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Marius Pedersen



**Univerzita Mateja Bela Banská Bystrica
Fakulta humanitných vied
Katedra telesnej výchovy a športu**

Klub telesnej výchovy UMB Banská Bystrica

**Vedecká spoločnosť pre telesnú výchovu a šport
Banská Bystrica**



GEOCACHING IN BANSKÁ BYSTRICA AND ITS SURROUNDINGS

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Keywords: *Geocaching, cache, GPS receiver*

Geocaching (geocache = a hidden container) navigation game originates from the USA, where it was enjoyed as a fun past time by GPS holders, and also in order to promote sales of GPS receivers. The core idea of the game is a “treasure“(cache), which is hidden outdoors with its coordinates submitted on the internet site www.geocaching.com. After its approval by an administrator (Geolens Reviewer) the other participants are trying to find it using their GPS receivers. Nowadays there are more than a million of hiding places/geocaches around the world. There are **1,141,210** active caches and an estimated **4-5 million** geocachers worldwide. In the last 30 days (as of July 2010), there have been **4,078,633** new logs submitted. Year after year the number of caches in Slovakia as well as Slovak geocachers has been rising. (Figure 1 and 2).

Tab. 1 Number of caches according to the years when they were set up

<i>Year</i>	<i>Number</i>	<i>%</i>
2010	702	18%
2009	1352	34%
2008	615	15%
2007	662	17%
2006	382	10%
2005	146	4%
2004	90	2%
2003	28	1%
2002	6	0%
2001	2	0%
Spolu	3985	100%

Source: www.geocaching.sk

Tab. 2 Number of the new geocachers (set according to the date of the first cache found)

<i>Year\Month</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>	<i>Total</i>
2001	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	4	2	0	1	3	1	1	12
2003	0	0	0	2	0	2	1	4	2	4	5	3	23
2004	3	3	1	2	13	3	8	13	15	8	2	6	77
2005	5	1	8	21	7	13	32	28	15	23	10	12	175
2006	13	15	19	45	46	48	101	101	68	47	43	44	590
2007	32	49	79	109	113	113	219	239	152	85	52	75	1317
2008	96	136	186	173	254	246	448	472	280	243	166	159	2859
2009	138	148	172	339	433	358	695	814	559	331	207	218	4412
2010	204	172	319	409	423	407	596						2530

Source: www.geocaching.sk

It is not that simple to find a cache as the accuracy of GPS receivers is in the best case $\pm 5\text{m}$ and the size of a cache is in many cases only a few centimetres (micro cca 1- 4 cm).

Tab. 3 Active caches variations according to their size in Slovakia

<i>Size</i>	<i>Number</i>	<i>%</i>
<i>Small</i>	1358	<i>43%</i>
<i>Regular</i>	1022	<i>32%</i>
<i>Micro</i>	589	<i>18%</i>
<i>Unknown</i>	90	<i>3%</i>
<i>Undefined</i>	85	<i>3%</i>
<i>Large</i>	41	<i>1%</i>
<i>Total</i>	3185	<i>100%</i>

Source: www.geocaching.sk

As far as accessibility, difficulties in terrain are concerned there are five difficulty ratings. First level is the easiest one while the last fifth level is the most difficult to access – in some

cases to reach a cache it is necessary to use climbing equipment or even to be accompanied by a mountain guide (eg. cache Gerlach peak etc.). There are also 5 ratings according to the way a cache is hidden (first level is the easiest one and the last one is the most difficult as for how well it is being camouflaged).

Besides, caches can be divided into the following categories:

- ***Traditional cache*** – basic type of a cache. It is often a plastic container for food, or a small bucket filled with a variety of objects (along with the mandatory log book – a pencil, a pencil-sharpener, a note with the instructions, trade items, travel bugs ...) Coordinates, submitted at the caption of a cache page with the description of a cache, give its exact location.
- ***Multi-cache*** – multi discoveries type of a cache with many variations. In fact, a geocacher needs to get through one or more intermediate cache stages, where he collects information (instructions, aids, some coordinates etc.) necessary for finding a final cache itself. Coordinates at the caption do not state a location of a final cache, but only coordinates of the first cache stage.

Tab. 4 Variations of the active caches according to their type in SR

	Type	Number		Logs - found		Number	Logs- found		Number
	Traditional	2081	65%	197162	73%	95	6254	63%	3
	Mystery	544	17%	33404	12%	61	1891	19%	3
	Multi-cache	485	15%	33501	12%	69	1762	18%	4
	Educational (Earthcache)	51	2%	3951	1%	77	18	0%	0
	Cache Wherigo	10	0%	337	0%	34	34	0%	3
	Event cache	8	0%	62	0%	8	0	0%	0
	Letterbox	3	0%	54	0%	18	6	0%	2
	Webcamera	1	0%	282	0%	282	4	0%	4
	10 years GC!	1	0%	18	0%	18	0	0%	0
	Cache In Trash Out	1	0%	0	0%	0	0	0%	0
	Total	3185	100%	268771	100%	84	9969	100%	3

Source: www.geocaching.sk

- **Mystery cache**- to determine the cache location it is required to solve a logical task, submitted in the description of a cache. It could be a simple brainteaser or a complicated task requiring special knowledge. Solving of a “mystery” should provide coordinates of a cache.
- **Letterbox hybrid** – translation of this type of a cache is a mailbox. It is not a widely used type of a cache and it applies clues instead of coordinates to find a cache. They are a part of the older game called letterboxing, based on a system of stamps.

A participant stamps the letterbox's logbook in a cache with his own stamp and inversely uses a stamp found in a letterbox to stamp his personal logbook.

- **Event cache** – an event cache marks (at least a month ahead) the location and time of a geocaching event. The aim is to get together with friends or to make new friends and have a talk about geocaching and the issues related to it. The event should be archived afterwards.
- **Earthcache** – these caches are located at some places of geological interest or the other unique places of our Earth. The aim is not to find a cache, but to figure out the location of a place and to find information about the specific place and take the photos of the place.

Location of a cache itself should be of a historical, educational, fitness, relaxation or entertaining nature.

Aim of the thesis

The aim of our work was to map and evaluate the caches in Banská Bystrica and its surroundings.

Materials and research method

We used the following GPS receivers while searching for caches:

- ✓ Garmin Etrex Vista Color;
- ✓ Garmin Oregon 400t;
- ✓ Nokia Expes Music 5800.

We underwent our search for caches during the years 2006-2010.

Results

As of July 2010 there have been in total 55 caches in Banská Bystrica and its surroundings (within 7 kms) . There are only three kinds of caches monitored: traditional, mystery and multi-cache (Figure 1).

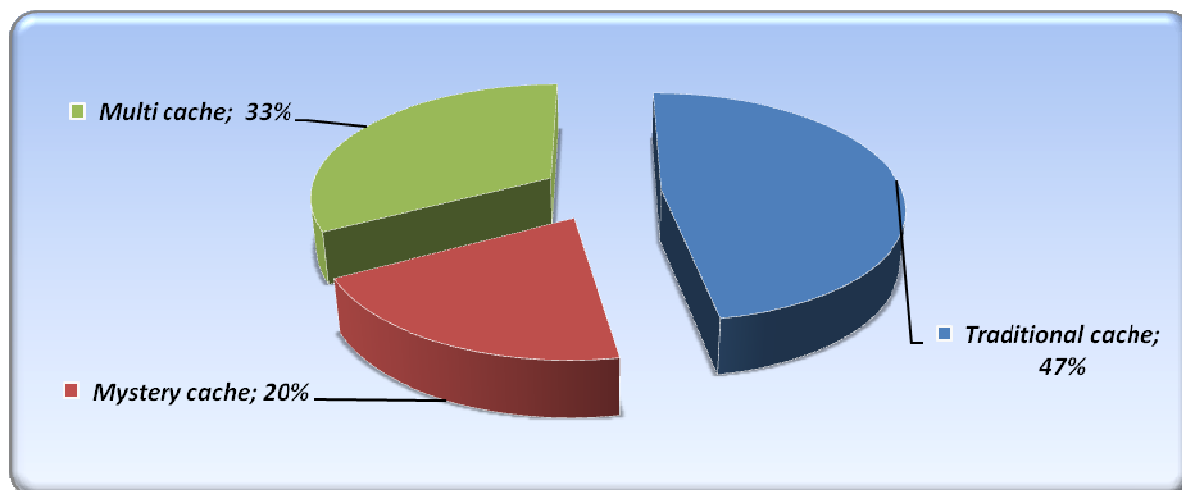


Figure 1 Caches' variations according to a type of cache

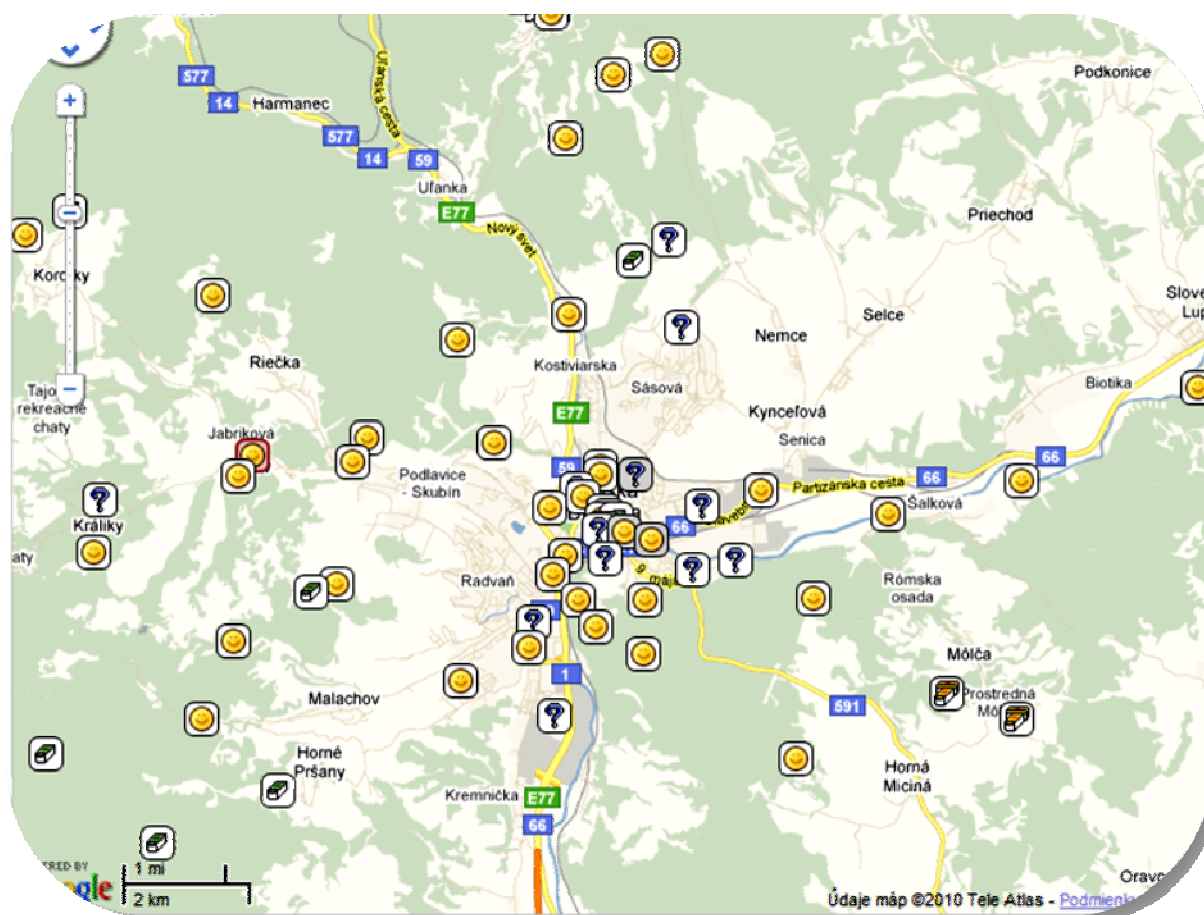


Figure 2 Topographic arrangement of caches (www.geocaching.com)

Figure 2 shows that caches are located both in the centre of the town, as well as in its close surroundings.

The best views on the town of Banská Bystrica are from caches located in Panský diel, Horný diel, Urpín, Laskomer, Horné Pršany and Malachovské skaly.

The above mentioned caches are described well and they are traditional caches not too hard to access with a nice view all around.

Highlights from the historical sights of Banská Bystrica are caches which would take us to the Leaning Clock Tower on the SNP Square, the Monument of the Slovak National Uprising and many other memorials of the famous people who lived in Banská Bystrica. Most of these caches fall into the category of “mystery” caches.

In the first half of the year 2010 there was also introduced a night mystery cache, which has been quite rare in Slovakia. Different logs in the logbooks prove that its description is very impressive. Eg.: “Great night adventure. Cache is done in a perfect way. Recognizing star configurations was a piece of cake for us.” “Relaxing walk, all the stages are visible from the path. Well mastered description.”

Geocaching also describes Jakubsky educational trail (multi cache), historical Laskomer water conduit, observatory on Urpín, protected tulip trees in Lenin Park.

As far as stages of difficulty are concerned the hardest one is probably “MobyDick” (mystery cache with the level of difficulty 4), which took us to the places where wood for the further processing was kept in the past.

Conclusion

Nowadays it is generally known that regular physical activity has got positive influence on our physical and psychological health. There has been monitored less physical activity of the children and youngsters in our – “modern” lifestyle as seen in the work of more specialists in this area (Šebrle, 1998; Mikláňková, 2001; Vladovičová-Novotná, 2005, Hřčka a kol. 2005, Michal, 2005, 2006). For that reason it is inevitable to be looking for the new possibilities in educational process to promote physical activity of children. One of the options of how to combine new technologies, in our case the Global Positioning System (GPS) with a game aiming at increasing physical activity of the children and the whole population, is a navigation game Geocaching, which has “celebrated 10th anniversary” this year. We deal with this mentioned topic within the grant project VEGA č. 1/0635/08.

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THE OLDER PEOPLE OPINION OF THE PLACE OF RECREATIONAL PHYSICAL ACTIVITIES IN THEIR LIFE

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Key words: *physical activity, kinetic activity, motivation, obstacles, elderly people, health training*

Introduction

Civilization progress implicated changes in life conditions of contemporary societies. Development of medicine and pharmacology let us eliminate a number of diseases and cure other ones successfully. Correspondingly, the technological progress reduced a rate of work accidents resulting in extension of an average lifespan. Transformation of a family model and increase in women's professional activity has recently led to a drop in number of childbirths and consequently to the minimal growth of population. In consequence of this the rapid changes in populations have occurred, the ratio of elderly people in the society has increased. The process of ageing of the societies has advanced.

Population aging forecast is unquestionably disquieting and indicates that such process is going to continue. According to demographers' predictions between years 2010 and 2020 the number of old citizens in Poland will increase by 2 million people. In 2040 one fourth of Polish citizens will be retired. While in 2000 14% of the population achieved the retiring age, in 2030 this will increase up to 24% (Osiński, 2002; Szarota, 2004).

Some negative occurrences among the developed societies are attributed to the civilisational progress. Development of technology and frequent use of machines resulted in spread of sedentary lifestyle. Physical effort was maximally reduced (hypokinesias. Deficiency in exercises and movement led to the acceleration of the involutional processes (Brzezyński, 2004).

Although the development in medicine brought the extension of the human lifespan it cannot be perceived as a success while there is no improvement in life quality.

Important transformations in mental and social conditions of an individual take place at the beginning of the old age. The critical moment for an individual is retirement, bringing

withdrawing from a social life and frustration on the basis of changes in daily routines (Szarota, 2004).

Elderly people are forced to face gradual worsening of health, physical strength and last but not least changes of appearance. Understandably, being drawn against such revolutionary changes they may feel unattractive, ugly and disabled, which diminishes their self-evaluation and in consequence influences their social behaviour (Parnicka, 2005).

A way a man is able to perform in his elderly years is conditional upon what his ability of adjustment is. The adjustment, adaptation to old age is by far easier for people who have had their own passions and hobbies throughout their lives and have focused on achieving their goals (Stuart – Hamilton, 2000). Alteration is conditioned by two groups of factors:

- external, which are duties, hardships and other people's negative influence,
- internal, which are motives, expectations and emotions.

Researches indicated that there is correlation between being active and fit, also in excellent psychological condition and life contentment (Susułowska, 1989). Feeling of satisfaction and positive reaction to changes brought by aging processes are correlated with intelligence, life conditions, socio-economical status and a level of education.

It was established in the survey conducted by Centrum Badania Opinii Społecznej (Szarota, 2004) that not less than 59% Poles do not do any exercises or do not play any sports and spend their leisure time passively. The number of individuals not taking up any physical activities increases together with age of examined. In the group of the eldest senior citizens the mean 85% declare not taking part in any form of physical exercises. The key moment for future decisions related to a process of renouncing each physical activity is a period between 25 and 34 year of life (Kuński, 1985 ; Kuński – Janiszewski, 1985) .

Needles to say, it is physical activity that determines aging and senility dynamics.

Conscious and systematic physical exercises help to delay senile changes or alleviate their course. "Physical exercises are factors to have a positive influence on a posture, appearance and other physical characteristics. Respectively, they significantly affect an individual's frame of mind (Kocemba – Kołomyjska, 1989; Rembowski, 1984).

Systematic exercises also lead to the higher level of fitness and physical performance influencing older adults' independence and autonomy and their sense of self-worth. Limited physical activity in a group of older adults is an independent factor of an early dying risk It belongs to a set of hazardous factors such as smoking, hypertension, high cholesterol level or obesity. The reason for nearly 50% of deaths among elderly people are cardiovascular diseases which are the consequence of inappropriate diet, bad nutrition patterns, smoking,

overusing alcohol or other stimulants along with lack of physical activity. The essential reason for injuries and disability among elderly people and, owing to subsequent complications, for their mortality are accidental falls. Frequency of falls increases together with age while muscular force, strength and flexibility decrease and dyspraxia and balance disorder appear. "It is estimated that additional physical activity performed by society members could lower the death ratio by 25-33%" (Osiński, 2002).

The old people are forced to deal with numerous barriers, which in result become the reason for not taking up any physical activity or avoiding any forms of recreation.

Social barriers constitute the first type of barriers. There is a widely spread mistaken conviction that spending free time in an active manner is only intended for the young, while an older person ought to stay inactive and slowly withdraw from various forms of activity ; social, domestic or physical. "It is being observed that people in their late years are changing their attitude towards physical recreation. The belief that physical exercises are the matter of young people still prevails, though" (Szwarc – Włańska – Łobozewicz, 1988).

The next type of barriers are economic ones. Participation in structured physical exercises is often payable and for the elderly, who often face material problems even small sums of money to be spent can trigger off strong discouragement. The fact is that barriers of embarrassment, fear and laziness can be ranked among psychological blockades, namely those deep-rooted in individuals' minds. Older persons may feel ashamed of their bodies, which have altered since adolescence, and sense discomfort due to their awkwardness. Consequently, they might be afraid of making themselves ridiculous. Additionally, they are frequently anxious about accidents or deterioration of a health state as a result of physical exercises (Drabik, 1997; Drabik – Drabik, 1997) .

Suffering from various diseases people in advanced age believe that their ailments are unconditional contraindications for starting any sort of activity. Moreover, they are often completely unaware that various physical activities directed to people of similar age take place in their vicinity.

Another problem is lack of highly qualified, professional instructors to run exercise programs for seniors. Recreation for seniors is a incredibly specific form of recreation requiring medical consultations. Respectively, this involves monitoring and supervision of instructors who are specialists in kinezitherapy and geriatric prophylaxis. Since the beneficial influence of physical activity on well-being and mental comfort of seniors seems unarguable, breaking down the barriers is absolutely necessary (Szwarc – Włańska – Łobozewicz, 1988). Five

categories of reasons why elderly people start exercising were mentioned in relevant studies: health-oriented, utilitarian, recreational and cognitive ones.

The first set represent health-oriented motives. Persons who are urged by this motive do it with the purpose of improving or maintaining physical fitness or health. They are acutely conscious of health benefits which stem from systematic physical movement and, correspondingly, they recognise that exercising is highly recommended as valuable in treatment of innumerable diseases appearing in older age.

The next group of motives which compel the elderly to take up physical effort and activity are the utilitarian ones. Seniors intend, by means of systematic movement, to maintain or improve their general fitness level which helps them to feel self-governing and at least partly independent. Being fit means that they are able to cope with performance of basic daily activities and, consequently, take pleasure in being with the closest and the dearest and enjoy the life.

The elderly also engage in exercising for social reasons. Being involved in variety of recreational forms lets them escape from the prison of loneliness, social isolation and finally, allows to stay in the community.

The following group of motives are entertaining and recreational ones. Senior citizens seek ways to fill the abundance of spare time that comes along with retirement and old age. Physical activity remains one of the most interesting and beneficial way of killing the boredom and monotony of everyday life.

The next type of motives mentioned in scientific works are cognitive ones. These who are set in motion by them possess an internal need of motor learning and gaining knowledge of touring. Equally, they would like to become acquainted with movement, its forms and rules.

The list above can be expanded by the utterly comprehensible esthetic motive. The older people desire to improve their appearance and to slow down emerging of external age signs. Strange enough, one element may become both a barrier to start physical activity and, simultaneously, can be of a positive value enhancing initiation of systematic recreational activities. This crucially depends on psychological characteristics of a person and previous experiences in domain of physical activity or social factors.

Needless to say, working with elderly people requires the appropriate, well constructed sets of thoughtfully chosen exercises, which is of vital importance. Those should be designed for individuals on different levels of general fitness, advancement and last but not least their health state. In particular extended, periodical activities such as walking, jogging, cycling, swimming and cross-country skiing performed at the moderate rate are the most advisable.

They are beneficial for the cardiovascular and respiratory systems. Special exercises improving or maintaining joint mobility in limbs and a spine are essential too (Szwarc – Włańska – Łobozewicz, 1988).

The purpose of research work

Although being interested in physical activities has recently become more common among senior citizens it still remains alarmingly low. The aim of this work is the attempt of discovering motives for which the elderly take up some activities and simultaneously, barriers which may restrain the elderly people from participating in physical exercises.

Materials and methods

The survey was conducted by means of a questionnaire, having been constructed meeting the needs of this very survey. Respondents were asked to answer 12 questions in writing and to fill up a short personal questionnaire. Questions 1-6 were designed to characterise the group which was examined

Subjects involved in this research were 60 persons, 50 women and 10 men with the average age being 66. The youngest person was 51, the oldest one 89.

Characteristics of individuals

93% of examined persons had been participating in movement activities for longer than a year. They took part in various forms of exercising once (18%), twice (25%), or even three times a week (57%).

Form chosen by them were:

- general fitness exercises at a gym (100%)
- aqua aerobic (43%)
- outdoor activities: walking, nordic walking (75%).

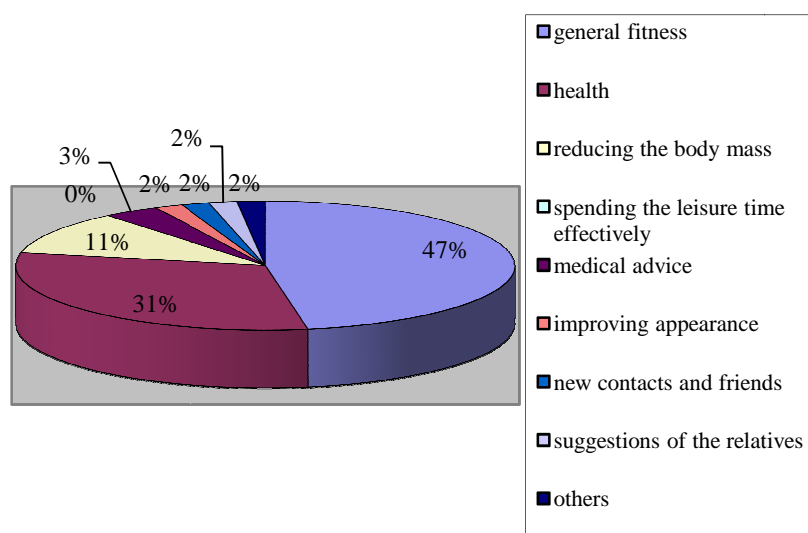
Moreover, 28% subjects of the research declared that their participation in additional fitness activities organized by The University of Third Age in Wicko, Touristic Club of Water Sports and other clubs and associations. Some of them reported performing other physical activities or kinds of work such as walking (70%), gardening (21%), cycling (21%), individual exercising (13%), swimming (6%), skating (2%), doing yoga (2%) and running (2%).

Analisis

Motives for taking up physical activity

Being questioned about the main reason for participation in recreational activities 43% drew attention to the need of improving general fitness. 28% of them indicated willingness to improve or maintain good state of health while not less than 10% wanted to lower their body mass, 8% to spend their spare time efficiently. For 3% of subjects the starting point was the advice of general practitioners or specialists.

Only 2% indicated desire to improve their appearance and to slow down emerging of external age signs. The subjects wanted to meet new friends, start personal relationships with other people of the similar age. Respectively 2% indicated acting on the family instigation or chose the option “others”, mentioning physical activity as such and satisfaction it brings about.



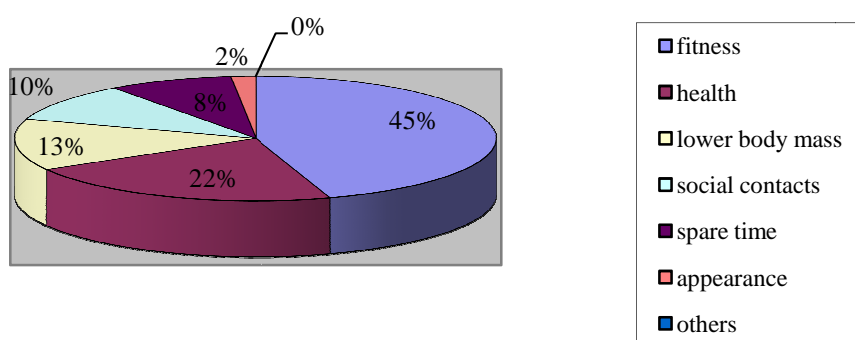
Graph 1 What was the reason for your participation in recreational activities?

