



KINEZIOLOGIJA – POT ZDRAVJA

KINESIOLOGY – THE PATH OF HEALTH

ZBORNİK PRISPEVKOV

THE PROCEEDINGS BOOK

Portorož, 2014

Univerza na Primorskem, Znanstveno-raziskovalno središče
University of Primorska, Science and Research Centre

8. mednarodna znanstvena in strokovna konferenca
Otrok v gibanju
The 8th International Scientific and Professional Conference
A Child in Motion

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Uredniki/Editors:
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ANNALES
UNIVERSITY PRESS

KOPER, 2014

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Izdajatelj/Publisher: Univerza na Primorskem, Znanstveno-raziskovalno središče / University of Primorska, Science and research centre, Slovenia

Za izdajatelja/Publisher represented by: Rado Pišot

Založnik/Publishing house: Univerza na Primorskem, Znanstveno-raziskovalno središče, Univerzitetna založba Annales, Slovenia / University of Primorska, Science and research centre, Annales University Press, Koper, Slovenia

Za založnika/Publishing house represented by: Rado Pišot

Sedež/Adress: Garibaldijeva 1, 6000 Koper, Slovenia

Elektronska publikacija – dostopna na naslovu: <http://ovg.upr.si>

Electronic publication, available at: <http://ovg.upr.si>

Publikacija je zaščitená © 2014 Univerza na Primorskem, Znanstveno-raziskovalno središče, Univerzitetna založba Annales

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Authors guarantee the authorship of their papers and take full responsibility for published contributions and their translations.

CIP - Kataložni zapis o publikaciji
Narodna in univerzitetna knjižnica, Ljubljana

37.015.31:796(082)
796.012-053.2:373.2/.3(082)

MEDNARODNA znanstvena in strokovna konferenca Otrok v gibanju (8 ; 2014 ; Portorož)
Kineziologija - pot zdravja [Elektronski vir] : zbornik prispevkov = Kinesiology - the path of health : the proceedings book / 8. mednarodna znanstvena in strokovna konferenca Otrok v gibanju = The 8th International Scientific and Professional Conference A Child in Motion ; uredniki, editors Rado Pišot ... [et al.]. - El. knjiga. - Koper : Univerza na Primorskem, Znanstveno-raziskovalno središče, Univerzitetna založba Annales = University of Primorska, Science and Research Centre, Annales University Press, 2014

ISBN 978-961-6862-98-1 (pdf)
1. Gl. stv. nasl. 2. Vzp. stv. nasl. 3. Dodat. nasl. 4. Pišot, Rado
275660032

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All contributions were pre-screened and reviewed.

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AEROBIC FITNESS VS. ADIPOSITY IN CHILDREN: IS IT BETTER TO BE FAT AND FIT THAN THIN AND SEDENTARY?

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ABSTRACT

It is well known that indicators of local and total adiposity were lower in children with high aerobic fitness and/or physical activity level. However, which factor, fatness or fitness, contribute more to health risk factors and mortality predictors in youth is currently unclear. This lecture reviews current evidence regarding relationships between fatness and cardiovascular disease risk factors, and between fitness and the same risk factors in children and adolescents.

Keywords: Cardiorespiratory fitness; Body fatness; CVD risks

BRIEF COMMUNICATION

Prevalence of childhood obesity reaches pandemic dimensions in the past decades, with approximately 17% of children and adolescents aged 2-19 years are obese (Ogden et al. 2014). Although the etiology of obesity is complex (Serra-Majem et al. 2013), low level of physical activity and/or health-related physical fitness, represented by cardiorespiratory (aerobic) endurance, seems to contribute to the development of obesity, type 2 diabetes, hypercholesterolemia, hypertension, metabolic syndrome, cardiovascular disease and all-cause mortality (Janssen & Leblanc 2010). Strong negative relationship between aerobic fitness and body fatness in children is well described (Ostojic et al. 2011), with waist circumference, abdominal skinfold thickness and total body fat were lower in both normal and overweight boys with high aerobic fitness in comparison with boys at the same BMI category with low fitness level (Ostojic et al. 2010a). However, which variable, fitness or fatness, is more important for determining health risks in youth is still controversial.

Sui and co-workers (2007) found twice lower death rate in obese adults that are moderately fit as compared to the normal weight people who are unfit. However, similar studies in youth are scarce. Our group (Ostojic et al. 2010b) reported that blood lipid-lipoprotein profile indicators were lower in overweight active adolescents with high aerobic fitness as compared to non-active counterparts with low cardiorespiratory fitness and normal weight. Strong beneficial effects of moderate-to-high physical activity on lipid profiles has been demonstrated in 29 active overweight boys as compared to 36 non-obese sedentary adolescents aged 14. It seems that physical activity and fitness in adolescents are more

important factors in balancing blood lipid status than adiposity *per se*, particularly for HDL-cholesterol. Moderate-to-high level of fitness and/or physical activity seems to be strong 'health-influencing' factor in children (Ruiz et al. 2006). Therefore, children who are sedentary, both obese and normal weight, should be encouraged to take part in moderate to hard physical activity on a regular basis, and exercise along with weight management should be a primary cardiovascular health goal for children and adolescents (Ostojic et al. 2010a). Further studies with robust methodology and longitudinal approach are needed to elaborate is it being overweight and fit better than being thin and sedentary in youth. Furthermore, clinical effect-size of physical activity (e.g. dosage of exercise) and/or physical fitness (e.g. preferred level of cardiorespiratory fitness) are yet to be determined. Yet, being fit may reduce the hazards of obesity in population of children.

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GAIT DYSFUNCTION IN CHILDREN WITH NEUROMUSCULAR DISORDERS

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Neuromuscular disorders (NMD) are heterogeneous group of inherited diseases of motor unit. The common and predominant clinical sign is muscular weakness together with muscular atrophies and hypotonia. NMDs can be further characterised according to pattern of muscle weakness and atrophies (limb girdle, distal, symmetrical...), biochemical and histochemical abnormalities (dystrophinopathy, calpainopathy, channelopathies,...), genetic characteristics (mode of inheritance, known genetic cause,...). Diagnosis therefor depends largely on recognition of phenotype, muscle biopsy, and mutation analysis. NMDs are mostly if not always progressive.

Most prevalent NMDs of childhood are hereditary polyneuropathies (Charcot-Marie-Tooth disease, CMT), Duchenne muscular dystrophy (DMD) and spinal muscular atrophy (SMA). Charcot-Marie-Tooth type 1A (CMT1A), an inherited demyelinating neuropathy, is the most common hereditary neuropathy (40-50% of all CMT cases). It is characterized by length-dependent degeneration of the motor and sensory fibres with consequent weakness of distal limb muscles, distal sensory loss and foot deformities. Usually, symptoms start in childhood and then slowly progress centripetally, from the intrinsic foot muscles to the leg muscles, thus affecting locomotor functions. The typical CMT1A phenotype is characterized by symmetrical, and slowly progressive, distal muscle weakness and wasting, sensory impairment, foot deformities, absent or reduced deep tendon reflexes and steppage gait. Duchenne muscular dystrophy DMD is an X-linked recessive disorder affecting primarily skeletal and cardiac muscle by an absence of the protein dystrophin. The incidence is 1 in 3,300 liveborn males. The muscles are affected at birth, but clinical symptoms of proximal muscle weakness usually manifest as awkward and difficult running or hopping between 3 and 5 years of age. Muscle weakness continues, with the legs affected earlier and more than the arms. The boys begin to use wheelchairs full time between 8 and 12 years of age, most by 10 years. Approximately 3 to 4 years after losing ambulation, 90% of the boys develop a spinal curvature of greater than 20 degrees. Joint contractures develop initially in the lower

extremities, with the feet assuming the typical equinovarus position. Upper extremity function declines in the midteens, and the boys lose the ability to care for themselves. Pulmonary function begins to deteriorate between 9 and 11 years of age, the forced vital capacity declines by 5% to 10% per year. Electrocardiographic and echocardiographic changes are present in more than 50% of boys with DMD. Boys with DMD are at increased risk for certain cognitive dysfunctions. Spinal muscular atrophy (SMA), also the leading genetic cause of infant deaths, is an autosomal recessive disease that results from degeneration of motor neurons of the spinal cord, which results in hypotonia, atrophies, contractures and mostly proximal muscle weakness. SMA is caused by mutation in the survival motor neuron 1 gene on 5q chromosome (SMN1 gene). The incidence of spinal muscular atrophy is about one in 10000 live births with a carrier frequency of one in 50. SMA can be divided into three clinical types on the basis of age of onset and motor function achieved: severe type - SMA I; intermediate type - SMA II; and mild type - SMA III. SMA I (Werdnig-Hoffmann disease) is the most severe type and could be distinguished by the onset of disease before 6 months of age and death within the first 2 years of life. These patients have profound hypotonia, symmetrical flaccid paralysis, and no control of head movement. SMA II is of intermediate severity and characterized by onset between 7 and 18 months of age. Patients are able to maintain a sitting position unaided. A few are able to stand with leg braces, but none can walk independently. Patients with SMA III (Kugelberg-Welander disease) show profound symptom heterogeneity. They typically reach all major motor milestones with independent walking. Additional clinical signs that usually develop in patients with SMA are fine tremor with digit extension, kyphoscoliosis and respiratory insufficiency. There is no effective medical treatment for SMA and CMT, corticosteroids are proposed to slow the progression of DMD.

The most frequent and usually the first complaint patients with NMDs have are difficulties in gait. Gait is defined as bipedal, biphasic forward propulsion of center of gravity of the human body, in which there are alternate sinuous movements of different segments of the body with least expenditure of energy. We walk and run effortlessly, yet gait is one of the most complex human functions. In deed, if one has to choose a single neurological clinical sign to evaluate functioning of individual's entire nervous system it would be gait. Progressive loss of ability to walk or run affects the child's with NMDs life in his/her specific way. Relationship between gait disorder and participation in everyday activities or quality of life of children with NMDs is far from straightforward. WHO's has

proposed International Classification of Functioning, Disability and Health (ICF) which assumes that the affect that a health condition has on a child's life depends on a balance between attributes of the health condition itself and a range of contextual factors (environmental and personal characteristics). Three levels are used to describe the person's functioning: in relation to the body or a body part (body structure and functions), the whole person (activity / limitations) and the whole person within a societal context (participation / restrictions). Several clinical and neurofunctional measures have been proposed to monitor the progression of impairment, disability and quality of life in patients with NMD. However, standardized measures for routinary clinical evaluation of the pediatric population with NMDs are lacking.

Instrumented gait analysis (clinical gait analysis, CGA) is the most sensitive clinical and functional assessment method. CGA allows us to quantify even the very early changes in gait in children with NMDs (ICF body structure and function level). CGA usually consists of measurement of general gait parameters (velocity, length and duration of stride and step, relationship between stance and swing...), kinematic analysis (which defines the movements of the major joints of the lower limb in 3 dimensions), kinetic measurement (force beneath each foot while walking) and electromyography (EMG) even in children. It is generally believed that children probably reach gait maturity after age of 5 and certainly after 7 or 9. By combining kinematic and kinetic data, it is possible to calculate the joint moments and powers, again in 3 dimensions. The joint angle, moment and power, and the EMG from specific muscles, provide a detailed description of the mechanics of gait in standardized conditions. CGA has become standard to tail the medical interventions to improve gait in patients with gait disorder (orthotics, surgery, evaluation of pharmacotherapy). The detailed characteristic changes of gait will be presented during the lecture.

Different test are used to assess the ICF limitations in activity level in children with DMD. The test can assess most relevant and specific activities affected (mobility, toileting, transferring oneself, dressing...), most commonly affected personal and environmental contextual factors (health system, technology, support and relationship...), activity ((stand-up and go test, 6 MWT, 5 or 10 m gait speed, Vignos or Brooke test, composite tests...), but also caregiver strain or family assessment tools. It is generally believed that a child can meaningfully cooperate in assessments tests from age 2.

We can assess most relevant restrictions in participation of children with NMDs with assessment tools like the Child Health Questionnaire, health-related quality of life by

Short-Form 36 or alike or NMD specific questioners like Zupan's test. The specific inquires into different levels of ICF discovers complex relationship between impairments and limitations of activities on one side and participation and quality of life on the other. Studies have shown that in CMT the quality of life is negatively affected by the presence and severity of the disease in childhood, while in SMA children and adolescent have a perception of good quality of life regardless the functional status. Also in DMD quality of life is not correlated with physical impairment.

Progress in medical sciences and advances in understanding the NMDs and its effects on different aspects of individual's health have changed the standard of care, with a significant overall improvement in the clinical course, survival, and quality of life of affected children. Gait assessment has significantly contributed to changes in medical practice and adaptation of health and social services for patients with NMD. The surprisingly high quality of life experienced by these severely disabled children should be taken into consideration when any decisions about children with NMDs are made.

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INJURIES IN CHILDREN - A GROWING PROBLEM?

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INTRODUCTION

Unintentional injuries are the leading cause of morbidity and mortality among children in the developed world including Slovenia. These injuries are predictable, preventable and controllable if good epidemiological data are available and causes are elucidated. A thorough analysis of the demographics of the groups of children who suffered unintentional injuries can help in deciding which measures and programs could reduce the burden of this growing problem. To identify the epidemiological pattern of nonfatal injuries treated in a community hospital emergency department (ED) a retrospective study was conducted at a General and teaching hospital of Izola (Slovenia).

METHODS

Patients < 15 years of age who visited the emergency department of the General and teaching hospital of Izola between January 1, 1999 and July 1, 2014 were included. The hospital database was searched for visits and admissions that were related to injury. Data collected included date of birth, gender, diagnosis, date and time of the visit and the type of admission (ambulatory or hospital).

RESULTS

A total of 43.726 children younger than 15 years were visited in our hospital as a result of injury during the studied period. Boys were seen more frequently than girls (60% vs. 40%). The number of injury-related visits increased during the last 15 years and a 20.7% increment was observed. Since 1999 the number of girls seen at the ED has increased by 36% and the number of boys by 22%. The number of injury-related visits has grown especially in the group of children aged one to four years and a more than 100% increase in the last 15 years was observed in this group. In the group of five to nine year old children the increase in visits was 43% while no significant changes during the observed period were noticed in children younger than one or older than ten years.

The most frequent injury-related diagnosis in boys were: superficial head injury (9% of all injuries), contusion of one or more fingers (6,1%), ankle sprain (6%), head wound (5,3%) and hand and wrist contusion (3,6%). In girls the five more frequent diagnosis were: ankle sprain (9,3%), superficial head injury (7,7%), contusion of one or more fingers (7,6%), hand and wrist contusion (4,6%) and head wound (4%). In the first year of age the most common injury

that brought infants to the ED was head contusion (63,6% of all injuries). In children between one and four years old the head was still the most frequently injured organ but open wounds were more frequent than simple head contusion (17,5% vs 16,5%). The same was true in the group of children five to nine years old. Among children older than ten years head injuries were only the fourth reason for visiting the ED while ankle sprain were the first with 10,2% of total visits being due to this pathology.

We found a seasonal variation in the number of injured children seen at the ED with most of them being examined in July (11,7%) followed by August (10,8%) and June (10,7%). The safest month appeared to be December with only 5,2% of all injured children seen in this month. Interestingly the number of visited children due to injury was steadily declining from Monday (15,5% of all children visited) toward Sunday (12,1%).

CONCLUSION

There is a steady increase in the number of children admitted to the emergency department due to nonfatal injuries in the last 15 years. The growing trend is especially worrying in children between the age of one and four years and in girls. The main causes of injury-related visits at the ED were superficial head injury, ankle sprain and injury to one or more digits. There is a seasonal variation in the number of children visited with a peak in summer months.

While use of emergency department data does not include all injuries (such as those treated by primary care doctors or those that did not seek medical care) the great number of children analyzed in this study and the data obtained could help in planning injury prevention strategies.

Keywords: injury, children, epidemiology

WHERE DID THE HOW GO- ABOUT TEACHING METHODS IN SWEDISH PEH

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During the fall of 2011, data collection began for a research project called “Physical education and health – a subject for learning”. The aim of the project was to explore the relationship between teaching and learning in the subject physical education and health [PEH]. As part of analyzing various learning aspects, the teaching methods represented in the material were investigated. Teaching methods, is the answer of the didactical How-question. How can the teacher organize a teaching and learning environment so the students will achieve the aims of the curriculum? Teaching methods have not recently been a topic for research in Swedish PEH. The Swedish School Inspectorate [SSI] that inspected PEH 2010 and 2011 notified that variation in teaching methods in Swedish PEH lacked student centered methods (SSI 2012). The aim of this paper is to explore and discuss the teaching methods that eight teachers in the project were using.

Back ground

Teaching methods in Swedish PEH.

Teaching methods in Sweden have developed from those used in Ling gymnastics which dominated the subject from the beginning of the 19th century until the implementation of the nine year mandatory school in Sweden. The exercises in Ling gymnastics were designed based on knowledge of the human body at that time. The exercises were described with a specific terminology and were organised together to form a ‘daily exercise’ [dagövning] that included training of different parts of the body and repeated over a period of time (Falk, 1916; Isling, 1988; Annerstedt and Meuser, 1990; Lindroth, 2004). The exercises were replaced when the students could perform them successfully. The didactical questions: *what* to teach (Ling exercises), *why* teach Ling exercises? (to strengthen the body) and *how* can that be taught (with command method), were closely interrelated and characteristic for the Ling gymnastics. The dominating teaching method was called command method. The teacher described or showed an exercise for as many as 100-150 students. The teaching situation was similar in the gym and in the classroom. The whole class was doing the same thing on command from the teacher,

Signal with the bell - the children organise themselves in two lines

Signal with the bell - the children turn left

Two taps on the bell - the children march on beat time to the benches

Signal with the pipe - the marching stops

Signal with the bell- the children turn to the front toward the teacher etc. (Isling, 1988).

Discipline was important in schools at that time. In the beginning of the 20th century, large groups of students were divided into smaller classes with only one teacher. The teacher was the authority and controlled all didactical decisions. However, all students didn't learn in the same pace so the method of self-activity was introduced to the general curriculum (Hartmann, 1995). The students could work individually or in small groups at their own pace with a specific task assigned by the teacher (Isling, 1988; Lindroth, 1993). PEH was, however, not particularly affected by this new method at that time. PEH was still taught with the command method (U 1919). Ling gymnastics disappeared from the curriculum with implementation of mandatory school in 1962. In the first curriculum, SNAE 1962, students got some more influence as they were encouraged to instruct their classmates, in order to improve their organisation and leadership skills (SNAE 62: 355). Later a supplement to the curriculum from 1969, SNAE 69, was called "Self-activity and creative activity in gymnastics" *Självaktivitet och skapande aktivitet i ämnet gymnastic* (Benjaminson., Ingevik and Ljunggren, 1975). In that supplement two teaching methods were identified: 'direct' or 'deductive method' that refers to traditional teacher centred method, and 'indirect' or 'inductive teaching method' that refers to a student centred problem solving method. (ibid.). However, the inductive method never became important in PEH teaching. Since the next curriculum, SNAE 1980, the steering documents have gradually moved toward emphasizing the importance of the students' responsibility and decision-making over their own education.

"The main task for education is to create environments that support the learning and development of children and youth. The school cannot in a simple way intermediate knowledge to students or *give* them experiences. It is the single student that must take responsibility for their own learning and their own processes of learning. The teachers mission then becomes to stimulate and motivate the pupils to look for and create knowledge. Together teachers and students can create good opportunities for learning and development"(SOU 1997: 121).

This change, motivated by the change from an industrial society into a society of communication, also changes the teacher's commission. The teachers' duty becomes to facilitate learning opportunities for the students instead of traditional teaching.

Teacher's work also became more collaborative. Until the 1980's, teachers worked quite isolated from other teachers. Tasks that required collaboration with other teachers were now added to the teachers work (Handal, 1995). In order to facilitate the collaboration, the teachers were organised together in a working unit with a group of students. Every unit had a portion of self decision. The teachers were supposed to plan and organise the work within the unit so that every child could reach the aims of the curriculum. In the 1990ies a comprehensive educational reform, changed the curriculum from content oriented to

objective and result oriented. The concept 'learning' was highlighted at expense of the concept 'knowledge' (SNAE, 2004). The current national curriculum (SNAE, 2011a and 2011b) stipulates that students shall have real influence over teaching methods, forms and content of their education" and the methods shall be democratic. Wahlström (2009) argues that Swedish education is steered by two fields of power. One side of the field is based on economic ideas of effective steering through objectives and results. The other side is based on Dewey's ideas of democratic education. The former uses traditionally more teacher-centred methods, while the latter advocates a more student-centred method. The teacher working in the field must consider both sides when planning the lessons.

Research on teaching methods

Research on teaching methods in PEH is not common in Sweden. No studies were found that directly investigate different teaching methods, but there are studies that touch on the issue. One study showed that single-subject PEH teachers teach more teacher-centred than teachers who teach two or more subjects. Two-subject teachers wanted to reduce their own influence on the lesson. When the students could organise and carry through the lesson by themselves, the teachers mission was fulfilled (Karlefors, 2002). The national evaluation of PEH (SNAE, 2005) showed that group work is a fairly common method as well as individual work, while project work is not so common. Discussions and reflections are seldom used and the students are seldom asked questions about their learning experiences. Notwithstanding, PEH is considered to be one of three subjects where the students feel they can have some influence, in particular over the content and over their own pace for learning (SNAE, 2005). The subject matter content, is mainly ball games, decided by the teacher and the students that are interested and involved in voluntary club sport (Sandahl, 2005; Londos, 2010). Meckbach (2004) argued that students' participation in the planning and realization of the lessons might uncritically preserve the current content of the subject. But even if the learner-centred approach is not fully developed in Swedish PEH, the students' have relatively more influence over their learning in PEH today compared to some decades ago (ibid.).

Teaching methods are more often discussed and researched in other countries (Cothran et al., 2005; Byra, 2006; Sicila-Camacho and Brown, 2008; Goldberger, Ashworth and Byra, 2012). Especially Mosston and Ashworth's (2002) Spectrum of Teaching Styles (henceforth called the Spectrum) are well known and have been researched from many different perspectives. The Spectrum identifies eleven different teaching method ranging from completely teacher-centred command method to the completely student-centred self-learning style. However, the Spectrum is relatively unknown and unused in Sweden (Annnerstedt, 2007).

The Spectrum (Mosston and Ashworth, 2002) was developed in response to a demand for more student-centred methods in the mid-20th century (Metzler, 2000) at the same time as the self-activity methods with creativity (Benjaminsson et.al 1975) were introduced in Swedish schools. The inductive method (Benjaminsson et.al, 1975) and the discovery methods (Kirk, 1996; Mosston and Ashworth, 2002) had the same intentions. Until then physical education was mainly taught with a direct command method. "The teachers gave directions and the students followed them" (Metzler, 2000: xx). To meet new demands of society and to improve education, the student needed to be more creative and discover knowledge by themselves. The learner should work on well-structured tasks introduced by the teacher and should include problem solving, creativity, individualization and reflexion.

The eleven different teaching styles that the Spectrum identifies are divided into six reproductive, teacher-centred styles and five productive, student-centred styles. The difference between the styles is based on the objective, the relation between the teacher and the learner and the outcome, [O-T-L-O], and is as central to the Spectrum as it was to Ling gymnastics. The relation between the teacher and student regarding decision making is the base for the division between reproductive and productive styles/methods.

The styles range from the completely teacher-centred *command style* to the completely student-centred *self-learning style*. The reproductive styles are designed for skill acquisition based on performance of a specific technique, while the productive styles are designed for "the discovery of new knowledge" (Chatoupis, 2010: 86) and individual movement qualities. Kirk et al. (1997) merged the eleven styles from the Spectrum into five teaching methods. The first three *the command, the task based, the reciprocal* are reproductive methods, the last two *problem-solving, and the guided discovery methods* are productive methods. From the first to the last the methods become successively more student-centred. The teacher can choose different methods for different objectives in different parts of the lesson (Kirk et al., 1996; Metzler, 2000; Garn and Byra, 2002) and the different methods are described as follows:

- a) *Directive or command method*: the teacher leads the exercises and the whole class tries to imitate the teacher. A conventional aerobics class is an example of this method.
- b) *Task based method*: the students work by themselves on one or several tasks assigned by the teacher. The teacher gives individual feedback to students. The tasks can be organized as different stations, as in circuit training.
- c) *Reciprocal method*: the students work individually or in pairs on an exercise and give feedback to each other or to oneself. The student can individually choose the level of intensity or complexity.. The method can also be defined as cooperative learning.

d) *Guided discovery*: the teacher provides students with tasks that will lead them to discover the answers to questions like: “What is your maximum ability in cardio-vascular training?” or “Can you find three different ways to balance on a balance beam?”

e) *Problem solving*: the student is trying to solve a specific problem, as to design a dance sequence (Kirk et al. 1996).

