bendíková & Nemček (2017) in their scientific paper presented even higher level of positive feelings during P.E. classes in the group of pupils living in orphanage, since 48 % pupils of their study felt during the P.E. always good and 20 % mostly good comparing our results. Another investigation show that pupils with visual disabilities expressed having significantly higher evaluation of their feelings comparing pupils who are D/HH (Kurková, Nemček & Labudová 2015). Results of current study also showing significant differences in emotions between two different special schools for children with HI, since pupils from special elementary school located in Hrdličkova Street expressed having a higher positive evaluation of their feelings. The results from the research among pupils in regular elementary schools done by Čillík (2012) show positive emotions in 70.6 % of pupils, 25 % pupils of his study displayed neutral attitudes and 4.4 % of pupils presented negative emotions towards P.E. classes. Neutral emotions during P.E. lessons of our sample were

expressed by higher number of pupils (31.5 %) than in pupils of regular elementary schools (25 %).

The results of current study show statistically significant difference ($p < .05$) in the emotions towards P.E. expressed by pupils' feeling at the P.E. lessons from the point of view of the respondents' gender, since boys expressed having significantly higher positive evaluation of their feelings. Significant difference ($p < .01$) in the emotions towards P.E. between genders was also presented in research chapter of Čillík (2012) where again boys attending regular elementary schools displayed significantly higher level of positive emotions comparing girls. Another research shows no significant differences in feelings and emotions towards P.E. lessons between boys and girls living in orphanage (Bendíková & Nemček 2017).

The results of current study further show the highest level of indifference (50 %) in pupils receiving special education in the case that for some reason a regular P.E. lesson is cancelled. Similarly in the study of Kurková & Nemček (2016) the group of pupils who are D/HH showed the highest level of indifference towards such a situation (59.5 %) out of all the pupils with disabilities involved in their research. We can argue that the content of P.E. classes at special schools is not exactly appropriate to pupils' interests and wishes therefor more than half of them do not care when the lesson is cancelled. Pupils of present study showed higher level of positive emotions if a P.E. lesson is cancelled. The results from the research among pupils in regular elementary schools done by Čillík (2012) show 30.4 % of intact pupils who are happy if a regular P.E. lesson is cancelled. Compared to our findings, more pupils attending special elementary schools are happy (38.9 %) compared to intact pupils. This percentage is best approximated by pupils with physical disabilities (38.6 %) in the research of Kurková & Nemček (2016). Another piece of research in regular school pupils (Görner & Starší 2001) revealed a smaller number of pupils who are happy if they cannot do exercise compared to the number of pupils who are happy if their lesson is cancelled. This was true only in pupils with visual impairments (21.3 %) in the scientific paper of Kurková & Nemček (2016). Results of Bendíková & Nemček (2017) discovered that only 4 % of orphan students were displayed negative emotion towards P.E.lesson when for some reason is P.E. cancelled.

In the present study did not occur significant differences between boys and girls neither between special schools with regards to their emotions in the case that for some reason a regular P.E. lesson is cancelled. Similar results presented Nemček's study (2017) which did not confirm significant differences between boys and girls living in orphanage. Even that,

happier group in her study was presented by orphan girls, who were always happy (35.7 %) or happy very often (21.4 %) if a P.E. lesson is cancelled comparing orphan boys, who were always happy or happy very often if a P.E. lesson is cancelled in 37.2 %. Čillík (2012) found the emotionality in the case that for some reason a regular P.E. lesson is cancelled between boys and girls of regular elementary schools significantly different ($p < .01$). Boys of his research expressed higher level of negative emotions 54.5 %; 24.9 % showed indifferent attitude and 20.6 % displayed positive emotion. Girls of his study showed in 31.3 % negative emotion if P.E. lesson is cancelled, 28 % of them presented indifferent attitude and 40.8 % were mostly happy or always happy if P.E. lesson was cancelled. Even differences between boys and girls of present study were not significant, higher degree of negative emotions to a cancelled P.E. lesson was also declared by boys as in previous mentioned research comparing girls attending special elementary schools.

The reason for some discovered differences in expressed emotionality comparison between pupils with HI and intact pupils may lie in the fact that pupils with sensory disabilities generally show less locomotion and space orientation and are able to perform only limited independent movement in space (Butterfield, van der Mars, & Chase 1993; Longmuir & Bar-Or 2000). Neglecting the health-oriented physical activities that are integral parts of the P.E. curriculum in schools for the pupils with sensory disabilities may also lead to poor posture or overweight in adulthood (Bendíková 2016a; Bendíková 2016b). Those findings in those pupils have also been mentioned in several other studies (e.g. Dair, Ellis & Lieberman 2006; Prechtl et al. 2001).

The results of current study show higher level of positive emotions towards P.E. classes in pupils attending special elementary schools for children with HI. On one hand pupils show very high positive emotions of feeling during P.E. lesson on the other hand they are happier than upset since P.E. class is cancelled. The fact is, that the pupils do not want to practice even they generally have a positive relation towards P.E. lessons. There is a lack of the real positive relation towards regular long-term sport and physical activity (Labudová, Nemček & Kraček 2015; Bendíková & Dobay 2017).

By comparing the average values of the feelings during P.E. lessons provided by our pupils receiving special education (2.37 of the point score) with pupils who are D/HH (2.14 of the point score) and pupils with visual disabilities (1.52 of the point score) of Kurková, Nemček & Labudová (2015) research as well as with pupils with physical disabilities (1.90 of the point score) of Nemček & Bergendiová (2013) study and orphan students (1.84 of the point score), the highest level of positive emotions towards P.E. was stated by pupils with

visual disabilities as opposed to all above mentioned pupils and students attending special schools in Slovakia. Interestingly lowest level of positive emotions towards P.E. lessons was expressed by pupils of our sample. When comparing the average values of responses about reaction when P.E. lesson is cancelled by pupils attending special elementary schools for children with HI (2.597 of the point score), and students living in orphanage (Nemček 2017) (2.6 point of the total score) interestingly we found out the same level of emotionality.

Limits of study

The results cannot be generalized, they only attest two special schools within the given region. This study was limited due to the low number of participating schools and the number of pupils, as well as due to the lack of knowledge of the level of current fitness and overall health condition of the pupils under this study.

Conclusion

Comparing the emotions and feelings of pupils attending special schools for children with HI shows significantly higher level of positive emotions only in feelings during P.E. lessons, where boys and those attending special school at Hrdličkova Street presenting significantly higher level of positive emotions. The statistically significant differences weren't discovered in the reactions when P.E. lesson is cancelled from the point of view of the gender neither schools.

The degree of emotions towards P.E. lessons is often related to the level of a pupil's successful gaining of movement skills, the level of intensity of specific exercises and their degree of difficulty, all which affect the pupil's ability to display their personality. Very often children attending special schools probably do not realize that regular participation in sports activities can help them to improve the quality of their life, especially in the field of self-service activities, as well in all daily routine activities, which brings them, when they get older, more independence from other people, and later provides even more opportunities for inclusion through work activities despite their serious disability. When accepting the specific requirements of physical activities for pupils with HI, we recommend that teachers at special schools create a space allowing pupils to utilise their individual skills and abilities to the maximum by performing activities according to their interests and wishes. This will increase the positive emotions of this mandatory subject and allow physical activities to become a

regular part of pupils' leisure activities as well as long term physical activity in late adulthood.

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