The results presented above point out that for the elderly people the major motive to take up physical activity is the utilitarian one. The older persons want, by means of systematic movement, maintain or advance the level of general fitness facilitating better performance in domain of daily basic activities, which results in feeling of self-confidence, independence and self-governing.

Similarly, the health-related motive is clearly visible. 28% of the persons being questioned pointed directly to the willingness to improve their health condition, the subsequent 2% mentioned medical recommendation as the reason for participation in recreational activities.

!0% were induced by the need of reducing their body mass, which may well be ranked among health-related motives (avoiding chronic health problems associated with overweight and obesity) or esthetic ones (achieving a slimmer figure). Only 2% indicated desire to improve appearance and to delay external signs of aging (esthetic motives)

Importance of some elements of enjoyment were also brought up by the subjects of the research. 8% ticked the answer “spending the leisure time “. Unarguably, physical activity emerges as one of the ways of avoiding boredom and monotony in everyday life. The elderly find pleasure and enjoyment in performing physical exercises. 2% indicated physical activity as such and the joy it brings as the main reasons for starting regular exercising. Only 2% of the subjects pointed out the need of new contacts and relationships. Considering that it is evident that the social motives are hardly present. The next question in the questionnaire regarded core benefits emerging from partaking in recreational activities. The question was proposed to recognize motives that help to continue the individual participation in recreational activities. Answering to this question 45% claimed that the most evident benefit was improvement in their general fitness, 22% noticed the health state progress, 13% reducing of the body mass, 10% new contacts and friendships. 8% of the subjects enjoyed the style they spent the spare time while 2% noticed the positive change in their appearance. The results are presented in Graph 2

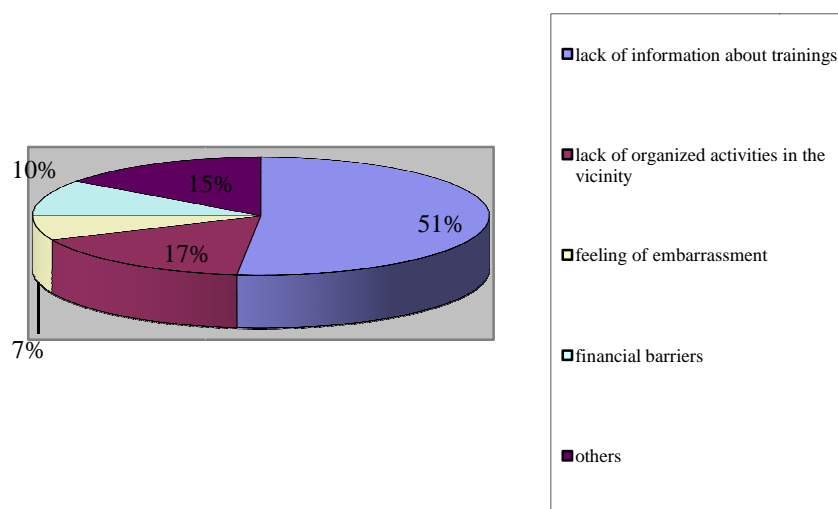


Graph 2. What is the main benefit coming from your participation in recreational activities?

For a second time the results support utilitarian and health-related motives for choosing regular participation in constructed recreational activities. 13% of the researched people indicated reducing the body mass as the essential advantage, which may be perceived as a health-related motive but, simultaneously, as a esthetic one. This ambiguity requires subsequent research. The social motives, namely opportunity to start new or strengthen old acquaintances and importance of elements of amusement and spare time spending are also evident.

Barriers to restrain senior citizens from taking up physical activity

Responding to the question concerning main barriers which discourage the elderly from participating in organized recreational activities 51% of researched persons pointed to insufficient information or even lack of knowledge of such trainings, 17% rationalized their inactivity pointing to lack of relevant trainings in the vicinity or (10%) to a financial barrier. 7% mentioned that the elderly face problems with overcoming a feeling of embarrassment while performing physical exercises in a group. 15% ticked the answer “others”, indicating to such obstacles as laziness (6%), time shortage (4%), lack of need of movement (2%), insufficient knowledge of value of regular physical activity (2%).



Graph 3 Which, in your opinion, is the main barrier to participation in recreational activities for seniors?

The results presented above reveal the clear dominance of a barrier of unawareness. The older people admit that they have far to little knowledge of importance of movement activities for

their health as well as for slowing down aging processes. Far too rarely have they information about organized recreational activities addressed to people of their age.

Another problem which appears is too little number of professionally run activities for the elderly. Such people are often unable to find relevant trainings in a place of living.

The older people often indicate an economic barrier and financial obstacles (10%). For those who are retired even a moderate unit cost of participation in recreational activities may work discouragingly and become a barrier not to overcome.

Internal motives, namely laziness, feeling of embarrassment, lack of need to start physical activity constitute the set of psychological barriers for 7% of the researched. Those require self-motivation, working on oneself and eliminating the obstacles which derive from a previous style of life.

Paradoxically, 87% of researched persons answering the question about what factors hampering participation in physical activities they recognized, stated they could not identify any. Next 13% mentioned the following obstacles: “lack of information ” (4%), “lack of time” (4%), “conviction that due to their poor health they should avoid physical exercises” (5%).

Giving answers to the question about obstacles which hinder systematic participation in recreational activities, 85% seniors were not able to recognize any, while the rest 15% indicated to “lack of time”, “episodic, short-term health disorders requiring treatment” or “family duties.”

Additionally, being asked about their further plans concerning continuation of participating in recreational exercises, only 2% declared lack of interest whereas 98% declared intention to continue.

Conclusions

In a group of the elderly people utilitarian and health-related motives prevailed. In promotion of physical movement with this group it is vital to emphasize the importance of systematic exercises and their beneficial influence on a fitness level and well-being of an individual. Activities should also be constructed thoughtfully in order to deliver as much joy, contentment and pleasure as possible., in consequence meeting a need of enjoyment.

Limited knowledge of importance of physical activity for health and well-being and, correspondingly for the quality of life, which seems to be a chief barrier to take up systematic exercises, confirms that building up appropriate programs is indispensable. It is also crucial to organize a wide variety of recreational activities directed to the elderly in the closest vicinity.

They should be able to find relevant activities in their pace of living. Similarly, adequate information where and when such activities are run is of vital importance. Providing the elderly with sufficient information and wide choice of activities will help to eliminate the barrier of poor availability. The researched pointed to economic barrier as one of those hampering their participation in physical activities. It is necessary to lower the cost of participation.

Diminishing of barriers which an older individual meets while they attempt to start physical activities and, simultaneously, appropriately prepared activities may enhance a chance for more active participation in the physical culture.

The issues discussed in the work may become a starting point for subsequent researches taking into account a larger number of variables and examining a larger population.

The analysis of the researches let us draw a tentative conclusion that among the physically active aged people both utilitarian and health-related motives dominate. The elderly persons want, by means of physical activity, improve the level of fitness. Physical fitness is an overall efficiency of an organism conditioned by an appropriate structural and functional level of a body systems. It is fitness that allows an elderly person perform daily activities and enjoy an independent and active life in a group of friends and family members. Seniors, by virtue of systematic partaking in movement activities desire to remain in good shape or to improve their health state. Physical activity throughout the life contributes to health by reducing the risk of many diseases and working as a method of prophylaxis, in particular in the time of aging. The element of enjoyment which was indicated as important by the part of the examined, let us believe that positive feelings such as joy and happiness, connected with taking active part in physical performance and spending free time with a group, may be essential for elderly people. Social and esthetical motives appeared far less important.

Summing up it is perceptible that the barrier of ignorance is essential when the elderly face the challenge of taking up systematic physical activity. Older adults are not aware of the importance of physical activity for health, fitness level and well-being. They are convinced that particular physical ailments or health discomforts are contraindications to physical effort and higher activity level. Basically, they are unaware that a series of deliberately organized, group-based activities is directed to older people.

Summary

Although elderly people's interest in physical activities has recently visibly increased, it is still ominously low. The main aim of this work is to establish both motives of taking up various activities and barriers which can preclude them from adopting new forms of physical activity. It was assumed that gaining knowledge of, simultaneously, motivation and obstacles to starting physical activities, can contribute to developing effective programs promoting prophylaxis and movement therapy with such population.

The research was conducted by means of no-standardized survey method (a questionnaire) on a group of 60 persons including 50 women and 10 men. An average age was 66, the youngest being 51 whereas the oldest person was 89.

Summing up, it was recognized that amongst the elderly, physically active individuals utilitarian and pro-health motives prevailed. They would like, via kinetic activities, to improve their movement ability in daily basic actions. Through methodical participation in physical performance they wish to stabilise or advance their health state. Social contact with people of the same age showed a relation with actual involvement in physical activities, more specifically with folk games. The element of enjoyment which was indicated as important by the part of the examined, let us believe that positive feelings such as joy and happiness, connected with taking active part in physical performance and spending free time with a group, might be essential for elderly people. Social and esthetical factors were far less perceptible.

It was also found that among numerous obstacles preventing the aged people from being engaged in physical activities, the lack of knowledge was the core one. The other important reason was a little number of professionally organised group-based activities addressed to them.

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THE INFLUENCE OF NONTRADITIONAL SPORT GAMES ON THE STATE OF COORDINATION ABILITIES IN 8-YEAR-OLD CHILDREN

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Key words: *nontraditional sport games, diagnostics of coordination abilities*

Introduction

Movement and motor activity are connected with healthy lifestyle, health care, way of life of modern human. Movement is for children important not only as the necessary condition for natural physical development, health and motor ability improvement, but also for their social development.

The way of children's and youth's motivation for movement is very important. Instead of spontaneous motor activity hypo activity occurs. The passive way of life become more favorite, what reflects in lower ability and these consequences can lead to the threat of health state.

The lack of attention is devoted to the monitoring of the physical development and motor performance level of children in the first grade of basic schools. Withal it is generally accepted that the younger school age period is more important from the biological, motor and psychical angel then the later age.

Physical education has in the period of younger school age unsubstitutional place. Its main task is to create in children positive attitude to motor activities, to get them for everyday motor activity, to teach them to understand necessity of motor activity for their healthy development. Games have the dominant position in providing all these tasks especially in the first grade of basic school. Games are traditionally stabile part of curricula of all school types. Pupil's individuality and his creative initiative are expressed in motor and sport games in full range. They contribute to the development of motor abilities of children and also their creative thinking in constantly changing situations (JALECZ – VEISOVÁ, 2001, BUKOVÁ, 2001, 2006, FEČ, 1996, NEMEC, 2009, NEMEC – JUNGER, 2007, RUŽBARSKÁ – TUREK, 2007).

In these days a lot of attention is devoted to less-known games. In term less-known motor activities and sport games we understand such games and motor activities that are completely new for us. Their origin is different (we can say that they have originated by the development of new materials, creating new tackle, development of the rules of older games or their combination). Many of these games are unexacting for spatial and material equipment at schools.

In nontraditional games accuracy and movement effectivity are conditioned by the ability of regulating strength, time and spatial parameters conditioned by condition, as well as coordination abilities. Nontraditional sports offer opportunities for knowledge development not only through the tackle peculiarity, rules, but also through the interest of sport experience that should lead to the lifelong motor involvement. Nontraditional games are the motivating factor of creating the active interest in sport, as well as the suitable structure of competitions that respects age and sexual personality. Nontraditional exercises and games extend the content of school physical education with new sport activities that do not require difficult spatial and material equipment and their adoption enables to expand motor activities of pupils also in free time (CHOVANOVÁ, LAFKO, 2008).

It is important not only to return to favorite games, but also to insert new games. Nontraditional games bring excitement, feeling of change, new possibilities for players to realize their abilities and of course a new chance to win (ARGAJ, 1994).

We deal with this mentioned topic within the grant project VEGA č. 1/0594/08 “The influence of nontraditional sport games on the development of coordination abilities“.

Methods

Research sample consisted of 54 children, pupils of the Basic school in Michalovce who reached and did not exceed 8 years in the time of testing – 18th September 2008 – 20th February 2009. The first measurement (input) was carried out in September 2008 and the second one (output) in February 2009.

The experimental sample consisted of pupils of sport class (n = 27, 12 girls, 15 boys). Pupils of sport class attend compulsory subject “Motor preparation” or they perform motor activities out of school (Basic Art School, sport clubs, Leisure Time Centers).

Control sample consisted of pupils of unsporting class (n = 27, 13 girls, 14 boys). Number of physical education lessons in these classes is three lessons a week.

For diagnostics of coordination abilities in 8-year old pupils prepared test battery was used. From this battery following 9 tests were chosen:

- T1 – choice reaction test with two rullers (reaction ability),
- T2 – catching the hanging ball (kinaesthetic–differentiation ability - spatial),
- T3 – tennis ball accuracy throw (kinaesthetic–differentiation ability - strength),
- T4 – roll of three balls (spatial-orientation ability),
- T5 – tapping hands and feet (rhythmic ability),
- T6 – hand tapping (frequency ability),
- T7 – complex locomotor test (CLT) – ability to connect acyclical movements,
- T8 – throw a ball at the target after the run over the benches (ability to change the movement direction),
- T9 – one leg stand (R, L) with closed eyes (balance ability).

For data elaboration following methods of mathematic-statistic analysis were used: for normality verifying Shapiro-Wilk test, for the level arithmetic mean and median. The difference significance of first measurement between boys of sport and unsporting class and second measurement was verified by nonparametric Mann-Whitney U-test. The same test was used for verifying differences significance also between girls “athletes” and their unsporting coevals.

Results and discussion

In results comparison between sport class boys and their coevals in unsporting class we found out significant differences in 5 input tests T3 – testing of kinaesthetic–differentiation strength ability, T5 – test of rhythmic ability, T6 – test of frequency ability, T7 – test of ability to connect movements and T8 – test of ability to connect the movements (Table 1). We can allege that in sport class „more clever“ pupils were chosen – through this fact we explain significant differences already in the first measurement.

Tab. 1 Comparison of coordination ability level in boys from sport class and boys from unsporting class in input tests

Proměnná	Mann-Whitneyův U test (chlapci_sport_nesport) Dle proměn. skupina Označené testy jsou významné na hladině $p < ,05000$						
	Sčt poř. šp_ trieda	Sčt poř. nešp_ trieda	U	Z	Úroveň p	Z upravené	Úroveň p
T1vs	215,0000	220,0000	95,0000	-0,43644	0,662521	-0,43784	0,661503
T2vs	246,0000	189,0000	84,0000	0,91652	0,359397	0,93984	0,347302
T3vs	164,0000	271,0000	44,0000	-2,66226	0,007762	-2,69023	0,007141
T4vs	222,0000	213,0000	102,0000	-0,13093	0,895830	-0,13104	0,895741
T5vs	175,0000	260,0000	55,0000	-2,18218	0,029097	-2,21376	0,026846
T6vs	162,0000	273,0000	42,0000	-2,74955	0,005968	-2,75226	0,005919
T7vs	158,0000	277,0000	38,0000	-2,92412	0,003455	-2,92664	0,003427
T8vs	284,0000	151,0000	46,0000	2,57497	0,010025	2,92057	0,003494
T9vs	196,0000	239,0000	76,0000	-1,26566	0,205634	-1,26676	0,205243

Legend: vs – inputs,

T1 – reaction ability test, T2 – kinaesthetic–differentiation spatial ability test,

T3 – kinaesthetic–differentiation strength ability test,

T4 – spatial-orientation ability test T5 – rhythmic ability test,

T6 – frequency ability test, T7 – ability to connect the movements test,

T8 – ability to change the movement direction test,

T9 – balance ability test.

In monitoring of significant differences in output measurements in boys between pupils from sport and unsporting class we noted significant differences in four tests (Table 2).

As well as in inputs in test T5 – rhythmic ability test, T6 – frequency ability test, T7 – ability to connect the movements test a T4 – spatial-orientation ability test. In other tests the ability level was from statistical and practical point of view almost the same.

In monitoring of performance sport class girls and their coevals in unsporting class we found out significant differences in four tests in inputs, as well as in outputs (Table 3, Table 4). Test T6 – frequency ability test and T7 – test ability to connect the movements test were tests where we noted significant differences in input measurements and also in outputs. We can allege that in the second measurement bigger differences appeared.

Other differences occurred in tests T1 – reaction ability test and in T3 – kinaesthetic–differentiation strength ability test in inputs. The second measurement confirmed the statistical significance in two more tests - T4 – spatial-orientation ability test and T9 – balance ability test. Considering other abilities we can allege approximately the same level.

Tab. 2 Comparison of coordination ability level in boys from sport class and boys from unsporting class in output tests

Proměnná	Mann-Whitneyův U test (chlapci_sport_nesport) Dle proměn. skupina Označené testy jsou významné na hladině p <,05000						
	Sčt poř. šp_trieda	Sčt poř. nešp_trieda	U	Z	Úroveň p	Z upravené	Úroveň p
T1vy	181,0000	254,0000	61,0000	-1,92032	0,054819	-1,92292	0,054490
T2vy	241,0000	194,0000	89,0000	0,69830	0,484992	0,71039	0,477466
T3vy	214,0000	221,0000	94,0000	-0,48008	0,631171	-0,48174	0,629989
T4vy	176,0000	259,0000	56,0000	-2,13854	0,032474	-2,14038	0,032325
T5vy	161,0000	274,0000	41,0000	-2,79319	0,005219	-2,85761	0,004269
T6vy	170,0000	265,0000	50,0000	-2,40040	0,016378	-2,40247	0,016285
T7vy	138,0000	297,0000	18,0000	-3,79699	0,000146	-3,80027	0,000145
T8vy	236,0000	199,0000	94,0000	0,48008	0,631171	0,51406	0,607211
T9vy	222,0000	213,0000	102,0000	-0,13093	0,895830	-0,13106	0,895728

Legend: vy – outputs,

T1 – reaction ability test, T2 – kinaesthetic–differentiation spatial ability test,

T3 – kinaesthetic–differentiation strength ability test,

T4 – spatial-orientation ability test T5 – rhythmic ability test,

T6 – frequency ability test, T7 – ability to connect the movements test,

T8 – ability to change the movement direction test,

T9 – balance ability test.

Tab. 3 Comparison of coordination ability level in girls from sport class and boys from unsporting class in input tests

Proměnná	Mann-Whitneyův U test (dievcata_sport_nesport) Dle proměn. skupina Označené testy jsou významné na hladině p <,05000						
	Sčt poř. šp_trieda	Sčt poř. nešp_trieda	U	Z	Úroveň p	Z upravené	Úroveň p
T1vs	118,0000	207,0000	40,00000	-2,06693	0,038742	-2,10282	0,035482
T2vs	135,0000	190,0000	57,00000	-1,14225	0,253351	-1,17287	0,240848
T3vs	90,0000	235,0000	12,00000	-3,58993	0,000331	-3,60661	0,000310
T4vs	128,0000	197,0000	50,00000	-1,52300	0,127760	-1,52476	0,127320
T5vs	124,0000	201,0000	46,00000	-1,74057	0,081760	-1,81164	0,070042
T6vs	119,0000	206,0000	41,00000	-2,01253	0,044164	-2,01642	0,043757
T7vs	99,0000	226,0000	21,00000	-3,10039	0,001933	-3,10577	0,001898
T8vs	160,0000	165,0000	74,00000	0,21757	0,827763	0,27649	0,782174
T9vs	160,0000	165,0000	74,00000	0,21757	0,827763	0,21786	0,827535

Legend: vs – inputs

T1 – reaction ability test, T2 – kinaesthetic–differentiation spatial ability test

T3 – kinaesthetic–differentiation strength ability test

T4 – spatial-orientation ability test T5 – rhythmic ability test,
T6 – frequency ability test, T7 – ability to connect the movements test,
T8 – ability to change the movement direction test,
T9 – balance ability test.

Tab. 4 Comparison of coordination ability level in girls from sport class and boys from unsporting class in output tests

Proměnná	Mann-Whitneyův U test (dievcata_sport_nesport) Dle proměn. skupina Označené testy jsou významné na hladině p <,05000						
	Sčt poř. šp_trieda	Sčt poř. nešp_trieda	U	Z	Úroveň p	Z upravené	Úroveň p
T1vy	140,0000	185,0000	62,00000	-0,87029	0,384145	-0,87247	0,382953
T2vy	182,0000	143,0000	52,00000	1,41421	0,157300	1,60049	0,109490
T3vy	134,0000	191,0000	56,00000	-1,19664	0,231447	-1,20197	0,229376
T4vy	90,0000	235,0000	12,00000	-3,58993	0,000331	-3,59408	0,000326
T5vy	124,0000	201,0000	46,00000	-1,74057	0,081760	-1,77150	0,076478
T6vy	94,0000	231,0000	16,00000	-3,37236	0,000745	-3,37625	0,000735
T7vy	78,0000	247,0000	0,00000	-4,24264	0,000022	-4,24754	0,000022
T8vy	126,0000	199,0000	48,00000	-1,63178	0,102726	-1,94184	0,052157
T9vy	212,0000	113,0000	22,00000	3,04600	0,002319	3,04952	0,002292

Legend: vy – outputs,

T1 – reaction ability test, T2 – kinaesthetic–differentiation spatial ability test,
T3 – kinaesthetic–differentiation strength ability test,
T4 – spatial-orientation ability test T5 – rhythmic ability test,
T6 – frequency ability test, T7 – ability to connect the movements test,
T8 – ability to change the movement direction test,
T9 – balance ability test.

Conclusions

It can be alleged that by the influence of nontraditional motor and sport games 8-year-old pupils achieved better results in coordination abilities as their coevals that did not have inserted nontraditional motor and sport games into the physical education classes.

RECOMMENDATIONS FOR PEDAGOGICAL PRACTICE

- we recommend to insert nontraditional sport games into curricula of each school as they are new for pupils and lessons are interesting and not stereotype,
- we recommend used motor tests for diagnostics of coordination abilities in 8-year-old pupils.

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BODY HEIGHT CHANGES OF BOYS FROM PRIMARY SCHOOL DURING THE ANNUAL CYCLE

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Key words: *Body height, seasonal rhythm, sensitive periods, primary school pupils*

Introduction

Biological rhythms are of great importance to a man. Endogenous and exogenous rhythms of the environment significantly affect the performance of working people not only during the day, but also during a season, i.e. during the seasonal rhythms. Seasonal and annual rhythms significantly affect the overall physical development of children and youth.

Problem

Body height is one of the somatic indexes of total physical development of a person. It's a genetically conditioned sign, although it's also affected by exogenous factors such as nutrition, socio-economic conditions, health condition, overall movement activity of children and youth. Medeková et al. (2001) measured the level of somatic signs by physical activity of children. In the group of boys, significant differences were observed by no-sport reference set against sport-active boys who were taller and heavier, and showed a higher percentage of fat. Consequently, it is necessary to pay attention to children's physical activity, not only by parents, but also by schools within the bounds of compulsory and leisure forms of physical education activities.

We studied changes in body height during the three periods of the annual cycle. As mentioned by Jančoková (2000), the annual periodicity also called seasonal, or circoannual are largely of exogenous rhythms nature, i.e. are dependent on external factors. Seasonal changes in the life processes often coincide with the annual cycle. Most of the maxima and minima is associated with February and August, which are the months that are considered groundbreaking in the phases of the annual biological rhythms. Bio-year consists of two phases – the first phase

known as biological spring-summer lasts from 16.2 to 15.8, the second phase known as bio-autumn-winter, lasting from 16.8 to 15.2.

The first phase can be characterized by greater increments in height, faster development, better formative effect, so we see that the muscle and its strength is growing. In the second phase the growth slows down same as development, creativity, efficiency and adaptability. From the observed results of our research, we have confirmed the theory of two phases. The highest increases in stature were considered during the spring-summer period and the smallest increases in stature reached boys in the autumn period.

Great importance for monitoring children's growth and development had works of longitudinal nature, which allowed comparison of results with other populations at home and abroad. Recent anthropological researches in Czech Republic, from the years 1991-2001 show that there is discontinuation in the positive secular trend of stature in the highest age categories, and perhaps it is the completion of a secular trend. (Krejčovský et al. 2001, Kopecký, 2006). In Slovakia, it was mainly the research carried out in the years 1985-1990 by Moravec (1990).

Aim

The aim of our research was to monitor the sensitive periods of growth of boys from primary school and also follow the somatic growth parameters of stature, in relation to seasonal oscillations in the first stage of research in 2008.

Methodology

The research group formed 6-15 years old boys attending primary schools in Banska Bystrica. It was the primary schools Moskovska, Radvanska, Podlavice. The boys were divided into age groups according to the decimal age. The decimal age was determined on the basis of the date of birth, depending on the date of measurement. The group consisted of 317 boys.

Boys of the 5th, 6th, 7th, 8th class from primary school which attended the 1st measuring-february-march/08,

boys of the 5th, 6th, 7th, 8th class from primary school which attended the 2nd measuring-may/08,

boys of the 5th, 6th, 7th, 8th class from primary school which attended the 3rd measuring-september/08.

Somatic index, Stature (M1), (BV) was measured by standard methods of anthropometry (Blaha 1986), with the assistance of anthropometre.

Results

Statistical changes in the value of physical development of the primary school boys are presented in Tab. 1 and pictures 1. - 4. Tab. 1 includes the average values of physical development of boys from the 5th class of primary school, from the first stage of research in 2008, in three study periods of the annual cycle, which is known as 1, 2, 3, measurement. In terms of seasonal cycles in the age group of 11 years old boys were most intense increases in the height between the 2nd and 3rd measurement. Body height as a genetically determined character with polygenic inheritance system shows the highest change in 3rd measurement, which is by the annual cycle known as the autumn term. The gain was +3 cm, which was statistically significant at 0.05% level of significance, $t=2,19$. Comparing the statistics of height of the 5th class boys whose the decimal age was 11.3 years with the Slovak population, Moravec (1996), boys are taller in all three study periods of the year (Fig. 1). Increase in height of boys, compared to the statistical values of Moravec (1996), is about +7 to +10 cm higher. This could help us to confirm the theory of growth acceleration and secular trend of our school population of children.