The Spectrum of teaching styles are declared very important and perhaps even the most important contribution to teaching PEH (Cothran et. al, 2005., Byra, 2006., Sicilia Camacho and Brown, 2008., Goldberger, Ashworth and Byra, 2012) and has been researched from different perspectives. The research questions deal with the learning outcomes of using different methods (Byra, 2006), the students perceptions of different teaching methods (Morgan, Kingston and Sproule, 2005; Cothran and Hodges Kulinna, 2006; Salvara et al., 2005; Sanchez, Byra and Wallhead, 2012), and what teaching methods that are used by the PEH teachers (Hodges Kulinna and Cothran, 2003; Jaakola and Watt, 2011). Referring to the Swedish interest of using student-centered methods, research shows that the reproductive methods are most common (ibid.). Kirk (2010) explains the lack of student-centred methods in PEH as a result of a struggle between Laban-inspired method productive methods advocated by female PEH teachers and the traditional reproductive military/physical training influenced method that was advocated by the male PEH teachers in Britain in the 1950's. The male teachers won the struggle and the child centred methods diminished as they did in Sweden.

A summary of the critique that different researchers have on the Spectrum is (Chatoupis 2010: 81-82) a) an overemphasis on teacher behaviour b) an ignorance of the context of learning and c) students' different learning styles. Another critique is that the current version of the styles advances a neo liberal positivistic rhetoric in learning (Sicilia Camacho and Brown, 2008).

In the study that will be presented here, some of the theory behind the Spectrum styles as well as the five teaching methods that Kirk (1996) defined on the basis of the Spectrum (Mosston and Ashworth, 2002) will serve as analytical tools. The theory will be used for understanding Swedish context and the description of the five methods will be used to identify and separate different teaching methods from each other.

Analytical framework and method

The empirical material used in this article comes from the study about “Physical education and health – a subject for learning?”

The empirical material used is 30 video recorded PEH lessons from compulsory and upper secondary schools. The transcribed pre and post interviews of eight teachers in charge of the lessons as well as in-depth interviews with the same teachers are also used. By using both

interviews and the videos, we will get a good view of the accord between planning, the activities, and the motivation for the teacher's actions. For a more expanded description of selection and data collection, see Quennerstedt et.al (2013).

The analysis was made in three steps. First, all the videos were viewed and sequences of different teaching methods were identified and marked. The different sequences were then categorized using Kirk's (1996) revised version of the Spectrum as a heuristic device.

Secondly, the relation between method and content that was present in the different sequences was identified.

Thirdly, the pre and post interviews as well as the longer interviews were analysed, with a special focus on the teacher's reasoning about their choice of method in relation to objective and content. There were no direct questions about teaching methods during the interviews, but the Spectrum theory as described above was useful when the interviews were analysed. The questions revolved instead around issues of what the teachers wanted to accomplish with their teaching. The portions of the interviews that implicitly dealt with teaching methods and objectives were marked. The analysis was inspired by the hermeneutic helix (Ödman, 2007), going back and forth between different sources of data and their contribution to the understanding of the whole picture. Observations from the videos were analysed together with statements from the interviews and vice versa in order to get a complete and clear understanding of the process.

Result

A general pattern of aims, structure and methods...

The most important objective to provide students, according to teachers, is a positive experience of the subject. They argue that students who enjoy the lessons will both be present and participate in the activities. These positive feelings of PEH might also increase the student's motivation to engage in physical activity from a lifelong perspective. Fundamental to creating these positive experiences are exercises that are not too difficult and subject matter content that the students appreciate. In this study, the content is sport and fitness activities such as ballgames, strength and cardio-vascular training, dancing and moving to music, and gymnastics with apparatus.

The standard structure of the lessons is divided into four parts: 1) introduction, 2) warm up, 3) a main activity, 4) a final gathering. The teacher-centred methods, the task based, and the command method are the most frequent methods used in the lesson. The command method is used when the lesson is introduced to the students: "Today we are going to practice volleyball..." or "Today we are continuing with floor ball..." Command method, is also used for the warm up. The teacher is telling the students what to do: "Run forward-knees up- kick your butt- run sideways with cross steps- etc" or "Now I want you to run to the other side.

Dribble the ball as you like” . Sometimes the task based method is used during the warm up, “Try to keep the ball close to the stick when you are moving around in the gym”. The students work by themselves, in pairs, or in groups. Then follows the main activity. The task based method, as circuit training, is most frequently used for the main activity. The teacher has organised a couple of stations with one exercise at each station that the students can work on in pairs or in small groups. Some instruction is given on how to succeed or what to learn at the different stations during the introduction, but the detailed instructional chart described in the Spectrum is not present. The students have to rely on what they remember from the oral instruction and sometimes through feedback from the teacher.

One example is a basketball session in grade 7 with four different stations: one with dribbling, one with scoring, one with passing, and one with a ball control activity. The students work in groups and small competitions between the groups are organised. There is no instruction on how to dribble the ball, score a basket, or pass the ball. The focus is on the “fun” part, the competition, and maybe collaboration between the team members, but not on learning the technical skills. The teacher’s aim, with the lesson, is to watch the students’ abilities in basketball.

During the introduction, some instruction focuses on how to succeed with or what to learn at the different stations, but the instruction is seldom followed up and students are often free to choose what exercises they want to perform and participate in. Quite often the exercises are too difficult for the students to perform without instruction, as in gymnastics or in strength training. Then the students try the activity once and if they don’t succeed and don’t get immediate feedback, they do something else. The lesson ends with a final gathering. The teacher leads a collective reflection to give feedback. Sometimes the students are given the opportunity to share their impressions of the lesson.

As the task based circuit training is most often used for the main activity, it becomes an important method. The teachers have modified the method, originally designed for skill acquisition, to be more student-centred as the student perform the exercises more or less by themselves. They also have a choice of what exercises they want to ‘try’. The teachers will not push them to try an activity they are hesitant to. The absence of clear instruction, makes the students self-actors but not self-learners, some of them even become avoiders. The task based method turns into a ‘self-activity self-learning method’. It seems as the teacher introduces sport activities to the students, but they avoid to teach the skills necessary to improve the performance of the activity.

Most teachers use one or two different methods during a lesson. The task-based method and the command method, the two most teacher-centred methods, are the methods most frequently used. The student centred problem solving method is also used in relation to a specified content and in short sequences, other more student centred methods are used.

... a less frequent and an unnoticed method

The problem solving method is the only learner-centred method that is present more regularly in our material. It is used in relation to dancing, creating choreographies to music, and in relation to health related content, as for instance when the students are asked to make a plan for their own fitness training, implement the plan, and evaluate it. The aim when using the problem solving method is that the students shall have an opportunity to work by themselves and the teacher acts more like a facilitator. The students were very active when working with this method.

But there are also shorter sequences of other student centred methods, more introduced by accident than as a result of planned didactical decision-making. The teachers are not aware of the possibilities for learning they have when they use productive methods..

DISCUSSION

This study confirms results from other studies that teacher centred methods are dominating and that student centred methods are rare in PEH lessons (Cothran and Hodges Kulinna, 2006; Kirk, 2010; Jaakola and Watt, 2011). There are many explanations of the dominance of teacher centred methods in the Swedish context. One reason is related to the sport like activities that are the main subject matter content present in our videos. Sport are traditionally taught with reproductive methods and the tradition continues even when if the skills and technique training are less important. With content, the methods might be more varied. Another explanation is related to teachers and many students interest in sport. (Sandahl, 2005; Londos, 2010). They are familiar with the traditional reproductive methods so there are no incentives for change. Maybe the teachers current ambition to make the lessons fun in order to make the students interested in PEH (i.e not bore them with details) also advantages the teacher centred methods. The students don't have to think (Karlefors, 2012) the teacher have already made all decisions. Another explanation is suggested by Kirk (2010), who declares that the teachers have no alternative than to use reproductive methods given the demands from the authorities and the time available.

In this study we have observed the domination of a new task-based that allows self-learning without much steering or support. The sport interested students will manage the situation as long as the content is sport activities, but other students become 'avoiders'. Their learning might be that they are not capable of learning physical activity. All together the presence of the self-learning task based method leaves the students without a feeling of having learned something (Karlefors, 2012) .

So how have this version of the task based method developed? One reason is that teaching methods isn't really discussed among PEH teachers and methods are not mentioned in the curriculum. Maybe the discussion of teaching methods was lost in the writings about teacher's new commission: to organise learning opportunities instead of teaching. The concept "to organise" as well as the students responsibility for their own learning, takes the teacher away from the close relation to the students learning. The teachers translation of the vision that the students are responsible for their own learning, is the task based self-learning method. This refers to Wahlström (2009) and her explanation that the curriculum is more often closer to the 'objectives and results' side but the 'democratic' side is always present and from time to time is more influential. Maybe that is the case now? This study supports Wahlström's (2009) statement that students are abandoned in an individualized learning process. To some extent the teachers have abdicated from the role as educators. Teachers work is steered by an amalgamation of objectives and expectations coming from different directions: the curriculum, the society, the students, their parents, politicians etc. Teachers try to fulfil their obligation by merging the most important objectives into their teaching context. The answer to the question: "Where did the How go"- is that it is hiding under curricular concepts, political visions, lack of in-service education and tradition. It is essential to draw the How out of its hiding place again.

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DEVELOPMENT OF MOTOR COMPETENCES IN CHILDHOOD – THE FOUNDATION FOR AN ACTIVE AND HEALTHY ADULTHOOD

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SUMMARY

The path from infancy to adulthood involves three interacting processes: growth, maturation and development. The terms are often treated as synonymous, but represent three distinct processes in the daily lives of children and adolescents (Malina et al., 2004). Changes, slowly but persistently occurring in human development, adjustments that are required during the life and work of the modern man which nature cannot keep up with and the decrease of basic human functional competences are some of the fundamental reasons that profound attention should be dedicated to the sustainability of complete human development. The discussion on sustainable development and ecological awareness shouldn't ignore the efforts to create an environment promoting health maintenance. History shows that human intervention in the natural environment enabled man, motivated by the hunger for development and progress which considerably simplified his daily life; however, concomitantly it made him neglect the very thing that throughout the millennia not only preserved, but also enabled him to evolve as a species – that is physical activity (Pišot, 2013). Human development that reflects changes in humans that occur over time are usually presented and described as a complex system of constant, reciprocal exchanges in basic domains: the physical domain (body size, body proportions, brain development, motor development, etc.); the cognitive domain (thought processes and intellectual abilities including attention, memory, problem solving, creativity, academic and everyday knowledge, etc.) and the social/emotional domain (self-knowledge, self-esteem, expression of emotions, temperament, interpersonal skills, etc.).

Development of voluntary control of movement begins in infancy and progresses into childhood as the child attains postural, locomotor and prehensile control. With the refinement of walking, control of locomotor and manipulative abilities improves so that a considerable amount of independent action is possible. These basic movement patterns are the foundation upon which other movements and combinations of movements are subsequently developed and refined. Movement is the substrate of physical activity (Caspersen et al., 1985), and there is increasing interest in relationships between proficiency (knowledge) in basic movement skills and habitual physical activity. Evidence indicates that instructional motor skill and physical activity interventions are associated with improvements in basic

movement skills in children. By inference, improving the motor proficiency of young children has the potential to enhance levels of habitual physical activity in adolescence and adulthood (Lopes et al., 2012). The transition from basic movement patterns to more complex skills depends upon individual differences in neuromuscular maturation (which has a significant genotypic component), earlier experiences and opportunities for new movement experiences, and the quality of early instruction and practice. Motor competence is thus the product of the interactions between the growing, maturing and developing child and the environments within which he/she is reared. Motor development is a process that in the individual's life through different life periods enables the transition to a higher level of motor competence – the development of motor abilities and acquisition of more demanding and upgraded motor skills in constant interaction and correlation with the environment (Malina, 2013).

Among these competencies, motor skills – abilities - proficiency are the basis for human motor capital, which in the complete functioning of humans and in the process of preserving and ensuring health presents the fundamental lever and one of the required skills that significantly contributes to the individual's quality of life and development through all life periods. Consequently, the period that is devoted today to monitoring and studying motor development of the individual, considering the role of sustainability and from an ecological perspective, can be named *competence-oriented period*: An approach that continuingly from the start follows the set of goals of the problem discussion defines motor competencies as *the lifelong competency model of motor development - LIFECOMDEL* (Pišot, 2013). There are three periods of the presented model; i.e. the acquisition of motor competences, the utilisation of motor competences and the decline of motor competences. The period of childhood is of substantial importance in the scope of lifelong functional competences and motor competences. Inadequately acquired fundamental motor patterns negatively affect the process of upgrading motor stereotypes leading to a lack of motor competences, and consequently also results in inadequate and irregular physical/sports activity in adulthood. This leads to an even more rapid decline of total daily physical activity in older adults as age increases.

Keywords: lifelong development, motor development, motor competences, model

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RESISTANCE EXERCISE FOR CHILDREN AND ADOLESCENTS: MYTHS AND FACTS

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SUMMARY

Using resistance training with the aim of developing muscle strength among younger athletes is still a matter of debate and often receives severe criticism. Certain previous research, which has not noted an increase in muscle strength, led to the conclusion that resistance training is ineffective among children. However, the results of numerous more recent studies which have closely followed the published statements and recommendations obtained by leading global professional and health organizations, indicate that if carried out properly, resistance training among children and adolescents can have very positive results. The increases in muscle strength after short-term programs (8–20 weeks) were approximately 13–30% greater than the increases which were expected only as the results of normal growth and development. Due to the lack of strong and clear evidence which would indicate muscle hypertrophy among children, the increase in muscle strength is usually ascribed to neurological adaptations.

In addition to its positive influence on muscle strength and endurance, as well as the potential increase in the success rate of motor performance, regular resistance training can result in the improvement of body composition, increased bone mineral density, an improvement in cardiorespiratory fitness, as well as its influence on one's psychological well-being. However, any improvement in muscle strength will not always and necessarily lead to an improvement in the desired motor performance. If the main goal of exercise is this type of improvement, then resistance training should respect the principle of specificity, that is, should include precisely those movements and types of muscle contractions which most closely resemble those occurring during motor performance.

The most commonly used types of load for resistance training include free weights and weight machines, which can have standard dimensions, but also specially designed for younger people. It is also often the case that these training programs consist of body weight exercises, exercises with a medicine ball and expanders and elastic bands. Lately, the most widely used training programs include exercises for the improvement of balance and coordination. The potential benefit of such training is reflected in the decreased risk of injury. Resistance training, like most other physical activities, carries with it a certain risk of injury. Nevertheless, this type of risk is no greater than the risk found in other sports or recreational activities in which children and adolescents regularly take part. Current findings from well-

organized and monitored studies involving samples of children or adolescents indicated a very small possibility of injury during resistance training, if all the training recommendations for the given age group are adhered to.

DEVELOPMENTAL ADAPTATION OF SKELETAL MUSCLE'S COMPOSITION

RAZVOJNA ADAPTACIJA SESTAVE SKELETNIH MIŠIČ

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ABSTRACT

We aimed at obtaining developmental trend on muscle composition for genders, different muscles and sport activity. The fibre type composition is traditionally assessed on muscle biopsies, but due to the invasive nature this information is limited in children. Using non-invasive tensiomyography (TMG), we measured the contraction time (Tc) in the vastus lateralis (VL) and biceps femoris (BF) muscles. Furthermore, we used regression model proposed by Šimunič et al. (2011) to estimate myosin heavy chain 1 proportion (MHC-1) in VL muscle. A longitudinal data were obtained from 107 children (53 boys) at 9.1 to 13.6 years. We found shorter and longer Tc in girls than in boys after the age of 12.9 years in VL and BF, respectively. Regular sport activity has a strong impact on shorter Tc in BF after the age of 12 years. In conclusion, the effects of age, gender and sport on muscle fibre type composition is muscle specific.

Keywords: Tensiomyography, Vastus lateralis, Biceps femoris, Sport, Children

POVZETEK

Cilj prispevka je pokazati razvojni trend mišične sestave, za oba spola, različne mišice and športno aktivnost. Za to informacijo je običajno potrebna invazivna mišična biopsija, kar pa ponavadi ni etično sprejemljivo, še posebej ne na otrocih. Z uporabo neinvazivne tenziomiografije (TMG) smo lahko izmerili čas krčenja (Tc), ki je povezan s sestavo miozinskih težkih verig tipa 1 (MHC-1), na mišicah vastus lateralis (VL) in biceps femoris (BF). Z uporabo enačbe Šimuniča in sod. (2011) smo izračunali tudi delež težkih verig miozina (MHC-1) v mišici VL. Longitudinalno smo spremljali 107 otrok (53 dečkov) od starosti 9.1 do 13.6 let. Ugotovili smo, da imajo deklice krajši Tc mišice VL in daljši Tc mišice BF, po starosti 12.9 let. Redna športna vadba otrok ima velik učinek na Tc mišice BF, vendar ne na VL, kjer imajo dečki, ki se redno ukvarjajo s športom krajši Tc po starosti 12 let. Zaključimo lahko, da je učinek starosti, spola in športa na Tc specifičen glede na opazovano mišico.

Ključne besede: tenziomiografija, vastus lateralis, biceps femoris, šport, otroci

INTRODUCTION

Growing interest in children's health in last two decades is a result of their worldwide health deterioration due to physical inactivity. This resulted in a gap in basic knowledge about children's skeletal muscle developmental trends, while there are numerous data on adults. There are only few studies on the skeletal muscle composition for children (Bell, MacDougal, Billeter, & Howald, 1980; Dahlström, Liljedahl, Gierup, Kaijser, & Jansson, 1997; Kriketos et al., 1997; Lexell, Sjöström, Nordlund, & Taylor, 1992; Glenmark, Hedberg, & Jansson, 1992; Lundberg, Eriksson, & Mellgren, 1979; Österlund, Thornell, & Eriksson, 2011). From those only one study examined longitudinal changes from childhood to adulthood (Glenmark et al., 1992). Therefore, it is unclear how skeletal muscle composition develops through childhood period.

The unethical invasiveness of a muscle biopsy is the main reason to not obtain data on muscle composition from a range of muscles. While the VL is the most commonly studied muscle, other muscles may be even more important for health, coherent posture and coordinated motor development in the childhood. All these issues motivated researchers to develop tensiomyography (TMG), a non-invasive and selective approach to measure skeletal muscle contractile parameters (Valenčič, 1990). Among all TMG parameters, contraction time (Tc) of muscles in vivo appeared to correlate with the proportion of type I fibres in cadavers (Dahmane et al., 2001) and in a multiple regression model the TMG-estimated contractile parameters correlate to MHC-1 proportion in VL (Šimunič et al., 2011). Therefore, the aims of our study were: (i) to establish age- and sex-related differences in VL and BF muscles; to estimate MHC-1 proportion in VL and extrapolate data to adults and athletes; and (iii) to assess the effect of regular sport training on Tc in VL and BF muscles.

METHODS

Participants

257 children (9 ± 0.5 years) without any history of neuromuscular disorders were initially recruited in the study. The children were selected from four randomly selected primary schools in three of the most populated regions of Slovenia (Coastal-Karst, Drava and Central Slovenia), where all third-grade children were invited to participate in the study. All participants and their parents were fully informed about the procedures and parents gave their written consents to participate in the study. About 50% of the invited children returned their written consents. All procedures conformed to the 1964 Declaration of Helsinki and were approved by the National Medical Ethics Committee of the Republic of Slovenia. Follow-up measurements took place approximately on the yearly basis. The analysis presented here included only those children who completed all six measurements; this was the case in 107 children (53 boys). Table 1 presents their anthropometric data taken at every measurement.

Table 1: Longitudinal descriptive anthropometric data of 53 boys and 54 girls at different age.

Age / years	Body height / cm		Body mass / kg	
	Boys	Girls	Boys	Girls
9.1 ± 0.5	139.6 ± 6.5	139.5 ± 7.2	34.9 ± 7.2	32.7 ± 6.8
9.9 ± 0.5	143.4 ± 6.9	143.5 ± 7.5	37.8 ± 8.2	36.1 ± 7.5
10.6 ± 0.5	147.6 ± 7.2	148.4 ± 7.6	39.5 ± 8.8	37.4 ± 7.8
12.0 ± 0.5	156.5 ± 7.9	158.4 ± 7.5	48.5 ± 10.8	45.8 ± 9.0
12.9 ± 0.5	162.6 ± 8.1	162.4 ± 6.9	53.5 ± 11.6	50.7 ± 9.3
13.6 ± 0.5	167.2 ± 8.0	164.5 ± 6.5	56.8 ± 11.7	54.3 ± 8.7

Study design

Six longitudinal measurements were performed on children who progressed from the third to the eighth primary school grade. At every measurement we followed the same procedure. One week before each measurement, we notified each school and asked them to follow a specific protocol; no major physical or sport activity should be performed 2 days before the measurement and all children had to be available for the measurements. In each child we first measured body height and mass, followed by TMG measurements and a short questionnaire about their exercise habits.

TMG measurements

The TMG procedure is described in detail by Šimunič et al. (2011). Suffice it to say here that the TMG measurement was performed in five muscles, however only data of two muscles are presented in this manuscript: for the VL and BF muscles from the dominant leg. Two maximal twitch responses were recorded for every muscle and saved. From every twitch response the maximal displacement amplitude (Dm), delay time (Td), contraction time (Tc), and half-relaxation time (Tr) were calculated as proposed by Valenčič (1990). The average values of these parameters extracted from two twitch responses were used for further analysis.

MHC-1 estimation

The estimation was performed only for VL muscle, using an equation developed by Šimunič et al. (2011). A linear combination of three TMG parameters (Tc, delay time – Td, and half-relaxation time – Tr) yield o proportion of MHC-1 for easier comparison to adults.

Sport participation assessment

A short questionnaire was used to obtain information about the out-of-school sport participation of the children. Only in boys enough valid data were available and they were divided in two groups; sporters and non-sporters. Sporters were members of sport clubs with at least three hours per week of organized predominantly anaerobic exercise (e.g., football, basketball, volleyball, handball, athletics – jumps, sprints and throws, etc.), which was consistent over the

all 5 years. Boys that were not members of sport clubs during a 5-year period and did not perform regular organized exercise were non-sporters. Following these criteria 17 boys were non-sporters and 27 sporters. Furthermore, we extrapolated our data in both groups with TMG data in the adult population (Šimunič, 2012), sprinters (Praprotnik, Valenčič, Čoh & Šimunič, 2001), dancers (Zagorc, Šimunič, Pišot, & Oreb, 2010), volleyball players (Rodríguez Ruiz et al., 2011) and football players (Rey, Lago-Peñas, Lago-Ballesteros & Casáis, 2012).

Statistical analysis

All data are expressed as means \pm standard deviation. For all variables the hypothesis of a normal distribution was tested with visual inspection and the Shapiro-Wilk's test. Age, gender and muscle effect on Tc were tested with three-way ANOVA, with age (6) and muscle (2) as within factors and gender (2) as between factor. To evaluate the effect of sport effect on the Tc of the VL and BF a three-way RM ANOVA was used, with age (6) and muscle (2) as within factors and sport (2) as between factor. For post hoc analysis the Bonferroni procedure was followed. Eta-squared (η^2) was used to estimate the effect size. Statistical significance was accepted at $P < .05$ level.

RESULTS

Figure 1 presents the descriptive data on Tc age development for VL and BF that was presented already in Šimunič et al. (2014). To summarize, for Tc a three-way ANOVA revealed significant age effect ($P < .001$; $\eta^2 = .050$); significant muscle effect ($P < .001$; $\eta^2 = .850$); significant muscle x gender interaction effect ($P < .001$; $\eta^2 = .111$); significant age x muscle interaction effect ($P < .001$; $\eta^2 = .123$); and significant age x muscle x gender effect ($P = .004$; $\eta^2 = .035$). Post hoc revealed, a significant gender effect in VL ($P = .027$; $\eta^2 = .046$), and BF ($P = .004$; $\eta^2 = .077$). An age x gender interaction was found only in VL ($P = .006$; $\eta^2 = .031$) as a shorter Tc in VL and longer Tc in BF after the age of 12.9 years in girls than in boys.

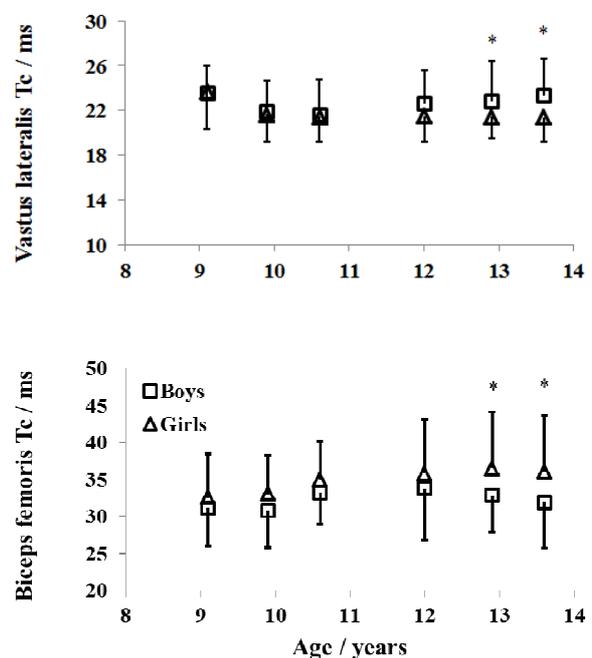


Figure 1: Age trends with gender effect on contraction time (Tc) for two skeletal muscles. * denotes statistical gender differences at $P < .05$.
Adopted from Šimunič et al. (2014)

Figure 2 presents estimated MHC-1 proportion in VL. We found a significant age effect ($P < .001$; $\eta^2 = .126$) and age x gender interaction effect ($P = .043$; $\eta^2 = .021$) on the estimated MHC-1 proportion in VL. Post-hoc analyses revealed a significant decrease of the proportion of MHC-1 in boys than girls after the age of 12 years. To put our data into context we have also included data from others (Bell et al., 1980; Glenmark et al., 1992), where it is obvious that after the age of 10 children have about the same muscle composition as adults with small but important gender interaction: girls having shorter Tc until the age of 16 and longer afterwards.