Tab.1 Body height of boys from primary school in the region of Banská Bystrica

Body height(cm)		1.measurement N-317	2. measurement N-317	3. measurement N-317
5.class 11,3 years	x	150,43	150,57	153,05
	SD	8,17	7,06	8,43
6.class 12,19 years	x	151,11	157,31	157,89
	SD	8,07	8,25	8,57
7.class 13,29 years	x	162,58	166,04	167,35
	SD	7,57	8,00	7,08
8.class 14,19 years	x	167,04	171,26	173,33
	SD	8,41	7,57	6,76

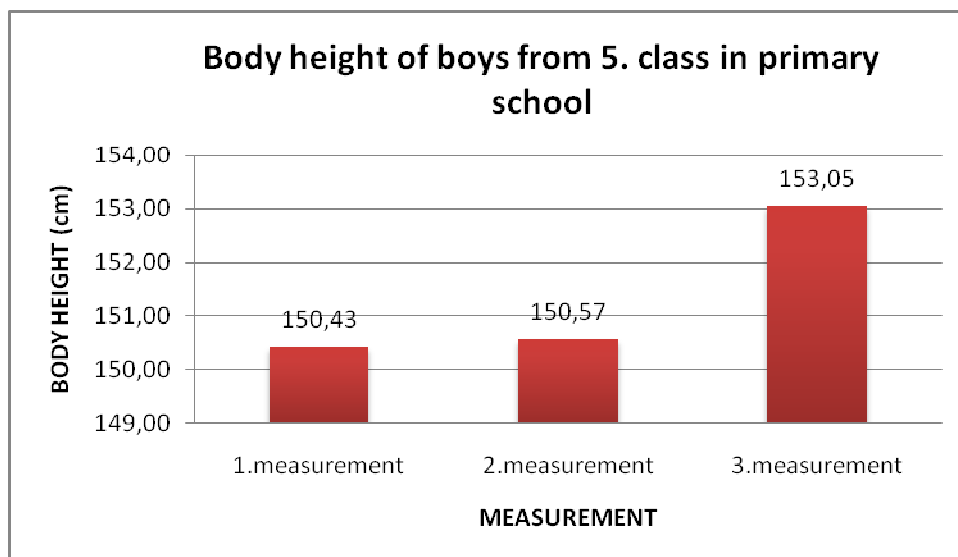


Figure 1 Average body height of boys measured in 3 season cycles, the 1. phase 2008

Boys from the 6th class of primary school with the decimal age of 12,19 reached the highest gain in the third measurement-September 2008, (Fig. 2). The annual increase was +6,78 cm. The maximum acceleration of height was recorded in summer, and a statistically significant difference at 0.01% level of significance is just between spring and summer, which is between the first and second measurement of height. The average values of body height of boys, compared to the statistical values of Moravec (1996) agree on 1st measurement - February / March, in the 2nd and 3rd measurement the values have the gains of +7,31 and +7,89 cm higher. The results of average height of 12 years old boys are consistent with the research of Jankovská (2002), Jančoková (2002).

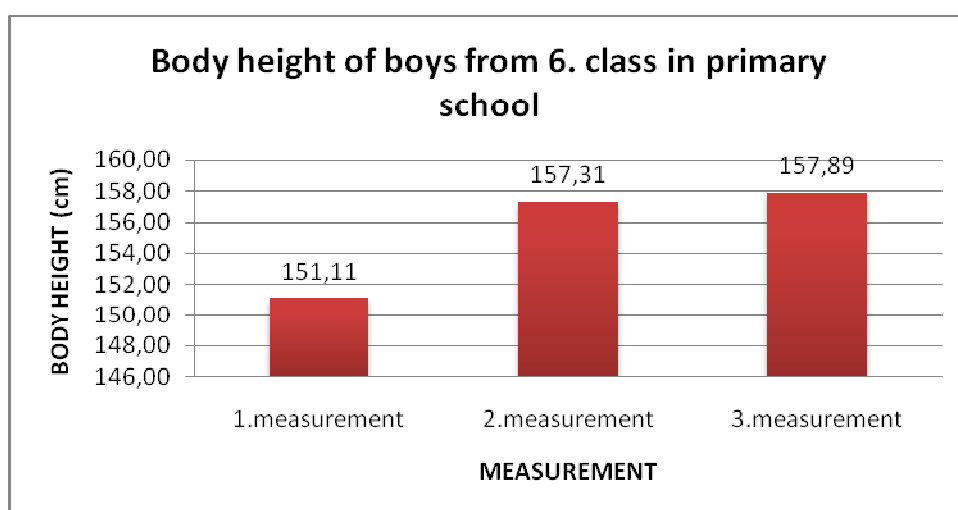


Figure 2 Average body height of boys measured in 3 season cycles, the 1. phase 2008

The average values of body height of boys from the 7th class (Fig.3), with the decimal age of 13,29 years, showed the highest whole year gains, +5 cm in the 3rd measurement - September 2008. During the 1st and 2nd measurement the gains of body height were +3 cm, which is statistically significant at 0.05% significance level and between the second and third measurement the gain was +1 cm. Comparing the statistics of body height of boys from the 7th class, with the Slovak population, Moravec (1996), the primary school boys reported higher average height in all three studied seasonal periods. The additions are +12,45 cm, compared to the same age group of pupils as set of Moravec from 1996.

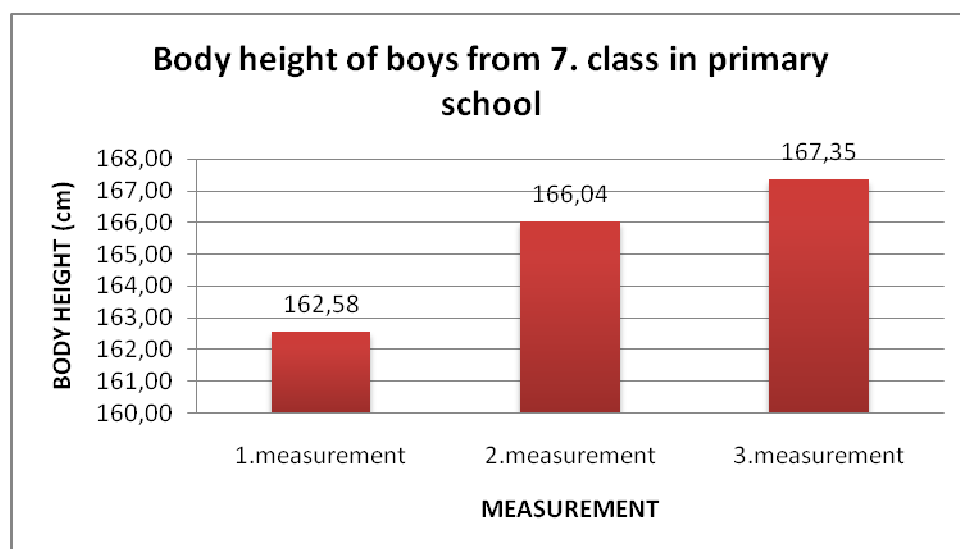


Figure 3 Average body height of boys measured in 3 season cycles, the 1. phase 2008

Boys of the 8th class with the decimal age of 14,19 years, achieved the highest increases in the height in the third measurement - September 2008 (Fig.4). The annual increase was +6,29 cm. During the 1st and 2nd measurement the increases of height were +4,22 cm, which is statistically significant at 0.01% level of significance, and the second and third measuring had the gains of +2 cm, which shows statistical significance. Slovak school population of Moravec (1993) has the average height values lower by 10 cm in comparison to the third measurement, lower by - 8 cm with the second measurement and lower by - 4 cm with the first measurement of our set boys

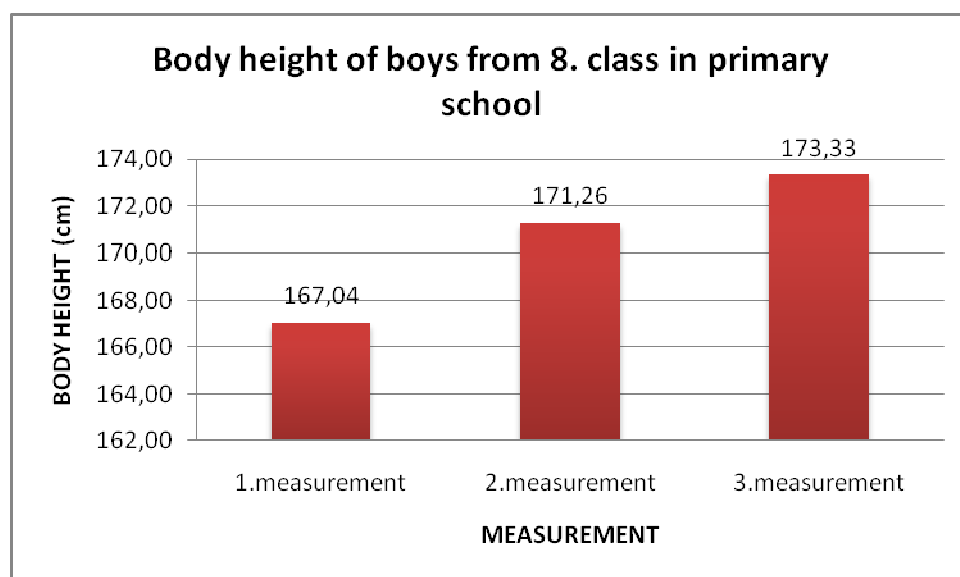


Figure 4 Average body height of boys measured in 3 season cycles, the 1. phase 2008

The growth acceleration was observed in boys between the 12th-13th year, the increase was +10 cm, which is confirmed by Jančoková, Kremnický (2002), who indicate a strong growth as a pre-pubescent growth acceleration with a peak at the age of 12, with an increment of height of 7,9 cm. Similar results came from Kopecký (2006), who speaks about an indication of the pubertal growth acceleration of boys from 12-15 years. The highest increase in body height of boys was seen in the age category of 12-14 years in the period of 2nd measurement, classed in the terms of seasonal cycles as the summer period. The maximum acceleration of height is in summer, when there is the most intensive growth of skeletal system of a person.

Conclusion

The most sensitive growth period of body height of our researched set we have recorded at the age of 12-13, when the increases in height were +10 cm, which is confirmed by Jančoková (2002), who indicate strong growth as the pre-pubescent growth acceleration with a peak at the age of 12. In the terms of seasonal rhythms, we have recorded the highest increases in height of boys between 1st and 2nd measurements, hence spring and summer. The smallest increases in height were in autumn – 3rd measurement for all age groups, except the 11th year age category. The maximum acceleration of height is in summer, when there is the most intense skeleton growth, and that should be respected from the standpoint of the load of skeletal system in the physical education processes, with what we can prevent the various deviations and functional disorders of the skeleton as a whole.

Summary

In this paper we deal with changes in somatic parameter- body height of boys from primary schools with the decimal age from 11,33 to 14,19 years. The group consisted of 317 students 5th-9th grades from primary schools in Banska Bystrica. On the basis of objectives of our work, where we set out to monitor the sensitive period of growth of boys, the somatic growth parameters-body height, in relation to seasonal oscillations in the first phase of the research in 2008, we can state that the highest increases in body height of boys were recorded in the age group 12-14 in the period of 2nd measurement, classed in the terms of seasonal cycles as the summer period. The maximum acceleration of height was in summer, when there is the most intense skeleton growth, and that should be respected in terms of the load of skeleton system in the physical education processes. We have confirmed the acceleration of height and secular trend in comparison with the result of body height 20 years ago.

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BODY POSTURE AND SPINE'S MOVEMENT OF ELDER PUPILS IN FOOTBALL

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Key words: *body posture, spine's movement, elder pupils, football*

Introduction

Body posture is the biopsychosocial phenomenon which depends on various general, specific, and individual factors. Regimen, general state of health, and man's predominant physical condition, can be classified into the group of general factors. In the group of specific factors are included biological, psychological, and social attributes that are directly related to the ability of proper body posture. In this connection we talk about: age, gender, constitutional type, temperament, biorhythm, skeletal system state, and neural system. Body posture depends on innate factors, and, on the other hand, on personal development (Ciklaminiová, 1990).

Problem

Body posture

According to Labudová-Thurzová (1992), the important precondition of body posture is an activity of neurophysiologic and central nervous regulatory mechanisms. These mechanisms control postural functions.

Spine is a determining source factor for body posture. There is a very close dependency between a shape of spine, its mobility, and position and body posture. Every movement activity requires some body posture for which some shape of spine is needed. The extent of its mobility determines what body posture will be like in a selected movement activity.

An education towards proper body posture is being stressed in a new conception of the physical education from the health, motion-functional and aesthetic point of view. A physical education teacher, coach, should be the promoter and instigator of education on proper body posture, thereby preventing the malfunctioning skeleton system. Jankovská (1996) and

Kanásová (2001), occupy themselves with the problems of body posture and overall physical development of primary school pupils. Ciklaminiová (1990) monitors body posture with 2217 primary school pupils. She finds out that, on average, 70% of pupils have the wrong body posture. Thurzová (1991), monitors 116 pupils in the age of 11-18, and she finds out the incorrect body posture in 67,8% of boys and 75,0% of girls. Thurzová – Štulrajter (1993), in a group of 62 football players with the average age 12,25, diagnose incorrect body posture and functional disorders of the spine in 41,9% of players.

If conditions for acquirement of a habit of proper body posture are created, simultaneously, the base of desirable development is created as well - not only constituents of skeleton and kinetic system, but also the other vitally important functions. Physical education pedagogues, coaches should be aware of this in order to provide prevention against formation of incorrect body posture to which the occurrence of muscle imbalance usually precedes. With the overall body posture and functional state of skeleton and kinetic system is also linked spine's movement or spine's flexibility. In most sports, good movability is one of the main conditions for achieving high sport performance, as Kasa (1995), Lenková (2000), and Kanásová (2004) present.

Aim

The aim of our work was to find out the state of body posture, spine's movement of 14-year-old football players in the club Junošport Stará Ľubovňa – category elder pupils (U-14's).

Methodology

Characteristics of examined

The monitored group in our research comprised 16 football players – elder pupils from the football club Junošport Stará Ľubovňa who play in the 2nd league. A number of training units per week was 4x á 90' and a match. The testing was carried out at the beginning of spring season, in April. The average age of probands was 14,27. The average period of probands' training preparation in the club was 6,3 years. The average height was 170,30 cm and weight 56,42 kg. BMI index ranged from 17,81 to 22,78 what is the level of slenderness and adequate weight.

Organization and the course of research

The research group was formed by 16 probands participating in sports training in the football club Junošport Stará Ľubovňa. The research was carried out in April, at the beginning of the

spring season. The group has been in preparatory period since 2002, when recruitment was made and sport training, of general and specific aim, was being in progress. The research part of the work - aimed at diagnosis of functional state of skeleton and kinetic system from the viewpoint of spine's movement and evaluation of body posture – was implemented as follows:

- the measures of indicators of physical development – weight, height, BMI (Body mass index)
- the tests of body posture and spine's movement for detecting weakness in skeleton and kinetic system (Janíková, 1998)

Methods of getting facts

The indicators of physical development

From the indicators of physical development we have measured height by an anthropometer with accuracy on 0,1 cm and weight by a digital scale with accuracy on 0,5 kg. The weight-height index – Body mass index (BMI) has been calculated as a proportion of body weight (kg) and the square of body weight (kg/m^2). We have assessed the BMI results according to Janíková (1998):

less than 20	slenderness up to thinness
20-26	adequate weight
26,1-30	overweight
30,1-40	obesity
40,1 and more	severe (obesity)

Functional tests of skeleton and kinetic system

The evaluation of body posture has been surveyed according to Jaroš and Lomníček's method that is modified for purposes of the physical education practice (Labudová, Thurzová, 1992)

The evaluation of spine's movement

We have surveyed spine's movement according to Janíková (1998).

We have evaluated:

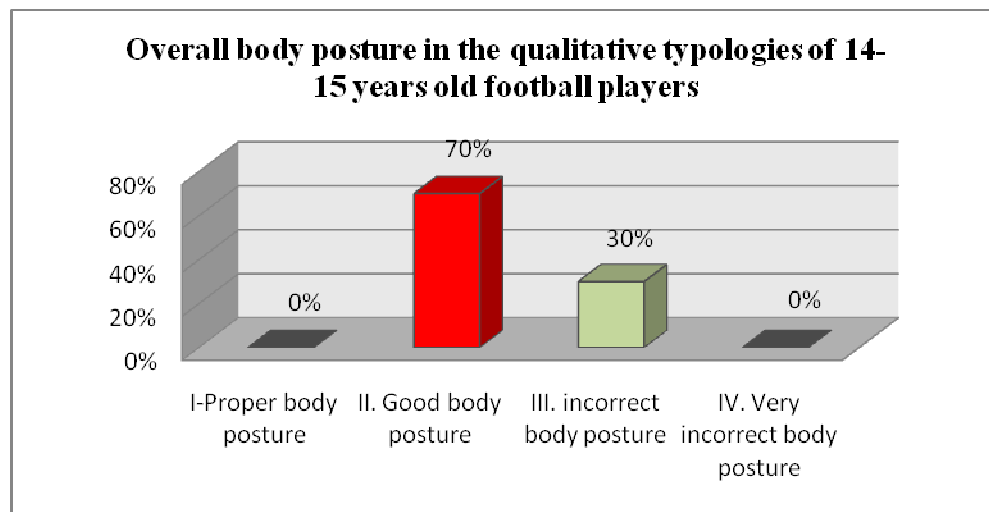
1. Schober's sign: is aimed at evaluation of lumbar spine movability
2. Stibor's sign: is aimed at evaluation of lumbar and thoracic movability
3. Otto's sign: is aimed at evaluation of thoracic movability
4. Thomayer's sign: is aimed at evaluation of overall movability
5. Lateroflexion in lumbar part: is aimed at evaluation of movability to sides in lumbar spine

Results

Evaluation of body posture test

Body posture is one of the signs in diagnosing the functional disorders of kinetic system. In assessing the quality of body posture of the whole reference group we have found out that 100% of probands had incorrect body posture. As proband with incorrect body posture was considered an individual that did not meet the standard in already one testing set. Therefore, the percentage could appear to be very high. Based on a comparison of our results with findings of Ciklaminiova (1998), who examined the body posture quality of 403 primary school pupils of the 8th class, we can state the differences to our group's disadvantage. Although Ciklaminiova's pupils were at the same age as ours, incorrect body posture had 69,7% respondents only.

None of respondents of the examined group was classified to the 1st qualitative typology (I – proper body posture). In the overall evaluation of probands, we have recorded the largest number of them (70%) in the 2nd qualitative typology (II – good body posture with slight deviation of the lower limbs) and in the 3rd qualitative typology 30% (III – incorrect body posture with the marked defects of lower limbs). None of probands was classified into the 4th qualitative typology (IV – very incorrect body posture) (picture 1).

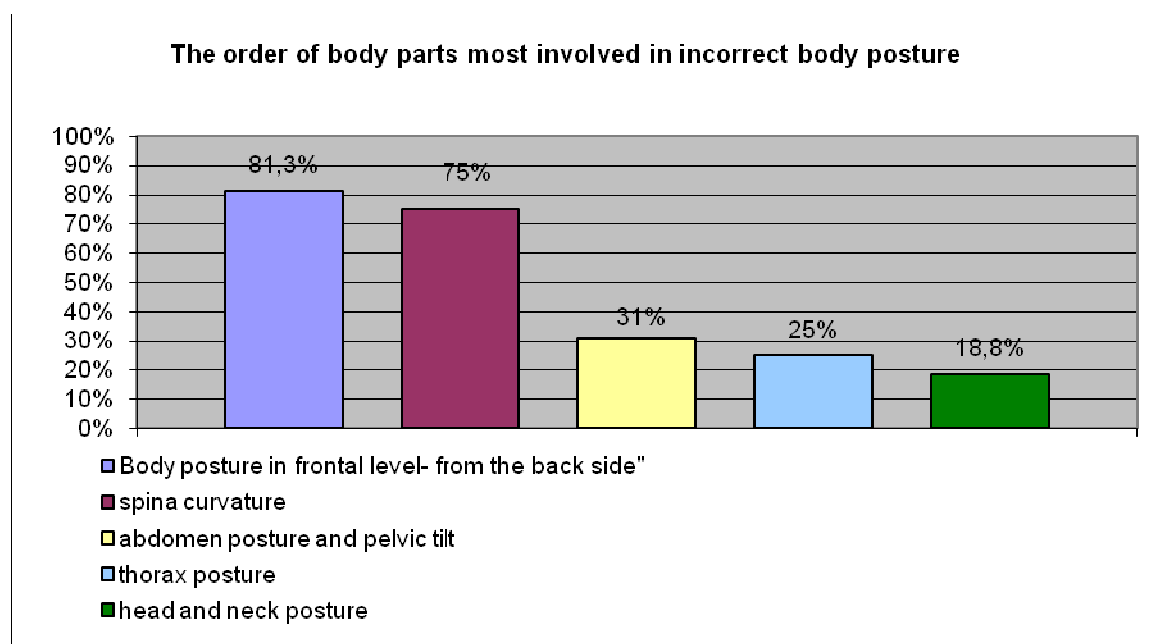


Picture 1 Overall body posture in the qualitative typologies of 14-15 years old football players

The individual evaluated parts of examined probands' body (dimensions) do not participate equally in great occurrence of incorrect body posture of 14 years old football players. Their percentage share is stated in the picture 2. A dimension of body posture in frontal level from behind holds the highest share in incorrect body posture. In our testing group of football players we have found out the presence of a deviation in this frontal level in 81,3% of

probands. In the Ciklaminiova's study, the percentage share in this dimension is 17,6%, from the viewpoint of overall group. Along with these marked differences it is necessary to take into consideration the above mentioned and from literature known findings about considerable variance in the evaluation of body posture by various authors. These unsuitable findings, for football players, could have been caused by a change of centre of gravity of the body while playing with ball.

Another relatively frequently occurring part of the body, which is involved in the incorrect posture of boys – professional football players, is the evaluation of spine from the side – 75%. The third, the most problematic part in occurrence of incorrect body posture, is part of abdomen and pelvic tilt – which reached the values 31% in the testing probands. The slightly lower values – in which deviations from the normal, well-arched chest represented 25% - reached the chest. The area least involved in incorrect body posture was the area of the head and neck which reached the value 18,8% (picture 2).



Picture 2 The order of body parts most involved in incorrect body posture

Evaluation of head and neck posture

This area is involved in incorrect body posture in 18,8%. 13 probands who had proper head and neck posture got a grade "1", 3 probands whose neck was slightly tilted forward got a grade "2". Larger deviations did not occur.

Evaluation of thorax posture

Four probands out of 16 probands had the slight deviations from well-arched thorax what presents 25%. These probands got a grade "2". This area was the fourth least problematic area which was negatively involved in incorrect body posture.

Evaluation of abdomen posture and pelvic tilt

The third area that has taken the 31% share in incorrect body posture in our testing group was the area of abdomen and pelvis. Slight deviations from proper abdomen posture and pelvis had been measured in 4 cases. These four probands got a grade “2” what presents 25%. There had been more marked deviations in one case. This proband got a grade “3” what presents incorrect abdomen posture and pelvic tilt.

Evaluation of spine curve from the side

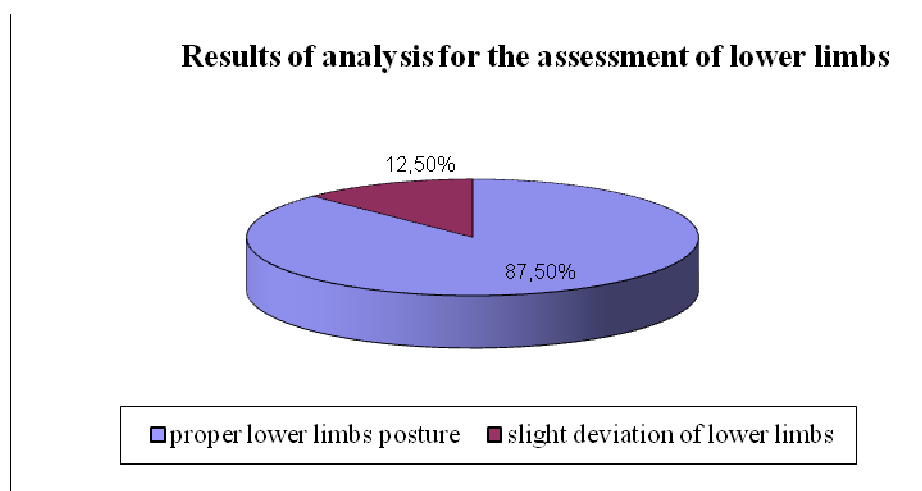
The area of spine curve was the second area with the greatest share in incorrect body posture. It takes the 75% share in incorrect body posture what assume a grade “2” for 10 probands who had a slightly flattened or slightly greater spine curvature, and a grade “3” got 2 probands.

Evaluation of body posture in frontal level - from behind

Area of sides, arms, and shoulder blades had the greatest involvement in incorrect body posture of the testing group. We had measured one deviation in at least one monitored area of 13 probands what presents 81,3%. 9 probands had a slight deviation in one point. These probands got a grade “2”. A grade “3” got 4 probands who had deviations of spine, asymmetry of arms, and fly-away blades.

Evaluation of lower limbs

A grade “1” got 14 probands whose lower limbs were in correct axis, the centre of pelvic, knee, and ankle joint were creating the vertical, and they had proper arch. 2 probands got a grade “2”, because they had bandy legs (within 3 cm) and slightly flat feet (picture 3).



Picture 3 Results of analysis for the assessment of lower limbs.

According to shape changes of spine curvature we have divided incorrect body posture into kyphotic (round spine), hyperlordotic (curved spine), hypolordotic (flat spine), and scoliotic. From the weakened lower limbs only disorder of lower limbs (bandy legs) and disorders of feet (flat feet) appeared.

Evaluation of the test of spine's movement

In the evaluation of spine's movement in sagittal direction, which we had evaluated by Schöber's sign, Stibor's sign, Otto's sign, and Thomayer's sign, we have found out the appropriate values.

Our probands had the movability of thoracic spine (Stibor's sign) of 1,5 cm above the norm for general population (Labudová – Thurzová, 1992).

In the movability of lumbar spine of the football players (Schöber's sign) we have found out the values from 5 to 7 cm what, on average, presents the value 6,2 cm. The values of Schöber's sign from 4 to 6 cm Labudová, Thurzová (1992) regard as the norm so from this point of view we can positively consider the movability of lumbar spine of our monitored group.

By Otto's sign we had evaluated the movability of thoracic spine in forward bend and backward bend. The measured values ranged from 2 to 3 cm in both forward bend and backward bend what Thurzová regards as the norm.

In the overall spine's movability that we had been testing by Thomayer's sign we have discovered slight hypermobility – for common population the norm is the reach to a mat, however our probands had reached over a mat (from 5 to 8 cm). This poses, on average, the value -6,5 cm. Our results correlate with the Scholzová's (2001) measurements who recorded the values of Thomayer's sign. The football players' values were in average -6 cm. This kind of spine's hypermobility is desirable in sport, and it is considered to be the manifestation of good training process of a sportsman.

We assume that the better movability of the football players - in comparison with boys of the same age that do not do any sport – was to a large degree influenced by both well-led training and the fact that the stretching exercise was integrated into a training unit of the football players. We have also found out the appropriate extent of mobility in lateroflexion in lumbar spine that had been tested by trunk-bending sideways. The appropriate extent ranged from 23 to 25 cm in both right and left side, and it was in accord with the norm according to Labudová, Thurzová (1992). In average probands reached the value 24,6 cm to the right side and 24,2 cm to the left side. We can state good spine's movement of our testing group.

Conclusion

We have tried to find out and evaluate the current functional state of skeleton and kinetic system, body posture, spine's movement of 14 years old football players in the club Junošport Stará Ľubovňa – category elder pupils (U-14's).

By means of our research we have gained information about the overall body posture quality, about the differences according to distribution of single parts of the body in the qualitative typologies. The deviations from proper body posture we have found out in all cases – football players. If we approach to the analysis of body posture evaluation by means of distribution of single body parts into the qualitative typologies, we can state that the greatest share in incorrect body posture took the dimension of body posture in frontal level – from behind, which occurred in 81,3% of probands. The head and neck posture area took the least share in incorrect body posture. This area reached the values 18,8%. We assume that this high percentage should be caused by change of football players' centre of the body while playing with ball. By means of testing of proper body posture we have discovered the most often weakening of skeleton and kinetic system. According to shape changes of spine curvature of our testing group we have divided incorrect body posture into kyphotic (round spine), hyperlordotic (curved spine), and scoliotic. From the weakened lower limbs only disorder of lower limbs (bandy legs) and disorders of feet (flat feet) appeared in 12,5% cases.

These results have showed the importance of body posture monitoring of the young sportsmen. It has also showed its influence by the suitably selected exercises aimed at practice of proper body posture, with regard for peculiarities of the football. By means of monitoring of spine's movement we have found out very good values in all indicators. In the depth of forward bend (Thomayer's sign) was slight hypermobility with the values -6,5 cm of the reach over a mat what poses a desirable point for a sportsman. It emerged that the football players mostly had the statistically better values in all indicators in comparison with the norm according to the statement of Labudová- Thurzová (1992). We presume that the established fact relates to well-led trainings and stretching exercises. It is necessary to mention that it is needed a running monitoring of these indicators to preserve spine's movement within the bounds of the norm. This is mostly important from the preventive and health point of view, but also from the perspective of a further professional improvement.

Summary

The monitored group in our research was made of 16 football players – elder pupils of the football club Junošport Stará Ľubovňa (2nd league). The number of training units per week was 4x á 90´ and a match. The testing was done in April, at the beginning of spring season. The average age of probands was 14,27.

From the results we can state that none of respondents of the examined group was classified to the 1st qualitative typology (I – proper body posture). In the overall evaluation of probands, we have recorded the largest number of them (70%) in the 2nd qualitative typology (II – good body posture with slight deviation of the lower limbs) and in the 3rd qualitative typology 30% (III – incorrect body posture with the marked defects of lower limbs). None of probands was classified into the 4th qualitative typology (IV – very incorrect body posture). Asymmetry of arms and fly-away blades has the great share in incorrect body posture. All probands achieved the values of the norm in the evaluation of spine's movement while in overall spine's movement, which we tested by Thomayer's sign, we have discovered hypermobility.

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SUCCESS OF OFFENCE FOUNDING BY GOALKEEPER IN FOOTBALL

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Key words: *goalkeeper, game activities, offensive phase, founding of an offence*

In conditions of modern football, the goalkeeper goes with his activities closer to players on the field. Except of defensive activities, he more often participates on doing offensive game activities (constructive kick-in) (Nemec, Kollár, 2009).

Playing of a goalkeeper consists of defensive and offensive activities. We sort into defensive activities positioning of a goalkeeper and consequently goalkeeper's save. To offensive goalkeeper's activities belong playing by foot and founding the offences (Kačáni, Horský, 1988).

Founding the offences is an expression of offensive game activity of a goalkeeper. He is the first person who starts an offence. By some means, he interferes into offensive game of his team. Founding of offences by the goalkeeper has two forms (Vencel, 2005):

a) founding an offence during not interrupted game:

- founding of fast counter-offence
- founding of sequential offence, mostly by short pass or shift of game centre by long ball pass, or holding the ball within the rules and consecutive kick-in.

b) founding an offence during interrupted game:

- playing short or long standard situations, out of penalty area (direct and indirect kick-offs), kick from the goal.

Regarding to tactical aim, a goalkeeper starts counter-offence by throwing by hand or kicking by foot from the ground, directly after ball kick over from the hand or closely after the bounce of the ball from the ground after former kick over from the hand (Kollar, 2006).

In our work we deal with offensive game activities of football goalkeeper from the first football league in Slovakia. Similar problematics was delt by Kollár, Chromek (2009), when they observed game activities of a goalkeeper Ján Ďurčo from FK Dukla Banská Bystrica.

They found out, that lower success was reached by goalkeeper, when passing for longer distances, mainly by kick off from the goal and kick over from the hand.

Aim

The aim of this work is to find out the success of particular ways of founding the football offences by goalkeeper Ján Novota from DAC Dunajská Streda in chosen matches.

Tasks

T1: Design a sheet for recording datas regarding particular ways of founding the offences.

T2: Observe chosen matches of goalkeeper by indirect observation

T3: Assess datas gained by observation

T4: Formulate conclusions and recommendations for the practice

Methodics

In this work we focused on observation of chosen game activities of goalkeeper Ján Novota from DAC Dunajská Streda in five matches. We watched and recorded particular ways of founding offence by listed goalkeeper. We focused on founding offence throwing by hand (by hand), kick from standard situation (stand. situation), kick-off directly from hand (from hand), kick off from hand after the bounce from the ground (from ground) and kick from ground (ground). To gain datas by stated ways of founding offences, we used method of indirect observation, when we watched matches of DAC Dunajská Streda in the season 2009/10:

- | | |
|---|-----------|
| 1. 19.09.2009 MŠK Žilina – DAC Dunajská Streda | 1:0 (0:0) |
| 2. 07.11.2009 DAC Dunajská Streda – MFK Dubnica | 1:1 (0:0) |
| 3. 21.11.2009 DAC Dunajská Streda – MFK Senica | 1:2 (0:1) |
| 4. 28.11.2009 Dukla Banská Bystrica - DAC Dunajská Streda | 2:0 (2:0) |
| 5. 05.12.2010 DAC Dunajská Streda – FC Nitra | 2:2 (1:2) |

We recorded watched ways of founding an offence into prepared record sheet (chart 1).

Chart 1 Record sheet for observing founding of offence by goalkeeper

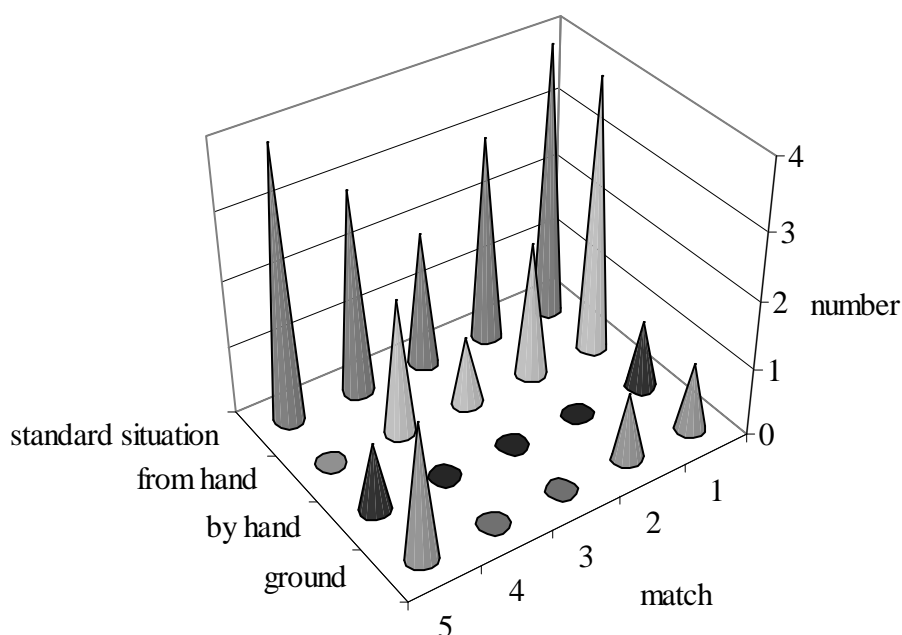
		1. halftime - pass				2. halftime - pass				Together	
		accurate (+)		inaccurate (-)		accurate (+)		inaccurate(-)		+	-
		long	short	long	short	long	short	long	short		
Founding of offence	stand.situation										
	from hand										
	from ground										
	ground										
	by hand										

We recorded them according to length of pass (long – over 25m, short – to 25m), according to time of the match (first and second halftime), and according to, if the ball directed into the player, to whom was it addressed (accurate, inaccurate). To record these items, we used line method. Gained datas were counted together and assessed according to particular matches and also together, and we counted average amount of particular successful and unsuccessful ways of founding an offence.

Results and discussion

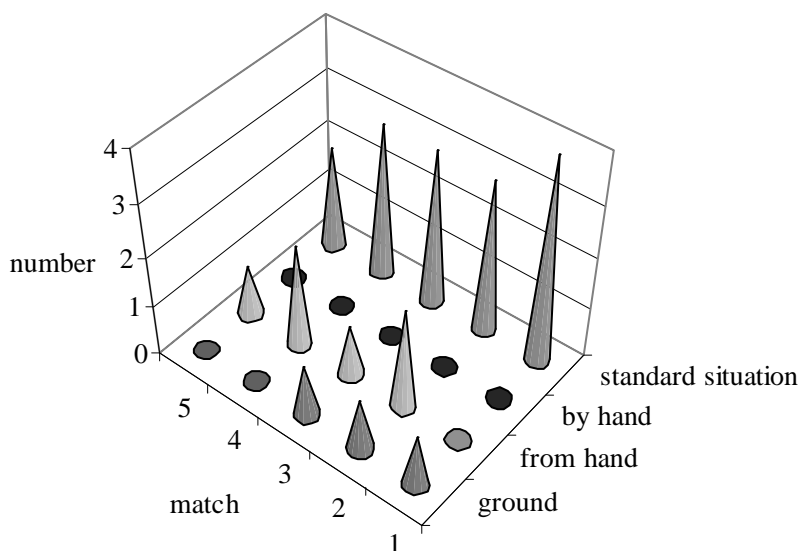
In this part we present the results gained by observation, according to of the match (first and second halftime), length and success of passes.

In the picture 1 are depicted ways of founding of an offence accurate long passes. Observed goalkeeper founded offence by accurate long pass in first halftimes within five watched 31 times. From this number in 51,61% cases, he founded offence by kick from standard situation. In 29,03% cases, he founded offence by kick off from the hand, in 12,90% of situations, he founded offence by kick from the ground and 6,4% were made by throwing by hand.



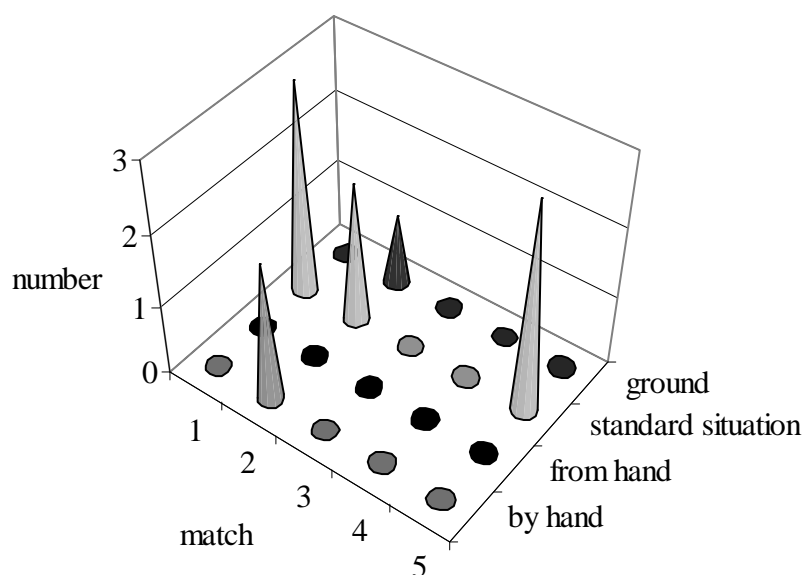
Picture 1 Number of founding offences by accurate long passes within the first half

Observed goalkeeper was unsuccessful in founding the offences by long pass within first halftimes 24 times. Inaccurate kick from standard situation meant 62,5%, kick off from hand 25% and kick from ground 12,5% from stated number of unsuccessful foundings of offences (pict. 2).



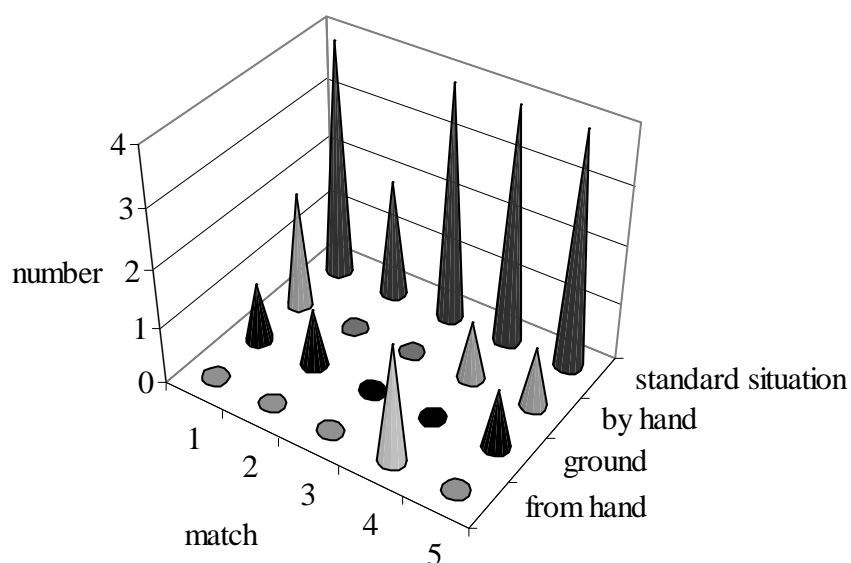
Picture 2 Number of inaccurate offence foundings by long passes within first halftimes

In first halftimes of observed matches found observed goalkeeper 11 offence actions by short passes. He most often realised playing of standard situation (72,73%). He found offence by hand 18,18% times and once he played the ball by foot from the ground (pict. 3).



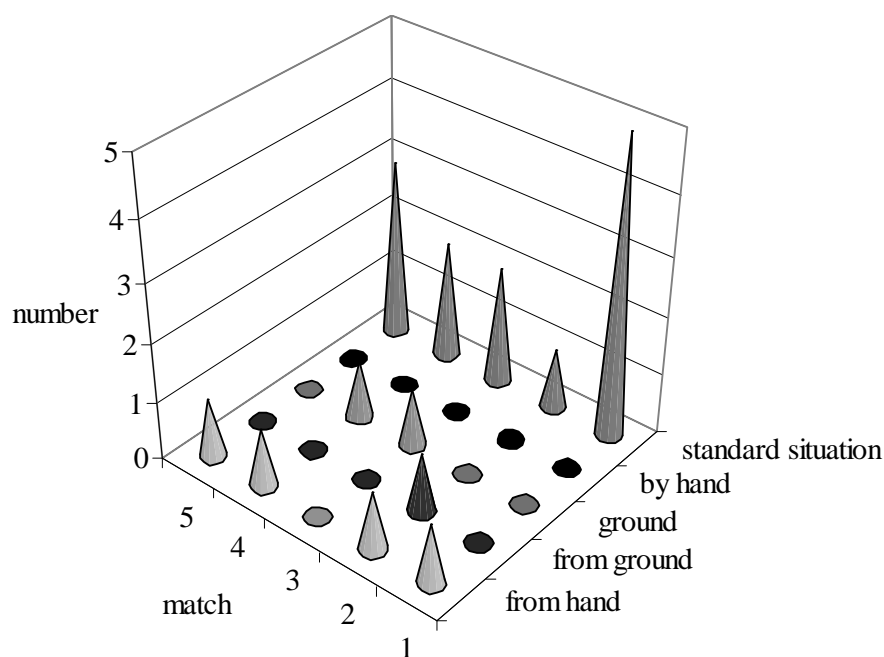
Picture 3 Number of offence foundings by accurate short passes within first halftimes

Within second halftimes the goalkeeper found offence actions of his team by long passes successfully 27 times. From this number playing of standard situations meant 66,67%. Other three ways of offence foundings were in comparison with this way represented minimally.



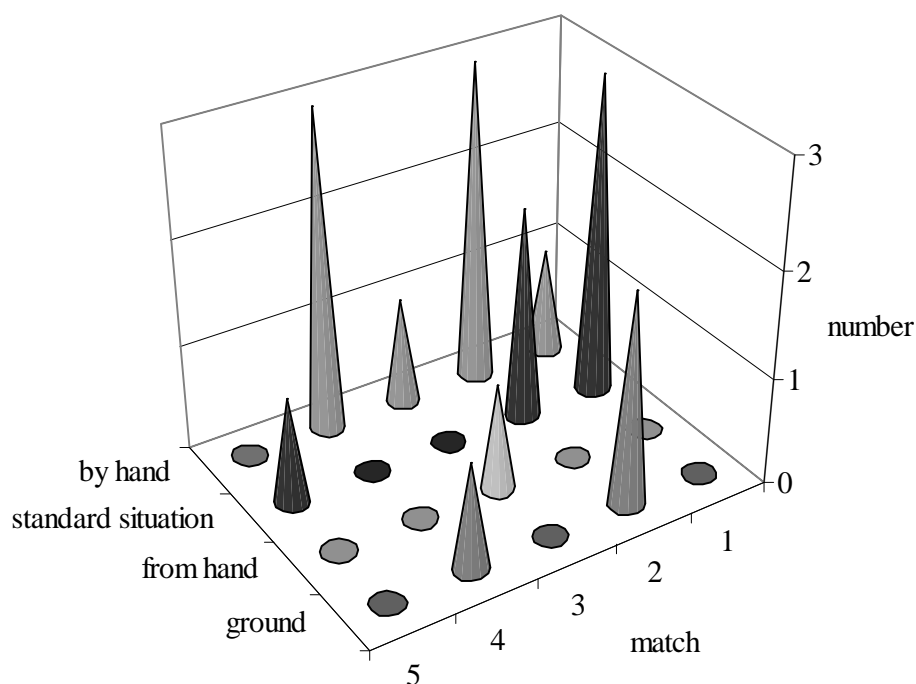
Picture 4 Number of successfully founded offences by long passes within second halftimes.

In 20 cases within second halftimes by founding offence activities by long passes was the goalkeeper successful. Again, he most often played standard situations (65%). In 20% cases, the goalkeeper found the offence inaccurately by kick off directly from hand (pict. 5).



Picture 5 Number of inaccurately founded offences by long passes within second halftimes.

Observed goalkeeper tried to start offence phase by short passes within second halftimes in 18 cases. He was successful in all cases. He most often threw the ball by hand (44,44%) and played standard situations (33,33%). In 16,67% of cases he started offence action of his team by kick from the ground and once by kick off from the hand (pict. 6).



Picture 6 Number of accurately founded offences by short pass within second halftimes.

In five matches observed goalkeeper founded offence by 131 passes. From this number were 66,41% realised within first halftimes. From all realised passes were 78,43% accurate. 63,64% of all passes realised passes in first halftimes were accurate and from all attempts to found offence in second halftimes were successful 69,23%. From all long passes were 53,92% realised within first halftimes of observed matches. From short passes (22,14%) realised in observed matches were made within first halftimes 37,93%.

Observed goalkeeper tried to found 77,86% offence action by long pass, and he was successful in 60,42% of cases. From this, within first halftimes, he passed by long pass accurately in 53,45% of cases and in second halftimes he passed accurately in 46,55% of cases.

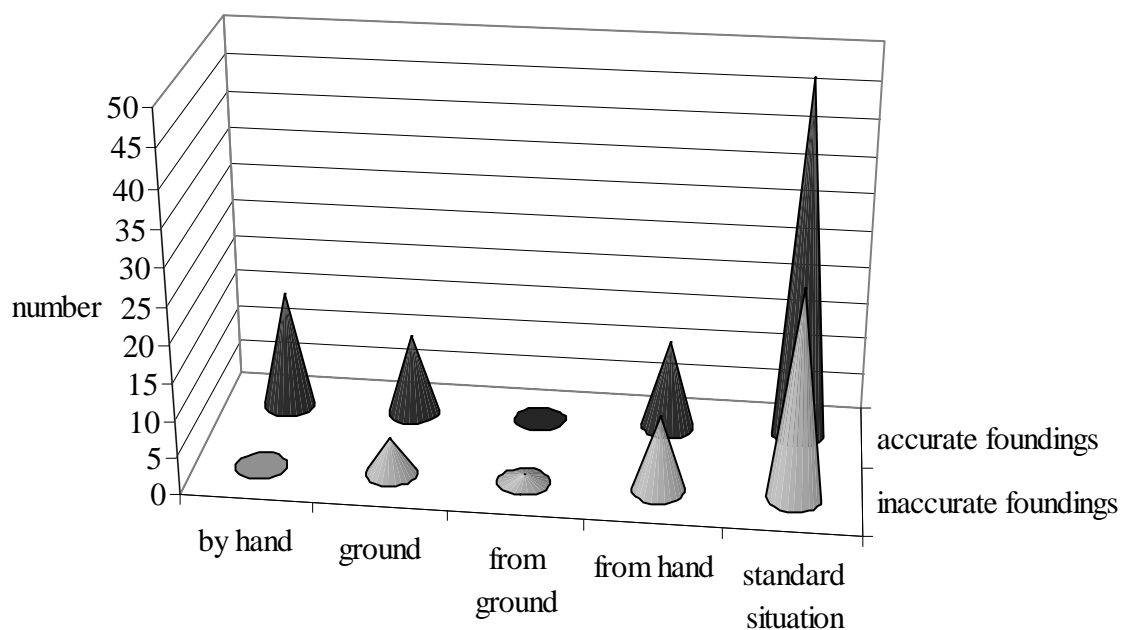
The goalkeeper used short pass only in 22,14% of all attempts to found offence actions and got unbelievable success of 100%. Short passes realised within first halftimes meant 8,4% of all passes and in second halftimes it was 13,74% of all passes.

From overall number of passes realised by goalkeeper to found offence were 47,33% kicks from standard situations. From this were 54,84% successful. The success of founding offences by long balls from standard situations reached within first halftimes only 51,61%. In second halftimes observed goalkeeper reached success of 58,07% by founding offences by long pass from standard situations.

By founding offensive actions by long pass by kick from hand, the goalkeeper was successful 52,38%. In first halftimes, he reached the success of 60% and in second halftimes only 33,33% success.

Observed goalkeepr passed by foot from ground within the matches in 12,21% of cases of all of his passes. His success in this game activity reached 68,75%. In first halftimes, he reached the success of 62,5% and in second halftimes he was successful in 75%.

The goalkeeper passed to long distance by hand in 4,58% of cases. Within first halftimes were both of his throws accurate and in second halfitmes were all his throws from hand accurate (chart 2,3, pict. 7).



Picture 7 Comparison of accurate and inaccurate offence findings

Chart 2 Accurate offence findings

Ways of founding offence	Match number					average
	1.	2.	3.	4.	5.	
kick from standard situation	14	9	6	7	12	9,6
kick off directly from hand	4	2	2	4	0	2,4
kick off from hand after the bounce from the ground	0	0	0	0	0	0
kick from ground	2	5	0	1	3	2,2
by hand	4	5	1	4	2	3,2

Chart 3 Inaccurate offence findings

Ways of founding offence	Match number					average
	1.	2.	3.	4.	5.	
kick from standard situation	9	4	5	5	5	5,6
kick off directly from hand	1	3	1	3	2	2
kick off from hand after the bounce from the ground	0	1	0	0	0	0,2
kick from ground	1	1	2	1	0	1
by hand	0	0	0	0	0	0

Conclusion

From analysis of results, we state that observed goalkeeper reached 100% success in offence founding by short pass. He most often realised this kind of pass by playing standard situations, throwing the ball and kick from the ground within the game.

Although, he was not so successful in founding offences by long passes. In total of all ways of offence foundings, he reached in this pass success of 60,42%. He was least successful in playing standard situations and almost the same success was reached by kicking from hand.

Observed goalkeeper used kick after bounce from ground after previous throw by hand only one time, when he used long pass, that was inaccurate.

From presented results arise recommendations for training practice, in which should the goalkeeper focus on offence founding from standard situations and to specify kicking of the ball directly from hand, because these ways of offence foundings were the most often by offence foundings by long passes.

It is important to mention here the fact that the player playing standard situation must not influence game activities of player to whom the ball directs after playing the kick and therefore unsuccessful offence founding does not need to be his mistake.