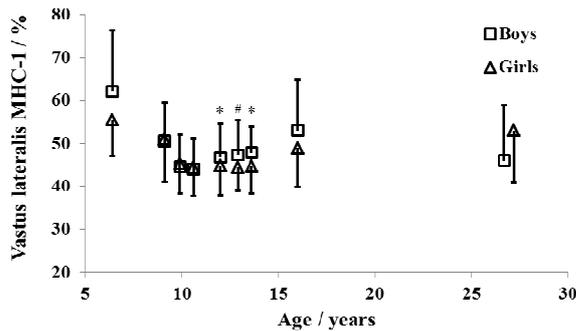


Figure 2: Age trend with gender effect on estimated myosin heavy chain 1 (MHC-1) proportion in vastus lateralis muscle. Our data was extrapolated with the data of 6-year-olds (Bell et al., 1980), 16- and 27-year-olds (Glenmark et al., 1992). * and § denotes statistical significant sex differences at $P < .05$ and $P < .01$, respectively.

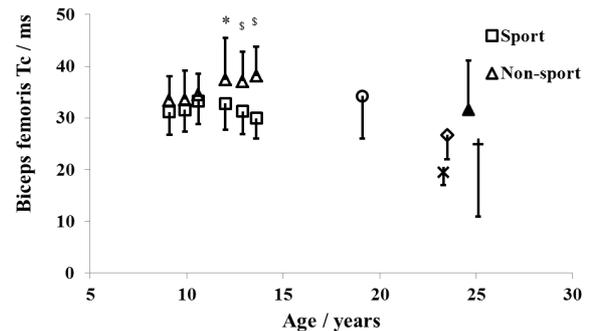
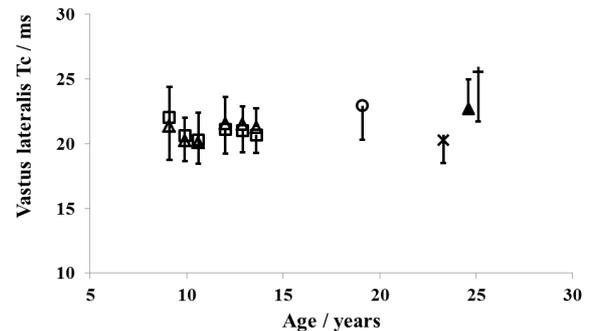


Figure 3: Age trend with sport effect on contraction time (Tc) in both muscles. Our data were extrapolated with the data of adult non-athletes '▲' (Šimunič, 2012), sprinters 'x' (Praprotnik et al., 2001), dancers 'o' (Zagorc et al., 2010), volleyball players '+' (Rodríguez Ruiz et al., 2011), and football players '◇' (Rey et al., 2012). * and § denotes statistical significant sport/non sport differences at $P < .05$ and $P < .01$, respectively.

In a Figure 3 a subsample of only boys was divided into a sport and non-sport group on the basis of their sports participation. A three-way ANOVA confirmed significant muscle x sport interaction effect on Tc ($P = .002$; $\eta^2 = .209$); and significant age x muscle x sport effect on Tc ($P = .001$; $\eta^2 = .111$). With a help of extrapolated data of adults we could notice small effect of

sport exercise on VL; however large effect of sport exercise on BF muscle, but after the age of 12 years.

DISCUSSION

The purpose of our study was to assess longitudinal development of muscle composition on a robust, high statistical power, way. Using non-invasive technique – TMG we obtained data from 107 children, 2 skeletal muscles, from both genders, and for six consecutive assessments (from 9.1 to 13.6 years). The main finding of our study is that Tc, a TMG parameter linearly related to MHC-1 proportion (Šimunič et al., 2011), changes with age but is gender-, muscle-, and sport-specific.

Age-related differences

When analysing triceps surae torque twitch Tc Grosset, Mora, Lambertz & Perot (2005) did not found any age-related differences in 7 to 11-year old children, also when compared to adults. This is in agreement with our findings, although our longitudinal design allowed us to confirm low effect size decrease in VL Tc from 9.1 to 9.9 years. In growing children sarcomeres are added (in series) at the ends of the muscle fibril. Muscle power, which is resultant of muscle force and velocity, will depend upon the total number of sarcomeres both in parallel and in series. It was reported that children lose their muscle flexibility during rapid growth sprout (Millar, Raasch, Robinson, St Jean, Wolff & Perry, 2001). Therefore, we could anticipate it by slower in series muscle fibrils elongations than bone elongations that could further affect actin-myosin overlap in sarcomeres.

Gender-related differences

After the age of 12.9 years boys have longer Tc than girls in VL (Figure 1); however at the same age in BF boys have shorter Tc than girls. Gender differences were not present throughout whole observed age-span. Direct comparison to other studies is possible just in VL muscle, where we found that our data are in agreement with Glenmark et al. (1992) where they found similar gender differences at age of 16 years but in follow up measurements at age of 27 years they found the opposite, boys having less MHC-1 proportion than girls. However, in triceps surae muscles Grosset et al. (2005) did not found any gender related differences in 7- to 11-year old children. It is well known that sex differentiation in sprints or jumps (Martin et al., 2004; Sumnik et al., 2013) and in peak cycling anaerobic performance (Doré et al., 2005) initiates after age of 12 and 14, respectively, when higher peak values were observed in boys. Moreover, we know that boys have higher muscle mass than girls and the pubertal increase in muscle mass in girls begins at age of 10 years while in boys at age of 12 years (Webber & Bar, 2012). Therefore, it seem that shorter VL Tc found in girls must compensate lower muscle mass

at achieving the same peak anaerobic power as in boys. However, in BF we found that boys have shorter Tc after the age of 12.9 years and that is in agreement with better performance of boys, after the age of 12 years, in actions where BF is predominantly utilized – e.g. sprints and jumps (Martin et al., 2004; Sumnik et al., 2013).

Sport-related differences

Using data obtained from a questionnaire, we divided boys in two groups with regards to their sport participation. Since there was no representative sample of girls, only boys were included in this analysis. We found that the BF muscle responds with a reduction in the Tc, while no such effect was seen in the VL. A similar situation was seen in adults where sport participation resulted in an increased proportion of type 2c fibres in the BF (Dahmane, Djordjević & Smerdu, 2006). It could be that the load on weight bearing muscles from normal daily physical activities in children is already relatively high in non-sporters and that in particular the non-weight bearing muscles get challenged more during sport participation. If so, this may explain the larger adaptation to regular exercise in the BF than in the VL. Lower Tc in the BF of sporters was evident only in the boys after the age of 12 years. When we compare this with specific adult populations we see that the effect of activity maybe activity specific as the Tc of sprinters is 19 ms, that of non-athletes 32 ms, and dancers 34 ms. It thus appears that participating in sport as a child may result in a faster profile of the BF.

CONCLUSIONS

We found shorter and longer Tc in girls than in boys after the age of 12.9 years in VL and BF, respectively. Regular sport activity has a strong impact on shorter Tc in BF after the age of 12 years. Trends of muscle composition are age-, sex-, muscle – specifics. Furthermore, we confirmed regular sport effect on non-postural muscle but non on postural muscle.

Acknowledgements

The authors are grateful to the Slovenian Research Agency (ARRS) for financing research projects entitled "Role of Biomechanical Properties of Skeletal Muscles in Child Motor Development" and " Monitoring of changes in biomechanical characteristics of skeletal muscles in early childhood and adolescence". We are also grateful to all children that participated in this study and their parents who have allowed such an important project. Finally, many thanks to other researchers and students for assisting in the projects.

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THE PROCESSES OF CHANGING IN CHILDREN'S BODY COMPOSITION – A REVIEW

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ABSTRACT

The measurement of body composition has assumed an important role in research studies as well as in the clinical practice. There are features of body composition development, including variations associated with age and sex. Present state of knowledge is based largely on differences between age groups and not on longitudinal changes. The purpose of present research was to present a process of changing in body composition during child growth and development from birth until the end of puberty. The newborn child has a much smaller muscle mass than the adult (25 % vs. 40 % of body weight) with the greatest growth in the first two post-natal months. A higher decrease in extracellular and increase in intracellular fluids are observed in boys, indicating their larger muscle cell mass. Sexual differences are later increasing: at ten years, girls are 5 % fatter than boys (18 % vs. 13 %). Fat mass is growing till puberty, when males undergo a phase of fat mass loss until the usual 15 % fat content of young adult males is reached. In girls % of body fat decrease and become stable at adult's 25 %. The mineral content of bones increases linearly with age with no sex differences in childhood. Boys are enlarging their bone mineral content during the late puberty and continue to increase into the 20s what define their higher bone density. Regular physical activity during childhood and puberty has a favourable influence on growth, maturation and healthy body composition.

Keywords: body composition, childhood, adolescents

INTRODUCTION

The measurement of body composition has assumed an important role in research studies as well as in the clinical practice (Rogol, Clark and Roemmich, 2000; 2002). The body composition development is the result of morphological, metabolic and genetic factors acting in various degrees at different life times (Knittle, 1978). The body composition of a child is changing during aging. There are features of body composition development, including variations associated with age and sex (Van Loan, 1996; Malina, 1996). At least basic information as body weight and height and body composition is usually needed by physicians and other health or fitness related professionals to monitor a child's growth and development. In the roughest form body composition refers to the proportion of fat (FM or %BF) and fat-free mass (FFM) (Rogol et. al, 2000; 2002). The regional variation in body composition is

well investigated for adipose tissue per age, sex and ethnicity. Present state of knowledge is based largely on differences between age groups and not on longitudinal changes (Malina, 1996). At birth an infant's size is more determined by maternal nutrition and other environmental factors than by genetic makeup. While adult heights, tempo of postnatal growth, skeletal and sexual development are significantly influenced by genetic factors. The overall contribution of heredity to adult size and shape varies also with environmental circumstances. Nutrition, including energy and nutrient intake is a major environmental determinant of growth. In under-nutrition growth and development of muscles are affected more than bones. Under-nutrition is also associated with late age of menarche (Rogol et. al, 2000; 2002). The purpose of this research is to present the process of changing in body composition during child growth and development from birth until the end of puberty. Only well understanding of a child physical development allows us to detect individual's deviation from age, gender and race specific growth standards and in so far as it is necessary to take action as soon as possible.

METHODS

For the preparation of the present review of changing in body composition in children and adolescents from birth to the end of puberty the key related literature was examined with an emphasis on the state of the art scientific books and book chapters, supported by articles with related content.

RESULTS AND DISCUSSION

Basics of human physical growth and development

The water compartment of FFM in human's decreases with aging, from about 81 % in the newborn's to 73 % in adults. In parallel the proteins and mineral content of FFM is increasing (Susanne and Bodszar, 2004). The newborn child has a much smaller muscle mass than the adult (25 % vs. 40 % of body weight). By the age of one year body weight (BW) and body length (BL) increase progressively: 3-fold in BW and 1.5-fold in BL. The greatest growth is in the first two post-natal months. Sexual difference first appearing at five years: girls are in average 2 % fatter and have lower minerals (0.3 %) than boys of the same age. Sexual differences are than increasing: at ten years, girls are 5 % fatter than boys (18 % vs. 13 %). A higher decrease in extracellular and increase in intracellular fluids are observed in boys, indicating their larger muscle cell mass. FM is increasing till puberty, when the growth spurt occurs (Van Loan, 1996, Rogol, et al 2000; 2002). Puberty is characterized by the greatest sexual differentiation since foetal life and the most rapid rate of linear growth since infancy. In pre-puberty growth (GH) and thyroid hormones are primary essential to growth. In puberty, the interaction of sexual hormones with GH becomes determinant for growth spurt and

sexual maturation (Rogol et al 2000; 2002). On average female entry puberty earlier than males, but have lower increments. Their average peak high velocity is 9 cm per year at the age 12 and a total gain in height of 25 cm during the pubertal growth period. Boys attain a peak high velocity of 10.3 cm/year, on average 2 years later than girls, and gain 28 cm in height. Greater growth spurt and longer duration of growth in boys results in an adult height differences between sexes. Puberty is also a time of significant weight gain; peak weight velocity occurs immediately after peak height velocity and in boys averages 9 kg/year at 14 years and girls 8.3 kg/year at 12 years (Rogol et al 2000; 2002). Almost all the sexual differences in adult body composition are the result of body compartments growing in puberty. Males undergo a phase of fat mass loss (especially in the limbs) until the usual 15 % fat content of young adult males is reached. In girls % BF decrease (fat mass would not) and become stable at 25 %. As height velocity decline, fat accumulation reassume in both sexes but is twice as rapid in girls. Puberty including the regional fat distribution changing in terms of increasing sexual dimorphism. The increase in FFM exceeds the gain in body weight due to the loss of adipose tissue. Under the influence of testosterone boys have a significant increase in growth of bone and muscle. As height velocity decline, fat accumulation reassume in both sexes but is twice as rapid in girls. The young adult amount of FFM is in girls achieved at 15-16 years and at 19-20 in boys (Sussane & Bodszar, 2004).

Adipose tissue growth and development

Adipose tissue can be divided in deep-seated and the subcutaneous part. The infant has little visceral fat and well developed subcutaneous fat. The fat content increases from birth to 6 months, but the rate of fat accumulation than rapidly falls and a plateau is reached at the end of the first year. A slight decrement occurs until the age of 7, following with the fat re-accumulation. There are critical periods in adipose tissue development: from birth to 2 years of age and from pre-puberty to 16 years, in both alterations in adipocyte number and size was observed in non-obese subjects. Once hyper-cellularity of fat tissue is achieved it cannot be altered by dietary regimes (Knittle 1978; Knittle, Timmers, Ginsberg-Fellner, Brown and Katz, 1979). The nature of the relationship between stature and skinfolds thicknesses is changing during growth and development. Regardless the kind of relationship between subcutaneous fat and stature, they are not independent. Subcutaneous fat amount and body length are low correlated in infancy (Himes & Roche, 1986), when visceral fat is low and subcutaneous fat is well developed (Knittle, 1978). The correlation is increasing in childhood and puberty and low association could be found on the threshold of adulthood (Himes & Roche, 1986).

Bone tissue growth and development

The mineral content of bones increases linearly with age with no sex difference in childhood. In early adolescence girls have a little higher bone content due to earlier growth spurt. The sex difference for bone body composition department is established in late adolescents. Boys are increasing their bone mineral content during late adolescent, and continue to increase into the 20s when growth in height is already finished. The growth curve for bone mineral content (BMC) in girls reach a plateau at about 15 to 16 years. Only a small increase in late adolescents is observed (Malina, Bouchard & Bar-Or, 2004). The development of the cartilaginous model into bone includes growth in length and width, changes in density. Bone length is mainly determined by inherent factors with the exception of the extreme environments in which excessive loads attribute to premature epiphyses closure. Bone growth in length slows down in order to retain its configuration in continues mechanical stress. Growth in bone diameter is largely influenced by exercise; compressive forces of muscular tension serve as the stimuli for lateral growth. Exercise is known to increase bone density while inactivity bone decalcification (Bailey, Malina & Rasmussen, 1978).

Skeletal muscle tissue growth and development

In humans the number of muscle fibres increase prenatally and only for a short period also after birth. Postnatal increase in muscle girth is due to hypertrophy. Growth in muscle length occurs due to the growth of existing sarcomeres, but the increase in sarcomere number is the main factor of muscle growth. Fibres enlargement is associated with an increase number of nuclei. Sex differences in muscle tissue amount are small before puberty, when males gain considerably more muscle mass than females and the sex difference persists through life (Malina, 1978). At birth the trunk account about 40 % of body musculature, but only 25 % at maturity. Muscle mass of the extremities increase in size during childhood and adolescents and have a growth pattern similar to body weight. In puberty boys develop considerably larger muscle widths of the arm and calf. By 18 years of age, arm musculature of males is 25 % larger than females. Their peak gain in muscle mass occurs after the peak height velocity but the spurt is twice as large as in girls (Malina, 1996).

Body composition and physical activity during human growth and development

Regular physical activity (PA) during childhood and adolescents has a favourable influence on growth and maturation. Moderate to vigorous aerobic exercise was negatively related to body weight and subcutaneous fatness but not related to stature in preadolescents (Raudsepp & Pall, 1999). The functional capacity of children is closely to their body size and to the dimensions of their active muscle mass (Davies, Barnes & Godfrey, 1982). Exercise is known to increase bone density while inactivity bone decalcification. Weight bearing and muscle contraction is indispensable for bone growth and maintaining the structure of bone

tissue, but is difficult to accurately define how much activity is necessary for optimal bone growth (Bailey et al., 1978). An increase in muscle size due to exercise is connected to hypertrophy; only in earlier stages of postnatal growth hyperplastic growth is possible. Physical activity is an important factor in maintenance of appropriate body weight and levels of fatness.

CONCLUSIONS

The body composition development is the result of morphological, metabolic and genetic factors acting in various degrees at different life times. At birth an infant's size is more determined by maternal nutrition and other environmental factors than by genetic makeup. While adult heights, tempo of postnatal growth, skeletal and sexual development are significantly influenced by genetic factors. Almost all the sexual differences in adult body composition are the result of body compartments growing in puberty. Puberty including the regional fat distribution changing emphasises sexual dimorphism in body composition. Influence of testosterone in boys significantly increases growth of bone and muscle, while a higher adult fat free mass. As height gain decline, fat accumulation reassume in both sexes but is twice as rapid in girls; result in their higher adult body fat percent. Physical activity is an important factor for maintain an age appropriate body composition.

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EFFECTS OF ACUTE PHYSICAL EXERCISE TRAINING ON MATHEMATICAL COMPUTATION IN YOUNG CHILDREN

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ABSTRACT

The aim of this study was to determine whether acute physical exercise may increase the ability to quickly solve basic mathematical operations in young children. In this way the children acquired the means to, when necessary, activate a larger area of the brain.

Participants who met the test of basic mathematical operations before and after physical exercise were 288 children of preschool, and 128 of school institutions, and 13 from special school (slightly mentally-retarded children). Participants who met the test of basic mathematical operations before and after hours without physical exercise were 18 from pre-school and 67 from school institutions. The results showed that children's computation performance was enhanced significantly in the groups with 30, or 45, or 60 min of physical exercise, but not in the groups without physical exercise.

Key words: computation performance in children; cognitive abilities; physical exercise; neural networks

INTRODUCTION

Tendency in the current school system, and in society in general, is to put more emphasis on the development of children's cognitive functioning than on the proper motor activity, thereby largely ignoring its importance in children's development, not only from a biological point of view. Increasingly we hear suggestions about the need to abolish physical education in primary and secondary schools because, allegedly, this time can be better spent teaching other subjects, mathematics, physics and the like. Furthermore, despite position from experts to introduce a minimum of three hours of physical education a week, it is clear that the state institutions do not look favorably on this proposal, despite the fact that there is plenty evidence that indicate the positive impact of motor activity, not only on the whole biological development and health status but also on the mental development, and the whole range of cognitive and conative dimensions of personality. Gabbard and Barton (1979) assessed the mathematical computation performance of 106 6th-grade boys and girls before and immediately following 20, 30, 40, and 50 min of vigorous physical activity. Contrary to the researcher's predictions, children's computation performance was enhanced significantly

following 50 min of exercise. Ryuta Kawashima (2008) found in his research that simple calculations activated the brain more effectively than any other activity. He also discovered that the best way to activate the largest regions of the brain was to solve these calculations quickly. That is why he created the easy-to-solve problems.

The aim of this study was to determine whether acute physical exercise may increase the ability to quickly solve basic mathematical operations in small children. This work was realized within the research project "Possibilities of improvement of intellectual, motor and cardio-respiratory abilities of children by means of kinesiological activities", which is funded by the Ministry of Education and Science of the Republic of Serbia, and realized by Faculty of Sport and Physical Education, University of Novi Sad (author and project manager prof. dr Gustav Bala, 2010-2014).

METHODS

Participants who met the test of basic mathematical operations before and after physical exercise were 288 children of preschool (ages 5-6), and 128 of school institutions (ages 7-8), and 13 of special school (slightly mentally-retarded children, ages 13-14). Participants who met the test of basic mathematical operations before and after class without physical exercise were 18 of pre-school (ages 5-6) and 67 of school institutions (ages 7-9). Type of institution (Group), number of children in groups (N), and activities during school class (Mode) are listed in the appropriate columns of Tables 1 and 2. Since the previous research on young children from the same geographical area, which had similar socio-economic status, found that there was no statistically significant differences in cognitive abilities between boys and girls aged 4 to 10 years (Fajgelj, Bala, and Tubić (2007), analysis were carried out in each subsample for boys and girls together. Test to assess the success of solving basic mathematical operations consisted of 40 tasks with the operations of addition and subtraction (same difficulty level for pre-school and school age), and multiplication and divisions (same difficulty level for school age). Each task had only 2 members, the corresponding mathematical operation symbol and an equal sign (eg., $3+5=$, $10-7=$, $2 \times 3=$, $6:2=$), and respondents were asked within 2 minutes to solve and write down solution for each task as soon as possible. The test result was the number of correct answers. Each group of children provided the consent of parents and teachers to meet the test. The same test with 40 tasks, with a short appropriate instructions, was applied in all subsamples of children prior to the class activities. Each child received a single sheet of printed tasks and pencil with a rubber band. In case of an incorrect response the child was able to erase an answer, or cross it out and then enter another result. Children from each group started the test at the same time. After 2 minutes the proctor finished the testing and collected all the

tests. Afterwards, the teacher began the implementation of relevant activities in class. At the end of the lesson the children were given the same mathematical tasks. After 2 minutes the testing was finished. For each subsample of children there were calculated basic statistics (mean - M, standard deviation - SD, standard error of the mean - SEM, minimum - MIN and maximum - MAX score in the test). Significance of differences between the test results before and after class activity was analyzed using a nonparametric technique of Wilcoxon Sign Test and Signed Test, but also parametric techniques Paired-samples t test (t). Since all techniques gave synonymous results, only the result of the last analysis techniques significance of differences (p) between the test results before and after appropriate class activity were shown.

RESULTS

Table 1. Differences in the successful solving of elementary mathematical problems before and after physical exercise

Group	M o d e	N	MIN	MAX	M	SD	SEM	t	p
Sp. school Preschool Novi Sad	Before physical exercise	47	0	40	12.1	14.1	2.1	-4.96	0.01
	After 60 min physical exercise	47	0	40	14.9	14.9	2.2		
Preschool Novi Sad Novo Naselje	Before physical exercise	121	0	28	4.1	4.6	0.4	-6.94	.01
	After 30 min physical exercise	121	0	34	5.8	6.1	0.5		
Preschool Novi Sad	Before physical exercise	24	0	17	4.5	3.3	0.6	-4.29	0.01
	After 30 min physical exercise	24	1	23	6.5	5.0	1.0		
Preschool Subotica	Before physical exercise	96	0	40	15.1	13.6	1.4	-5.84	0.01
	After 30 min physical exercise	96	0	40	17.6	14.4	1.4		
Sp. school School Novi Sad	Before physical exercise	26	2	40	19.6	10.2	2.0	-4.06	0.01
	After 60 min physical exercise	26	2	40	22.1	10.2	2.0		
School 1 st grade Belgrade	Before physical exercise	28	2	40	29.1	10.8	2.0	-4.29	0.01
	After 45 min physical exercise	28	3	40	33.3	10.1	1.9		
School 2 nd grade Belgrade	Before physical exercise	24	6	32	19.4	6.0	1.2	-5.82	0.01
	After 45 min physical exercise	24	14	39	24.8	5.5	1.1		
School 1 st -3 rd Sombor	Before physical exercise	150	8	40	31.1	8.6	0.7	-10.31	0.01
	After 45 min physical exercise	150	8	40	34.3	7.8	0.6		
Slightly mentally- retarded children	Before physical exercise	13	6	40	20.6	10.8	2.9	-3.26	0.01
	After 45 min physical exercise	13	8	40	24.8	10.8	2.9		

The results showed that children's computation performance was enhanced significantly in the groups with 30, or 45, or 60 min of physical exercise (Table 1). The calculated standard errors of means (SEM) can be applied in assessing the range of possible results of the means in the case before and after application of the appropriate types of activities in class at pre-schools and schools for the population from which small samples of respondents were drawn.