Author in this work deals with success of offence game activities of goalkeeper DAC Dunajská Streda Ján Novota in five matches of first football league in Slovakia. He recorded offence game activities by method of indirect observation and found out that the most numerous group of passes were kicks from standard situations. Observed goalkeeper reached 100% success in founding offences in short distances. The least successful way of offence founding were playing standard situations and kick offs from hand.

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THE USE OF MOVEMENT GAMES IN PHYSICAL EDUCATION IN 2ND LEVEL PRIMARY SCHOOLS

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Keywords: *primary schools, movement games, Orava region*

Introduction

Physical education, nowadays, presents a growing importance of health and compensation meaning. Therefore, an important task of a teacher is it to find ways to get the school age children to be interested in regular activity. Movement games are applied in an educational environment of physical education and sport, as an attractive and emotional form of physical activity. Experience shows that the most popular these are ball games.

According to Jalecza - Veis (2001); from the definition of movement games, in terms of its development, but mainly from the very purpose of physical education, results that physical games have the following importance for the school age children: pedagogical, medical, educational, training, recreational and athletic. Each one of these meanings is of great importance and plays an important role in the development of pupil's personality.

According to Adamčák (2005), movement games are an important pedagogical tool; because they develop all aspects of the child's personality – physical, intellectual, moral, operational and esthetical.

Each educator knows from his own experience, that it is necessary to return to the most popular games but, is also important to assign new ones. Unknown games bring; excitement, a feeling of a change, new opportunities for players to realize their potential and of course, a new chance to win. The quality of the selection and implementation of a movement game is therefore an adequate quality of teacher's knowledge about this particular game and his approach to games (Vladovičová, 1998).

For reasons given, it results that in the implementation of physical education a teacher is the dominant factor. From his interest, creativity and teaching skills is where the whole learning process will depend on the hours of physical education that includes; challenging, emotionally saturating or stereotyped, or maybe restricted only to walking (Adamčák - Novotna, 2009).

The mere experience shows, that in school, physical education is applied and implemented through movement games; which are designed to develop character traits as well as to develop traits of motion, agility, speed, endurance and strength. The individual game itself creates a whole different movement, which is aimed at a final goal.

The content of the curriculum is assigned to the thematic units where skill games are included in all grades. Movement games are divided by their content, variability and user-friendly rules. These one of the most used means of physical education in elementary school.

Objective

The goal of this task was to determine the current status of using movement games in physical education in second degree primary schools, looking at both urban and rural schools in the Orava region.

There were 5 tasks which were determined before setting out on our investigation.

1. To research using literally sources and acquire necessary knowledge on the subject.
2. To develop a questionnaire for students in a 2nd primary school level and find out the usage of movement games in physical education.
3. To evaluate and compare the results obtained from urban and rural schools in the Orava region.
4. To formulate conclusions and recommendations for practice.
5. To prepare a collection of movement games for students and teachers, using the information collected from our research.

Research Hypotheses

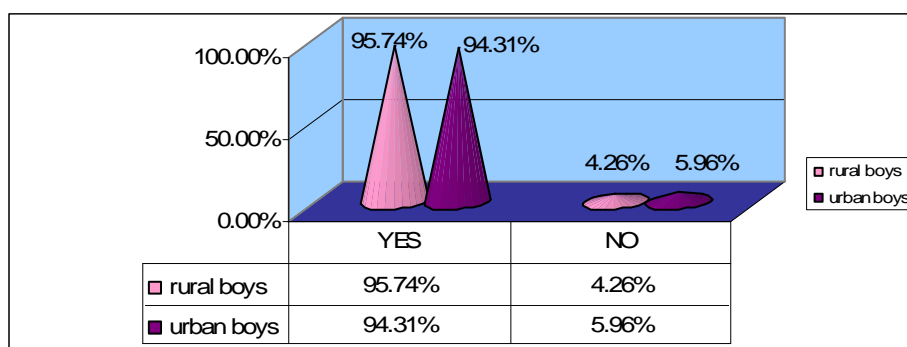
1. Movement games are regularly used in school physical education in urban and rural areas in the Orava region.
2. Movement games are more often used in rural areas than in the cities.
3. Movement games are primarily used in the thematical units as sport games.
4. Movement games are frequently used in the preparation part of lessons in the countryside and in cities.
5. Movement games are most frequently played as competition between groups.

Methodology and results

From our research, we were able to deduct that we should apply methods including analysis, synthesis, comparison, questionnaires and statistical methods. These helped us to clarify the results of our investigations. These results have been presented in percentages to better show the values as well as the information recorded by geographical location. After a careful preparation, we have sent out the questionnaires to 18 schools in the Orava region, of which 11 were rural schools and 7 urban schools. From the responses received, we found out the interest of students in movement games, and also their opinions on the use of these games in school physical education and leisure time. 182 pupils from the 8th and 9th grade responded to the questionnaires sent out. From the urban schools there were 88 boys, whereas we received 94 responses from boys in rural schools.

With the help of this questionnaire method, we calculated the necessary information to produce our paperwork. The questionnaire consisted of 16 questions and was designed for primary school students of the 8th and 9th grade. Evaluating the results, we verified our assumption and thus reached the following results:

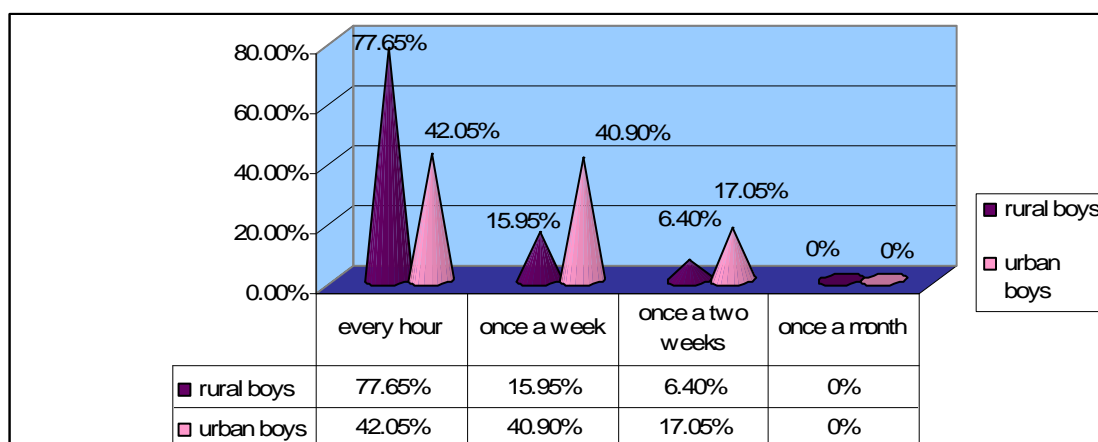
We confirmed the 1st hypothesis, in which we assumed that movement games are fully engaged in school physical education in the cities and the countryside in the Orava region. Our assumption was confirmed by the high percentages. These percentages in all groups of respondents have been more than 94%. Achieved values indicate that educators are aware of the importance of movement games and also the need of regular use in physical education lessons. Exact results are shown in Picture 1.



Picture 1: Results on the use of movement games during PE classes

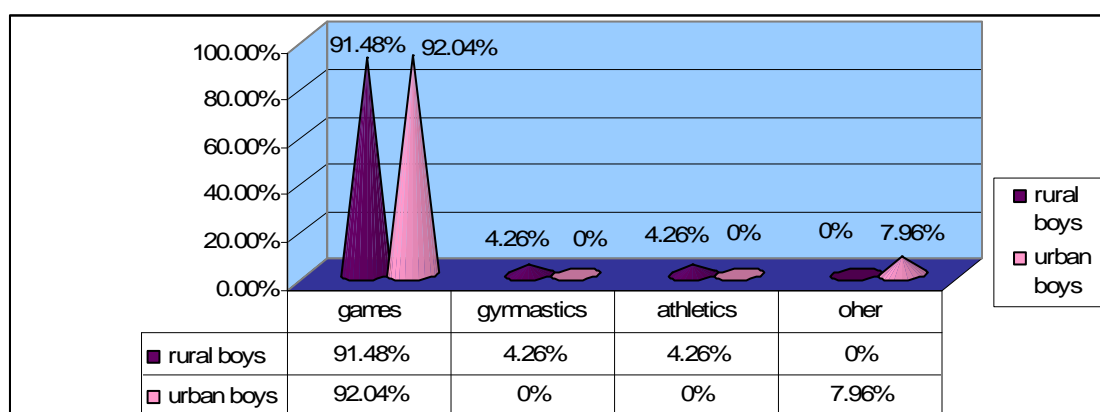
The comparison of responses, in the fifth question of our questionnaire, has confirmed the 2nd hypothesis. Here we have investigated if movement games are more often used in rural schools. The percentage difference between respondents from urban and rural areas was

20%. Based on these findings we can conclude that movement games are often used in rural areas rather than cities. The results are shown in Picture 2.



Picture 2: Percentage results of the movement games frequency during PE education

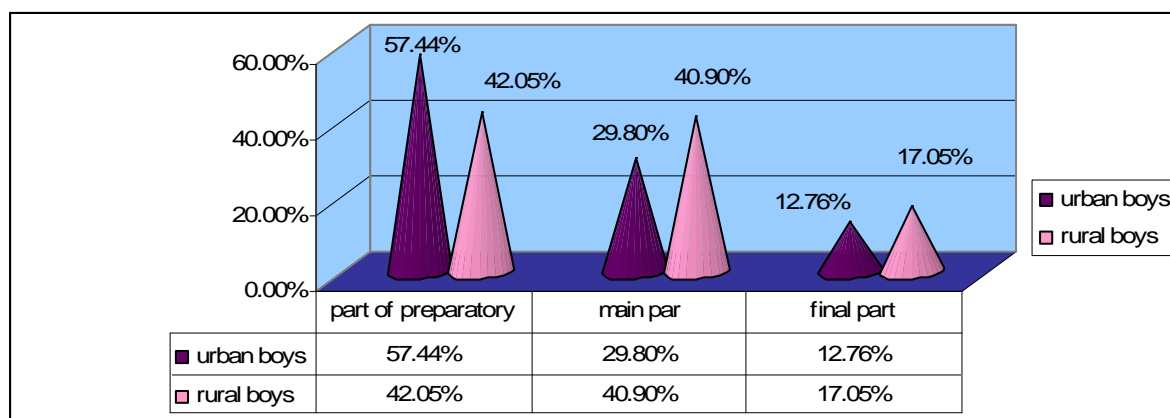
We also confirmed hypothesis no. 3 with the results of the survey, as we found out that movement games are most often used in a way of thematic sport games. Our hypothesis was confirmed on the basis that all thematic units, which we introduced as a choice, showed the highest number of respondents that have chosen sport games. We believe that movement games are a good way for easier and quicker learning game activities in sports games. The mere experience shows that for every one sports game and its gaming activities, a large number of movement games exist. In picture 3, we have created an image that shows the values of sport games, where all are above 91% by all groups of respondents.



Picture 3: Thematical unit in which the movement games are most frequently used.

Evaluating the questionnaires, we have also confirmed our 4th hypothesis in which we assumed that movement games are most frequently used in the preparation of lessons for rural

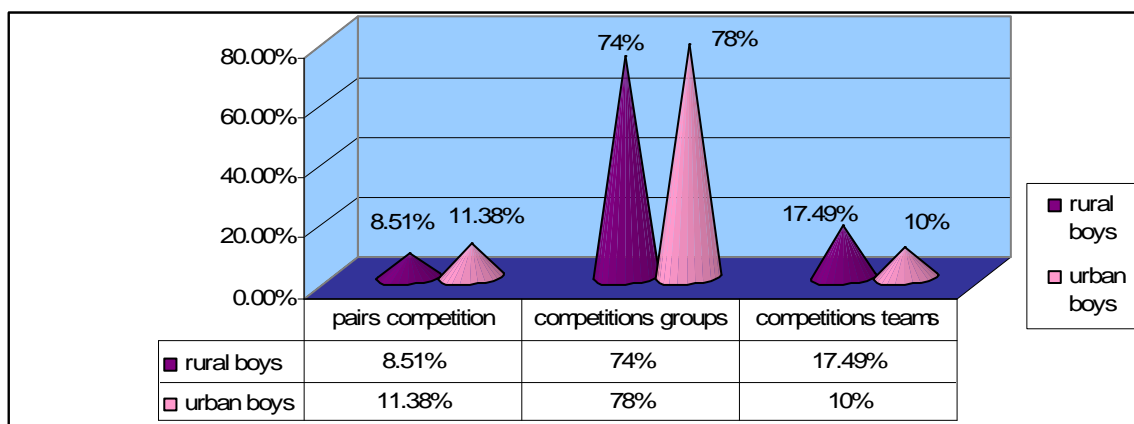
and urban areas. Although the highest results by percentage were obtained by the preparatory section, the difference in comparison with other options has shown that the answer has not been that strong. The results are shown in Picture 4. Comparing the results, we confirmed the assumption, that in the cities and the countryside the movement games are frequently used in the preparation part of the lesson. We have also found out that the movement games played in the main part of the lesson are more often used in urban schools than rural. Note that the insertion of movement games into the main part of physical activity in PE lessons, can contribute to more positive results, as well as facilitating an easier understanding of the curriculum and the engaging interest among students. The appropriateness of this choice is important because an inadequate movement game may have a negative impact on students. This does not only relate to a loss of interest, but also the appropriateness of the choice of game affects the acquisition of good practice. Therefore, with the selection of movement games, caution must be taken. My contribution to the final section, in which we recommend to include movement games with a lower intensity, enables pupils to rest and regenerate and therefore be ready and concentrated for further education. We have also considered that thematical sport games should not be implemented in the final part of the movement game, as students should in the end play the actual game.



Picture 4: The use of movement games in different part of the lesson

In our research, we confirmed hypothesis no. 5, where we assumed that movement games are mainly played as a competition between groups. Evaluating the results, we found out that the value of respondents from the countryside and the cities choosing the answer 'competition between groups' was more than 74% (Picture 6). We believe that competition is the most appropriate form, because students not only learn to communicate and collaborate in groups,

but each student is more likely to engage and interact in a movement game as compared to a team exercise.



Picture 5: The method of performance the most common movement games

Conclusion

The aim of our study was to discover the current status of the use of movement games in school physical education in second stage of primary schools from the perspective of urban and rural schools in the Orava region.

During the development of this project, we found out a large amount of interesting information that could be beneficial for each teacher. We propose the following recommendations for practice.

- Movement games are important for the development of a pupil's personality, because they can fully express their individuality and show initiative. Therefore, we recommend regular teachers to lead students into partaking in movement games.
- Not every movement game is popular among students; therefore we focus on teachers to respect the age of pupils by the selection of movement game. It is important that the teacher knows how to create a good atmosphere by choosing the right game to attract the interest of pupils and to meet the objective to be achieved by the chosen game.
- It is recommended to use equipment and tools for the implementation of any movement game because they are of greater popularity with pupils. They bring more satisfaction.
- Students are also interested in new movement games. Unknown movement games offer something new, which brings tension between students, thereby increasing their interest in any activity.

- Each teacher should make their own movement games portfolio and constantly enrich it with new games. We believe that the teacher should not only look for ideas in literature, but should use various internet sources.



In conclusion, we would like to state that being a teacher today is a very interesting role, but also a difficult and responsible task. It is not an art to teach a lesson, but the art is to attract students' interest and that requires an enormous amount of experience and ideas.

Summary

Objective of the thesis: the goal of this task was to determine the current status of using movement games in physical education in second degree primary schools, looking at both urban and rural schools in the Orava region. From the responses received, we found out the interest of students in movement games, and also their opinions on the use of these games in school physical education and leisure time. 182 pupils from the 8th and 9th grade responded to the questionnaires sent out. Movement games are important for the development of a pupil's personality, because they can fully express their individuality and show initiative. Therefore, we recommend regular teachers to lead students into partaking in movement games. Students are also interested in new movement games. It is recommended to use equipment and tools for the implementation of any movement game because they are of greater popularity with pupils.

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CIRCADIAN RHYTHM OF CORE TEMPERATURE AND HIS RELATION WITH SPORT SCIENCE

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Keywords: *circadian rhythms, hormonal secretion, body temperature, sport staleness*

Introduction

Phenomenon like core temperature is phenomenon, whose receptor is whole organism. If is core temperature activation mechanism of hormonal system, is a part of sport performance and with sport science. In theory of Hamar at all (2001), who speaks that the testosterone and his volume fall and growing volume of cortisol level reflects level of staleness, resp. recovery process level. Rate between this two hormones and his concentration is sometimes applied in sport practice for interception initial phase of staleness. If these hormones directly correlate with circadian rhythm of core temperature that we don't need biochemical way measure level of this hormones but we can staleness assign from core temperature. That can be accounting to skin temperature (in standard situation less for 4 degrees) and that can be directly measures in sport performance. If we would have skin temperature and mechanism for his monitoring with defined critical level is identifiable staleness in his achievement in real time. Study is part of task of grant VEGA MŠ SR n. 1/0409/10 Biorhythms and sport performance.

Chronobiology and circadian rhythms

Some biological functions are cycle changed with period 24 hour. These rhythms are called circadian rhythms. The major rhythms with participation on sport performance are body core temperature and sleep-wake cycle. A lot of components of sport preparation are in straight relation with body core temperature rhythm, whose grow in early evening hours. Exercise with dominant neuromotorical level and cognitive components are depending of sleep-wake cycle. Optimal time for exercising is determined by endogenous rhythms, habitat, and intensity of exercising, population, environmental factors, and individual time of phase shift in different environmental activity. Environmental factors determined circadian rhythms are light, temperature, ionization, activity and food habits and social activity. Endogen rhythms

are desynchronized when the organism is given effect of shift work or travelling throw time zone. Connection of pharmacological products context with desynchronisation too, same like diet or sleep loose. Sleep deprivation affect circadian rhythmicity and cognitive function more like whole motorical activity of organism. Exercising and his function on circadian rhythm are found in sportsmen with scientists with experimental work in sport subject in specification on testing, sport injury specialists, and sport organizers typing plans of sportsmen traveling (Relly, 1990).

Hormones and their function

In theory of Hamar at al. (2001) in faze of recovery throw hormones direct process of renovations energetic source and normalization of water and electronic balance loosed in normal activity. In assurance of increase energetic demands of power muscle are used increase of catecholamines, adrenalin and noradrenalin. These hormones are produced in adrenal, in synapses of sympatic nervous system (noradrenalin) and throw the receptors affect organs, tissues. Their metabolic effect rests major in stimulation of glicogene scission in liver with subsequent releasing glucose in blood and mobilization of fad acid from acid tissue. This are in blood transport support to muscle, where are in disposition like substrate of energetic metabolism. Katecholamines increase a frequency of hard contraction, direct redistribution of blood in profit of working muscles and adding lower breath ways. All of one of this changes improving progress of quantity oxygen for working muscles and his participation of energetic metabolism. Quantity of classic stress hormones ACTH, cortisol are increasing in long work. These take part in reformation glucose in liver in long working time of muscles when the glycogen reserve is loosed. With this system help hold the blood glucose level; this is only one energetic source for brain cells. From this hormones whose have an anabolic effect, whose take part in process of renovation, but there is a change of increase the level with long time working, have a major role testosterone, ACTH and insulin. If there is a major role of insulin in promotion of glucose transport for muscle cells and with glycogen stimulation, testosterone an ACTH produce process of the regeneration with recreation protein stimulation. Growth hormone is in youth before closing growth slot is acting like a stimulation effect on separation cells and whole growth. In lawful age acts as the stimulation through synthesis protein, process who is well important for regeneration after physical exercise. This effect is used through support transport of amino acids via cell membrane same like stimulation creation ichthyonucleic acid, whose is important for structure of specific protein by genetic information code in dezoxiichthzonucleic acid. Growth hormone

production in physical density is very visibly influence his intensity. More strange intensity of physical exercise leads to significant rising of growing hormone, whose is stabile also in recovery faze. Similar influence exists between intensity of exercise and surface man sexual hormone testosterone. If short time intensive exercise (etc. intensive condition training) produces growing level of this prominent anabolic hormone, long time exercise with low intensity of strange in opposite decrease testosterone level. Regress of concentration testosterone and increase of cortisol level visible reflect degree of fatigue, resp. process of regeneration, concentration rate of these hormones is used in practice like sensitive index for interception initial staleness stadium. Insulin level has different reaction, in practice exercise especially long time, when slowly declines. Insulin is typically anabolic hormone, whose produces entrance glucose in cell with declines his blood level, averting release glucose from liver glycogen and fat acid in fat tissue. Muscle working needs mobilization liver glycogen and physical fat leads unblocked katabolic effect of decreasing this hormone with next improvement of availability energetic sources.

Next hormone of bellow stomach glandule calls glucagon in opposite supports mobilization of fat acid same like glucose, like an assumption their entrance to the energetic metabolism. His level in physical exercise increase, this is same effect like decrease of insulin level. Important role hormones participate in regulation water and electrolysis service, aldosteron and rennin and vasopressin. Low increasing their level in exercise has a role in minimalism plasmatic volume losing and quickly normalization of his in recovery phase. Thyroid hormones income increase in more situation of exercise, thyroxin and trijodothronin, in level around 1/3 from original level. These two hormones have a role in regulation in normal situation intensity of room's energetic metabolism, whose can in influence of him increase four times. Meaning of increasing these changes in physical power is exact. (Hamar a kol. 2001).

Hormones and core temperature




Research of observation for finding dependencies of hormones and temperature were carried out in cows. Was finding that cortisol has no significant influence in time. Aldosterone, sodium, cadmium and progesterone had changes in dependents of time. Aldosterone was significant depend from temperature with association in time in with was converse observation (Aranas a kol. 1986). Next experiment spooks about social failure, in sexual areas and his affect on kortikosteron and circadian rhythm of body core temperature, in animal and his difference opposite dominate cat male. In theory of Keeney at al. (2001) this stress effect will cause increase corticosterone level same like temperature. Repeated failure will cause

chronic increase of temperature and to high increase of corticosterone level. Realize research present how chronic affect failure like chronic stress. Spoke that need next research for observation hyperthermy and increased level of corticosterone. Corticosterone in cooperation with temperature is produces in failure case in area of a sexual behavior, in this type of stress, what is necessary for as. Stress attack is more time in association with temperature in mammals (Veeninga at al. 2004). In cat is documented stress affect and next response on thermoregulation system in stress application. Glucose level contexts with corticosterone production, in his increasing increase level of corticosterone same like adrenaline and noradrenaline level. In theory of Hilary at al. (1981) noradrenaline level increase with increasing glucose level, same like adrenaline level. Because catecholamine has alike function like symphatic nervous system, this hormone have protection function, but they are hormone anabolic in believing. In their increasing body core temperature measured on skin increase with time distance 1 hour. In cat with aim disruption, with decreasing volume of growth level, in simulation stress in absence relax after physical activity, in with is increase production of growth hormone level and cortisol. In theory of Hauck at al. (2001) have these significant decrease value hormone triiodothyronine and thyroxine, whose are anabolic hormones with insuline, whose production was lower same like level of glucose. Tyroxine has a function in creation of energy in organism and decreasing metabolism in live organism (Scheen at al. 1998). Temperature of environs affects production of growth hormone in exercise. Skin temperature increase in heat room temperature and decrease in cold in value around 4 °C in with core temperature increase in both causes. Secretion of growth hormone increase in both causes, but his secretion was deferment in cold. His level was high in room temperature. Core temperature correlates with maximal secretion level of growth hormone and with his increase in room temperature without difference of type sport orientation in sportsmen. Exercising in levels behind anaerobic threshold in room temperature reduce level of secretion growth hormone. Changes in body temperature are mechanism for change secretion growth hormone in sport performance. Differences in secretion correspondents with condition, whose concrete sportsmens production, and it's same in swimmers and rowers (Wheldon at al. 2006). Study of Zuloaga at al. (2009) shows early tasks for organization testosterone production and his timing for circadian decreasing for core temperature and his values differences whose haven't context with defeminization in rats.

Summary

Anabolic and catabolic hormones correlate with circadian rhythm of core body temperature. Only one difference has testosterone, about whom we don't know that it is starting gear of temperature rhythm or his production is caused by its level. It is no important in situation that we don't want know origin of creation but his level. In situation if the circadian temperature rhythm producing by testosterone secretion can cause changes of secretion this hormone in various exogenous environment, what have influence in circadian temperature rhythm, will not suitable for fatigue expression from his concentration in effect different external factors. From this problem we need next research in this area. Rate of concentration of testosterone and cortisol context with maximal and minimal values for circadian rhythm amplitude of temperature measured in standard situation. His values on limit of staleness will need laboratory research and next generalize. If we will have this research and we will have values resp. rate of core temperatures in with come in staleness we will have a sense and in primary external researchable index for interception initiation of staleness. These would be guaranteeing for fluent growth of sport performance without injuries and mistakes caused by staleness and sportsmen would have known his limits for his decision. Next it would be index for finding status of performance, if it would be measured with restriction of desynchronization.

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ATTITUDES OF SECONDARY SCHOOL PUPILS TO PHYSICAL EDUCATION AND PHYSICAL ACTIVITY IN THE REGION OF BANSKA BYSTRICA

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Key words: *attitudes, physical activity, physical education, pupils of secondary schools*

Introduction

In the present time, the lifestyle of the whole society has changed. We can say, that the body movement has gone down. Following snug life, we can see harmful events. On the other hand we can see positive effects of kinetic activity aimed at physical and psychical functions such as on the health fixation. Just physical training orients not only on physical, functional, kinetic, but also psychical and rational developing. One of the most important aims of physical training by the students is to form positive attitudes to kinetic activity and to sport. So we decided to find out the students attitudes to P.T but also to kinetic activity.

Problem

The authors, who addressed this problem of students attitudes for P.T and kinetic activities, we can mention Gorner - Starší (2001), Antala (2001), Bartik –Mesiarič (20009), Michal (2008, 2009) and the others. We can also mention authors' mainly Frömel (1999), Michal (2005) and the others. The most of the mentioned authors solved the problem at the elementary schools. Therefore we realized that the research at the secondary schools is very proper.

One of the preferred tasks is health care. We can find information about the lifestyle anywhere. For all that, the lifestyle has become all-society problem. The questions about physical robustness in relation to health, are the main problem of modern society. It concerns both genders, and all age-groups. (Held and col., 1995).

Childish and youth age is the optimal period for sport and kinetic activities performance. We are interested in the adolescence period. Adolescence is the period of self-formation. The young people create moral principles and norms, they look for fair place in the life and society. They think about the future, build the life planes, think about point of the life. Individual

perceives himself, but also creates visualizations about that, he should be. (Rybárová-Klindová 1977).

Kinetic activity should be our everyday part. It is activity, that claims power expence, that is above the level of the expence at rest. We can include here all work activties but also sport activities. Kinetic activity can effect on the human, it has got big biologic and scholastik influence on the living attitudes, work efficiency,alimentation, conduct, human image.

The general aim of kinetic and sport education is to allow the students to orientate, develop and fix correct kinetic habits and skilfulnesses, to raise kinetic literacy, develop conditional abilities, riase activity in the health-care, obtain knowledges about the body moving, create permanent relation to kinetic activity like part of healthy lifestyle and ability presumption to concern about our health.(www.statpedu.sk)

The schol P.T takes share in biological development of individual and creation healthy lifestyle. Two lessons per week is not satisfactory. One of the main aims of P.T is to teach the pupils how to develop kinetic skilfulnesses in the free time.

Aim

The aim of our work is to find students attitudes at the secondary schools in Banská Bystrica region, to kinetic activites and P.T. We assume that the most important factor is the healthcare. We deal with this mentioned topic within the grant project VEGA č. 1/0635/08.

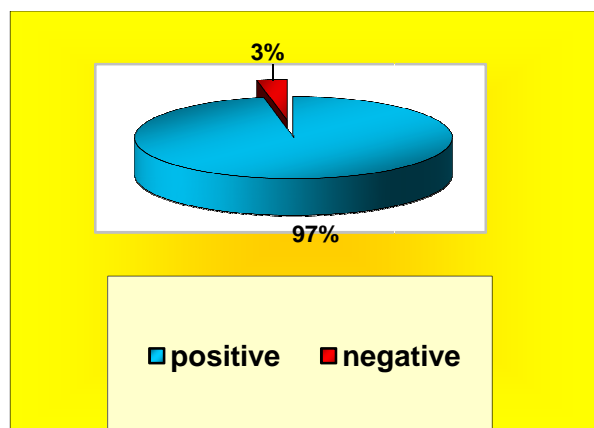
Methology

In the first stage of our research process, we used the method of literary study about the problem. We used questionnaire method. For the entries scoring I used the basic logical methods, slassification,analyse, synthesis and basic statistic methods. These entries are worked in the charts and pictures. We realised the research at 3 secondary schools in the region of Banská Bystrica. 120 pupils went into place, namely 58 boys and 64 girls. The part of the research was questionnaire. All of them were supplied and delivered,so that´s 100%.

All schools that supported the research owned gym. The teachers confirmed, that the economic equipment is not good. The reconstruction is owershooting at any schools, others are still waiting on the gyms reconstruction. 50% of the pupils think, the ekonomic and material equipment of P.T is not good, 38% are satisfied and 12% don´t know. The schools are quite old and the problem is ordinary servicing. Therefore the are no finances for the refreshing, so there is widgets shortage at several schools.

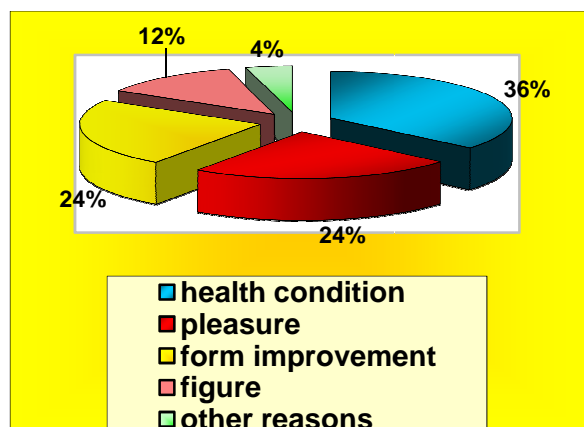
Results

Our research was centred on finding the pupils attitudes to P.T and kinetic activities, so we were interested in the pupils relation to kinetic activities, reasons, why they do kinetic activities and their most popular activities. We published the results in the graphs.



Picture 1 Pupils attitude to kinetic activities

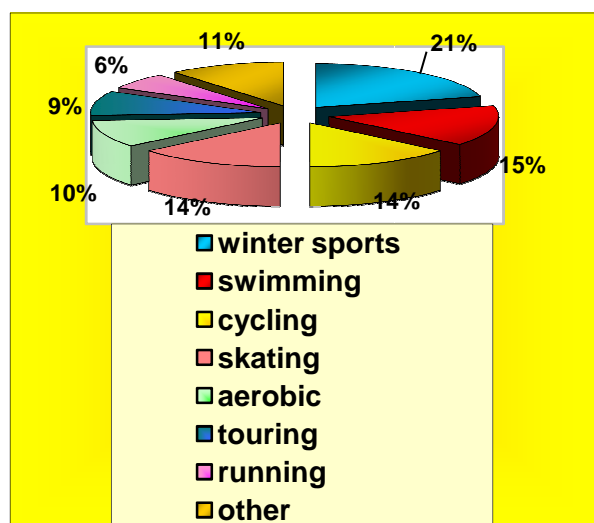
One of the most important information was to find out the pupils attitude to kinetic activity. We can see (Picture 1), that pupils bear positive ship to kinetic activities as evidenced by 97% positive answers. We can evaluate it like very positive, because internet, tv, pc games etc. Stifle the interest in kinetic and sporty activity.



Picture 2 The reason of execution of kinetic activities by pupils

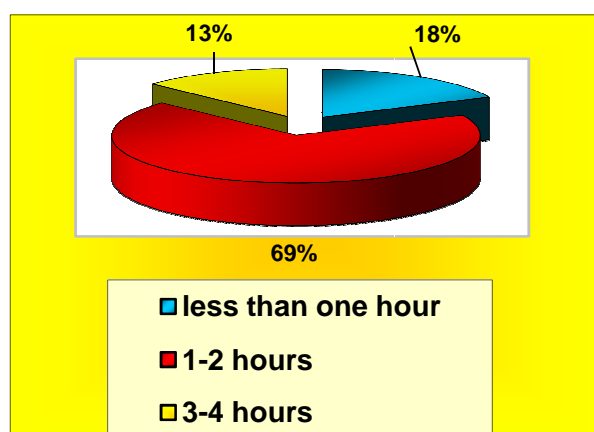
We wanted to know, what eventuates the pupils in kinetic activity (Picture 2) 34% consider the kinetic activity positively for good health condition, 23% execute the movement for pleasure, 23% introduced that kinetic activity is for form improvement, 12% is good for figure and other 4% execute kinetic activity from other reasons.

We can see that pupils know, that kinetic activity is good for support of their health and form, they aware the esthetic aspect what means good created figure, which is typical for girls. Pleasure, or good mood is very good reason for pupils to execute the kinetic activity.



Picture 3 The most popular activities

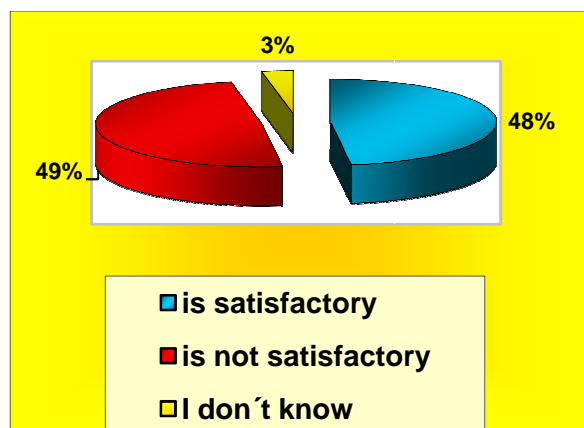
The most popular activities (Picture 3) are winter sports with 21%, swimming is the second popular activity with 15%. Cycling and skating with 14%, 10% pupils prefer aerobic and 9% prefer touring. 6% of pupils prefer running, 11% prefer other sporty activities. We can say that the youth like recreative sporty activities, which are executed in winter or summer, so during the summer or winter holiday, the pupils have more time for kinetic activities.



Picture 4 Hours, which pupils spend by kinetical activities

We are interested in the time, which pupils spend by kinetical activity (Picture 4). 13% of pupils execute kinetical activity 3-4 hours daily, 69% execute kinetical activity 1-2 hours per day and 18% execute kinetical activity less than one hour. Pupils who trained professional introduced the most hours, that are included in their trainings and concentration training. The

attendance is very important, because pupils visit the school from the whole region. Some give out 20-30km and after school they spend lot of time by the travelling. Except the free time, pupils have the kinetical activity at the P.T lessons.



Picture 5 Quantity of the movement at the P.T lessons.

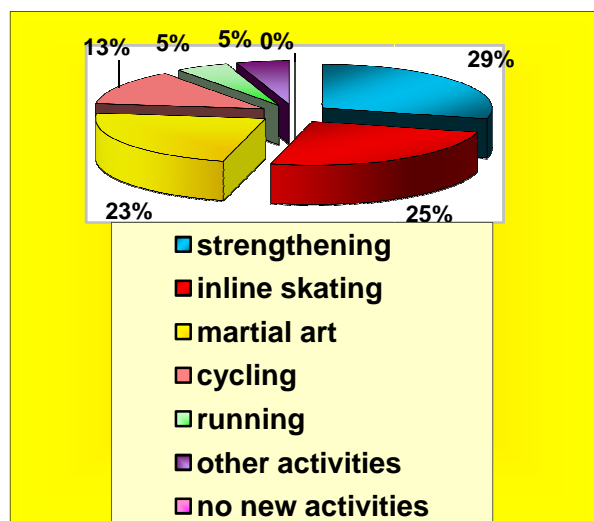
The quantity of the movement at P.T is satisfactory for 48% of pupils. 49% of pupils aren't satisfied with the movement at P.T. The youth maybe want to execute new, for them attractive and interesting activities, which are not included in the program of P.T lessons. It would be good to propose bigger area for new sporty and kinetical activities, but it includes considerable investments.



Picture 6 diversity and variety of P.T lessons

P.T lessons are varied everytime for 24% of pupils, for 43% of pupils sometimes and 33% of pupils introduce, that the P.T lessons are not so varied. It would be possible to afford new activities, what requires mainly teacher organization abilities, his study of the new methods at P.T lessons.

Pupils should to get chance, to purport and we detected, which activities they would.



Picture 7 new kinetic activities at P.T lessons

The result shows(Picture 7) that 29% of pupils would strengthening at P. T lessons, 25% would inline skating, 23% are interested in martial art, 13% would cycling, 5% prefer running and the same 5% prefer other activities. We can see that there was interest in new kinetic activities.

In the next picture we can see the economic and material school equipment.



Picture 8 economic and material equipment at secondary schools.

We detected(picture8), that 50% of pupils think, that ekonomik and material equipment of P.T is not good, 38% are satisfied and 12% don't know. The schools are quite old and the problem is ordinary servicing. Therefore the school try to obtain new equipment by sponsors and by other form.

Conclusion

By the research at the secondary schools in Banská Bystrica region, we discovered the pupils attitudes to kinetic activities. 95% of pupils have very positive relation to kinetic activities. We are glad that the pupils know about the importance of kinetical activities for the health support. 34% of pupils consider kinetic activity positive for health condition., what confirmed our hypothesis. Next we discovered that almost half of the pupils was not satisfied with the quantity of kinetic activity at P. T lessons, it follows, that pupils are interested in kinetic activity. The P.T lessons weren't so varied for 33% of pupils. We advice to teachers in collaboration with Ministry of Education to prepare methodical manuals. The teacher could pump from them new themes. It is necessary to target this group of pupils and motivate them and add bigger offer of kinetic activity, above all that pupils are interested in.

Summary

In our work we present the results of research carried out by monitoring the 3 secondary schools in the Banska Bystrica region. On our research participate 120 students of which was 58 boys and 64 girls. Students completed questionnaires, which were our predominant method of gathering data. The research was aimed to determine the attitudes of pupils towards physical activity if hours of physical education. From the results we have found very positive relationship (95%) students to the physical activity. Pleasing for us was the finding that pupils of secondary schools are aware of the importance and relevance of the implementation of physical activity.

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SWIMMING AND RESCUE SKILLS OF STUDENTS OF PHYSICAL EDUCATION

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Keywords: *water rescue, students of physical education*

Introduction:

The stay in water environment is accompanied with certain percentage of risk and indisposition with the possibility of drowning. Help activity and rescue in water environment are uncoverable for every person. Knowledge of water rescue should be skill for every swimming instructor or teacher of physical education, the one who participates in direct realization of swimming training. In order to make this condition at least partially realized, universities according to their compulsory or voluntary subjects sort in the content of teaching; elements of swimming, the help for tired swimmer and activities of the direct water rescue. Although these students are introduced to direct training of rescue during swimming lessons at university; they can't do lifeguard for business or for commercial purposes. Students can do the job of lifeguard as their main profession when attending courses in Water Rescue Service of Slovak Red Cross or in private Water Rescue Service in Slovak Republic. Many writers like Bence, Merica, Hlavatý (2005), Mandzák (1999), Baran (1995), Kručay (1992), Biloveská, Michal, Bence (1994) acclaim that rescue skills have their strong position in teaching programmes for next physical education teachers and are important for secondary assurance of direct water rescue in swimming trainings at schools.

Aim

The aim of our study is to compare the level of skills in water rescue of physical education students in Department of Physical Education and Sports at Matej Bell University (FHV UMB) in 2009/2010 with skills level detected in 1999/2000.

Method

26 boys and 5 girls from physical education specialization were used as a collection for our studies. Students according to their subject „Swimming 3“ in summer term adopted rescue

skills, which they demonstrated at the end of the term when they showed a comprehensive direct water rescue. Measuring was held in 25m pool of FHV UMB. Pool has 6 swimming tracks with minimal depth 0.9m and maximal depth 2m.

Before the test, we held exact instruction and showed the demonstration of water rescue. Students after introductory swimming have chosen swimming partners and according to random order the examination started.

Evaluation of rescue skills level in the water was realized by the usage of scheme form 1 to 5, where scale 5 represents the highest quality done in rescue. We have divided the evaluation into 5 activities which are: jump, approach – dive, stabilization, transport and bear out of drowning person, from which water rescue activities consist of. Evaluation of rescue was directed to quality and smoothness of activity. Because the quality of rescue depends on swimming efficiency we also compared between the times in swimming 400m freestyle and 100m crawl. We compared our actual results with the sample group of student-swimmers (28 boys and 8 girls) in 1999-2000. Also, this group attended the subject „Swimming 3“ which included water rescue of drowning.

Results

Mutual comparison of rescue skills level for physical education students, showed that after 10 years there were some differences in quality. Boys group A, which attended „swimming 3“ subject in academic year 2009/2010 reached in 4 scales, higher level than group B in 1999/2000. The highest differences (merely 1.35 of scale) were approved in the action of stabilization of drowning person. The most mistakes were recorded during stabilization of body on the place.

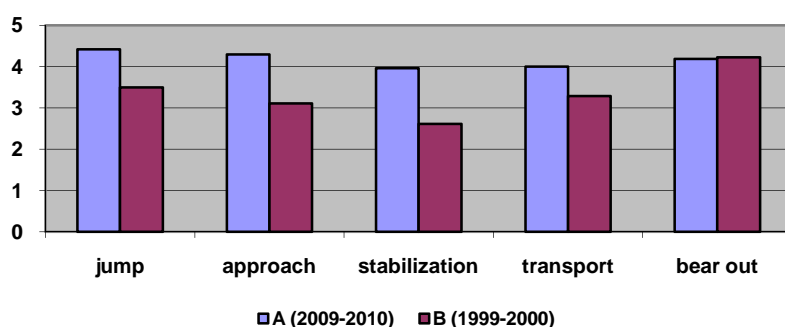


Figure 1 Comparison of rescue of drowning person in boys groups A

Pulling the drowning body to the surface is very difficult, and the stabilization to the horizontal position is made immediately under the surface of water. Fulfilling the airways

with water might complicate the rescue process. This is why it's important to perform the stabilization whilst in movement, in the direction of transport. During the transport phase we discovered that group B is 1.29 lower than the scale level in group A. What we consider to be the main mistake; is the bend of pulling arm, this could dip the face of the drowning person under the water. Besides that, we noticed the wrong way of grabbing the jaw, which causes the decrease the entrance of air through mouth cavity, where the lung ventilation is insufficient to keep the awareness of rescued person. In pulling phase evaluation, we noticed approximate same level for all students. Both groups adopted enough „fireman grab“, whilst the rescue, and consequently when carrying him on the ladder to the pool's wall.

Table 1 Comparison of rescue quality and swimming performance of boys

	jump		approach		stabilization		transport		bear out		100m Cr		400m FS	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
x	4,42	3,50	4,30	3,11	3,96	2,61	4	3,29	4,19	4,23	1,44	1,50	8,03	8,22
s	0,94	1,12	0,92	1,8	1,11	0,98	1,1	0,84	0,89	0,91	0,22	0,15	0,98	0,82
m	5	4	5	3	4	3	5	3	4	4	1,41	1,48	7,80	8,25
t-test	*		*		*		*		-		-		-	

Legend: A- group 2009/2010, B- group 1999 – 2000, x – average, s – standard deviation, m - median, t- test – test of the two differencies

In swimming for 100m crawl we registered better performance in group A. But the difference is not significant. Also in swimming to middle length – 400m freestyle, students of the year 2009/2010 reached better average of performance. Moreover, in this case the difference in performance was statistically insignificant.

In girls group we noticed that similarly like in boys group, the girls were better in activities such as; jump, approach and dive, stabilization and transport.

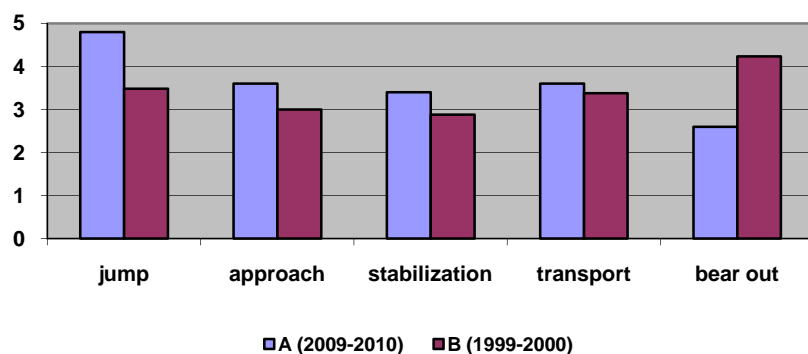


Figure 2 Comparison of rescue in girl's group

In the phase of jump into water, the average valuation of scale differed about 1.32 points in favour of the group A. The most mistakes whilst jumping were drowning face under the water, this was the reason for the lost of visual contact with drowning person. We reported the highest difference in picking up by „fireman grab“. The skills of group B were on a higher quality, the scale difference was 1.52.

Table 2 Comparison of rescue quality and swimming performance of girls

	jump		approach		stabilization		transport		bear out		100m Cr		400m FS	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
x	4,8	3,48	3,6	3	3,4	2,88	3,6	3,38	2,6	4,12	1,66	1,97	8,88	8,94
s	0,45	1,11	0,89	0,87	0,89	1,17	1,5	0,7	1,52	0,79	0,21	0,44	0,50	0,7
m	5	3,5	3	3	3	3	4	3,5	3	4	1,63	1,88	9,10	8,65
t-test	*		-		-		-		*		-		-	

Legend: A- group 2009/2010, B- group 1999 – 2000, x – average, s – standard deviation, m - median, t- test – test of the two differencies

In swimming disciplines we noticed more expressive difference in 100m crawl, we registered better performance in group A. However, the difference is statistically insignificant. In swimming discipline 400m freestyle, both groups reached almost the same average performance. Also in this case we noticed that swimming skill in girls group reached very comparative values.

Summary

In the end we can announce, that swimming performance in academic year 2009/2010 is comparable with the level reached in year 1999/2000. In rescue of drowning the results

showed, that the groups of boys and girls in actual school year, has the higher quality of rescue skills. According to these facts we can suppose that, in necessity the rescue of drowning would be done on average. Besides that, we want to point that 4 out of 5 phases of rescue were adopted towards required level.

Nowadays, according to actual accreditation, dotation and coverage of subject swimming 1 and 2, was reduced in the study programmes in physical education and sports. The exception in this reduction concerns only in specialized physical education.

In order to make students in future study direct water rescue, we suggest the cooperation of universities with local educational centers VZSSČK and VZS SR. This cooperation would contain the adoption of all practical skills in water rescue. Students swimming adoption would be improved on compulsory swimming lessons. Theoretical informations together with final evaluation would be provided by representatives in educational centers. The advantage of this cooperation is regular and systematic skill gain in water rescue and permanent swimming preparation at schools especially compulsory swimming lessons. The license of lifeguard would be provided only for students who fulfill conditions set by VZS SČK and VZS SR.

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THE ASSESSMENT OF LEVEL OF SWIMMING EFFICIENCY OF THE STUDENTS WITH A DIFFERENT DOTATION OF CLASS UNITS

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Key words: *swimming efficiency, education process, Physical Education students*

Introduction

Swimming as a compulsory subject in the branch of Sport and two-divisional Physical Education (PE) is placed into the education process in two terms, after some changes in study programmes at our department. Students begin their 1st grade with some level of swimming efficiency, which they presented at entrance exams, where they had to swim 100 m in chosen swimming style. According to Jursík (1994) the appropriate swimming capability of applicants for a study of PE through the entrance exams is a condition for adequate handling of the methodics in every stage of education process at university and a guarantee of safety of education in water environment.

Problems of swimming capability and efficiency of university students had been monitored and solved by many university authors Bence (2003), Bence – Mandzáková (2006), Chebeň (2001), Janko (2001), Jursík (1994), Macejková (1996), Mandzák (2001), Merica – Glesk (2001) and others.

These changes in study programmes have caused not only decreased dotation of swimming as a compulsory subject in curriculum from three terms to two terms, but in the branch of two-divisional PE also reduction of amount of class units from two to one per week. We were interested in how much this change affected the level of swimming efficiency of students of two-divisional PE in comparison to dotation of branch of Sport with two class units per week.

Work aim and tasks

The aim of our work is to find out and to compare the level of swimming efficiency of the 1st grade students of branch Sport and two-divisional PE students with different dotation of class units.

Tasks:

- At the end of the 1st term execution of swimming tests at 50 m freestyle and 100 m breaststroke in the school year 2009/2010
- Analyse gained results, evaluate them statistically and compare together.
- According to analysis and comparison of the results create some options of solution of researching problem for the next period.

Methodics

We executed our research in the 1st term of the school year 2009/2010. This research took place at the swimming pool of Faculty of Humanities (FHV), where was a reconstruction made in 2009, which affected also the education process. As far as the reconstruction wasn't completed on time swimming education started on 19th October 2010. Because of this fact, dotation was reduced into a half.

The 1st researched file consisted of the 1st grade students of Sport with dotation of two class units of swimming per week. Total dotation of classes in the winter term 2008/2009 of these students was 14 classes. The file „Sport“ consisted of 34 students. Whereas in this file only two women took part at classes of swimming they were displaced from this research because of low quantity.

The 2nd researched file consisted of the 1st grade students of PE in combination with the second subject. After some changes in study programmes dotation of swimming class units in two-divisional study of PE they were reduced into one class per week, which made only 6 classes of swimming through the term of 2009/2010 because of reconstruction mentioned. The file „PE“ consisted of 45 students, and 11 students were displaced from the research because of some medical reasons or their weak swimming capability they couldn't swim one or both swimming disciplines to get credits.

We executed our research in the 1st term of subject „Swimming 1“, which content was equal for both study branches. A requirement to get credits apart from active attendance at education was to swim with a right technique two swimming styles; freestyle and breaststroke. At the end of the 1st term male students had to swim with a right technique 100m breaststroke within 2 mins. and female students within 2 mins. 10 secs. and 50 m freestyle within 45 secs for male and 55 secs for female students. Apart from this they had to perform the starting jump and the basic turn and swimming under the water. We executed the tests at 25 m long swimming pool at FHV UMB, that has 6 lanes equipped with starting blocks, with max. depth of 1,8 m and min. of 0,9 m. The average temperature of water and air was between 27 – 29 °C. While executing the tests we went step by step every time. Students

swam in pairs in one lane and we measured time by electric stopwatch with accuracy in tenth of a second.

We executed the swimming test of 50 m freestyle and 100 m breaststroke which were focused on the assessment of swimming efficiency in the final week for the students, who were able to fill the criteria for credit requirements. Because of low dotation of class units throughout the term students were allowed to practise individually at the swimming pool in January and accomplishment of credit requirements was postponed into exam period and was evaluated in two terms on 22nd January and 25th January 2010.

Both men files had equal conditions to accomplish credit requirements. We exposed gained results to logical and statistical analysis. We used basic statistical methods of facts assessment (arithmetical average, decisive abberance, t-test) to process them. The results are presented in the text and well-arranged in charts.

Results

In the result part we compare the level of swimming efficiency of two male files with different dotation of class units in the 1st term.

Chart 1 Comparison of swimming efficiency of males in 100 m breaststroke

100 m P	x	s	max	min	T-test
súbor Šport	1:45,38	10,50	2:08	1:24	1,62sn
súbor TV	1:51,68	17,41	2:38	1:18	

Legend: x – the average time, s – decisive abberance, max – the slowest time, min – the fastest time, Sn – statistically unimportant, T – criterium at the level of statistic importance of 0.05 in male file (1.99)

Chart 1 shows massive qualitative changes in swimming efficiency in the test in 100 m breaststroke in advance of the file „Sport“. This file reached the average efficiency of 6.3 secs better than the average efficiency in the male file of „PE“, which didn't prove as a statistically important change. Worse efficiency in the file „PE“ is presented also by the slowest individual efficiency in 100 m breaststroke, which markedly overruns the time limit needed for accomplishing credit requirements. Vice versa the fastest individual efficiency showed the male file „PE“.