Table 2. Differences in the successful solving of elementary mathematical problems before and after school hours without physical exercise

Group	M o d e	N	MIN	MAX	M	SD	SEM	t	p
Preschool Novi Sad	Before drawing class	18	2	18	6.2	4.5	1.0	3.74	0.22
	After 45 min drawing class	18	2	16	4.8	4.2	1.0		
School 1 st grade Sombor	Before mathematics class	24	6	40	28.3	9.2	1.8	-1.02	0.32
	After 45 min mathematics class	24	3	40	29.2	10.1	2.0		
School 4 th grade Belgrade	Before drawing	18	31	40	37.5	3.3	0.7	-1.36	0.19
	After 45 min drawing	18	31	40	38.5	2.2	0.5		
School 1 st grade Belgrade	Before English class	25	13	40	29.3	9.4	1.8	-2.01	0.06
	After 45 min English class	25	9	40	32.9	8.7	1.7		

Basic statistics and the significance of differences between means before and after class without exercise training in appropriate groups of children are in Table 2. It may be noted that although the results have improved, on average, there were no statistically significant increase in mathematics test results. In pre-school in Novi Sad the children had even impaired results. This indicates that the classes where there was no physical exercise did not produce a significant improvement in mathematics test results, probably neither in the activation of brain function in these children.

DISCUSSION

Quick resolution of short and simple mathematical tasks activated a large area of the brain (Kawashima, 2008). It is known that physical exercise with high intensity, even acute (which refers to one or a couple of hours of practice), particularly chronic (several months and years), can increase the brain activity. Thus, increased brain activity in physical training increases the capacity for mathematical function, which affects the integrated activity of the cerebral cortex and, possibly, the entire functioning of the nervous system, the level and quality of concentration, and thus also the cognitive functioning of children.

The results of this study confirm the findings of McNaughten and Gabbard (1993) who evaluated the mathematical computation speeds of 120 6th-grade boys and girls and found that performance was significantly better following paced walks of 30 and 40 min duration than following 20 min of such exercise. There were no differences by gender of subject.

Similar research was conducted by Raviv and Low (1990) who compared children's rapid letter/cancellation performance prior and following physical education classes and science classes. Children's performance improved following both classes, suggesting to the researcher that the physical excitement, associated with traditional physical education classes, does not impair children's academic performance in other classes.

General results obtained in this study are consistent with findings of Tomporowski (2008) who concluded that physical exercise has an effect on specific cognitive functions and the ones most likely to define the role of central executive processor. This processor is part of the individual self, located in the prefrontal cortex and is responsible for the use of information, engagement, working memory, strategic planning and controlling behavior. Central executive processor governs everyday behavior, ie, adjusts to the demands of the environment, including its own intellectual abilities.

CONCLUSION

The author believes that even acute intensive physical training can yield positive effects on children's mathematical ability, not only through aerobic exercises, but through variety of exercises that are common in school-gyms. Furthermore, this physical exercises will create better conditions for increasing the quality of neural networks in young children. Generally, physical activity may influence brain health and cognition in children, which could enhance scholastic performance and greater overall cognitive functioning across their lifespan (Hilman, Kamijo, and Scudder, 2011).

Acknowledgments

This work was realized within the research project "Possibilities of improvement of intellectual, motor and cardio-respiratory abilities of children by means of kinesiological activities", which is funded by the Ministry of Education and Science of the Republic of Serbia, and realized by Faculty of Sport and Physical Education, University of Novi Sad. The author is particularly grateful to PhD students of the University, who conducted the testing.

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DIFFERENCES IN THE LEVEL OF SOME GYMNASTICS SKILLS ACCORDING TO STUDENTS' DIFFERENT INVOLVEMENT IN EXTRACURRICULAR SPORTS ACTIVITIES

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IZVLEČEK

Po uradnih kurikulumih, mora poučevanje nekaterih gimnastičnih veščin se izvaja v telesno vzgojo v osnovni šoli. Vendar pa je zaradi različnih dejavnikov regulatorja, predvsem zaradi neustreznih materialnih pogojev, učenje gimnastičnih spretnosti odsoten. Poleg šolskega sistema, poučevanja in usposabljanja strukturno enostavnih gimnastičnih spretnosti je treba opraviti v izvenšolskih športnih dejavnosti zaradi pozitivnega prenosa gimnastičnega znanja o veščinah različne športne discipline. V skladu s temi dejstvi, je bil cilj te študije: 1) določi raven gimnastičnih veščin iz uradnega učnega načrta športne vzgoje za šolske dekleta (N = 126) in šolskih dečkov (n = 110), šesti grederji; 2) Za določanje razlik v ravni analiziranih gimnastičnih spretnosti, ki upoštevajo vključevanje učencev pri izvenšolskih športnih dejavnostih. V skladu z določenimi rezultati študije šolske dekleta, na splošno, opravljajo analizirano gimnastično znanje za šolo znamke dobro (3) in šolskih fantov za šolo znamke zadostno (2). Ni bistvene razlike v stopnji gimnastičnih sposobnosti, v zvezi s sodelovanjem v izvenšolskih športnih dejavnostih, je bila določena na šolskih fantov, in za šolske dekleta, je bila pomembna razlika določiti le v stopnji kozolec.

ključne besede: dekleta šola, šola fantje, t-test, šolski kurikulum

INTRODUCTION

Artistic gymnastics is classified as a so-called basic sport, i.e. as a physical activity that contains such educational opportunities that cannot be compensated or can only be partially compensated by participating in other sport activities. Participation in these activities from the early age is of great importance because it gives a chance for anthropological characteristics, which are the basis for engagement in various other sports, to develop (Bala & Katić, 1989). These properties are primarily derived from the fact that the first programs in artistic gymnastics are designed for preschool children (from the age of 3) and based on learning and developing biotic motor skills. Biotic motor skills are considered to be fundamental and indispensable because they make a firm basis and the best preparation for

learning more complex motor skills (Payne & Isaacs, 2002; Gallahue & Donnelly, 2003). Respecting the basic didactic principles, biotic motor skills are upgraded with structurally simple, and later with more complex gymnastics skills from different apparatus of women and men artistic gymnastics. The possibility of acquiring a large number of diverse, structurally differentially complex motor skills allows children to create a high-quality fund of senso-motor experiences and functions that are one of the positive stimuli on their psychosomatic status.

Despite these findings, known in professional and scientific circles, it is very likely that the general population is not familiar with them and because of that children usually encounter gymnastic motor skills only in physical education classes. In school, however, despite of the fact that they are a part of official physical education programs for all grades of elementary school, due to the objective, and very often subjective factors of limitation in the implementation of the learning processes of gymnastics skills, gymnastics skills slowly disappear from the curricula (Wolf – Cvitak, 1999).

Relying on the thesis that sports educators are aware of the importance of high levels of biotic motor skills, and at the same time of structurally simple gymnastics skills, it is assumed that this knowledge is used in preparatory phases of young athletes or in a variety of extracurricular sports activities. The results of the study conducted on students of the Faculty of Kinesiology in Zagreb confirmed that this is not the case. According to the results of this study more than 40% of students (representing sports population), get acquainted with the gymnastics skills at the faculty for the first time (Hraski, Pedišić & Vunić, 2004).

Relying on the stated facts and research results, the goals of this study are being set: 1) to determine the level of gymnastics skills that are in the official curriculum for sixth grade elementary school students; 2) to analyze the differences in the level of gymnastics skills among female and male students with different levels of involvement in extracurricular sports activities.

METHODS

The sample consisted of 126 female and 110 male sixth grade students of three elementary school ("Bijaći" from Kaštel Novi, "Kman-Kocunar" from Split, "Knez Mislav" from Kaštel Sućurac), of chronological age of 12 years (\pm 6 months). On average, female students were 159.26 cm tall and weighed 49.73 kg, while male students were 159.31 cm tall and weighed 50.25 kg (Delaš, 2005). In addition to regular physical education, by their own choice, they were involved in extracurricular sport and other activities, except in artistic gymnastics. Information about their extracurricular activities was collected through questionnaires (Delaš,

2005). All students were clinically healthy and were regularly attending physical education classes following the official curriculum.

Gymnastics skills, whose level was investigated, were the official themes of physical education curriculum for the sixth grade of elementary school, and they partly differed with regard to student's gender. Motor skills that were common for female and male students were *cartwheel, handstand, squat vault and backward pullover mount*. *Scale and double leg pirouette for 180°* (on beam height 40 cm) was performed by female students only, and *forward shoulder kip from increase* (elevation height 80cm) was performed by male students only. Performances of those skills, through video record, were evaluated by six judges. With the aim of doing objective evaluations, at a seminar organized earlier, they were instructed about the correct performance of the selected gymnastics skills and about the newly designed criteria for evaluating those skills (Delaš, 2005). The newly designed criteria contained: 1) general instructions for evaluation - constructed on the basis of the table of general deductions (Code of Points, FIG, 2005; Table 1) and classified on a five-point Likert scale; 2) technical and aesthetic errors specified for each skill which, according to the experiential knowledge of the author, most often appear in key points of each skill. The judges, who have evaluated the performance of the analyzed gymnastics skills, were physical education professors with elective course in artistic gymnastics and gymnastics judges.

Table 1 General criteria for the evaluation of gymnastics skills

MARK	DESCRIPTION OF PERFORMANCE
5	Excellent - student performs the skill individually, without technical and aesthetic errors
4	Very good - student performs the skill individually, with minor technical and aesthetic errors
3	Good – student performs the skill individually, with middle size technical and aesthetic errors
2	Sufficient – student performs the skill individually, with great technical and aesthetic errors
1	Nonsufficient - student is not able to perform the skill

Metric characteristics of items of individual judges' scores were determined by the RTT program (designed by Momorović, written in the programming language Statistica Basic and implemented in the statistical package Statistica for Windows 5.0. by Dizdar in 1999). For the purposes of this study only RTT values (values of indicator of reliability calculated assuming an equal share of all the items in the right measurement subject) and AVR (values of indicator of homogeneity of the judges calculated based on the average correlation between the items) will be presented. The total score of evaluations for each gymnastics skill was

obtained by calculating the average result in the items. The total scores of individual skills were analyzed by Statistica for Windows, ver. 6.0. on Basic central and dispersion parameters of variables were calculated: mean (Mean), standard deviation (SD), minimum and maximum values (MIN and MAX), a measure of asymmetry (Skewness) and peakedness (Kurtosis) of the result distribution.

T - test for independent samples was used to analyze the differences between female and male students in the level of gymnastics skills, according to their different involvement in extracurricular sports activities, at a significance level of 0.00 (p-level).

RESULTS

The results of metric characteristics (reliability and homogeneity) and descriptive parameters of the judges' scores given for *cartwheel*, *handstand*, *squat vault* and *backward pullover mount* performed by both samples, for *scale and double leg pirouette for 180°* performed only by female students, and for *forward shoulder kip from increase* performed only by male students are presented in Table 2.

In both samples the results of metric characteristics determined that measuring instruments (judges) exhibit a high degree of reliability (RTT) since the value of this indicator is in the range of 0.96 - 0.99 for female students and from 0.97 - 0.98 for male students. Based on the values of the indicator of homogeneity (AVR is in range from 0.80 - 0.93 for female students and from 0.83 - 0.93 for male students) it can also be concluded that there was high homogeneity of the judges. These results are consistent with previous studies investigating the judging scores (Brindl, 1972; Hraski, 1988; Živčić, 1989; Bučar, Čuk, Pajek, Karacsony & Leskošek, 2012; Bučar Pajek, Čuk, Pajek, Kovač & Leskošek, 2013).

On the sample of female students the average value scores for performing a *cartwheel*, *handstand*, *scale and double leg pirouette for 180°* and *backward pullover mount* were in the range from 2.52 (Mean_{HANDSTAND}) to 2.74 (Mean_{SCALE AND DOUBLE LEG PIROUETTE FOR 180°}), whereas the average value for *squat vault* was 2.23. The minimum value (MIN) determined in all skills was 1.00, while the maximum value (MAX) in four skills was 5.00, and in *squat vault* was 4.25. The values of Skewness were in the range of values from -0.14 (Skew_{SQUAT VAULT}) to 0.76 (Skew_{SCALE AND DOUBLE LEG PIROUETTE FOR 180°}). The values of Kurtosis were mostly negative and in the range of values from -1.02 (Kurt_{HANDSTAND}) to 1.35 (Kurt_{SCALE AND DOUBLE LEG PIROUETTE FOR 180°}).

On the sample of male students the average values ranged from 1.56 (Mean_{FORWARD SHOULDER KIP FROM INCREASE}) to 2.58 (Mean_{SQUAT VAULT}). The minimum value (MIN) in all skills was 1.00,

while the maximum values ranged from 4.11 ($MAX_{HANDSTAND}$) to 4.83 ($MAX_{SQUAT VAULT}$). The values of Skewness were in the range from 0.09 ($Skew_{SQUAT VAULT}$) to 1.81 ($Skew_{FORWARD SHOULDERKIP FROM INCREASE}$). The values of Kurtosis ranged from -0.65 ($Kurt_{BACKWARD PULLOVER MOUNT}$) to 3.18 ($Kurt_{FORWARD SHOULDERKIP FROM INCREASE}$).

Table 2 Descriptive statistic parameters and metric characteristics of judges' scores given for performance of gymnastics skills by male and female students

	Mean	SD	MIN	MAX	Skew	Kurt	RTT	AVR
FEMALE STUDENTS								
CARTWHEEL	2.72	0.96	1.00	5.00	0.13	-0.53	0.98	0.88
HANDSTAND	2.52	1.03	1.00	5.00	-0.14	-1.02	0.98	0.91
SCALE AND DOUBLE LEG PIROUETTE FOR 180°	2.74	0.71	1.17	5.00	0.76	1.35	0.96	0.80
SQUAT VAULT	2.23	0.86	1.00	4.25	0.36	-0.43	0.97	0.85
BACKWARD PULLOVER MOUNT	2.61	1.16	1.00	5.00	0.24	-0.76	0.99	0.93
MALE STUDENTS								
CARTWHEEL	2.01	0.89	1.00	4.58	0.82	0.03	0.97	0.85
HANDSTAND	1.74	0.84	1.00	4.11	1.05	0.15	0.99	0.93
FORWARD SHOULDER KIP FROM INCREASE	1.56	0.72	1.00	4.17	1.81	3.18	0.97	0.83
SQUAT VAULT	2.58	1.04	1.00	4.83	0.09	-0.61	0.97	0.84
BACKWARD PULLOVER MOUNT	2.22	0.95	1.00	4.67	0.42	-0.65	0.98	0.89

Differences in the level of gymnastics skills, based on different extracurricular sports activities of students, have been analyzed by the independent samples t-tests (Table 3).

On the sample of female students the independent samples t-test determined that there was a significant difference in the level of *cartwheel* among female students who were not engaged and those who were engaged in extracurricular sports activities. In the performance levels of *handstand*, *scale and double leg pirouette for 180°*, *squat vault* and *backward pullover mount* among these subsamples, no significant differences were found.

The results of the independent samples t-test, on the sample of male students, showed no significant differences in the performance level of the analyzed gymnastics skills among male students who were not engaged and those who were engaged in extracurricular sports activities.

Table 3 Differences between groups of male and female students with a different level of involvement in extracurricular sports in the level of performance of gymnastics skills

	EXTRACURRICULAR SPORTS INACTIVE	EXTRACURRICULAR SPORTS ACTIVE	INDEPENDENT SAMPLES T-TEST
FEMALE STUDENTS			

	N	Mean	SD	N	Mean	SD	t-value	p
CARTWHEEL	46	2.39	0.86	58	2.78	0.93	-2.18	0.03
HANDSTAND	46	2.21	0.97	58	2.60	1.08	-1.91	0.06
SCALE AND DOUBLE LEG PIROUETTE FOR 180°	46	2.64	0.63	58	2.79	0.77	-1.12	0.27
SQUAT VAULT	46	2.12	0.87	58	2.29	0.87	-0.71	0.48
BACKWARD PULLOVER MOUNT	46	2.29	0.90	58	2.46	1.12	-0.86	0.39
MALE STUDENTS								
CARTWHEEL	45	2.06	0.95	64	1.97	0.85	0.53	0.60
HAND STAND	45	1.70	0.82	64	1.77	0.86	-0.45	0.65
FORWARD SHOULDERKIP FROM INCREASE	24	1.54	0.57	38	1.58	0.81	-0.20	0.84
SQUAT VAULT	22	2.86	0.97	27	2.35	1.05	1.72	0.09
BACKWARD PULLOVER MOUNT	45	2.28	0.86	64	2.18	1.01	0.55	0.59

DISCUSSION

High values of indicators of reliability and homogeneity detected in all gymnastics skills, on a sample of male and female students, go in favor of the design of good and applicable criteria for evaluating the level of performance of gymnastics skills in the school system.

The range of marks, detected on a sample of female students, in the skills *cartwheel*, *handstands*, *scale and double leg pirouette for 180°* and *backward pullover mount* shows that within this sample there were female students who, according to a defined set of evaluation criteria, could perform gymnastics skill without any technical and aesthetic errors (MAX = 5.00), but also those students who could not perform the skill independently (MIN = 1.00). However, according to the results of the average values, which are generally located on the lower side of the scale of the school mark *good* (Mean from 2.52 to 2.74), it can be concluded that this sample of female students generally performed these four skills with a large to medium technical and aesthetic errors. Within these four skills, according to the values of Skewness and Kurtosis, the level of performance of *scale and double leg pirouette for 180°* is emphasized. In this skill, although arithmetic mean shows the value that corresponds to the school mark *good*, considering the values of Kurtosis ($Kurt_{SCALE AND DOUBLE LEG PIROUETTE FOR 180^\circ} = 1.35$), and parallel to it, the size and sign of the Skewness ($Skew_{SCALE AND DOUBLE LEG PIROUETTE FOR 180^\circ} = 0.76$) it can be concluded that for a large number of female students the performance of this skill was slightly more difficult than the performance of the other gymnastic skills analyzed. Since it is the skill that unites performance of equilibrium position (balance) and dynamic elements (*double leg pirouette for 180°*) and all in reduced

surface support, this result is not surprising. Maintaining balance while performing dynamic skills in puberty (probably the majority of this sample is in puberty; Delaš, 2005) is difficult, which was also determined on a sample of elite gymnasts (Erceg, Delaš Kalinski, Milić, 2014). However, according to the obtained results, the skill *scale and double leg pirouette for 180°* was not the most difficult skill to perform for female students school girls - it was the *squat vault*. The results for this skill determined that the mean value corresponds to school mark *sufficient* ($\text{Mean}_{\text{SQUAT VAULT}}=2.23$), and the maximum value corresponds to school mark *very good* ($\text{Max}_{\text{SQUAT VAULT}}=4.25$). Based on these results we can conclude that this sample of female students generally performs this skill with great technical and aesthetic error and that not one student could perform this skill without any errors. The reason why the vault skills are slightly more difficult to non-gymnastics population probably stems from the fact that, in relation to the performance of the other analyzed skills, with this skill the learner, apart from the need to manipulate the whole body, needs to overcome switching of the body over apparatus through a relatively small space. Because of the fact that female students of this age are usually in puberty (that is accompanied by an increase of primarily longitudinal dimensions, but also of voluminosity dimensions) the obtained result is imposed as a logical consequence of the aforementioned. However, such a conclusion requires further investigation of this problem. The opposite of the obtained results are the results determined on the samples of top gymnasts. Performing vault skills, based on the values of difficulty and execution scores, was determined as easier in comparison to performances on the other apparatus (Čuk & Atiković, 2009; Erceg, Delaš Kalinski & Milić, 2014.).

On the sample of male students, based on the results of the mean values, it can be concluded that almost all the analyzed gymnastics skills were generally performed for school mark *sufficient* ($1.54 < A < 2.28$) respectively with great technical and aesthetic errors. The exception to the previously stated is determined in the skill *squat vault* in which the mean score corresponds to the school mark *good* (3) and represents performances with middle sized technical and aesthetic errors ($\text{Mean}_{\text{SQUAT VAULT}}=2.86$). This result for *squat vault* (on the sample of male students) is in contradiction with the results determined for this skill on the sample of female students, and leads to two conclusions: 1) it is likely that male students, unlike female students, have not yet enter the period of puberty and experienced an increase in certain anthropometric dimensions which is why the performance of this skill was, probably, easier for them than for the female students; 2) because of the fact that *squat vault* is a dynamic skill in which the aesthetic component is not so pronounced, in comparison with the requirements for aesthetic components in other analyzed skills, and aesthetic component is one of the decisive items for judges in evaluating the performance level of this skill; it

actually gave an incentive to male students, who usually don't prefer aesthetic performances, to achieve a better (higher) mark for performance of this skill.

The analysis of the values of Skewness and Kurtosis on the sample of male students, leads to the conclusion that distribution of the results of *cartwheel*, *squat vault* and *backward pullover mount* did not significantly deviate from normal distribution of results, while significant deviations from the normal distribution were determined in *handstand* and *forward shoulder kip from increase*.

For *handstand* and *forward shoulder kip from increase* values of Skewness ($Skew_{HANDSTAND}=1.05$; $Skew_{FORWARD SHOULDERKIP FROM INCREASE}=1.81$) and Kurtosis ($Kurt_{HANDSTAND}=0.15$; $Kurt_{FORWARD SHOULDERKIP FROM INCREASE}=0.15$) reviewed with mean values ($Mean_{HANDSTAND}=1.74$; $Mean_{FORWARD SHOULDERKIP FROM INCREASE}=1.54$) that are on the beginning of the scale of school mark *sufficient*, lead to the conclusion that the performances of those skills for male students were generally more difficult than performance of the other analyzed skills. At *forward shoulder kip from increase*, further, a grouping of male students on a side of lower values of results was determined.

The results of the independent samples t-test, on the sample of female students, showed significant differences between extracurricular sport active and extracurricular inactive female students only in the level of performance of *cartwheel*. According to the obtained results it can be concluded that female students who are engaged in extracurricular sports activities are more familiar with *cartwheel*, respectively it is a skill that is learned in extracurricular sports activities in which the female students are involved. Other analyzed gymnastics skills are equally known or unknown to female students who are involved and those who are not involved in extracurricular sports activities, since significant differences among these subsamples were not found.

On the sample of male students significant differences between male students who are not engaged and those who are engaged in extracurricular sports activities were not found in the level of any gymnastics skill analyzed. This further suggests that both subsamples of male students encounter these analyzed gymnastics skills equally, probably only in physical education. This result was not unexpected since, traditionally, male population from which the sample for this study was taken favored sports that do not require an aesthetic component.

CONCLUSION

The results of this study determined that extracurricular sports active female students are perform only one analyzed gymnastics skills (*cartwheel*) significantly better than extracurricular sports inactive school girls. Significant difference was not found in the sample of male students in performance of the analyzed gymnastics skills among extracurricular sports active and inactive male students. Based on these results, it can further be concluded that active female students probably perform *cartwheel* in extracurricular sports activities while they learn other analyzed gymnastics skills exclusively in physical education. Since skills like *handstands*, *scale and double leg pirouette for 180°*, *squat vault and backward pullover mount*, realistically require certain material conditions, besides teaching knowledge of the teacher, the obtained result can be considered as logical and expected.

General lack of knowledge of gymnastics skills determined in the sample of male students, which is probably partly a consequence of the general non-participation or a very small percentage of the male population participating in sports with an aesthetic component, unfortunately, was an expected, but an unsatisfactory result. That is primarily due to the fact that in these sports, especially in artistic gymnastics, in addition to the aesthetic aspect of movement, one also works on learning motor skills that affect the development of a wide range of anthropological characteristics of children and create a solid basis to build specific skills from all other sports. Accordingly, the authors consider that it is important to encourage informing of parents and children about all positive impacts that artistic gymnastics has on a young child.

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EPIDEMIOLOGY OF CHILDREN INJURY IN SLOVENIAN COASTAL REGION

EPIDEMIOLOGIJA POŠKODB OTROK SLOVENSKE OBALNE REGIJE

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ABSTRACT

In the current times we can notice a large amount of sports/physical inactivity among children and young people which results in the increase of different sedentary lifestyle patterns. The number of skeleton injuries, degenerative bones and joints infections and diseases as well as spine injuries and diseases, which are all largely related to the inactive lifestyle, has been rising. Falls are the fourth leading cause of children's injury deaths and the leading cause of hospitalization and emergency department visits in Slovenia. Everything stated above dictates the necessary to carefully research the children's health and physical status. In 2011 in Izola general Hospital we examined 1,158 children and youth from the Slovenian coastal region, aged 0-16 years, who had visited a doctor or been sent to hospital for treatment because of injury. The results showed more boys than girls were treated because of injuries (60.36%) and most of them suffered fall-related injuries. Child and youth injuries, especially fall-related ones, are the country's big health problem, which is certainly not given enough attention. This results in the overall poorer quality of life of an individual as well as the society (diseases, injuries, absence from work, prolonged hospital stay, poorer work performance and creativity etc.) and thus imposes a large economic burden on the country. It is the task of all public sectors to be conscious of this issue and to be aware of the importance of prevention programs as well as strategies to prevent injuries among children and young people.

Keywords: Falls, physical/sport activity, modern lifestyle, fundamental movement patterns, responsibility.

IZVLEČEK

V današnjem času je moč zaslediti, da je veliko otrok in mladih gibalno/športno neaktivnih, s tem pa naraščajo različni vzorci sedentarnega življenjskega sloga. Narašča število poškodb skeleta, vnetih in degenerativnih bolezni kosti in sklepov, bolezni in poškodb hrbtenice, ki so v veliki meri tudi povezane z neaktivnim življenjskim slogom. Poškodbe zaradi padcev pri otrocih so četrti najpogostejši vzrok umrljivosti in glavni vzrok hospitalizacij in pregledov v urgentnih ambulantah v Sloveniji. Vse navedeno narekuje potrebo po proučitvi zdravstvenega ter gibalnega statusa otrok. V letu 2011 smo v Splošni bolnišnici Izola proučili 1158 otrok in mladostnikov starih med 0 in 16 let slovenske obalne regije, ki so zaradi poškodb obiskali ali bili napoteni v bolnišnično obravnavo. Ugotovili smo, da je bilo zaradi poškodb obravnavanih več dečkov (60,36%) ter, da se je večina poškodovancev poškodovala zaradi padcev. Poškodbe otrok in mladostnikov, predvsem tiste zaradi padcev, so velik zdravstveni problem države, kateremu posvečamo premalo pozornosti. Posledično se to odraža v splošnem zniževanju kakovosti življenja posameznika in vedno tudi družbe (bolezni, poškodbe, odsotnost od dela, povečanje bolnišničnih dni, slabša delovna uspešnost in kreativnost, itd.), kar pa predstavlja veliko ekonomsko breme države. Naloga vseh javnih sektorjev je zavedanje te problematike in pomena preventivnih programov ter strategij preprečevanja poškodb otrok in mladostnikov.

Ključne besede: padci, gibalna/športna aktivnost, sodobni življenjski slog, elementarni gibalni vzorci, odgovornost.

INTRODUCTION

Injuries among children and young people are a rising health and economic problem of the country. A report from the National Institute of Public Health (2010) estimates that most injuries (73%) occur at home and in leisure time, especially among children, people with lower socioeconomic status and older people. In Slovenia the child and youth mortality that results from traffic injury, falls or poisoning is higher than the developed EU countries' average. In the last few years the number of fall-related deaths has grown whereas the number of traffic-related deaths has fallen (IVZ, 2011). The drop in traffic-related child and youth mortality is related to the highly successful prevention programs and other safety measures, which were adopted in the Strategy of the Republic of Slovenia for Children's health related to Environment for the Period 2012-2020. On the other side, fall-related injuries, which

happen at home and in leisure time, and are the cause of a high mortality rate among children and youth, are increasing and therefore this issue requires our special attention. The international assessment conducted by the European project Tools to Address Childhood Trauma, Injury and Children's Safety (TACTICS) showed a lower score in fall-related safety, compared to other safety fields (MacKay and Vincenten, 2012a). In comparison to other countries, the high rate of fall-related deaths and deaths which result from drowning is alarming among boys aged 15-19 years (MacKay and Vincenten, 2009). This situation could be improved by promotional activities to improve public awareness of the risks causing children's falls and the safety measures (MacKay in Vincenten, 2012b). The Strategy of the Republic of Slovenia for Children's health related to Environment for the Period 2012-2020 (2011) mentions physical activity being a part of fall prevention and emphasizes the problem of childhood obesity. Strel and his colleagues (2008) report that in the years 1987-2007 the rate of overweight and obese children aged 6-19 years grew from 15,6 % to 28,9 % (boys) and 24,1 % (girls).

The National Institute of Public Health (IVZ, 2013) states that participating in sport and recreation are among the leading activities of young people (aged 15 years and over) who also suffer most sport-related injuries. In Slovenia most sport-related youth injuries occur as a result of falls, hitting an object, being hit with an object or collision with another person (IVZ, 2010). Both domestic and foreign authors claim that boys are more involved in sport activities than girls therefore they suffer more sport-related injuries (Bilban in Djomba, 2007; Janssen, 2007; Latash, 2008; Lopez et al., 2007). The most common sport injuries among young people are knee and tibia injuries, head injuries, shoulder and upper arm injuries (IVZ, 2013). There are different types of injuries (superficial injury, wound, fracture, dislocation, sprain, strain, poisoning, etc.). In order to identify the cause and the circumstances of the injury, it is important to identify the external cause, which tells us whether the injury was unintentional, an accident (a fall, a traffic accident, a scald...) or deliberate (self-harm, interpersonal violence) (Laflamme et al., 1999, adapted from IVZ, 2013). The injury occurrence is related to injury risk factors, which represent a bigger or smaller risk for different types of injury/accident. Gender, age and ethnicity are the factors to various types of injuries. Some injuries are more common among females, other among males, some are typical of elderly people or children, others more often occur among certain nations and ethnic groups. The injury occurrence is partly related to the socioeconomic status, which is determined by education, income, social status as

well as the current environmental and time factors (Laflamme, 2009, adapted from IVZ, 2013).

According to the national data and trends, we will focus on data and trends in injuries among children and young people from the coastal region. Firstly, we will ascertain whether boys from the coastal region suffered more injuries than girls in 2011. Later on we will research the external causes of injuries, namely we will discover whether, in 2011, falls were the main cause of hospitalizations and hospital treatment also in the coastal region as they were at national level. We will look closely into types and number of injuries according to gender.

METHODS

Sample group

The study was conducted in Izola general Hospital, where we analyzed clinic visits of the children from the Koper health region, aged 0-16 years, which happened in 2011. There were 2,587 visits that year and we closely analysed 1,158 visits, which were related to unintentional injuries. The children were selected on the criteria of hospital treatment. The analysis included the children who, in the year 2011, visited or were sent to Izola general Hospital because of injury.

Variables

The following variables were taken from personal health records and electronic databases: gender, age, external cause of injury, type of injury.

Statistical methods

In the article we used descriptive statistics, conducted with Microsoft Office Excel software. Statistically important differences were tested with t-test for independent variables and confirmed with $p < 0.05$ risk.

RESULTS

Out of 2,587 treatments from the Koper health region in the year 2011, we closely analyzed 1,185 clinic visits of children and young people, aged 0-16 years, which were related to injuries.

The results show that 60.63% of boys and 39.64% of girls, aged 0-16 years, were injured in the coastal region in 2011.

The findings show (image 1) that most injuries happened as a result of falls, mostly from standing height (29%) or as a result of hitting (25%), clumsiness (12%) and falls from height (6%). Boys and girls do not statistically differ according to the external cause of injury ($p=0.430$).

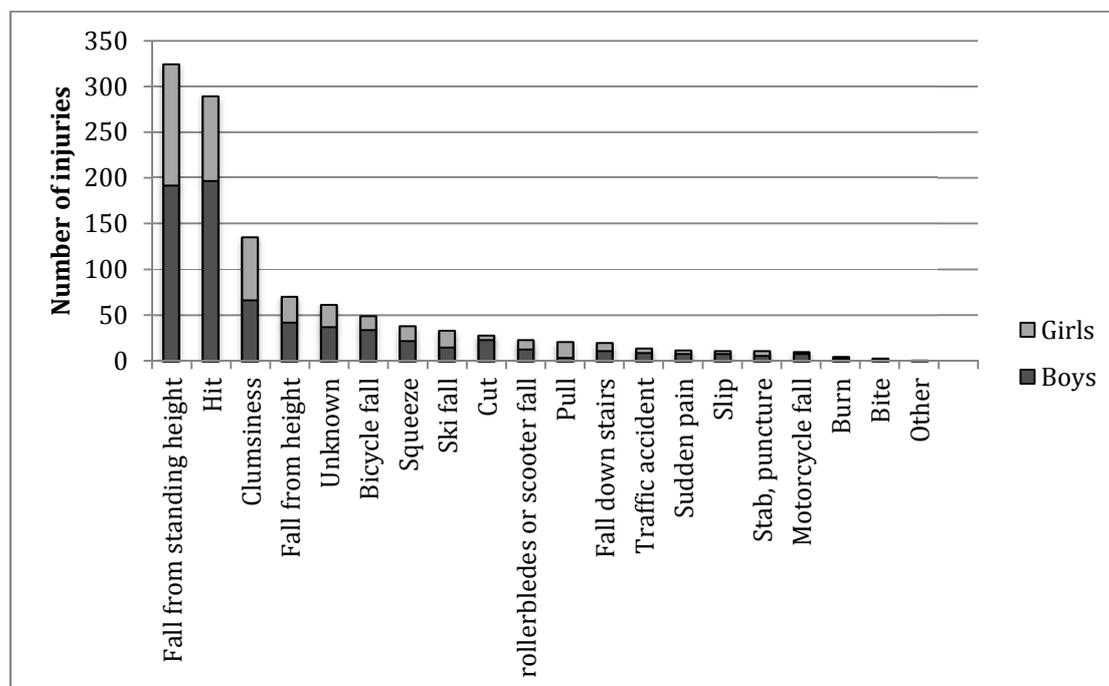


Image 1: Rate of children and youth hospitalizations (0-16 years) according to the external cause of injury (main diagnose from MKB-10) in 2011.

Image 2 shows different types of injury. In 2011 most children visited Izola general Hospital because of contusion (33%), sprain (20%), fracture (16%), open wound (15%) and epiphysiolysis (4%). Boys and girls do not statistically differ according to the external cause of injury ($p=0.473$).

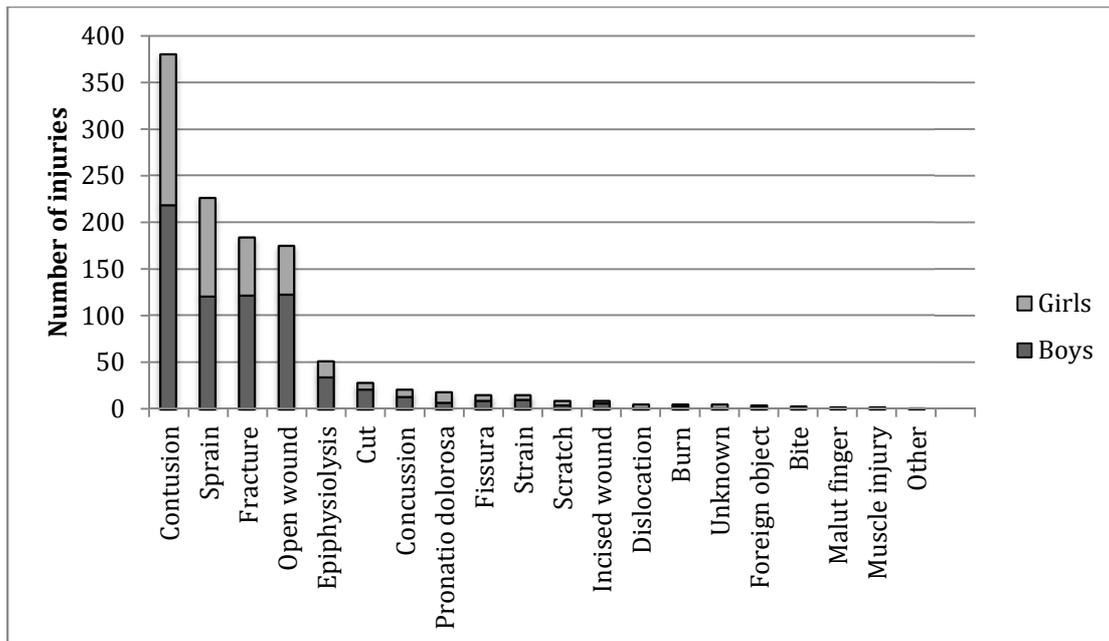


Image 2: Type of injury among children and young people aged 0-16 from the coastal region in 2011

DISCUSSION

Our findings show that in 2011 in the Koper health region more boys than girls were injured. The results indicate that most injuries result from falls, mostly from standing height, the most frequent type of injury is a contusion. Our data are consistent with the national data from the 2000-2005 period. On the basis of all the results we can conclude that falls are the leading cause of hospitalizations due to injury among children and young people. In both cases most falls happen from standing height. In the 2007 statement, the National Institute of Public Health states that in the 2000-2005 period, falls were the fourth leading cause of deaths and the leading cause of hospitalizations and emergency department visits. In Slovenia, in that period, falls were the cause of 52,7% of pre-school-aged children hospitalizations and 57,8% of school-aged children hospitalizations. The percentage is slightly lower among youth aged 15-24 years (35,5%), still most falls occurred from standing height (68,2%). In that period, the rate of hospitalization due to falls was rising together with the children's age. However, the rate decreased by 21% among young people in comparison with the older school-aged children. The occurrence of falls from standing height also increased together with age (IVZ, 2013). Some authors claim that boys more often suffer from injuries than girls (Bilban in Djomba, 2007; Janssen, 2007; Latash, 2008; Lopez et al., 2007). Similar results are mentioned in other countries; e.g. in the EU falls are also the fourth leading cause of deaths and the leading cause

of hospitalizations and emergency department visits due to injury (Rok Simon, M., 2007). Bauer and Steiner point that the decrease in fatal injury incidence (traffic accidents, workplace injury) and the increase of non-fatal injury (at home, in leisure time) can lead to the rise in the number of people with limited mobility and disability following injury (IVZ, 2013).

In our case, the leading type of injury is a contusion (33%), which is consistent with the Videmšek's (2009) research, conducted among pre-school children in 2009. According to her study, contusions were followed by sprains and scratches, fractures occurred least frequently. Our findings show that falls are followed by fractures (20%), open wounds (16%) and sprains (15%). On the national level, we have not come across any information about the type of injury among children and youth. However, some authors report about the injured organs and it would be advisable, in the future, to carry out a research or a study on the subject among children and youth in the Koper health region. Hovnik Rožen (2012) claims that in Slovenia as well as abroad, most playground-related injuries are minor injuries, 22-44% are major injuries, the most common being forearm and leg fractures, wounds and head contusions. Rok Simon et al states falls from playground equipment on improper surface, the equipment height and the surface (adapted from Hovnik Rožen, 2012). According to the statistics of the National Institute of Public Health of the Republic of Slovenia (for the 2000-2005 period) most children need hospital treatment due to head injury (34,2%), elbow and forearm injuries (24,1%) and knee and tibia injuries (14,2%). Among school-aged children and young people aged 15-24 years the rate of hospitalization due to sport equipment-related injuries (at school and other institutions and at home) grows together with their age (Rok Simon, 2007).

The United Nations Declaration on the Rights of the Child states children have the right to the best possible health and safe environment. It is entirely understandable that physical activity increases the possibility of injury. However, physical activity benefits the health and development of children and youth. Therefore it is the duty of every society to ensure the children's right to safety. The appropriate prevention strategies can reduce the number of injury-related hospitalizations and deaths. The prevention strategies include political decisions on national injury prevention strategies, safety promotion, safe products and environment design, training for staff who work with children and after all understanding the motor development and fundamental movement patterns in the early stages of child development. The effect of unsatisfactory adaptation of fundamental movement patterns and impaired

physical development might be crucial for the occurrence of fall-related injuries among children. Today, overprotecting parents may in a way prevent their children from participating in sports/physical activity, as adults have different child safety concerns. Some of us are not concerned about the risk factors because we have not had such an experience, others see the danger everywhere. However, such children do not have a chance nor get encouragement to develop their physical competence and a sufficient quantity as well as quality of movement experience in the early stages of child development. In the future it would be necessary to research the causality between injury occurrence and the development level of fundamental movement patterns. It may well turn out that this combination will predict the possibility of children's injuries.

CONCLUSION

In the last few decades an approach, typical of public health, has been enforced in the field of injury prevention. The approach is based on scientific findings and includes improvement in data monitoring, cause and risk factors analysis, reducing injury severity and development, implementation and evaluation of intervention (Peden et al., 2004, adapted from IVZ, 2013). Due to injuries we are losing mostly young people who will be highly important as a future driving force in this rapidly ageing population. According to some assessments, Slovenia has mainly been successful at ensuring traffic safety whereas the country should enhance attention to prevent injuries at home and in leisure time. This can be accomplished by taking measures which combine education, planning, changing the living environment to ensure better safety and control over the application of standards and regulations (MacKay and Vincenton, 2012a). In doing so, we must be aware of the importance of the development of a child's healthy fundamental movement patterns, which is essential for a healthy and safe lifetime physical and motor development. With intervention measures, which would indicate directives to prevent injuries resulting from a possible child's motorical (in)ability, we would contribute to motorically more successful and more capable children and create the foundation for a more harmonious and healthier development in the future.

Acknowledgements

The authors are thankful to Izola General Hospital– Department of Surgery and to Mladen Gasparini, the head author of the unpublished study Injuries of Children and Youth from the Koper Health Region.

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PHYSICAL SELF-PERCEPTIONS OF ELEMENTARY SCHOOL STUDENTS: DIFFERENCES BY GENDER AND SPORTS PARTICIPATION

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ABSTRACT

The objective of the study was to examine physical self-perceptions of elementary school students in relation to gender and their involvement in sports activities. The sample included 140 adolescents (70 girls and 70 boys) aged between 13 and 15 years. The Slovenian version of the Physical Self-Description Questionnaire (PSDQ) was used to measure multidimensional physical self-concept. Students who were engaged in regular sports activities outside of school hours exhibited higher levels of perceived sport competence, coordination, endurance and strength and reported greater self-esteem compared to students not engaged in regular sport activities. Results indicated that boys exhibited higher scores in perceived physical activity frequency, sport competence, strength and endurance compared to girls. Also, boys perceived themselves as more physically attractive than did girls. Research findings are largely consistent with the results of some previous studies and have an applied value to educational setting. Physical self-perceptions may serve as useful information to identify those students who are insufficiently physically active in order to promote a more active and healthy lifestyle.

KeyWords: physical self-concept, sports activity, gender, adolescents

IZVLEČEK

Namen raziskave je bil ugotoviti značilnosti telesne samopodobe pri osnovnošolcih v povezavi s spolom in vključenostjo v redno športno vadbo. Vzorec je obsegal 140 mladostnikov (70 deklet in 70 fantov) med 13. in 15. letom. Za preverjanje večsestavinske telesne samopodobe smo uporabili slovensko priredbo vprašalnika PSDQ (Physical Self-Description Questionnaire). Učenci, ki so se v prostem času redno ukvarjali s športno vadbo, so navajali višje vrednosti na področju zaznane športne kompetence, koordinacije,

vzdržljivosti in moči ter dosegali višjo raven splošnega samospoštovanja v primerjavi z osnovnošolci, ki niso bili vključeni v redno športno vadbo. Fantje so izkazovali višje ravni gibalne aktivnosti kot dekleta; doživljali so se kot bolj kompetentni, vzdržljivi in telesno močnejši v primerjavi s svojimi vrstnicami. Prav tako so se fantje ocenjevali kot telesno privlačnejši v primerjavi z dekleti. Dobljeni rezultati potrjujejo izsledke nekaterih predhodnih študij in kažejo pomembne možnosti aplikacije ugotovitev v prakso. Samozaznave na telesnem in gibalnem področju lahko služijo kot koristna informacija za identifikacijo tistih učencev, ki niso zadostno gibalno aktivni, ter predstavljajo izhodišče za promocijo aktivnega in zdravega življenjskega sloga mladih.

Ključne besede: telesna samopodoba, športna aktivnost, spol, mladostniki

INTRODUCTION

Self-concept is one of the most studied constructs within the framework of educational, personality and social psychology (Scarpa, 2011). It can be defined as the perception that individual has of him or herself, with contents that are both descriptive and evaluative (Harter & Whitesell, 2003). Self-concept is formed through experiences with and interpretations of one's surrounding environment and becomes increasingly multidimensional with age (Marsh & Ayotte, 2003).

Physical self concept is considered as one of the domains of general self-concept that incorporates self-evaluation of physical appearance and perceptions of athletic competence (Marsh et al., 1997). The physical self is regarded particularly important for adolescents psychological health and well-being (Shapka & Keating, 2005). Furthermore, many studies have demonstrated that physical self-concept is a strong facilitator of physical activity (Peart, Marsh & Richards, 2005); it has an important role either as a mediating variable, that allows the acquisition of motor competencies and promotes sports activities, either as a result of exercise (Marsh, Chanal & Sarrazin, 2006). It can be concluded that physical self contributes significantly to the development of an active lifestyle. Contemporary concepts of understanding physical self emphasize its multidimensional and hierarchical organization (Esnaola, Infante & Zulaika, 2011). Over the past two decades, several measurement instruments have been developed, such as the Physical Self-Perception Profile (PSPP; Fox & Corbin, 1989), and the Physical Self-Description Questionnaire (PSDQ, Marsh et al., 1994). The PSDQ is one of the most world

widely used instruments for measuring multiple dimensions of physical self-concept. The psychometric properties of the PSDQ have been established through numerous studies in different populations and cultural contexts (Chung, 2003; Guérin, Marsh in Famose, 2004; Tsoarbatzoudis, 2005). Researchers have paid particular attention to establish the effects of physical activity and exercise on physical self-concept of children and adolescents. Many studies confirmed the positive relationship between physical activity involvement and a more positive self-perceptions in most of the components (Asçi, 2004; Crocker, Eklund & Kowalski, 2000; Lazarević, Radisavljević & Milanović, 2008; Moreno et al., 2007; Pepevnik, 2009) or only in certain components of the multidimensional physical self (Klomsten, Skaalvik & Espnes, 2004). A large amount of previous studies quite consistently determined gender-related differences in physical self-concept. Males had generally higher perceptions of their own physical abilities (strength, endurance, coordination), sport competence and body attractiveness (Klomsten et al., 2004; Maïano, Ninot & Bilard 2004; Moreno & Cervelló, 2005).

Little research has been conducted to assess self-concept in the physical domain among Slovenian elementary school students. Thus, the objective of this investigation aimed to analyze the effects of gender and sports participation on physical self-perceptions of early adolescents.

METHODS

Participants

The sample included 140 Slovenian students (70 girls and 70 boys) aged 13 and 14, with an average of 13.4 years ($SD = 0.55$). Participants attended elementary schools in city municipalities of Ljubljana, Maribor and Koper. Permission to conduct the study was previously received from the school stuffs. A written consent to participate in the study was also obtained from the participants and their parents.

Instruments

The Slovenian version of the PSDQ (Physical Self-Description Questionnaire; Marsh et al., 1994) was used to assess physical self-concept. The instrument is designed for adolescents between 12 and 18 years, and measures nine specific dimensions: Appearance (being attractive), Body Fat (not being overweight), Physical Activity (doing a

lot of physical activity regularly), Strength (being strong, having a powerful body with lots of muscles), Coordination (being good at coordinated movements), Flexibility (being able to bend and turn one's body in different directions), Endurance (being able to run for a long time without stopping), Sport Competence (being good at sports, having good sports skills), Health (not getting sick very often), and two general dimensions: Global Physical Self (feeling positive about one's physical self), and Self-Esteem (the overall emotional evaluation of his or her own worth). Participants answer to each of the 70 items on 6-point rating scale, where higher values indicate a higher perceived competence and a more positive self-concept. Confirmatory factor analysis confirmed the multidimensional factor structure of the Slovenian translation of the PSDQ (Dolenc, 2011).

Data about gender and sports participation were also collected. Adolescents were asked to indicate, if they were involved in an organized sports activity outside physical education classes, at least twice a week over the last twelve months.

Statistical analysis

The data was analyzed with the software package SPSS. In addition to descriptive statistics, MANOVA and ANOVA were calculated to analysis principal (gender and sport practice) and interaction effects of PSDQ factors.

RESULTS

Internal consistency of the PSDQ dimensions, calculated with the alpha Cronbach coefficients, ranged from 0.79 to 0.93, indicating a high reliability of the instrument.

Among the participants in the study, there were 76 adolescents, 43 boys, 33 girls involved in regular and organized sports activities two times a week or more (sport practice group), and 64 adolescents, 27 boys, 37 girls, that were not involved in sports activity (non-sport practice group). Basic descriptive statistics of the PSDQ for girls and boys according to sport activity involvement are presented in the Table 1.

To analyze principal (gender and sport practice) and interaction effects for each dimension of the PSDQ, MANOVA and ANOVA were calculated (Table 2). MANOVA executed for all PSDQ scales showed a significant difference (Wilks' Lambda = 0.778. $F = 3.263$, $p = 0.001$) between boys and girls in the dependent variables. The univariate ANOVA showed a main effect of gender on Endurance ($p < 0.001$), General Physical Self and Strength ($p =$

0.001), Physical Activity, Sport Competence and Appearance ($p < 0.05$). In all cases, boys presented higher scores for these dimensions than girls.