Chart 2 Comparison of swimming efficiency of males in 50 m freestyle

50m K	x	s	max	min	T-test
súbor Šport	37,08	5,85	53	26	2,10542*
súbor TV	40,20	6,15	59,2	26,3	

Legend: x – the average time, s – decisive abberance, max – the slowest time, min – the fastest time,
*statistically important in 5% level of statistic importance, t – criterium at the level of statistic importance of 0.05 in male file (1.99)

From chart 2 results, that the best average efficiencies in the discipline 50 m freestyle were reached again by the students of the file „Sport“, whose class units dotation in the lesson plan for the winter term is doubled than the male file „PE“. By comparison of the results in 50 m freestyle we can point out statistically important difference at 5% level of statistic importance in advance of the file „Sport“. Alike the swimming style breaststroke we notice high individual values of efficiency, which highly overrun the time limits needed for accomplishing criteria to get credits. The freestyle is more difficult in technique and coordination and the students mostly prefer to choose breaststroke at the entrance exams. We suppose, that according to the results, the students enter the pedagogical process with better level of one swimming style, which is breaststroke. Low dotation of class units of swimming in two-divisional PE couldn't cover demands of practice of more difficult swimming style in technique and coordination, freestyle, which also present statistically important differences.

Resume

According to gained results we can point out, that work aim was completed and set tasks were solved.

By comparison of the research results we can point out markedly better swimming efficiency of the students of the file „Sport“ with increased class unit dotation of swimming in the 1st term. In breaststroke they reached better average efficiencies, which were not proved as statistically important, but as a fact and from pedagogical view they are important. We suppose, that the results affected the entrance exams at which the majority of applicants choose breaststroke and so they enter the pedagogical process with some kind of swimming capability in particular swimming style. Low dotation of class units markedly influenced the results of freestyle, which were proved as statistically important at 5% level of statistic

importance in advance to the file „Sport“. Inadequate preparedness of the students is shown by the slowest individual efficiencies in both swimming styles.

Reduction of the amount of class units in the lesson plan of two-divisional PE markedly influenced the level of swimming efficiency of the students. A 45-minute lesson seems to be inadequate. When we maintain didactical principles of lesson division into direct education activity, so it remains only 20 minutes for drilling of new swimming skills, which increases the demands for effectiveness of the lesson.

According to analysis of set problem we recommend the students, who don't fulfill conditions to get credits to choose from the offer of optional subjects „Swimming exercises“, „Conditional swimming“ according the level of their swimming capability, respectively individual practice at the swimming pool within hours reserved for „Sport for all“.

Summary

The author in this contribution compares the level of swimming efficiency of the students with a different dotation of class units in the winter term. The results expressly proved markedly better swimming efficiency of the students of the file“Sport“ with higher dotation of class units within the term. According to the analysis of the particular problem the author proposes to create the widest offer possible of optional subjects for the students to improve their swimming skills.

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OPINIONS AND INTERESTS OF PRIMARY SCHOOL STUDENTS IN PHYSICAL EDUCATION

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Key words: *Physical Education, opinions and interest, evaluation.*

Introduction

In recent years many authors (Višňovský, 2001; Petlák, 2000; Zelina, 1996) have dealt with the term of the humanization of education, which is a new approach in education with the aim to create the atmosphere of rest, pleasure and creativity in lessons of Physical Education, where the main focus is on interests, abilities and needs of students.

Physical Education is an integral part of Primary schools education, by means of volitive characteristics, accurate response, coordination, health and physical activity habit are formed (Mišurová-Biela, 2003).

According to authors researches (Bence, 2009, Kasa, 2000; Mišurová-Biela, 2003, Popelka, 2009) the most popular activities among students are sport games. According to Kollar (2009) girls prefer especially volleyball and boys football. According to Vraňák (2003), pupils at primary schools are interested in activities that are not included in the curriculum of Physical Education. Görner and Starší (2001) state that the opinions of pupils on the 2nd grade of primary schools are mostly positive toward Physical Education thanks to all, who teach Physical Education. Media and the fact that Physical Education has become the social phenomenon have also the positive effect on this fact.

The aim

The main aim of our report was to find out pupils attitudes and interest towards Physical Education. Then we wanted to find out which physical activities are the most popular among the students of the 9th class. Another aspect which we wanted to detect was the attitudes of students towards the classification and evaluation of Physical Education.

Tasks

- Distribution of the questionnaire for the issue
- To analyze the students' answers
- Provide conclusions for practice according to results

Methodology

We used the method of a questionnaire for the research. The questionnaire included the lines of the issues and the items were closed or half-open nature. In our study we engage students of the 9th classes who were selected from the primary schools in Ružomberok in the school year 2008/2009. Overall, we distributed 115 questionnaires, but 8, 2% were eliminated from our research because they were filled up incorrectly. The research sample therefore consisted of 101 students - 51 girls and 50 boys. Their average age was 14.8 years. We expressed the percentages through the basic statistical characteristics.

Results

In the first question, we asked students, if they do sport actively. According to the research we can state, that the majority of the questioned students do sport actively. This group is represented by the 71,3% of respondents. According to our analyse, there is also obvious that students prefer sport games such as volleyball, basketball, hockey, football, cycling, athletics, aerobics or dancing. The 22,8% of asked students do sport irregularly and only the 5,9% of respondents do not do any sport.

On the question about the popularity of the subject Physical Education at schools, the 61,4% of students answered positively (PE belongs among their favourite subjects), the 31,7% of students answered partly, they did not know, and the 6,9% of students answered negatively (no).

The most typical reasons of why Physical Education does not belong among their favourite subjects were:

- on the lesson of Physical Education I am getting bored
- Physical Education does not entertain me, because we do not do things, which would be interesting for me
- the teacher just throw us a ball and we play a game immediately

Which sport activities are the most popular on the lessons of Physical Education is illustrated in the Fig. 1.

Sports games belong to the most favourite sport activities. The 36,4% of students presented this opinion. Kenetic games are favourite too, they were selected by the 13, 6% of respondents. The 9,7% of students prefer athletics and the same number of student like skating.

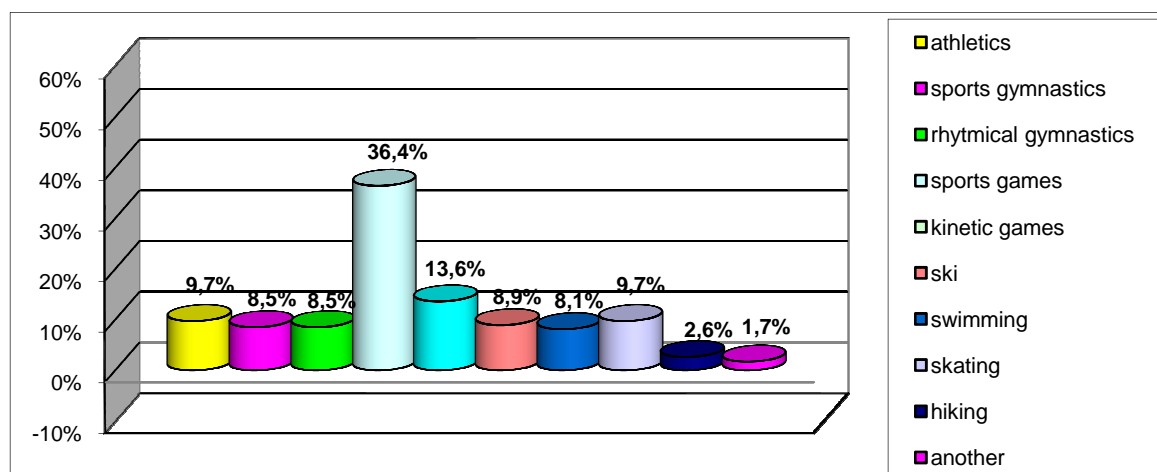


Fig. 1 Which physical activity on the lessons of Physical Education do you like the most?

The answers on the question “why does Physical Education belong to your favourite subjects“ are in the Fig. 2.

From the answers we found out, that the 23,1% of students consider Physical Education as their favourite subject because of fun and relaxation.

Other reasons were body-forming, improvement of health condition and increasing of sport activity.

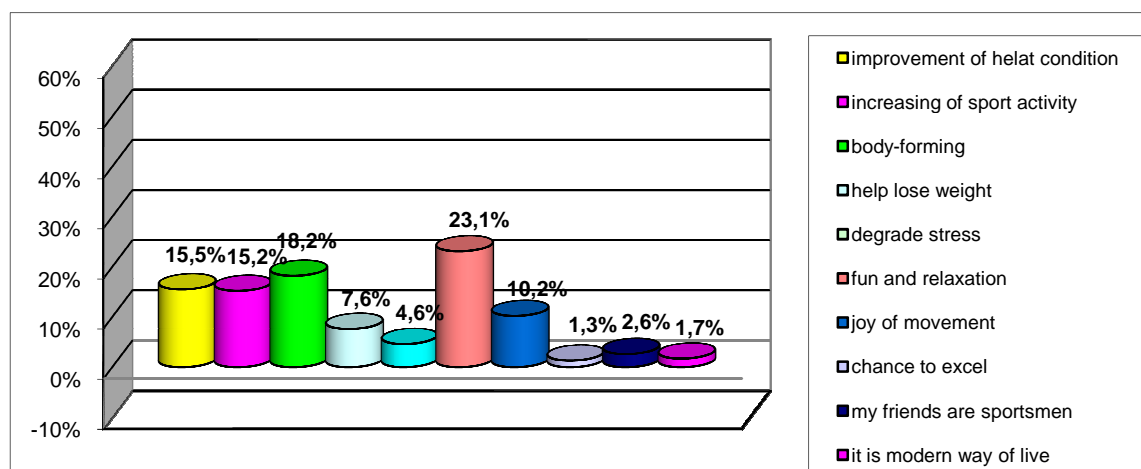


Fig. 2 Why is Physical Education your favourite subject?

With another question we tried to find out, if students attend some sports clubs. We discovered that only the 22,8% of students attend a club at their school. The most preferred are volleyball, table tennis, football, gymnastics and basketball sports clubs. As many as the 77,2% of asked students do not attend any club. We would like to point out, that the majority of students already attend a sports club in the town, as it was obvious from their answers on the first question. That is the reason students do not attend any sports clubs at their school.

We were also interested in answers on the question about the influence of a teacher's personality on student's interest in Physical Education.

According to the 38,5% of students, the teacher's personality influences their relation to Physical Education. It is caused mainly by the fact the teacher can show an activity to students, he/she is creative, he/she performs as their model, is tolerant and fairly-minded during an evaluation. The 34,6% of asked students answered the personality of their teacher influence their relation to the subject just partially, and 26,9% of respondents answered no, it does not influence their relation at all.

The evaluation of Physical Education at basic schools is one of the most discussed problems not just in a science, but in a public too. We were interested in the students' opinion, and answers to this question are placed in the Fig 3.

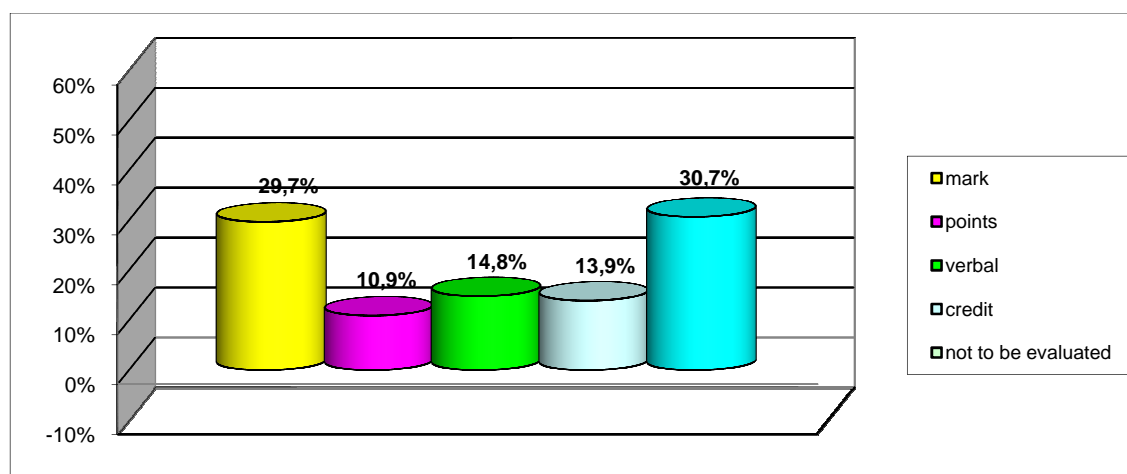


Fig. 3 How would you like to be evaluated on Physical Education?

The 30,7% of students expressed the idea not to be evaluated at the lessons of Physical Education. Only the 1% less of respondents agreed with the marks. We consider that differences in their opinions result from the tradition of schools. It means that if Physical Education is not classified, the majority of students agree with the idea not to be classified. We suppose that students do not consider as important just the evaluation, but also the fact,

what teacher makes provision for. That is why we were discovering students' opinions also on this question. Answers are present in the Table 1.

Table 1 What do you think a teacher considers as the most important during an evaluation?

answer	%
acquisition of the technique of physical element	12,30%
effort to achieve good physical performance	38,10%
discipline	17,00%
individuality in physical exercise	2,00%
attendance at non-compulsory Physical Education	3,40%
school representation	19,00%
theoretical knowledge	0,70%
others	7,50%

On the basis of the research we can point out, that the 38,10% of students consider an effort to achievement of a good performance as decisive in the process of evaluation. According to us a Physical Education teacher should evaluate students from different points of view, because not everybody can be an excellent sportsman, although he/she is taught by the best teacher. Besides of a performance aspect there is also medical aspect and effort to better students' relation to Physical Education and sport, and to make physical activities as their everyday routine. In our opinion that is the main aim of Physical Education.

Conclusion

According to answers of the second grade students of chosen primary schools in Ružomberok we can state, that students have positive attitude towards sports, physical activities and Physical Education. The high percentage, as many as 71,3% of questioned students do some kind of a sport actively. According to students' answers Physical Education is favourite mainly because of the fact it is a fun, relax and students like sport games. We suppose, that one reason of its popularity is, that students consider it as a mean, where they can relax, „switch off“ and remove stress from theoretical lessons. That is why schools and Physical Education teachers should create conditions which will be accessible, attractive and will accept the abilities and needs. During an evaluation we advise respecting of student's personality and complex assessment. We would like to remark that mentioned results are only

partial and it is not suitable to generalize them. Results will be a foundation for a broader research of Physical Education problem.

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THE OPINIONS OF TEACHERS ON TEACHING COMPULSORY PHYSICAL EDUCATION

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Key words: *Physical Education, opinions, teachers*

Introduction

Autor in this contribution is interpreting results of pre-research of the VEGA 1/03770/08 grant task in which deal with The Opinions of Teachers on Teaching Compulsory Physical Education.

We agree with authors (Antala, Labudová, 2006; Grexa, 2005), who declare that at the present time Physical Education has an immense meaning in the educational and training system of children and juveniles, it is a basic factor in a cognitive and physical development of a pupil while it forms its relationship to the healthy life style and the permanent physical activity.

In 1995 – 1996 there were established teaching standards, which became the second official pedagogic document after the curricula, which should have been more opened, extended, substituted and pluralized and their legislative obligation would be proportionally decreased (Majerský a kol., 2006).

Recently, the transformation of education has been based on decentralization of a school system, bigger independence of a teacher and supporting teaching values of education (Antala, Labudová, 2008). Kršjaková (2008) considers perception of a new approach to a pupil, a pupil to itself, to its health and health prevention as the fundamental change in Physical Education.

Whereas in recent years many mentioned changes have become into practice regarding to curricula, establishment of educational standards, state educational program ISCED2 and the humanistic approach to pupils comes into the practice more and more, we were interested in opinions of teachers on the recent state of teaching compulsory Physical Education on the second degree of basic schools.

The aim

Our aim using a questionnaire was to find out the opinions of teachers on teaching compulsory Physical Education. For obtaining a given aim of work we established following tasks:

- to distribute a questionnaire to schools,
- to analyze the Physical Education teachers' answers on a questionnaire,
- to determine the conclusions on the base of results.

Methodology

In the research we used a questionnaire for getting opinions of teachers for a problem of teaching compulsory Physical Education on the second degree of basic schools. We made a research at chosen basic schools in the town Ružomberok in October and November 2009. Our group consisted of 18 teachers of Physical Education, 8 women and 10 men, at the average age of 53, at the average working experience of 27.6 years and all of them were university educated in Physical Education approbation. According to answers of teachers, teaching Physical Education runs in good or very good conditions and only two teachers of the same basic school expressed that the conditions for teaching are satisfactory. We show the results after individual questions in percentage and in figures.

Results

From the Fig. 1 it is visible that teachers do the sport games the most often, which pupils like very much because of their motivation and compatibility. According to obtained results, teachers prefer following sports: basketball, football, volleyball, dodgeball, floorball and badminton is favorite the least. No teacher mentioned handball.

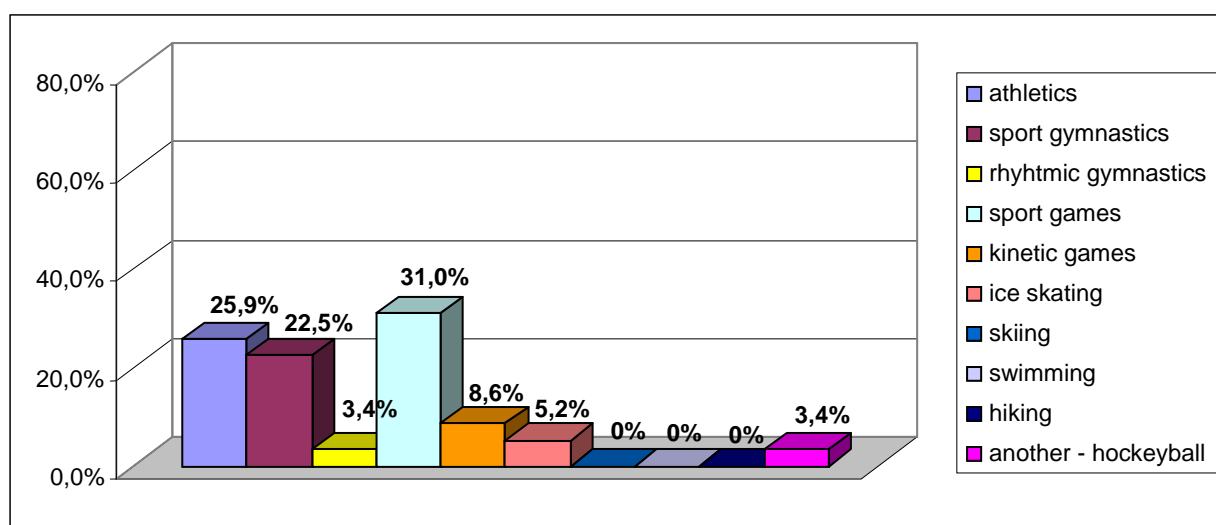


Fig. 1 Sport activities preferred by Physical Education teachers

We asked them if they agreed with different number of Physical Education lessons for boys and girls. 83.3 % of them answered YES and as a main reason they said that boys are more interested in sports than girls. As the second activity teachers prefer athletics and then sport gymnastics. No teacher mentioned skiing, swimming and hiking. According to the research by Starší (1997) just teachers of basic schools propose to add the courses of swimming and skiing to basic education at basic schools. We suppose that mentioned state of lower interest in swimming and skiing results mainly from the conditions of school and financial situation of parents.

By the next question we found out that 50 % of asked teachers respect curricula within teaching Physical Education and the same number respect them mostly, too. All teachers confirmed that curricula continuous from one school year to another.

The opinions of Physical Education teachers on recent capacity of Physical Education lessons at basic schools are shown in Fig. 2.

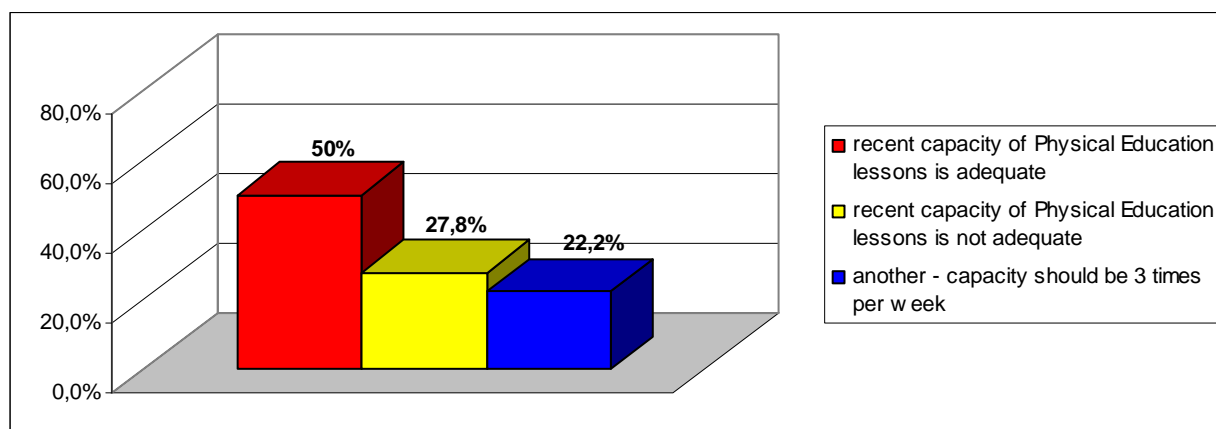


Fig. 2 The opinions of teachers on capacity of Physical Education lessons at basic schools

In capacity of Physical Education lessons at basic schools the opinions of teachers did not correspond. It results from mentioned that 50 % of teachers are FOR the present capacity of Physical Education lessons and 50 % are FOR the higher number of Physical Education lessons. In comparison with authors Antala and Labudová (2006), they declare that in some countries like Poland there was increased capacity of Physical Education lessons for 4 lessons a week and in Ukraine and Slovenia for 3 lessons a week.

At the present time in the process of education it is necessary to respect a pupil and its character, interests, hobbies and necessities. According to our findings, 61.1 % of teachers within Physical Education teaching respect interests and opinions of pupils and 38.9 % of teachers respect them partly. With the mentioned ideas there are closely related having sport clubs at schools according to the interests of pupils and also possibilities of schools and specialization of teachers. At all observed basic schools there are more sport clubs shown in Table 1.

Table 1 Number of sport clubs at basic schools

Sport club	football	basketball	volleyball	table tennis	gymnastics	floorball
Number	5	1	5	1	1	1

In Physical Education teaching it is very often necessary to create an imagination, some model for creation of a certain sport activity for pupils. Pupils can create this technique model or exact playing activity in sport games on the basis of information provided by different ways and one of them is exploitation of modern multimedia means. We were interested whether also Physical Education teachers use them at observed schools. We found out that 27.8 % of teachers use mainly recorders and also a kinogram, 61.1 % of teachers use this technique partly and 11.1 % of teachers never use it.

One of the Physical Education aims is to lead pupils to create a permanent relationship to sport activities. We suppose that if a Physical Education teacher does a sport activity, he/she represents a model for pupils, which can lead them to sport activities. All teachers do some sport activity, while 38.9 % of them do a sport activity 1 hour a week, the same number does it 2-3 hours a week and 22.2% of teachers do sport activities more than 4 hours a week.

For the question whether teachers were prepared for their job of a Physical Education teacher by university, 88.9 % of teachers answered YES and 11.1 % of them answered PARTLY. Directly to this, there is closely related also a further education or getting new information and knowledge during pedagogical practice. The answers for the question of further education or getting new information are shown in Fig. 3.

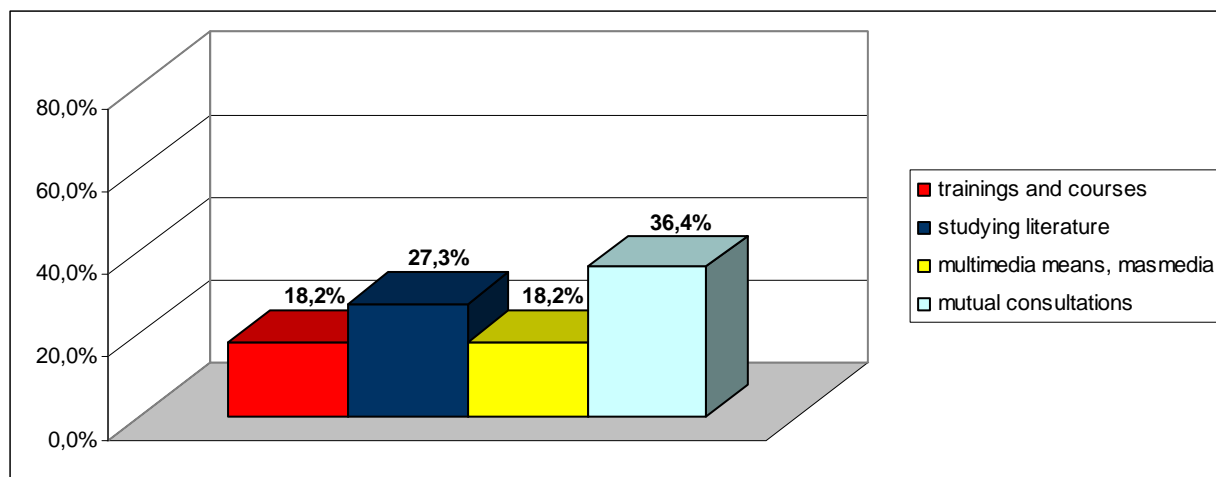


Fig. 3 Getting new information and knowledge by Physical Education teachers

Asked teachers answered that they get new information mainly via mutual consultations in 36.4 %, studying literature in 27.3 %, trainings and courses in 18.2 %, multimedia means and mass media in 18.2%.

Conclusion

Analyzing a questionnaire, we got following conclusions:

- Physical Education teachers deal with a thematic unit of sport games the most, they would increase the capacity of lessons for boys, because boys are interested in sport games more than girls and this is the reason why all teachers lead sport clubs at schools where the biggest interest in sport games is.
- Teachers have different opinions on capacity of Physical Education lessons. The first half of teachers agrees with the present capacity, the second half of teachers disagrees or they would increase its capacity for three lessons a week.
- Teachers use modern multimedia means in the teaching process of Physical Education very rarely. We suppose that the reason of it is inadequate equipment of schools by this technology and it is related to their economical situation.
- Teachers get new information and knowledge mainly via mutual consultations. We suppose that these consultations occur at sport competitions among schools where more teachers take part and they have the possibility to share their experience from pedagogic practice.

It is necessary to remark that the number of respondents is low and results are not possible to generalize. They serve as basis of further research at solving the problem of education humanization in Physical Education.

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EFFICIENCY OF THE BASIC SWIMMING TRAINING

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Keywords: *basic swim course, the effectiveness of the basic swim course, basic school students, basic school students swimming capability test*

Introduction

Swimming is one of the most dynamic sports industry. It is evidenced by the many world records achieved by swimmers at European, World Championships and the Olympics in the last decade. USA and Australia dominate the sport. These countries care about the sport and with the elaborate and systematic work with young people they provide the number of athletes to achieve the top results. Swimming base in Slovakia is much smaller than of the „Swim Powerss“ mentioned earlier, however, there are examples of success in Slovakia swimming also, for example - Ľuboš Križko - the European recorder in backstroke (50 meters) or a few promising juniors entering the sport scene.

In the past, swimming courses were mandatory to 8 – 10 years old students following the Ministry of Education Directive. The directive was implemented to practice via swim courses for students and it ranged to 21 hours of swim lessons per person. Nearly 80% of children of this age group learned to swim, thanks, to the sponsorship of the Slovak Insurance Company that covered the costs associated with the operation of swim teaching centers.

After the year 1989 there was a significant deterioration in conditions for swimming learning process. Swim courses were removed out of the basic education of the elementary school 3rd graders. The various stages of swim education are performed by swim schools and swim clubs, whose founder may be any person, legal person or an organization. There is no legislation in place to oversee the quality of swim teaching. There is a number of private swim schools operating in Slovakia that are not registered in the SPF. They focus only in commercial interests by organizing basic, intermediate and advanced swim courses.

The new national education program (SEP 2009) includes swimming in the two-hour thematic units with the following characteristics:

ACCOUNTABILITY: Student - swimmer - can swim in technically correct style a distance of 200 meters by one or several swim styles with the appropriate start jump to the water.

In the new national education program we meet the terms of „swimmer“ which relates to the basic swimming criteria - swimming distance.

According to Hoch (1976) the definition for a swimmer should distinguish three stages:

- children under 7 years of age should be able to swim a distance of 10 meters or more
- children from 7-14 years should be able to swim the distance of 50 or more meters
- children older than 14 years should be able to swim 100 meters or more

We agree with the opinions of Jursík (1977), Baran (1996) and Michala (2002), that the criteria cannot be defined by the distance only, regardless the situation and without comprehensive consideration.

According to Baran (1994) the most significant impact on motoric learning in swimming are the following factors: teacher's personality, teaching methods and procedures, fear of water, selection of the first swimming style, swimmer's age, space and material conditions, scale and frequency of lessons.

The motoric learning occurs in swim educational process. According Jursík (1994) and Michal (1995) the efficiency of this process is influenced by a number of factors, both external and internal that are naturally interrelated and differentiated in degree of their efficiency, but all of them significantly affecting the quality of the teaching process. Investigation of these factors and their mutual relations allows us to create more optimal teaching methods. Underestimation of the importance of individual factors, or their elimination can lead to undesirable situations and problems in acquiring the swimming motion habits.

Jursík (1994) split factors influencing swimming teaching effectiveness to several groups with specific content. As internal factors he is considering the age and gender of student, the relationship to the aquatic environment, natural swimming capability, physical development, movement coordination, capability to learn motoric skills, anatomical, physiological, psychological term assumptions - fear, stress, tension, motivation, feeling the water, transfer of motoric skills and skills of other physical activities, passive adaptation of the body to aquatic environment, moral and mental qualities. The most important external factors are the conditions and facilities (swimming pool availability) and the frequency and extent of the swim lessons, the number of students per teacher, and teacher's personality.

Objective

Swimming can be classified as one of the sports for general public. In addition to active swimmers, swimming is also a sport performed by athletes as a form of recovery or

additional sport to their main one. The basis for formulation of the objective and our research was the level of current knowledge in the areas, that are processed in details in professional literature focused on swimming methodology, as well as my own experience as a swimming teacher.

The objective of the research was to analyze the effectiveness and relevance to include teaching swimming into the basic swim courses.

Methodology

All information was received during the 2007/2008 school year (September 2007 - June 2008). To analyze the effectiveness of the particular swim courses in terms to meeting the objective we researched students of different age groups from different swim courses. The swimcourses were organized at the indoor swimming pool in Povazska Bystrica, me being a trainer and coach at the same time.

To detect the interest in the pre-swim, basic and advanced swim courses we used a questionnaire prepared in November 2008. The responses were collected in until the beginning of the year 2009. During February and March 2009, we analyzed the data.

Swimm courses begin with slection. The students are split to two groups, the groupe of beginners and the advanced students. The selection criteria are based on one's cpability to merge water, breath in water, and swimm a distance of 15 meters). This is done because many students have completed a pre-swim course. Re-learning their basic swimming skills would be a complete waste of time. These students can continue to improve the skills they already have acquired. In our research, we analyzed a group of students who were enrolled in basic swim course.

Special swim capability tests were performed at the end of the basic swim courses. Basic and advanced swim courses took place twice a week every day, in 90 min long lessons with 15 min break, in total of 15 hours. The lesson is lead by two swim instructors working with the max. number of 20 students. The other, advanced swim courses, consisted of 20 children in maximum also.

We worked with a set of students from Považská Bystrica and its neighborhood who were attending swimccoursest the indoor swimming pool in Považská Bystrica. All basic schools in Považská Bystrica (8 schools), 9 basic schools from the region of Považská Bystrica, and 4 schools from Rajec and Bytča joined the research.

1. Test method:

Swimming capability test after completion of the basic swim class.

1. Jump into water (with the capability to swim back to the edge of the swimming pool without assistance)
2. Getting puck out of the water of 2.20 meters deep
3. Capability to swim a certain distance in his or her own style:
 - 3a. Up to 15 meters
 - 3b. From 15 to 25 meters
 - 3c. 25 meters
 - 3d. The number of meters swum in his or her own style up to 25 meters

Results

In our research, we wondered whether third-grade students are or are not capable of swimming. The evaluation criteria has been described above (in the chapter called Methodology). Based on results the students were split to two groups, to the basic swim class group and advanced swim class group.

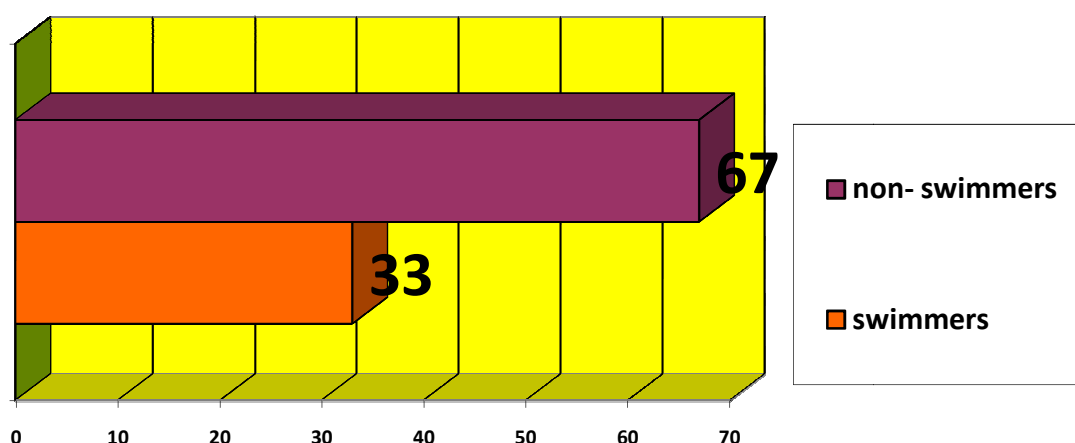


Figure 1 The ratio of non-swimmers vs swimmers among Považská Bystrica elementary school 3rd grade students before swim class completion (%)

About one third of students were capable of swimming. We must add, however, that the art of swim skills of the students enrolled into the swim class was not good (sort of breaststroke styles with head above water, crooked cut, bad interplay of arms and legs, mostly water polo crawl, cycling legs).

Swimming capabilities of students living in villages without indoor swimming pool were less developed by 10% (before basic swim course completion Figure 2) in comparison to students living in Považská Bystrica.

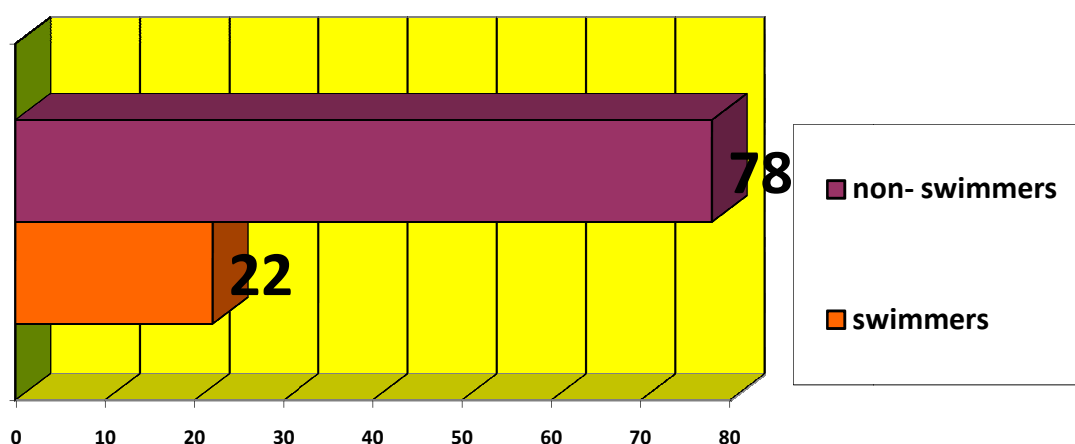


Figure 2 The ratio of non-swimmers vs swimmers among elementary school 3rd grade students from the villages without indoor swimming pools before swim classes completion (%)

The comparison may be slightly distorted since a number of students living in the villages attend elementary schools in Považská Bystrica. We think that if we had selected these students out of the research we would have received even more significantly different data.

Table 1 Považská Bystrica elementary school 3rd graders' enrolled to the basic swim course based on their swimming capabilities

Basic school name	Number of students on training	Basic training (number of students)
1. Nemocničná	35	21
3. Školská	67	44
4. Stred	18	12
5. Slovenských partizánov	75	55
6. SNP	34	25
7. Slovanská	32	22
8. Rozkvet	36	23
9. Cirkevná ZŠ	18	10
TOTAL	315	212

Table 2 Basic school 3rd graders' enrolled to the basic swimcourse from the villages of Povazska Bystrica region with no indoor swimming pool. The enrollment based on their basic swimming capabilities

Village Basic schools in PB neighborhood	Number of students on training	Basic training (number of students)
ZŠ Pov. Teplá	16	13
ZŠ Plevník	21	18
ZŠ Štiavnik	12	10
ZŠ Brvnište	15	12
ZŠ Papradno	13	10
1. ZŠ Bytča	17	13
2. ZŠ Bytča	14	11
ZŠ Prečín	13	10
ZŠ Domaniža	16	13
. ZŠ Rajec	19	13
2. ZŠ Rajec	18	13
ZŠ Mariková	15	11
ZŠ Jasenica	13	11
SPOLU	202	158

Effectiveness of basic swim course in the third grade of basic school

The objective of the basic swim classes is prosaic - "making student learn to swim." The objective of the second stage of the course is to develop student's swimming skills to the extend to make him or her capable to swim a distance of 25 meters in one swimming style, 15 meters in another swimming style, then swimming with a swim plate - at least 25 meters by any of swimming styles. He or she should be also capable of jumping into water deep enough not to reach the bottom of the pool.

From personal experience I know that for pre-swimming courses graduates it is much easier to master the course focused on swimming basics. These students also learn to swim earlier. Students who had not not attended the first stage of basic swim classes (pre-swimming classes) must cope simultaneously with the second stage of swimming basics. The final effect is of that, that the students of these classes can handle only pre-swimming classes

requirements only, and are capable to swim halves of the distance set as a requirement for the second phase of basic swim classes.

Table 3 Test results – Basic swimming capabilities in basic swim course

Basic school name	Number of students in the course	Course completed by	Jump to water	Puck catching	Distance		
					Up to 15 m	15 - 25 m	25 m
1. Nemocničná	21	20	18	10	2	5	13
3. Školská	44	40	37	22	10	9	21
4. Stred	12	12	12	8	2	2	8
5. Slovenských partizánov	55	51	51	22	10	10	31
6. SNP	25	20	18	9	2	10	8
7. Slovanská	22	22	22	11	4	4	16
8. Rozkvet	23	23	21	12	7	2	14
9. Cirkevná ZŠ	10	10	9	6	1	2	6
11. Pov. Teplá	13	11	8	5	6	2	3
12. Plevník	18	17	14	8	10	2	5
13. Štiavnik	10	10	8	6	5	2	3
14. Brvnište	12	12	9	7	5	2	5
15. Papradno	10	10	8	4	3	4	3
16. Bytča	13	12	9	5	4	4	4
17. Bytča	11	11	7	5	5	2	4
18. Prečín	10	10	7	6	3	4	3
19. Domaniža	13	13	10	4	6	4	3
20. Rajec	13	12	9	6	4	5	3
21. Rajec	13	12	9	4	4	2	6
22. Mariková	11	11	7	7	2	2	7
23. Jasenica	11	10	7	5	3	3	4
Total	370	349	300	172	98	82	170

Swimming basics classes were attended by 370 3rd-graders from 21 basic school in Považská Bystrica and neighboring villages (Table 1 and 2). 6% of the students attending the

course did not complete it due to sickness or some other reason. In terms of minimum requirements for swimming capabilities of students in this age group – managing swimming a distance of 25 meters - we can conclude that the basic swim course was effective in 49%. We see the reasons in the lack of time dedicated to swim classes (only 15 hours in total) as well as the fact that the classes take place once a week only, and they last for three hours. In terms of students fatigue it is extremely challenging. Body's adaptation to a stimuli lasts much longer. Therefore, it would appear preferable to reorganize the classes slightly. However, after a discussion with instructors and swimming teachers we understand the current limits. We must admit that the existing model is currently the best one available.

To assess the effectiveness of the basic swim courses we can also see the fact that 86% of students who could not swim, can jump into water and safely reach the shore. Eventually, we can state that more than 72% of students, who were non-swimmers, were capable to swim a distance of 15 meters and more. In this respect, we believe and can conclude that the courses are conducted well and that they are effective. This is confirmed by teachers satisfaction (for some, it is a small miracle. At the course beginning of many do not believe that students could become so familiar to move in water). We also get a positive feedback from the public, parents as well as municipality.

Conclusions

In our research we focused on finding the effectiveness of specific basic swim courses based on the requirements of authors dealing with this topic. We conclude that the children residing in the areas with an indoor swimming pool are better at the swimming. Through the data analysis we want to point out the fact that the effectiveness of the researched courses is good. In this publication we also tried to highlight the importance and coherence of the various types of swim courses in regards to managing swimming skills by a student.

Based on the questionnaire assessment, we have to say that despite the parents interest in swimm classes, their financial situation does not allow them to buy the courses for their children. A percentage of the respondents are also concerned about their children's health due to poor hygiene of swimming pools, as well as the possibility of injury or drowning. Throughout the research we also collected enough data, handling motoric tests mainly, that may bring more objective assessment of the effectiveness of courses, not only from swimming point of view but also from physiological and health state points of view. The data collected generate enough information for additional research themes that could be processed in the form of thesis e.g.

RECOMMENDATIONS FOR PRACTICE

- the capability of swim should be an essential part of every human being nowadays
- from the mentioned above, as well as from the other social reasons, we consider the completion of all types of swim lessons important. It is also important to keep the described swim courses sequence
- to increase the motivation and interest of students in swimming and sports swimming we recommend to have playful and human approach to students adequate to their age
- swimming instructor's job should be performed by professionally trained and accountable individual with a positive attitude to students

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HEALTH EDUCATION IN PRE_EDUCATIVE PROGRAMS

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Keywords: *kindergarten – health education – curricular transformation - projecting.*

Introduction

The pre-school age is the period of time when the source of physical and mental strength of an individual is formed. The process of a child's development is outlined by hereditary prerequisites, it is the result of concurrence of many factors and it happens in concrete life circumstances, whose substantial change is characterized by a lack of physical activity of children. In the pre-school age a child spends the day mainly playing and in motion, long sitting means constant tension, even overburdening of some muscle groups and skeleton. The importance of physical educational program in pre-school institutions was affirmed a long time ago and its influence should positively be expressed especially in children's health condition. However, this is not the case, which is confirmed by all research of recent years (Krejčí, 1996, Liba 1999, Pařízková, 2000). Not only the number of children with wrong posture grows but also the number of children with allergies, different chronic illnesses and higher fidgety restlessness rises. There is increasing obesity among children in pre-school age and the danger grows that children of obese parents will also be obese. Recent researches aimed at evaluating the food intake in developed countries show that the food intake has not grown in the past years, and thus the rise of the number of children with excessive weight is the result of decreased physical activity (Pařízková, 2000). These conclusions are followed up by our present research VEGA (1/4519/07) "Programs in physical activity regime of younger school-age pupils in the region of Banska Bystrica as the determinant of their health", which has been expanded also for children of pre-school age. Our aim is to find out the attitudes of kindergarten teachers to health in connection to physical activity and their readiness to create integrated thematic projects.

Problem

In kindergartens, thanks to natural physical activity of children, motion games prevail over other activity. With increasing age the interest in physical activity decreases. Kindergarten teachers thus not only have the duty but also a great possibility to form the relationship of children to physical activity (Michal, 2005). Hypokinesia, intensifying mental load and also inadequate position of physical activities in value criteria, all are the roots of unsatisfactory health condition of the population, growth of health weakening of children but also of mental and psychomotoric disorders (Liba, 1999).

In the process of strengthening individual as well as collective responsibility up to the level of health, kindergarten has an irreplaceable role. This was pertinently characterized by Havlínová, et al (1995) in their theses; some of them follow:

- Kindergarten has the opportunity to act as an autonomous subject, educational and formational elements are balanced in the school curriculum.
- Kindergarten covers needs of personal development of each child through programs respecting developmental regularities in respect of physical, mental, social, psychical and moral formation.
- Kindergarten sees its function not only in realization of educational process but also in forming valuable environment and offering free time activities.

The main aim of pre-school education is, according to State Educational Program (SEP ISCED 0, 2008), reaching optimal perceptual - motoric, cognitive and emotionally – social level as the basis of being prepared for school education and life in society. SEP, which is the highest curricular document in Slovakia, defines general obligatory contents of education in kindergarten, by which key competencies of children are to be developed. Complex and integrative approach towards education is supported in it through set topics and educational fields. SEP also includes section themes, out of which the following have been selected:

- protection of humans and health,
- education towards healthy way of life.

These themes are interwoven in all topics and educational fields and can be realized through different organizational forms and through play. The program offers a new model of projecting educational contents and talking about health education there are integrated thematic projects (monthly, bi-weekly and weekly), as a part of time – topical plan. In the educational aims in kindergarten, there are aims of health education clearly defined as well –

to intentionally develop the child's psychomotoric domain, to learn how to protect one's own health including utilizing healthy diet and protecting the environment.

The program is integrated into four topics I am, People, Nature, Culture. Topics are interwoven and are complementary; they are fulfilled in integrated and continual educational process according to the possibilities offered by the environment, children's needs and teacher's preparation.

From the point of view of physical education in kindergarten, the aim of pre-school education is "purposive, systematical and creative development of a child's personality in psychomotoric, cognitive, social, emotional and moral sphere" and it is to help the child to learn to protect health, the environment, cooperate in a group, learn to develop and cultivate its personality. The aims of pre-school education are outlined more broadly, however we consider the above mentioned aims as the key ones.

According to SEP kindergarten develops 7 kinds of competencies, and psychomotoric competencies are stated as the first ones.

Psychomotoric competencies offer teachers the foundation when creating school educational programs in physical education. Each topic has 3 educational fields of a child's development and these include, to different extends, sub-fields aimed at physical and health education.

When elaborating the school educational program in concrete kindergarten circumstances, teachers follow from content and performance standards of topics which are included in SEP; the following content standards have been selected:

- physical activity as the tool of health consolidation,
- health state and attitudes towards health,
- principles of health protection,
- protection against drugs,
- conditioning and exercise in nature.

In the organization of daily activities in the kindergarten physical activities and relaxation exercises are a part of the daily routine, which include exercising, relaxation and breathing exercises and are realized every day. Outside activities which also include physical activity of children should be realized every day and it is not recommended to omit them in the interest of healthy psychosomatic development of children.

Pre-school education is realized through organized educating activity (balanced educational and formational elements). The planning of educational activity is completely in

the teacher's competence; the method, form and extent of educational activity is approved by each kindergarten at the first pedagogical meeting.

The aim, hypotheses and methods

The aim of the quantitative research was to elicit the knowledge of pre-school teachers about the importance of physical activity for healthy development of a child and to assess the level of teacher's capability to apply the project approach in teaching.

The researched sample included 132 kindergarten teachers in the city of Banská Bystrica. The level of knowledge and capability to project teaching was found out through questionnaires. The questionnaire of our own construction included 19 items. On the whole 150 questionnaires were distributed, recoverability represents 88%.

Research hypotheses:

H1: Kindergarten teachers, irrespectively of the level of their education, dispose of the needed theoretical knowledge about the importance of physical activity for healthy development of children.

H2: Kindergarten teachers dispose of the necessary theoretical knowledge about the creation of integrated thematic projects.

H3: Kindergarten teachers with higher than high school education realize projects in practice more often than high school graduates.

Results

It was found, after evaluation of the questionnaires, that 16.7% researched teachers had a university degree in the specialization pre-school and elementary pedagogy, which was 22 respondents, 93 teachers were high school graduates from pedagogical schools, which represented 70.4% and 12.9% i.e. 17 teachers were university students in specialization pre-school and elementary pedagogy at the time.

After researching the teachers' opinions, whether or not they have adequate theoretical knowledge about the importance of physical activity for healthy development of children (H1), it can be stated that 65 teachers consider their knowledge absolutely adequate, i.e. 49.3%. Forty-one teachers considered their knowledge adequate (31%), 22 responded that they are not able to say so (16.7%), four teachers considered their knowledge inadequate, i.e. 3% of respondents. The answer "absolutely inadequate" was not selected by any teachers. Hypothesis 1 was affirmed, 80.3% of respondents disposes of the necessary knowledge, which was also affirmed by responses to other controlling questions in the questionnaire.

When analyzing the answers according to the level of education, no substantial differences were found.

In the next questions we focused on the views of teachers, whether or not they have enough knowledge for creation of integrated thematic projects. From the results of a statistical procedure a lack of theoretical knowledge is evident. Thirty-three teachers consider their knowledge absolutely inadequate (23.5%), sixty-three consider it inadequate (47.7%), twenty-five could not give an answer (18.9%), ten consider their knowledge adequate (7.6%) and three consider it absolutely adequate, which is only 2.3% of respondents. Hypothesis 2 was not confirmed.

In hypothesis 3 we assumed that kindergarten teachers with higher than high school education realize projects in practice more often than teachers with high school education. We followed from the assumption that university studies offer more knowledge from the field of projecting and we compared the frequency of applying projects in their own practice. 54.5% (12) teachers with university degree realize projects often and 45.5% (10) responded that they do so sometimes. 31.2% (29) teachers with high school education realize projects sometimes and 40.9 % (38) responded that they are interested in it. All studying teachers realize projects in practice often. Hypothesis 3 was confirmed.

Conclusion

The research results confirmed that kindergarten teachers have adequate theoretical knowledge about the importance and necessity of physical activity for a healthy development of children, pointed out considerable lack in didactical activity of teachers. The concept of State Educational Program ISCED 0 follows from the assumption that kindergarten teachers will realize content standards according to their own integrated projects and will contribute to that, that a child will master output standards outlined as target requirements at the end of pre-school education.

The traditional understanding of physical education from the point of view of health prevention and forming healthy life state, losses its importance, and common influence of knowledge, views, motives and also active physical activity from parents towards children or from children to parents becomes relevant. Such educational activity is considered life-long and in concord with Labudová (2001) we consider its aim to involve all children in physical activities, even those with lower somatic and motoric prerequisites.

Innovating physical educational preparation of students of bachelor program Pre-school and Elementary Pedagogy follows from the needs of contemporary kindergarten. In the preparation we focus on those key competences of future teachers, which are inevitable in developing psychomotoric competencies of children and realization of health education. Students gain experience through their own learning and have the possibilities to learn to project, organize and manage physical education. Educational activities in kindergarten need a teacher who is versatily prepared, they need a teacher who is a guide in a pupil's development. A teacher has to know how to use the acquired knowledge and physical skills in creating suitable conditions for the learning process in such a way that a child would achieve maximum within the limits and would acquire a positive relationship to applied physical activities and his/her own health. An integration of physical activities with music but also with the nature and hygiene also requires integration in future teachers preparation, which is one of the goals of university studies.

Following from the research results, we consider important that a graduate would:

- know how to make contact with children,
- clearly formulate the goal of educational activities and manage to compile an integrated thematic project,
- manage to prepare secure environment for physical activities in the classroom, gymnasium or in nature,
- know how to identify physical abilities of children,
- know how to prepare and realize such physical activities, which are interesting for children and will be used outside the school,
- know how to mediate children responsibility for their own health and help them to create the feeling of responsibility,
- know how to use the positive experience from physical activity for positive motivation of children.

Summary

The article presents research results focusing on eliciting the knowledge of kindergarten teachers about the importance of physical activity for healthy development of children and assessing the level of ability of the teachers to apply project approach in teaching. The research was realized using the questionnaire method on a sample of 132 teachers. The results show that kindergarten teachers have adequate theoretical knowledge

about the importance and necessity of physical activity for healthy development of children but they have substantial lack in activity and realization of projects in practice.

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