Table 1: Descriptive statistics (means and standard deviations) of PSDQ dimensions

PSDQ	Sport practice			
	Girls		Boys	
	M	SD	M	SD
Health	5.08	0.72	5.15	0.59
Coordination	4.47	0.77	4.64	0.66
Physical Activity	4.82	0.74	4.93	1.01
Body Fat	4.49	1.32	5.05	1.21
Sport Competence	4.28	0.84	4.64	0.88
Global Physical Self	4.35	1.51	5.01	0.97
Appearance	4.00	1.35	4.49	1.19
Strength	4.09	0.89	4.64	0.80
Flexibility	4.30	0.88	4.53	0.85
Endurance	3.93	0.86	4.52	0.74
Self-Esteem	5.03	0.70	5.18	0.60
	Non-Sport practice			
	Girls		Boys	
	M	SD	M	SD
Health	4.83	0.86	5.02	0.91
Coordination	3.98	0.82	4.21	0.97
Physical Activity	3.83	1.14	4.52	0.92
Body Fat	4.28	1.45	4.51	1.50
Sport Competence	3.57	0.98	4.04	1.35
Global Physical Self	4.08	1.17	4.81	1.24
Appearance	3.67	0.94	4.10	1.19
Strength	3.79	0.88	4.32	0.99
Flexibility	4.10	0.97	4.18	0.91
Endurance	3.38	0.89	3.99	1.41
Self-Esteem	4.71	0.81	4.78	1.05

MANOVA executed for all PSDQ scales showed a significant difference (Wilks' Lambda = 0.830, $F = 2.350$, $p = 0.015$) between sport practice (practice vs. non-practice) and physical self-perceptions. A posteriori ANOVA revealed that non-practioners had lower scores in dimensions of Sport Competence, Physical Activity ($p < 0.001$), Coordination ($p = 0.001$), Endurance, Self-Esteem ($p < 0.01$), and Strenght ($p < 0.05$).

To analyze the interaction effect between gedner and sport practice a 2X2 MANOVA was calculated. There was no interaction effect (Wilks' Lambda = 0.930, $F = 0.856$, $p = 0.638$)

Table 2: Univariate and multivariate analysis of variance of PSDQ dimensions

PSDQ	Principal effects		Interaction effects
	Gender	Sport Practice	Gender X Sport Practice
	F	F	F
Health	1.039	2.101	0.223
Coordination	2.259	11.358**	0.051
Physical Activity	6.852*	15.587***	3.683
Body Fat	2.544	2.158	0.324
Sport Competence	5.881*	14.637***	0.153
General Physical Self	11.166**	1.245	0.035
Appearance	5.231*	3.227	0.020
Strength	12.479**	4.253*	0.004
Flexibility	1.012	3.203	0.146
Endurance	14.392***	11.743**	0.014
Self-Esteem	0.650	7.370*	0.070
Multivariate analysis			
Wilks' Lambda	0.778	0.830	0.930
Multivariate F	3.263**	2.350*	0.856

*p<0,05; **p<0,01; ***p<0,001

DISCUSSION

The aim of the study was to examine the effects of gender and sport participation on physical self-concept in Slovenian elementary school students. Results revealed no interaction effect between gender and involvement in sport practice, indicating that the two variables did not influence the physical self in a cumulative manner.

The results showed a principal effect of gender in six of eleven dimensions of the PSDQ. Boys scored significantly higher in self-perceived endurance, strength, physical activity volume, and global physical self than did girls. They also perceived themselves as more physically competent and attractive compared to their female peers. There were no statistical gender differences in perceived health, body fat, flexibility, coordination and overall self-esteem, however, higher mean values for these factors were observed among males compared to females. Obtained results are largely consistent with previous studies in which gender differences among adolescents were examined using the PSDQ questionnaire (Gadbois & Bowker, 2007; Marsh, 1998; Klomsten et al. 2004). As indicated by Maïano and colleagues (2004), these findings highlight the influence of gender on adolescents' physical self-concept. Reasons for gender differences in physical-self can be at least partially attributed to the type of physical activity programmes and greater

opportunities for boys to develop motor skills. These differences in participation inevitably are influenced by stereotypes of male and female physical and psychological attributes (Colley, Berman & Millingen, 2005). Research suggests that girls are more critical of their bodies, usually overestimate their physical dimensions and are more dissatisfied with their physical appearance compared to boys (Bowker, Gadbois & Cornock, 2003). In the field of physical appearance the standards of desirable physical characteristics are demanding and unrealistic particularly for girls, therefore they face more difficulties to reach society's standards of beauty and attractiveness.

A principal effect of sport practice was found in different components of the PSDQ. Students who participated in regular exercise activities outside of school hours exhibited higher levels of perceived sport competence, coordination, endurance and strength and reported greater self-esteem compared to students not engaged in regular sport activities.

The obtained results are comparable with other studies carried out on samples of older elementary school students indicating that sport-engaged adolescents of both genders provide more favourable perception of themselves in most dimensions of physical self-concept than those not engaged in sport activity (Aşçi, 2004; Lazarević et al., 2008; Marsh, 1998; Moreno et al., 2007). Also, these findings are in line with some previous research suggesting that physical activity allows the development of physical competences and skills, which in turn are associated with increase in self-esteem and confidence (Carraro et al., 2010; Haugen, Ommundsen & Seiler, 2013).

One important implication of the study might be that adolescents' perceptions of their physical self could be used to roughly identify those students who are at risk of remaining physically inactive and therefore more prone to develop unhealthy lifestyle behaviours. It seems necessary to consider possible interventions to increase students' activity both in and out of school in order to improve their perceived physical competence. It should be emphasized that perceived competence is closely related to motivational processes. Students with high perception of competence are more likely to choose challenging tasks, have fun during the learning process, use more effort to mastery skills, persist longer when faced with difficulties, and show more confidence (Roberts, Treasure & Conory, 2007).

In order to develop more positive physical self-concept and increase physical activity involvement among young people, physical education teachers and coaches should

provide attractive programmes through creating opportunities to experience success, promoting positive emotional group climate, and taking into consideration individual needs and interests in specific sports activities.

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THE EFFECT OF ACTIVE AFTER-SCHOOL FACILITY TIME ON CHILDREN'S PHYSICAL ACTIVITY, BODY CHARACTERISTICS AND MOTOR ABILITIES

VPLIV AKTIVNEGA PREŽIVLJANJA ČASA V PODALJŠANEM BIVANJU NA TELESNE ZNAČILNOSTI, GIBALNE SPOSOBNOSTI IN GIBALNE NAVADE OTROK

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ABSTRACT

Contemporary times have been significantly marked by sedentary way of life. Spontaneous physical activity is on the decline whereas passive way of spending one's free time is on the incline, thus leading to negative results, such as increased body fat and obesity, which in turn trigger numerous additional health problems. Unfortunately, this kind of trend is found also in children. Therefore, the aim of our study was to evaluate the effectiveness of active after-school facility stay during school time on body characteristics, motor abilities and physical activity phenotypes in 2nd grade children. Children from two primary schools were divided in the experimental group (N=25, 9 boys) and the control group (N=19, 11 boys). In an experimental group, a physical education teacher, during prolonged stay on days without curricular sport course, lead 90 minutes of physical and sport activities during the whole school year. Measurements of body characteristics and motor abilities were performed at the beginning and at the end of school year, while physical activity was measured with accelerometer once, approx. 2 months prior the end of the school year. The effectiveness of intervention was not neither evident in body characteristics nor in majority of motor abilities. However, we found increased overall physical activity (11%), time spent in moderate (33%) and vigorous (81%) physical activity, while decrease in time spent in sedentary behaviour (-3%). In conclusion, we could emphasize that selected intervention did not alter neither body characteristics nor motor abilities, it did, however, change physical activity. The intervention was most probably not carried out long enough to alter body characteristics and motor abilities as well.

Keywords: physical activity, sport, intervention, accelerometer

IZVLEČEK

Današnji čas zaznamuje sedeč način življenja. Vse manj je spontanega gibanja in vse več pasivnega preživljanja prostega časa. To vodi v negativne posledice, kot sta prekomerna telesna masa in debelost, ki pa sta eden najpomembnejših dejavnikov za nastanek številnih bolezni sodobnega sveta. Zato smo želeli preveriti učinkovitost aktivnega preživljanja podaljšanega bivanja na telesne značilnosti, gibalne sposobnosti in gibalne navade otrok drugega razreda osnovne šole. Otroke dveh osnovnih šol smo priložnostno umestili v eksperimentalno skupino (N=25, 9 dečkov) in kontrolno skupino (N=19, 11 dečkov). V eksperimentalni skupini je profesor športa med podaljšanim bivanjem celo šolsko leto, ob dnevih, ko na urniku ni predmeta športa, vodil 90 minut gibalnih/športnih vsebin. Meritve telesnih značilnosti in gibalnih sposobnosti smo izvedli na začetku in na koncu šolskega leta, medtem ko smo gibalne navade spremljali z merilnikom pospeška enkrat, približno dva meseca pred koncem šolskega leta. Ugotovili smo, da aktivno preživljanje podaljšanega bivanja ni spremenilo telesnih značilnosti in večine gibalnih sposobnosti, razen preprečilo izgubo gibljivosti za -6.4%. Pri gibalnih navadah pa smo v eksperimentalni skupini ugotovili povečanje celokupne dnevne gibalne aktivnosti (11%), časa srednje (33%) in visoke (81%) intenzivne gibalne aktivnosti in zmanjšanje časa gibalne neaktivnosti (-3%). V zaključku lahko povemo, da izbrana intervencija spremeni gibalne navade, a verjetno smo jo izvajali premalo časa, da bi pustila učinke tudi na telesnih značilnostih in gibalnih sposobnostih.

Ključne besede: gibanje, šport, intervencija, merilnik pospeška

INTRODUCTION

Despite the known data of favourable effects of regular physical activity on human health, a significant proportion of children have lower quantity and intensity of physical activity as recommended (Biddle, Gorely and Stensel, 2004; Troiano, Berrigan, Dodd, Mâsse, Tilert and Mcdowell, 2008). Therefore, we face continued negative impact on health status and body and motor characteristics of children. In the last decade, in several European countries we face prevalence of overweight and obese children and related health problems (International Obesity Task Force. Childhood Obesity Report, 2005).

It is well known that the amount and the intensity of motor/sports activities decreases with age (Šimunič, Volmut and Pišot, 2010) and boys are physically more active in comparison to girls (Volmut, Pišot and Šimunič, 2013; Lopes, Vasques, Maia in Ferreira, 2007; Riddoch et al., 2007). Regular physical activity in various forms is very important to maintain the

necessary level of motor abilities (Pišot and Planinšec, 2005). Many studies showed that children with lower motor abilities are less physically active than children with higher motor abilities (Williams et al, 2008.; Wrotniak et al, 2006).

Study of Williams and co-workers (2008) showed that children with better motor abilities spend much more time in middle and high intensity of motor sports activities and less time in motor inactivity as children with lower motor abilities. In foreign countries, during the school year as well as outside it, various intervention programs were starting to be acceleratory implemented. Their main goal is to prevent the increase in overweight and child obesity and to promote the amount and intensity of motor/sports activities and improve their motor abilities and skills (Bellows, Davies, Anderson and Kennedy, 2013).

Educational institutions have central role in promoting and developing healthy lifestyle and in dealing with everyday motor/sports activities of children. Therefore, in the second grade of elementary school, we have decided to carry out a one-year intervention program with the intent of twice weekly in after-school facility time children have additional hours of sport, lead by physical education (PE) teacher. The purpose of the study is to examine whether the intervention program affects the increase of amount and intensity of motor/sports activities of children and the change of body and motion features.

METHODS

SUBJECTS: 44 children from the second grade, aged 7 and 8, from two elementary schools, participated in the research. All children from one school were in the experimental group (25 children, 9 boys) and all children from the other school were in the control group (19 children, 11 boys). Children from the experimental group had next to three hours of sport lessons two more lessons of sport every week in after-school facility time. These two hours we had on the day when sport was not in the timetable. The lessons were led by PE teacher. Parents of the children gave written consent for co-operation in research.

RESEARCH PLAN: Research was conducted in school year 2010/2011 on two deliberately selected primary elementary schools from south-east region, within national research program P5-0381- Kinesiology for quality of life. After the initial measurements at the beginning of the school year, we included the children from the experimental group in the additional sport program in after-school facility time. At the end of the school year, we again carried out the measurements. During the school year, we also carried out the measurements of the quantity and intensity of physical activity.

MEASUREMENT PROCEDURES: All measurements were carried out in schools that children attend. Measurements were carried out by an experienced team from Institute for

Kinesiology Research at UP ZRS. We ensured that children were not tired on the day of measuring.

Measurement of body characteristics: height and weight were measured with altimeter and scale, respectively. Percentage of fat and muscle mass was measured with bio impedance (Maltron, UK).

Measurement of motor abilities: we carried out tests in vertical leap with opposite movement, running at 60 meters, running at 600 meters, movement back, forward bend on a bench, test of balance by measuring the length of the path projection on the basis of gravity on force plate, grip strength via dynamometer (Jamar, USA).

Measuring the quantity and intensity of physical activity: were measured by an accelerometer (Actigraph, USA), worn by children on five consecutive days (from Wednesday until Monday), from 8 am until 8 pm. In the process procedure, we took the results of average physical / sports activities for every minute (1-minute epoch). The measurement was valid if the child wore the accelerometer for at least 9.6 hours a day and at least on two such days. We used the signal of each child for calculating the time of physical inactivity, time of light, medium, and high physical activity.

STATISTICAL PROCEDURES: The data were processed with the statistical package SPSS (Statistical Package for Social Sciences inc., Chicago IL, version 15). For the determination of the initial differences, we used one-way ANOVA-on and testing of longitudinal changes in two-factor ANOVA-o for dependent samples. In both cases is the fixed factor group of children (KS and ES) and time as a repeated factor. In case there were initial differences present, we used ANCOVA-o. Statistically significant changes were confirmed by risk level <0.05.

RESULTS

In Table 1 we presented changes in body characteristics during the study period. Body height and mass, body mass index and muscle mass increased, whereas fat mass decreased. There was no group effects and only significant interaction was confirmed for body height which can most likely be attributed to randomness or a consequence of sampling error.

Similarly, motor abilities improved during the study, however not in the flexibility test, where we found a significant interaction with children in control group, declining for -6.7% and children in experimental group for -0.3%.

Table 1: Body characteristics, motor abilities at pre- and post-measurements in control and experimental groups with statistical decisions regarding time, gender and interaction of both.

	Control group		Experimental group		P _{TIME}	P _{GROUP}	P _{TIME*GROUP} P
	Pre	Post	Pre	Post			
Body height / cm	126.0 ± 4.6	130.9 ± 4.6	126.6 ± 4.2	129.7 ± 4.2	<.001	.815	.010
Body mass / kg	26.8 ± 4.3	29.9 ± 4.5	25.8 ± 3.7	28.4 ± 4.0	<.001	.316	.133
Body mass index / kg·m ⁻²	16.8 ± 1.8	17.4 ± 1.8	16.1 ± 1.9	16.8 ± 2.1	<.001	.277	.440
Fat mass / %	22.2 ± 3.2	17.2 ± 4.3	21.5 ± 2.4	16.1 ± 5.4	<.001	.386	.794
Muscle mass / kg	8.7 ± 1.5	9.8 ± 1.5	8.1 ± 1.1	9.1 ± 1.2	<.001	.119	.411
Grip strength / N	138 ± 28	168 ± 32	137 ± 26	164 ± 27	<.001	.878	.443
Number of push-ups / n	21.4 ± 6.5	34.0 ± 10.3	16.4 ± 4.7	29.0 ± 12.6	<.001	.031	.868
Stand and reach / cm	43.5 ± 6.5	40.6 ± 6.1	49.0 ± 4.6	48.9 ± 5.7	<.001	<.001	.014
Balance sway length / cm	12.5 ± 2.3	10.3 ± 2.1	13.4 ± 2.0	11.9 ± 2.1	<.001	.031	.279
Vertical jump height / cm	15.5 ± 3.9	16.1 ± 3.1	14.4 ± 2.8	15.7 ± 3.4	.028	.573	.652
Time of 60m sprint / s	12.6 ± 1.5	12.0 ± 0.9	12.3 ± 1.1	11.5 ± 0.8	<.001	.131	.632
Time of 600m run / s	212 ± 36	179 ± 21	210 ± 29	191 ± 23	<.001	.618	.096
Time of training range / s	16.8 ± 4.7	15.9 ± 3.7	15.8 ± 3.4	15.4 ± 3.4	.044	.447	.737

The highest effect of intervention was found in physical phenotypes (Table 2). In the experimental group, we found the highest overall physical activity for 11%. Furthermore, the experimental group also shorter time spent in physical inactivity was confirmed for -3%, longer time spent in moderate and vigorous physical activity, for 33% and 81%, respectively.

Table 2: Overall physical activity and time spent in different intensities of physical activity with statistical decisions between both groups.

	Control group	Experimental group	P _{GROUP}
Overall physical activity / counts per minute	640.0 ± 165.9	744.6 ± 155.6	0.019
Time of physical inactivity / min	629.3 ± 26.2	611.0 ± 34.1	0.002
Time of light physical activity / min	57.8 ± 15.9	61.1 ± 19.2	0.091
Time of moderate physical activity / min	24.0 ± 10.0	31.9 ± 10.9	0.005
Time of vigorous physical activity / min	8.9 ± 7.7	16.1 ± 9.6	0.005

DISCUSSION

We have found that with additional sport content in time of after-school facility we increase the time of the total amount of motor/sports activities, reduce the time of physical inactivity

and increase the time of medium and high intensity of motor/sports activities. We have also found that one-year intervention program has not significantly affected motor abilities and body characteristics of children, as significant interaction was found only in the test of flexibility.

Many researches confirm that significant proportion of children has a lower amount and intensity of motor/sports activities as recommended (Biddle, Gorely and Stensel, 2004; Troiano et al, 2008) and the amount and intensity of motor/sports activities decreases with age (Volmut et al, 2013). The results of our research show that amount of motor/sport activities decreases about -3 % per year. The selected intervention program had a high positive effect on a physical activity phenotype and stopped that trend in the time of one year. We have also found that no child from the control group achieved the recommendations for physical activity, while only 12 % of children from experimental group do not reach the recommendations. This confirms that the selected intervention program brought favourable results on a physical activity phenotypes. For further increase of practical effect to be evident also in body characteristics and motor abilities, it would be necessary to integrate the selected intervention program with another intervention program. Lower impact of selected intervention program is also confirmed by not affecting motor abilities where we practically did not find favourable effects except to test flexibility.

Foweather (2010) included 152 children, aged 9, in his one-year intervention program. He found out that intervention program has no effect on physical characteristics of children and has little impact on improvement of motor skills. Williams and co-workers' (2008) survey has shown that children with better motor skills spend much more time in middle and high intensity motor/sport activities and less time in motor inactivity than children with inferior motor skills, which indicates a possible link between the two parameters. Furthermore, some studies even quote that overweight or obese children, compared with children that have normal weight, are less active and less time spend in middle and high intensity physical activities (McMurray, Harrell, Creighton, Bangdiwala, 2008). The authors of the study note also that there are differences in motor skills among children with normal body weight and children with excessive body weight or obesity (De Toia et al, 2009). Wrotniak and co-workers (2006) add that children with a higher body mass index are less physically active and spend more free time sedentary and have lower physical knowledge in comparison with children that have a lower body mass index. It seem that one-year longitudinal studies are too short to determine the favourable effects of selected intervention on motor skills as well, which confirms that it is necessary to take action with long-term and more-component intervention programs or to change the children's lifestyle.

In conclusion, it can be emphasised that the selected intervention program which provides children with every day physical activities in addition to curricular, within the after-school facility time brought favourable effects on the total physical activity as well as physical activity phenotypes. We almost did not find the effects on motor abilities, which indicates that the time of intervention program was most likely too short and not enough intense.

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DANCE MOVEMENT THERAPY WITH CHILDREN AND ADOLESCENTS: A REVIEW

PLESNA IN GIBALNA TERAPIJA PRI OTROCIH IN MLADOSTNIKI: PREGLED LITERATURE

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ABSTRACT

Dance/movement therapy can be an effective method in helping individuals who are healthy and those with emotional and behavioral problems and other mental health problems. It is used as a psychotherapeutic or a healing tool, focusing on understanding and expressing one's emotions. In order to investigate the effects and outcomes of dance/movement therapy in children and adolescents we reviewed the literature on dance/movement therapy from the year 2000 until now.

Keywords: dance/movement therapy, children, adolescents, review

IZVLEČEK

Plesna/gibalna terapija je lahko učinkovita metoda tako pri zdravih posameznikih kot tistih s čustvenimi in z vedenjskimi težavami ter drugimi težavami v duševnem zdravju. Uporabna je kot psihoterapevtsko sretstvo ali kot oblika zdravljenja, saj se osredotoča na razumevanje in izražanje posameznikovih čustev. Da bi preučili učinke plesne/gibalne terapije pri otrocih in mladostnikih, smo opravili pregled literature z obravnavanega področja od leta 2000 do danes.

Ključne besede: plesna/gibalna terapija, otroci, mladostniki, pregledni prispevek

INTRODUCTION

The need for rhythmical movement and expressing oneself through dance is inherent to every human being. For as long as they can remember, people have been noticing that dance has two different effects – it can stimulate emotions and it can modify them. That double effect of dance was soon recognized by modern psychotherapists (Škrbina, 2013). According to Levy (1988), the roots of dance therapy can be found in modern dance from the beginning of the 20th century. Dance therapy – the use of dance/movement as a healing tool

– is rooted in the idea that the body and the mind are an inseparable unit. The basic premise of dance/movement therapy is that body movement reflects inner emotional conditions and changes in movement can cause psychological changes. The aim of dance therapy is to aid both healthy individuals and individuals who have emotional or mental disorders, in order to help them achieve the completeness of emotion through the union of body, mind and spirit. Škrbina (2013) emphasizes that it is not necessary for an individual to be a professional dancer or even familiar with different dance techniques for dance/movement therapy. The process of therapy is focused on understanding oneself, especially on expressing one's emotions. The therapy can be adjusted according to the condition, wishes and abilities of individual. Through different techniques, a therapist must try to create a trustworthy relationship between himself and the patient, which would result in better communication and understanding between them. According to Meekums (2002), the process of dance/movement therapy contains phases with smaller set of goals which can differ from individual to individual. The point is to be creative through dance and movement, experiencing relaxation, freedom and connection of body and mind and creating safe environment. Dance therapists who work with children use dance/movement therapy for: creating the emotional contact with the child, helping the child to create a better image of himself or herself, improving the cognitive aspect of child's development, developing self-control and mastering movement both as self-expression and facilitation of social interaction. Dance/movement therapy is adjusted according to child's difficulties and specificities. Weltman (1986) notes that it is important to establish confidence between the child and the therapist, in order for the child to open up and share his or her pain, fears, anger and shame caused by his or her experience. The therapist has to listen and react with empathy, never forcing the child to convey his or her experiences more than he or she is ready to. The key element in establishing and sustaining the trust between the therapist and the child is the feeling of safety. According to Polk (1974), if you are working with children in a group therapy, it is very important to create a feeling of being part of the group, by giving them challenges that will not result in competitive behavior. Creating a good atmosphere in the group is the key to success in group activities. Salus and Schengerg (1971) note that the focus of the dance/movement therapy with a special needs child is mostly to improve the body image, coordination and motor skills, raising the awareness and teaching him or her to behave in his or her environment, by providing the child with creative space for personal development.

The aim of this review is to depict the research on dance/movement therapy (DMT) with children and adolescents.

METHODS

The review of literature and researches was conducted by using several databases: *Science Direct, Web of science, SCIdirect, PubMed, Taylor and Francis Online, Springer Link, SAEe publications, JAMA Pediatrics, Idea: drexler e-repository and archives, Google Scholar* and on-line database catalogues of city library *Marko Marulić Split* and University of Split's library. Keywords used in the research were: dance movement therapy, dance therapy, movement therapy, all combined with the word children. The research was also conducted in Croatian, in which the keywords were: *terapija plesom i pokretom, terapija plesom, terapija pokretom, plesna terapija,*

all combined with the word djeca.

Study selection

We included all available researches about dance/movement therapy with children and adolescents from 2000 until today.

RESULTS

Dance/movement therapy with children

Dance movement therapy is an effective method used to help children with different kinds of problems. The problem of obesity in the United States among children and adolescents remains very high. According to the Center for Disease Control, from 1998 to 2003, the prevalence of obesity increased from 13.05% to 15.21%, and the prevalence of extreme obesity increased from 1.75% to 2.22%. Some of the higher increase in body mass is noted in African-American girls. In Europe according to World Health Organization and 2009/2010 HBSC survey the highest prevalence of overweight among 11-year-olds (both genders) was found in Greece (33%), Portugal (32%), Ireland (30%) and Spain (30%). Among 15-year-olds prevalence of overweight range from 10% (Armenia, Lithuania and the Russian Federation) to 23% (Greece). Robinson et al. (2003) investigated how dance/movement therapy and reduced television viewing time affect body mass among 61 African-American girls from 8 to 10 years. The girls were randomized into a treatment (N=28) and a control group (N=33). During the twelve week treatment, which consisted of after-school dance classes at community centers and 5 lesson interventions in participant's homes (designed to reduce television, videotape and video game use), therapists tried to decrease body mass gain among girls. Recruitment and retention goals were exceeded. All interventions received high reception and high satisfaction ratings. In comparison to the control group, girls in the treatment group showed tendencies towards lower body mass index and waist circumference as a result of increased after-school physical activity and reduced television, videotape and

video game use. As a result of reduced television viewing they reported significantly less meals eaten and less concern about body mass.

Dance/movement therapy can also be effective in the prevention of violence among children, since school violence has become a serious problem even in the elementary schools. Fried and Fried (1996) suggest that children involved in violence may have been victims of abuse themselves and have exhibited ongoing problematic behaviors, such as expressing anger, that were left untreated. Koshland et al. (2004) tried to evaluate the use of 12 week dance/movement program based on violence prevention, with 54 multicultural children of elementary school age group. The program used dance/movement group activities that were focused on socialization and engagement of children in creative, problem solving experiences. Statistical results showed that teachers noticed a significant decrease in behaviors such as fighting, not being able to calm down, low frustration tolerance and throwing things. The children were reported to have significantly improved in behaviors concerning two areas: "someone doing something wrong" and "someone throwing something". Significant changes in the students' perceptions and feelings in experiencing or seeing aggression were also noted. Classroom observations showed a significant decrease in the frequency of negative behaviors. However, a significant increase in pro-social behaviors was not noted. While data showed a decrease in the number of aggressive incidents reported to the principal throughout the entire school, the decrease in number of incidents in participating classrooms was greater than that in those that did not participate in the DMT program ($p < .001$).

Motivation for participating in physical education has decreased dramatically over the past few years. Likesas and Zachopoulou (2006) tried to examine whether music and movement programs would increase pleasure and intrinsic motivation of students in elementary schools by teaching them Greek traditional dances. 135 participants were assigned (72 boys, 63 girls) to the treatment group and 97 participants (53 boys, 44 girls) to the control group. The treatment group was being taught traditional dances using the music and movement teaching method, while the control group was taught using the instructional or guided teaching method of traditional dances. McAuley's Intrinsic Motivation Inventory was used to measure effectiveness of the two methods. Results showed that the use of music and movement education had a positive effect on intrinsic motivation for dancing and participation in the program, especially for the boys in the treatment group.

Improving impulse control, frustration tolerance, gratification delay and ability to get along with others is also possible through DMT, as shown in the research of Erfer (2006), where she DMT was used among children aged 5-8 on a short term inpatient psychiatric unit in a major teaching hospital. The author confirmed that DMT is a valuable treatment for creating cohesion in groups of children who have previously been chaotic and disorganized. This

sense of cohesion provides encouragement and a safe, nonjudgmental atmosphere in which children are able to achieve therapeutic goals. The author also noted the importance of developing body image, self-awareness and others-awareness, as key components that are the foundation upon which cohesion is built. Kljajić (2006) used DMT to illustrate the influence of therapy on communication skills of autistic children. The therapy was based on movement games aiming to stimulate skills and activities which are necessary for the development of verbal and non-verbal communication. The therapy lasted for 3 months. The tests that were conducted before and after the treatment showed positive effect of DMT on specific abilities of the child and his behavior, his participation in the environment and his relationship to it. Development of verbal and non-verbal communication using DMT is also effective with children who suffer the risk of social displacement and long-term learning disabilities. Authors Ylönen and Cantell (2009) led a year long, weekly DMT group of six preschool children. The sessions used creative movement, movement observation, kinesthetic attunement and mirroring. The themes noted in children's drawings suggested developmental changes and externalization of emotional experiences. The conclusion was that DMT supports the development of group dynamics and movement as a form of interaction. DMT is also used with children that have developmental delays. Cantell and McGhee (2007) found that the children with developmental delays were compromised in their midline organization and their ability to move in relation to gravity. They observed 20 children during motor assessments and play sessions at hospital clinic. Qualitative, developmental descriptors from the fields of dance and movement that dealt with key issues in motor development, contributed to a new motor observation tool. The researchers also concluded that a multi-level approach to movement assessment and treatment is recommended for children with developmental delays. According to Dayanim et al. (2006), dance/movement therapy is in need of assessment methods that meet the demands of managed care. Therefore the authors introduced the Moving Story Effort Assessment (MSEA), a movement assessment for preadolescent children which uses imagery as a catalyst for Effort production. It is based on Laban's Effort elements, which is a psycho-physical term that explains the movement in its qualitative and quantitative dimensions. Laban constructed 8 basic effort actions which are the combination of power, space and time (Škrbina, 2013). The assessment was administered to 31 healthy children aged 8-11 years. The findings suggest that the tested images consistently result in eliciting a specific Effort quality. The data collected from the study can be used to assist DMT therapists in the assessment of children. Participation in an integrated dance program can have positive impact on children's perception of dance abilities and a more subtle impact on able-bodied children's perceptions of disabilities. Zitomer and Reid (2011) tried to investigate how healthy children's perception of dance abilities and disabilities can change with participation of children with physical

disabilities (N = 5) and without their participation (N = 9). The children were aged between six and nine. An interpretative phenomenological analysis (IPA) was used to analyze the data. Pre-program interviews revealed different themes among children with disabilities and without disabilities, while post-program interviews revealed two common themes: emotional/physical and body parts/levels. One theme that emerged while describing perceptions of participants with disabilities during post-program was competence. Through movement therapy, Regev et al. (2012) tried to employ methodology to examine the influence of mother's participation in children's movement therapy group. Participants in the study included 26 children, 17 boys and 9 girls, ages 6-8. The researchers hypothesized that improvement in children's self-image and behaviors would be greater in the experimental group (intervention with mother) than in the control group (intervention without mothers). They also hypothesized that mothers who participated in the therapy would demonstrate improvement in parental functioning. Study results indicate improvement in children's self-image in both groups, but a greater improvement in children's behavior in the experimental group than in the control group, improvement in functioning and efficacy of parental functioning in both groups, with a higher degree of improvement in the experimental group. Even the short-term DMT can be effective in working with children who have different kinds of disorder. Lee et al. (2012) used short-term DMT to work with children who were at the high risk of post-traumatic stress disorder (PTSD) following the earthquake in Taiwan. Fifteen elementary school children participated in a two day dance/movement therapy program. The results of the short-term therapy showed that through the therapists holding, the children's emotions are released and their bodies achieve liberation. After liberating their bodies, authors suggest that children may display creativity and imagination.

Dance/movement therapy with adolescents

Physical attractiveness becomes very important in adolescence, which can lead to a negative body image. The peer pressure and excessive emphasis on body appearance in the media can contribute to the body dissatisfaction among adolescents. Fourie and Lessing (2010) tried to determine the therapeutic value of DMT and its impact on body image in female adolescents. The participants described DMT as a positive experience and an opportunity to express their feelings through movement, while the self-exploration helped them improve their self-knowledge. DMT enhanced their acceptance of their physical characteristics, it affected their definition of beauty, made them discover new positive feelings about themselves and about others, and increased their confidence. Thus, dance and movement can improve self-consciousness, body image and low self-concepts of the participants, which makes it a valuable tool for wellbeing and self-actualization.

Wagener et al. (2012) studied the impact of a dance-based program on the perceived competence of obese adolescents to exercise, psychological adjustment and body mass index (BMI). During a ten-week program, 40 adolescents were randomly divided into an experimental group, which participated in the program, and a control group, which was on a wait-list. Baseline and follow-up measures included a self-reported physical adjustment, perceived competence to exercise and parents' report of adolescent's psychological adjustment and anthropometric measures. After the treatment, the participants in the experimental dance program significantly increased their self-reported competence to exercise and reported a significant improvement in the relationship with their parents since the beginning of the treatment. The parents' report of externalizing and internalizing symptoms also improved since the beginning of treatment. No pre-post BMI differences were noted within or between the conditions. The results support the positive effect of dance treatment on psychological functioning and perceived competence to exercise in obese adolescents. Dance has proven to be a popular form of physical activity, especially in adolescent females. It can provide a supportive environment and improve negative body image and self-perception. It can also reduce disabling conditions caused by stress. Duberg et al. (2013) tried to determine whether dance affects self-rated health (SRH) of female adolescents from 13 to 18 years of age, suffering from psychosomatic symptoms and stress related problems. 59 girls were randomized into an experimental group, while 53 were randomized into a control group. The therapy consisted of dance classes twice a week during 8 months. Every class lasted 75 minutes and the focus of the treatment was on the joy of movement and not on performance. Its primary outcome was self-rated health, the secondary outcomes were adherence to and experience of the treatment. The experimental group improved self-rated health more than the control group in all evaluations. 67% had an attendance rate of 50% to 100%. 91% of girls rated the program as a positive experience, which leads to conclusion that DMT improves self-rated health in female adolescents with internalizing problems. Since the 70s, the studies have been reporting the effectiveness of therapeutic mirroring in movement with autistic children. Koch et al. (2013) used their dance movement therapy based on mirroring in movement to increase body awareness, social skills, empathy, wellbeing and self-other distinction. The results of their research suggest that DMT proved as an efficient and feasible approach for autism spectrum disorder, because after the seven-week treatment, the participants of the dance program improved their body image, self-other distinction, wellbeing and social skills.

CONCLUSION

Through this overview of studies we can conclude that DMT can be very effective as a therapeutic tool for children and adolescents with various physical and psychological health issues. Although DMT is based on dancing and expressing movement through music, its focus is above all on expressing emotions. The studies show us that, apart from helping to express emotions through movement, DMT helps children improve body image and the perception of self and others. It can increase tolerance levels, the ability to accept others and the control of problematic behaviors. It provides an effective means for the development of a better parent-child relationship and improvement of the parental functioning (especially with the special needs children). DMT equally helps children to change their perceived competence, as well as the competence of other children in the group. It provides a quality treatment for the development of verbal and non-verbal communication with autism spectrum disorders, because it improves participants behaviors and necessary social skills. DMT can be used to affect the changes in children's development and their external and emotional experiences. Dance and movement can also be used to improve the perception of body parts, body mass, balance and movement control with children with disabilities. Participation in the DMT increased empathy and self-control, and affected certain problematic behaviors and social skills with children and adolescents suffering from attention deficit hyperactivity disorder. The DMT can decrease aggression, improve self-consciousness and positive relationship with others. It is a great treatment for increasing the motivation for exercise in children and adolescents with obesity issues, who avoid physical activity, and it also proved to be a great method for the prevention of violence in schools.

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THE INFLUENCE OF CLIMBING SKILLS PROGRAM ON PHYSICAL EFFICIENCY DURING PRESCHOOL PERIOD

VPLIV ORGANIZIRANEGA TEČAJA PLEZANJA NA GIBALNO UČINKOVITOSTI V PREDŠOLSKEM OBDOBJU

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ABSTRACT

The purpose of this study was to investigate the effect of the semi-annual climbing programme on physical efficiency during preschool period. A clustered sample of Slovene five years old pre-school children (N= 50, n boys= 26 (52,0 %), n girls= 24 (48,0 %) was assessed on their fundamental motor skills (FMS) development with the Motoriktest für Vier- bis Sechsjährige Kinder [MOT 4-6] (Zimmer and Volkamer, 1987). Half of them were involved in organized physical activity (climbing program for pre-schoolers) for 6 months, another half did not practise in any organized physical activity. Findings statistically showed significant differences between the two groups at the end of the experiment. Organized physical activity has a significant influence on the physical efficiency in preschool period.

Keywords: climbing, fundamental movement skills, MOT 4-6, preschool period

INTRODUCTION

Pre-school age is recognized as the most appropriate period for the development of Fundamental Movement Skills (FMS) (Gallahue & Ozmun, 2006). The general definition of fundamental movement skills is the ability to learn a sequence of movements to produce a smooth action in order to accomplish a task. During the last decades, various assessment tools for FMS have been developed (Yoon et al., 2006). MOT 4-6, M-ABC and The Test of Gross Motor Development – Second Edition (TGMD-2) are three most frequently used tools for assessing FMS (Cools, De Martelaer, Vandaele, Samaey, & Andries, 2010).

Pišot and Planinšec (2005) found out that the motor space of pre-school children is still incompletely modified and it differs from the motor space of adult. That is why researchers use a different test battery for assessing motor abilities among children and adults. Furthermore, we usually use one quantitative motor test to assess a single motor ability (ex. balance, coordination etc.) and a variety of qualitative tests to assess motor efficiency.

Because of the specific development during preschool period, as known that the development is established through an interactive process of aspects related to the individual activities, the genetics and the environment (Videmšek & Pišot, 2007), researchers rather than quantitative use qualitative tests. The first tests reflect the 'product' of the movement on the performed task, and the second reflects to the 'processes'.

Therefore, the aspects of motor development in preschool period include biological and other personal variables (physical growth, maturation, gender, motivation), environmental variables (neighbourhood surroundings, socio-economic status, socializing agents), variables of practice (experience, exercise) and task variables (Barreiros, 2008) and that is why test batteries around the world are so different.

It is important for preschool teachers to have information about the present level of the FMS or motor efficiency itself to focus and change appropriately the guidance of teaching. Using the validate assessment tool, they can find those children who are or may be at risk for future problems. In this study we present Motoriktest für Vier- bis Sechsjährige Kinder [MOT 4-6] (Zimmer and Volkamer, 1987). It was established that this test has a high internal consistency ($\alpha = 0.81$) and high split-half reliability ($\alpha = 0.80$). The MOT 4-6 includes 18 items that are divided into four major performance areas: (a) stability, (b) locomotion, (c) object control and (d) fine movement skills. The assessment protocol primarily identifies a child's developmental movement skill status at an early age (Bös, 2001). Additionally, the assessment protocol creates an opportunity for early detection of motor difficulties (Zimmer and Volkamer, 1987).

Kambas et al. (2012) were examining the suitability of the MOT 4-6 (Zimmer & Volkmer, 1987) for use with pre-schoolers in Greece. Seven hundred and seventy-eight Greek children aged 48-71 months were examined and they found out slight differences between the motor development of Greek and German pre-schoolers. They agreed, however, that the test seems to be valuable motor assessment tool for Greek pre-schoolers. Slightly efforts were done in Slovenia also. Cemič (1993) investigated the suitability of the test MOT 4-6 in Slovenia. She standardized the test for 5,5 years old Slovene pre-schoolers.

Test detects differences in development at 6 months exactly, that is why we took only 5 years old children. As Gallahue and Cleland-Donnelly (2003) find out that time spent in unorganized physical activity is not enough to cause the expected positive change in preschool children's FMS, rather skill specific practice through organized physical activities is

needed. Furthermore, research among preschool children shows that mastery of FMS is correlated with higher levels of physical activity (Fisher et al., 2005).

The majority of organised motor activities contain different basic forms of movement (such as jumps, runs, walking, crawling or pulling, etc...). Trainers frequently choose the initial elements of different sports regardless of the further specialisation within sport. However, it is appropriate to use their entire body (hands and legs) for locomotion and for handling with objects. Climbing programs cover the gaps which the general practice could often miss. It is the vertical movement of a body and containment of his weight only with extremities. We wanted to determine if such exercise more effectively impact on the integral physical effectiveness of preschool children.

METHODS

A clustered sample of Slovene pre-school children (N= 50, n boys= 26 (52,0 %), n girls=24 (48,0 %) was assessed on their FMS development with the Motoriktest für Vier- bis Sechsjährige Kinder [MOT 4-6] (Zimmer and Volkamer, 1987). (The test features 18 test items including fine and gross motor movement skill items. Then, the individual test scores were added and the total test battery score was calculated, with 34 being the maximum score.) The pre-school children were 5 years old (M=63,16 months, \pm 1.6). Half of them were involved in organized physical activity (climbing program for pre-schoolers) for 6 months, another half did not practise in any organized physical activity. Both groups attended the same kindergarten and received approximately equal education within the nursery. Climbing program was designed for pre-schoolers and combined a variety of FMS. During six months the experimental group participated altogether 46 times for 45 minutes. The data were collected during 2013-2014. We analysed the data, using the SPSS statistics software package. The frequencies and descriptive statistics were done after calculated all individual variables. Independent t-test was used to identify a significant difference between the two groups. The hypotheses under consideration were tested against a 95 % confidence level ($p \leq 0.05$).

RESULTS

Table 1. Differences in the average initial and final assessed values in MOT 4-6

assessments get from the test MOT 4-6	Experimental group N = 25		Control group N = 25	
	initial stage	after 6 months	initial stage	after 6 months
Average	20,5	24,5	18,9	20,1
Standard deviation	+ - 5,04	+ - 4,02	+ - 3,85	+ -4,26

Table 1 shows the differences in the average initial and final assessed values between control and experimental group, gathered from the whole test MOT 4-6. The detailed analysis showed that the participants had at the beginning of the experiment approximately the same assessment, but after six months the scores between the two groups differed. It can be also concluded that all the children (the experimental and control group) progressed. We predicted these because the development of the movement during this period is extremely rapid. It is clear that the experimental group progressed for 4 assessments while the control only for one.

Table 2. Results of Independent samples t-test

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	Df	Sig. (2-tailed)
AFTER 6 months	Equal variances assumed	,207	,652	3,757	48	,000
	Equal variances not assumed			3,757	47,848	,000

We have been investigated if the differences between the two groups at the end of the experiment were statistical significant. Therefore we used the independent samples t-test. The results show (t-value=3,757, $p < 0,000$) statistical significant differences between the groups.

DISCUSSION

We would like to point out three findings. The first finding from this study is importance of organized physical activity during preschool period. The results have shown the statistical significance between those who practise and those do not. Gallahue and Cleland-Donnelly (2003) also find out that unorganized practice does not have the same impact on development as organized physical activity. However, not any organized physical activity is suitable for pre-schoolers. We should be aware of the specific child's development. It is holistic (Galahue and Ozmun, 2006) and therefore requires a holistic treatment (Gregorc and Cemič, 2013) in all fields, including physical activity. That is why the mastery of FMS should be included in any physical activity program (Cools, De Martelaer, Vandaele, Samaey, & Andries, 2010). Structural physical activity is considered as the most important factor which may influence motor development (Zimmer et al., 2008; Roth & Winter, 1994; Winter, 1992). Results from Zimmer et al. (2008) study confirmed the theory of a linear improvement of motor abilities during childhood and the effects of a physical training program which were confirmed by their results.

The second finding presents the differences in gender. In our study boys performed the same as girls. This result was the same as Cools, De Martelaer, Vandaele, Samaey and Andries (2010) got, when investigate 48 5-years Flemish pre-schooler. Also previous studies support the notion that at early childhood there is no significant effect of sex in motor-proficiency oriented tests (Eggert, 1971; Hirtz, 1985; Winter, 1987; Zimmer & Volkamer, 1987). We would like to point out that in preschool period physical activity should be treated the same for boys and girls.

The third finding is the comparability in the FSM among the countries. We could compare our data with Flemish children, Greek, German and Spanish. Flemish children (Vandaele, Cools, De Decker and De Martelaer, 2011) assessed the same scores as ours. The subjects were 236 6-year-old children, and the mean was 20.78 (SD 5.7), without significant gender differences. The Greek pre-schoolers were investigated by Kambas et al. (2012). They were examining the suitability of the MOT 4-6 (Zimmer & Volkmer, 1987) for use with pre-schoolers in Greece. Seven hundred and seventy-eight Greek children aged 48-71 months were examined. The results were slightly the same as in Germany and therefore also in Slovenia (Cemič, 1993).

CONCLUSION

Organized physical activity plays an important role to foster and develop children's FMS. The current findings highlight the need for suitable teachers to organize, prepare and implement the appropriate exercises. With providing structured opportunities such as playing games that are fun, including all skills and wide variety of physical activities will influence on children's FMS and the development itself.

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PROBLEMATIC USE OF ENERGY DRINKS BY CHILDREN AND ADOLESCENTS

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ABSTRACT

This paper addresses the problem of energy drink consumption by children and adolescents, who are increasingly turning to such products. Consuming energy drinks does not have beneficial effects on health as promoted by manufacturers, but can cause serious health problems. An uncontrolled and excessive consumption of energy drinks can lead to poisoning with caffeine, sleep and eating disorders, obesity, high blood pressure and to many other diseases. The declarations of caffeine content as well as the recommendations on the maximum daily consumption amounts and alcohol mixing ratios are generally inadequate. Energy drinks contain a high concentration of caffeine (up to 500 mg/680 g) and other stimulants (taurine, guarana), whose long-term effects in the body are not yet known. Therefore, energy drinks are in no way suitable for children and adolescents.

Keywords: Energy drinks, children, adolescents, caffeine, drugs

INTRODUCTION

The term »energy drinks« (ED) often represents beverages that contain a high concentration of caffeine and other stimulants, such as taurine, guarana and ginseng. In addition to these ingredients the ED often include vitamins, sugar, sweeteners and acids (Goldman, 2013; Seifert et al., 2011). The literature uses different terms to refer to ED, whereby the terms "stimulant drinks" or "caffeinated beverages" are most commonly used (Finnegan, 2003).

The use of ED among young people has been increasing rapidly and has become a worldwide phenomenon, especially in the recent decades. Of particular concern is the fact that a half of the drinks sold are consumed by children (<12 years), adolescents (12-18 years) and young adults (19-35 years) (Seifert et al., 2011). According to the results, approximately 30 % to 50 % of children and adolescents consume ED on the regular basis. A study which included 1265 German adolescents has shown that 53 % of the participants had consumed such beverages at least once, while among them 23 % of boys and 5 % of girls reported drinking ED regularly (Reissig et al., 2009; Seifert et al., 2011). The ED are also widely consumed by young people who are engaged in sports (Finnegan, 2003; Temple, 2009). The reason is probably attractive packaging and advertisements in media (Temple, 2009). The companies that produce ED are daily trying to convince us that the use of such drinks is healthy and has some special effects. ED are often sold to adolescents as an

alternative to natural drinks, with the argument that such drinks make a better party, promote wakefulness, increase cognitive performance, improve concentration and contribute to fat melting and weight loss (Reissig et al., 2009).

Adolescents often consume ED to increase their energy (65 %), to overcome sleepiness (67 %) and in combination with the alcohol (54 %). What is worrying is the fact that 49 % of adolescents who consume ED with alcohol, usually consume more than three cans of such drinks (Malinauskas et al., 2007), which results in a very large intake of caffeine and other stimulants. Consuming ED among children and adolescents is becoming a serious clinical problem because it endangers the health of the consumers (Reissig et al., 2009).

METHODS

The literature review was conducted by reviewing the PubMed and Science Direct databases and by using Google Web search engine targeting the literature published between January 1990 and July 2014. Keywords used in the search queries were “energy beverage”, “energy drink”, “power drink”, “red bull” and “caffeine”. The composition of ED was analyzed based on six of the most popular drinks that can be found in vending machines and shops.

INGREDIENTS OF ED

In addition to stimulants in the form of caffeine, the ED also contain other stimulant substances, such as taurine, guarana, ginseng and glucuronolactone and have added vitamins, particularly from B and C vitamin groups. The ingredients of the most common ED are given in Table 1.

Carbohydrate

The most common source of carbohydrate in ED are sucrose, saccharose, fructose and glucose syrup (Higgins et al., 2010). The percentage of carbohydrate is high: ED contain up to 10 % or 0 g to 67 g of carbohydrates per can (250 ml) (Schneider et al., 2011), which could be compared to 13 teaspoons of sugar. High content of sugar and the corresponding high energy value (around 100 kcal/250 ml) may also result in an excessive daily energy intake, which leads to the developing of obesity and insulin resistance (Higgins et al., 2010). The ED with low amounts of sugar, which are particularly appealing to young girls are also gaining on the popularity (Meadows et al., 2007). These drinks contain from 0 g to 3 g of sugar per 250 ml and have a low energy value (5 to 10 kcal/250 ml), however on the other hand, they have a high content of caffeine (120 mg/250 ml) (Meadows et al., 2007 Schneider et al. 2011).

Caffeine

Caffeine is known as the world's most commonly used psychoactive substance. Besides being a key component of almost every energy drink, it is also found in the coffee, tea, carbonated sodas and chocolate (Babu et al., 2007). Its concentration can vary significantly; for example the coffee contains 56-100 mg/100 ml of caffeine, carbonated drinks contain 9-19 mg/100 ml, chocolate contains 5-20 mg/100 g and cocoa contains 7 mg/155 ml of caffeine (Benowitz, 1990). Caffeine content in ED varies between 14 and 45 mg/100 ml (Schneider et al., 2011; Babu et al., 2007). ED which were selected for analysis on average contain 32 mg of caffeine per 100 ml, or 80 mg per can. The American Food and Drug Administration has limited the caffeine content in the drinks to 68 mg/340 g, however some ED still contain up to 500 mg of caffeine/680 g ED (Reissig et al., 2009; Seifert et al., 2011). The maximum recommended daily caffeine intake for children and adolescents ranges between 45 and 125 mg/day (≤ 2.5 mg/kg of body weight (b.w.)) and 400 mg/day (≤ 3.0 mg/kg of b.w.) for adult population (Health Canada Reminds 2010).

The average daily intake of caffeine in the United States is 3 mg/kg of b.w. for adults and 1mg/kg of b.w. for children (Babu et al., 2007). The other studies focused on the caffeine intake have also shown that caffeine intake was not exceeded, except for young Brazilian adults and teenagers (Thomson, 2010; Rojo, 1999). The highest value of caffeine consumed was reported in studies including Danish (8-18 mg/kg of b.w.) (Barone and Roberts, 1996) and German participants (7 mg/kg of b.w.) (Dlugosza and Bracken, 1992).

The use of caffeine in sport is also high. It is the most common substance in sports because it increases the aerobic endurance and strength, improves response time and delays fatigue. Some athletes who desire better performance may consume up to 13 mg/kg of b.w., although the ergogenic effects of caffeine have been detected with doses of 3 to 6 mg caffeine/kg of b.w. (Schneider et al., 2011). However, all studies were conducted on adults, and it is little known how caffeine affects the children and adolescents.

Guarana

Caffeine is not the only stimulating substance in ED; guarana also has similar or even stronger effect than caffeine. Studies indicate that 1 g of guarana contains 40 mg of caffeine, which is about four times the amount of caffeine in the coffee (Finnegan, 2003, Smith et al., 2007). Guarana is produced from diced dried seeds of *Paullinia cupana*, which contain large amounts of caffeine (4-8%), theobromine, theophylline and tannins. The effects of guarana last longer than those of caffeine, mainly because guarana contains tannins and saponins

(Babu et al., 2007). ED often contain both, guarana and caffeine, and such combination is likely to increase the stimulating effect on the body (Finnegan, 2003).

Guarana is also thought to contribute to weight loss by inhibiting the feel of hunger. However, as ED contain large amounts of sugar, the consumption of these drinks does not result in weight loss but, on the contrary, their regular consumption can lead to the development of obesity (Smith et al., 2007).

Many manufacturers declare guarana as a natural ingredient or herbal extract. For example, the nutrition table on the product Sexes (Table 1) declares a low caffeine content (0,01 mg/100 ml) although it actually contains 0.1% of guarana or 10 mg of caffeine per can. A large part of consumers does not realize that guarana actually contains high levels of caffeine, which may present a health risk (Finnegan, 2003). This is supported by the studies which report on caffeine poisoning of young people who consumed ED that contain both, caffeine and guarana (Smith et al., 2007).

Taurine

Taurine is an amino acid which is generated as a product of the metabolism of methionine and cysteine. It is present in large quantities in the human body, although, these amounts decrease in case of stress and increased physical activity. Taurine is therefore often labeled a “conditionally essential” amino acid (Finnegan, 2003). The main sources of taurine are meat, fish, milk and milk products (Babu et al., 2007). We consume from 20 to 400 mg of taurine each day with food (Finnegan, 2003; Babu et al., 2007), while its content in ED is several times higher.

The overview of nutrition tables found on the ED which are sold in local stores revealed that these drinks contain about 1000 mg taurine/250 ml. However, its amounts in products sold in North America can be even higher ranging from 2000 to 5000 mg of taurine/500 ml (Higgins et al., 2010). Taurine is added to ED to potentiate the effects of caffeine (Schneider et al., 2011). Although, in smaller amounts, taurine has beneficial effects on the body (e.g. influence on muscle contraction, reducing DNA damage, lowers the content of bad cholesterol, anti-oxidative and anti-inflammatory effects), its amounts in ED are much above these amounts (Higgins et al., 2010). Moreover, it is also little known about the effects of long-term consumption of high concentrations of taurine in the body in children and adolescents (Babu et al., 2007).

Table 1: Contents of sample energy drinks per 100 ml

Product	Red Bull	Shark	Burn berry	Sexes	Monster energy	SBudget
Volume (ml)	250	250	250	250	500	250
E (kJ (kcal))	192 (45)	275 (65)	191 (45)	210 (28)	203 (48)	190 (45)
CH (g)	11	15,3	10,8	6,6	12	11
Caffein (mg)	32	32	32	0,01	32	32
Taurin (g)	0,4	0,4	0,4	nd	0,4	0,4
Sodium (g)	0,04	tc	0,02	0,1	0,08	0,25
B2 (mg)	nd	0,5	nd	0,28	0,7	nd
B3 (mg)	8	6,4	2,4	3,2	8,5	8
B5 (mg)	2	2	0,9	nd	nd	2
B6 (mg)	2	0,5	0,21	0,28	0,8	2
B12 (µg)	2	1	0,38	0,4	2,5	2
Other Ingredients	Sodium citrate, magnesium carbonate, carbon dioxide, inositol, flavour, caramel	Citric acid, glucuronolactone, choline bitartrate, lysine hydrochloride, inositol, caramel, guarana, flavour	Fruit concentrate, carbon dioxide, citric acid, Sodium citrate, inositol, carrot and hibiscus extract, guarana	Zinc, citric acid, guarana, maca, Sodium citrate, inositol, flavour, saffron, sodium benzoate, potassium sorbate, gluconate, ginseng, melissa	L- carnitine, ginseng, flavour, sodium citrate, anthocyanine, tartrate, sorbic acid, benzoic acid, sodium chloride, glucuronolactone, guarana, inositol, maltodextrin	carbon dioxide, sodium citrate, glucuronolactone, caramel, riboflavin, inositol

Legend: E,energy; CH, carbohydrates; nd, no data; tc, trace constituents

Vitamins and minerals

The majority of the ED contain mainly the B-group vitamins: thiamin, riboflavin, niacin, pantothenic acid, and biotin. Vitamins in this group are soluble in water and act as a coenzyme in the energy generation (Depeint et al., 2006). These vitamins are added to the ED in order to help the conversion of simple sugars into energy (Higgins et al., 2010). Beside vitamin B, many ED also contain vitamin C, sodium, calcium, magnesium and zinc.

Glucuronolactone

Glucuronolactone is a natural ingredient that the body can form or can get with food. The average daily intake has been estimated between 1,2 and 2,3 mg per day, however, it may increase up to 500 times when it is consumed with food (Finnegan, 2003). In many cases the amount of glucuronolactone has not been declared in the product's nutrition table, but it is only mentioned as an ingredient. The nutrition tables of the products, which specify the amount of glucuronolactone, however, reveal that large quantities of glucuronolactone (1200 to 5000 mg/500 ml) are usually added to ED (Higgins et al., 2010). What is worrying is the

fact that even though glucoronolactone is added to ED in large quantities, its effect on the human body has been very little studied and it is therefore yet unknown (Finnegan, 2003; Higgins et al., 2010).

RECOMMENDATIONS FOR CONSUMPTION

Because ED contain a lot of caffeine and other stimulating substances, it would be necessary to include recommendations on the maximum recommended daily intake on the packaging of such drinks.

A review of six ED reveals that the producer of Shark energy drink recommends drinking no more than one can (250 ml) a day while the producers of Sexes and Red Bull recommend two cans (500 ml) a day. The recommendations that are found on the cans (250 ml) of SBudget and Burn ED only advise moderate consumption. On the packaging of Monster (500 ml), no recommendations regarding the daily consumption can be found.

For the majority of healthy adults consuming one can (250 ml) a day can be considered safe. On the other hand, warnings for heart patients and patients with hypertension are often inadequate, even though consuming ED can present a risk for such consumers (Higgins et al., 2010).

All the manufacturers except Sexes indicate that their drinks are not suitable for children, diabetics and pregnant women, and provide warnings not to consume these drinks during the intense sports activities (SBudget Energy Drink). Especially young people often consume ED with alcohol, which can cause serious health problems (Reissig et al., 2009). The warnings of the danger of mixing ED with alcohol were found on the packages of only two out of six products (Monster and SBudget).

THE IMPACT OF THE CONSUMPTION OF ED ON HEALTH

Consuming ED in children and adolescents is a serious problem because more and more young people are seeking help from intoxication with ED (Goldman, 2013; Crane, 2009). Research shows that the consumption of ED can affect the development of hyperactivity in children and sleep disorders (Goldman, 2013). Teenagers often report feeling nervous, dizzy and not being able to focus when drinking ED (Bramstedt et al., 2007). The individuals who sought medical help had experienced the following symptoms: nausea / vomiting (56 %), hypertension (100 %), increased heart rate (44 %), nervousness (67 %), dizziness (44 %) and chest pain (11 %) (Reissig et al., 2009). The intoxication most often occurs due to high concentration of caffeine, as caffeine tolerance in children and adolescents is generally lower than in adults (Goldman, 2013). In addition to the above-mentioned symptoms, high concentration of caffeine also causes sleep disorder, depression, anxiety, headache, longer

response time and affects brain development in children (Seifert et al., 2011; Babu et al., 2007).

High levels of caffeine in ED can also be associated with reduced bone mass. Caffeine causes reduced absorption of calcium, which is an important element in building bones (Seifert et al., 2011). At the same time, research has shown that children, who consume ED, also consume less milk and milk products which are an important source of calcium (Blum et al., 2005).

Consuming ED is not recommended for any active person. It is especially important to draw the attention of young people to their harmful effects. Caffeine acts as a diuretic, which means that it accelerates the loss of fluid with the urine or sweat, which increases the possibility of dehydration of active people (Meadows et al., 2007). In addition, sport activities increase heart rate, which presents a risk, as heart rate can exceed the value of 200 beats per minute when we consume ED. There are some cases known, where adolescents had drunk ED before exercise and later died of cardiac arrest (Berger et al., 2009; Higgins, 2010).

Consuming ED can contribute to the development of obesity and related diseases. Children who consume ED often have a higher body mass index, higher blood pressure and glucose levels, and bad teeth (Seifert et al., 2011; Goldman, 2013). On the other hand, the consumption of ED is also associated with eating disorders, particularly with *anorexia nervosa*. Children and adolescents often consume ED with the aim to suppress appetite, to make the excretion of faeces easier or to prevent fatigue due to low energy intake (Striegel et al., 2006, Stock et al., 2002).

Teenagers often consume ED with alcohol, which can lead to serious health disorders: liver damage, kidney failure, respiratory disease, panic attacks and even death (Seifert et al., 2011). The combination of alcohol and ED can also affect the cognitive abilities, it reduces the symptoms of intoxication and alcohol poisoning, which consequently contributes to increased number of accidents (Higgins, 2010).

Researchers found that teenagers who consume ED are also subjected to other bad habits. They very likely smoke cigarettes, cannabis and take other illicit drugs, engage in fights and do not use seat belt in vehicles (Kaminer, 2010). However, although it is attributed to a number of weaknesses it is not just caffeine that has negative effects on health. The other ingredients in ED, such as taurine, guarana and gluconolactone, probably also have negative effects, but they are still far too little studied. Too little studied are also acute and chronic effects that energy drink consumption has on health. The consummation of these beverages, therefore, requires special care.

DISCUSSION AND CONCLUSION

Consuming ED in children and adolescents is increasing, which raises a number of questions about the safety and the impact of long-term consumption of such beverages on health. Producers of ED lead a very aggressive advertising, which is strongly media supported. They are targeting primarily at young people and misleading them by ensuring that consuming ED gives more energy, less fatigue, better endurance and relaxation. The labeling of ED, including health risk warnings, varies depending on the producer. Some producers provide a warning that drinking such beverages is not recommended for children, while others sell their products without such warnings. It also must be pointed out that the recommended daily intakes of the ingredients of ED are calculated for healthy adults and not for children, young people or even chronic patients.

Adults can daily consume up to 400 mg of caffeine. Toxic effects occur when consuming more than 1 g of caffeine, while the intake of 5 to 10 g of caffeine can be lethal. Children and adolescents should not consume more than 100 mg of caffeine per day ($\leq 2,5$ mg / kg b.w./ day) (Seifert et al., 2011). Red Bull drink, for example, contains 80 mg of caffeine. If consumed by a young individual who weighs 50 kg, its daily intake of 1,6 mg / kg does not mean overdose (Health Canada Reminds, 2010). However, this is probably not the only source of caffeine, the person will consume. Many young people also drink carbonated drinks, which also contain caffeine, coffee or tea and chocolate, thus exceeding the recommended daily intake caffeine. Furthermore, it is not only caffeine that makes in ED problematic, but such are also other stimulating substances (guarana, glucoronolactone, taurine), which also have a negative impact or little is known about their impact on health.

Most of the research (Goldman, 2013; Seifert et al., 2011; Reissig et al., 2009; Babu et al., 2007) has shown that the consumption of ED results in a high blood pressure, arrhythmia, loss of bone mass, obesity, depression, dehydration, and number of other immediate effects on the body. The effects of an excessive and chronic consumption of ED and the potential interactions with drugs are still largely unknown. Another problem of energy drink consumption lies also in the fact that such drinks are freely available to young people and can be purchased anywhere and anytime. We currently have no age restrictions on the sale and consumption of ED. In 2014, Lithuania became the first country in the world to ban the sale of ED to people under the age of 18, which is definitely a big step towards preserving the health of children and adolescents. A lot can also be achieved through the education of children and their parents about the risk of consumption of ED, particularly in combination with alcohol.

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**PRESCHOOL TEACHERS' OPINIONS ABOUT SUITABLE SPORTS EQUIPMENT FOR
MOTOR / SPORTS EDUCATION**

**MNENJA VZGOJITELJEV PREDŠOLSKIH OTROK O PRIMERNI ŠPORTNI OPREMI PRI
GIBALNI / ŠPORTNI VZGOJI**

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ABSTRACT

The aim of our study was to investigate, how many attention and emphasis of preschool teachers is focusing on the use of appropriate sports equipment in motor/sport activities of preschool children in public kindergartens. The preschool teachers from seven kindergartens in Obala region were included in the study. Data collection was conducted in May 2014 with the structural questionnaire. We asked the preschool teacher, what is the appropriate sports equipment, or children in their groups dress up for the organised motor/sports activity, and what are the reasons of preschool teachers to not encouraging children to dress up in sports equipment. The results showed that 37.1% preschool teachers are aware of appropriate sports equipment and dressing children for the motor/sports activities in kindergarten. For the 60.9 % of preschool teachers with the opposite opinion, are the most common reasons disagreement of parents and the excessive loss of time with dressing. Spearman correlation showed that preschool teachers in the kindergarten group of the second age period of children are statistically significant more aware the importance of dressing for the motor/sports activities in comparison with the preschool teachers in the kindergarten group of the first age period of children ($r_s = -0,318$, $p = ,001$). In the future the emphasis need to be given to the preschool teachers and parents of children in the kindergarten group of the first age period, and present them the importance of using the appropriate sports equipment for the safety and healthy motor/sports activity of child.

IZVLEČEK

Z raziskavo smo želeli ugotoviti, koliko pozornosti in poudarka namenjajo vzgojitelji uporabi primerne športne opreme pri gibalnih/športnih aktivnostih predšolskih otrok v javnih vzgojno-varstvenih zavodih. V raziskavi so sodelovali vzgojitelji sedmih Obalnih vrtcev. Zbiranje podatkov je potekalo maja 2014 s strukturiranim vprašalnikom. Z vprašanji smo želeli preveriti, kaj je za vzgojitelja primerna športna oprema, ali se otroci v njegovi skupini za vodeno gibalno/športno aktivnost preoblečejo, ter kakšni so razlogi vzgojiteljev za ne

usmerjanje otrok v preoblačenje v športno opremo. Rezultati so pokazali, da se 37,1% vzgojiteljev zaveda pomena primerne športne opreme in preoblačenja otrok za gibalno/športne aktivnosti v vrtcu. Med 60,9 % vzgojitelji, ki temu ne sledijo, sta najpogostejša razloga nestrinjanje staršev in mnenje o preveliki izgubi časa s preoblačenjem. Spearmanova korelacija je pokazala, da se vzgojitelji skupine otrok drugega starostnega obdobja statistično pomembno bolj zavedajo pomena preoblačenja pri gibalnih/športnih aktivnostih v primerjavi z vzgojitelji otrok prve starostne skupine ($r = -0,318$, $p = ,001$). V prihodnje je potrebno pozornost posvetiti predvsem vzgojiteljem, ki delujejo v prvi starostni skupini otrok, ter staršem teh otrok in jim predstaviti pomen uporabe primerne športne opreme za varno in zdravo gibalno/športno aktivnost otroka.

Ključne besede: predšolski otrok, javni vzgojno-varstveni zavod, gibalne/športne aktivnosti, športna oprema, varnost.

INTRODUCTION

Physical activity is an integral part of a child's behavioural repertoire, and it represents the medium through which children directly include themselves in the environment that surrounds them. It also helps them to discover various dimensions of the environment, and enables them to gain precious experience, especially during the period of early childhood (Thelen, 2000 in Pišot and Planinšec, 2005). Motor/sports activity is an important external factor in the development of a child, which affects all development areas (physical, motor, cognitive, emotional and social). Regular motor/sports activity plays an important factor in the development of a child, it protects and enhances the health, maintains an appropriate level of physical fitness, and helps children to develop habits and behavioural patterns which include motor/sports activity that will last for their whole life (Gallahue and Ozmun, 1998; Malina, 1996; Riddoch et al., 2003; Simons Morton, Parcel, O'Hara, Blair and Pate, 1988; Strong et al., 2005, in Matejek and Planinšec, 2008; Zurc, 2005).

Organised motor/sports activity for preschool children begins when they enter a public day-care institution – kindergarten – for the first time. By performing different indoor and outdoor activities, children develop motor and functional abilities, and gradually get acquainted with basic elements related to different types of exercise and sports genres (Videmšek, Berdajs and Karpljuk, 2003). Various authors have already discovered that it is extremely difficult, if not entirely impossible, to develop motor knowledge, skills and abilities if they were not acquired in time, during early childhood (Videmšek et al., 2003).

One of the objectives in Kurikulum (Bahovec et al., 1999) related to motor/sports activities is also to teach children the basic principles of hygiene, clothing and footwear suitable for such activities. Adequate sports equipment plays an important role during motor/sports activity because it controls thermoregulation – the ability of an organism to maintain body temperature within certain limits, even when the ambient temperature is significantly different. If we want thermoregulation to function properly, suitable sports equipment has to be chosen that enables children to easily perform physical activities. The choice of materials is of paramount importance, because “the skin has to breathe” during motor/sports activity (<http://sl.wikipedia.org/wiki/Termoregulacija>). According to Štemberger (2005), it is essential that teachers change into suitable clothing in order to carry out quality physical education classes. This is important for many reasons, the first one being safety, immediately followed by hygiene. Teachers cannot carry out physical education classes safely, if they do not wear suitable clothing and footwear. Children can also get injured if teachers use unsuitable sports equipment because it prevents them from demonstrating the exercise properly, and impedes them from assisting and protecting children, which is of crucial importance for physical education. Teachers should also support such findings because they are an important role model for children. If they want to accustom children to safety and hygiene by teaching them to change into suitable clothing and footwear before and after physical education, then teachers should do the same as well.

Objectives

The aim of the study was to find out how much attention and emphasis preschool teachers devote to the use of suitable sports equipment for motor/sports activities in both age groups of children attending a public day-care institution.

According to the objective of the study, we have formulated two hypotheses:

H1: We assume that younger teachers and teachers with higher education are statistically more aware of the importance of suitable sports equipment in both age groups of children, compared to older teachers and teachers with a lower level of education.

H2: We assume that teachers of the second age group of children are statistically more aware of the importance of changing clothes and footwear before and after motor/sports activities, compared to teachers of the first age group of children.

METHODS

Sample

Teachers from seven kindergartens in the Slovenian coastal region were included in the sample. The sampling method was non-random purposive sample. We distributed 148

questionnaires and we received back 115 fully completed questionnaires, which shows a 77.7 % realization of the sample. The average age of the surveyed teachers was 47.2 years (SD = 9.3 years). The youngest participant was 25 and the oldest 67 years old. Women represented the majority of the sample (98.3 %), but there were also two male participants (1.7 %).

64 teachers (55.7 %) have upper secondary school education and upper secondary school education with retraining, 51 teachers (44.3 %) have a high professional or university education. 45 surveyed teachers (39.1 %) work with the first age group (1-3 years), 61 teachers (53.0 %) work with the second age group (3-6 years), and 9 teachers (7.8 %) with a mixed age group (1-6 years).

Measurement instrument and data collection method

Data were collected using a structured questionnaire that consisted of 7 open and closed-type questions. Before we distributed the questionnaires, we had been granted permission by the managements of the kindergartens involved in the study. Data collection took place in May 2014.

Methods of data analysis

Data were analysed using the statistical package SPSS 22.0. We have calculated the frequencies, standard deviation, minimum value, maximum value, and Spearman's rank correlation that was used to determine the correlation between teachers' age and education, the age group of children they work with, and their opinion about the importance of suitable sports equipment during motor/sports activities for preschool children.

RESULTS AND DISCUSSION

45 teachers (39.1 %) realise how important it is for preschool children to change into suitable sports clothing and footwear for motor/sports activities. It is, however, alarming that 70 teachers (60.9 %) do not motivate or encourage children to change into suitable clothes before the beginning of motor/sports activities. We have found out that all the surveyed teachers realise the importance of suitable sports equipment (clothes and footwear) because it allows children to move easily and safely during physical activities. All 115 teachers agree that suitable sports equipment consists of sneakers, shorts and a T-shirt. When motor/sports activities are performed outdoors, in colder weather, a sweat suit is also adequate.

Table 1: Correlation between teachers' age and education, the age group of children, and their opinion about the importance of changing clothes.

		changing clothes	teachers' age	teachers' education	age group of children
Spearman's rho	changing clothes	1.000	-0.026	0.034	-0.318**
	teachers' age		1.000	-0.510**	-0.068
	teachers' education			1.000	0.082
	age group of children				1.000

** Correlation is significant at the 0.01 level (2-tailed).

In order to determine the correlation between teachers' age and education, the age group of children they work with, and their opinion about children changing into suitable clothing for motor/sports activities, Spearman's rank correlation has been used (Table 1). A statistically significant strong correlation ($r = -0.318$, $p = .001$) can be noticed between the teachers' opinion on changing clothes for motor/sports activities and the age group of children they work with. From a statistical point of view, teachers who work with the second age group motivate and encourage children better to change into suitable clothing before the beginning of motor/sports activities, compared to teachers who work with the first age group. Therefore, we can accept the second hypothesis, because teachers working with the second age group of children are statistically more aware of the importance of changing clothes before motor/sports activities, compared to teachers working with the first age group of children.

Spearman's rank correlation has not shown any statistically significant correlations between teachers' age and education, and their opinion about the importance of changing clothes for motor/sports activities. According to the results, we can reject the first hypothesis that younger teachers and teachers with higher education are statistically significant more aware of the importance of suitable sports equipment in both age groups of children, compared to older teachers and teachers with a lower level of education. The study has also shown a statistically significant strong correlation between teachers' age and education ($r = -0.510$, $p = .000$). With the age increasing, a statistically significant decrease in the education level of teachers can be noticed.

We have also asked teachers why children from their group do not change into suitable clothing for motor/sports activities. Most of the answers came from teachers working with children from the first age period. These are the reasons they listed:

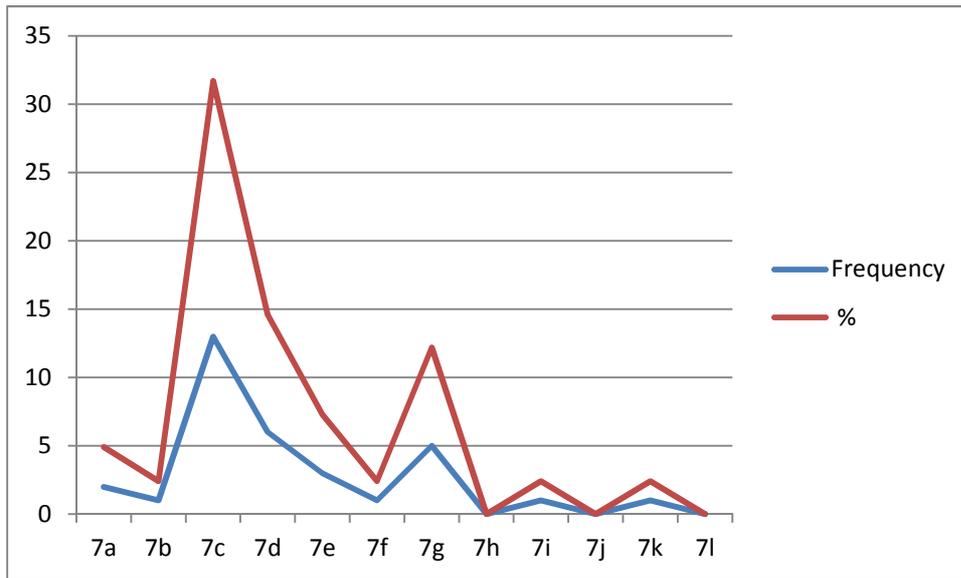
- age differences in the group,
- children come to the kindergarten already wearing clothes that are suitable for motor/sports activities,
- when organised motor/sports activities are planned in advance, parents dress their children in suitable sports clothing already at home.

We have to emphasise that 4.9 % of the surveyed teachers stated that they support the practice of children changing into suitable clothes:

- when we exercise in the playroom, children are barefoot and they wear a T-shirt,
- I support the practice of children changing into suitable clothes, but teachers should do the same as well.

The reasons were mainly listed by teachers working with children from the first age period.

Figure 1: The reasons why children do not change their clothes for motor/sports activities, listed by teachers.



Legend:

- 7a: I think it is not necessary.
- 7b: I believe that there is no need for preschool children to change their clothes because they can easily move in the clothing they usually wear to the kindergarten.
- 7c: In the first age period, children are too small to independently dress and undress themselves.
- 7d: Changing clothes takes a lot of time.
- 7e: The space in which guided motor/sports activities are carried out is cold in the winter.
- 7f: In the summertime guided motor/sports activities are carried out outdoors. Children come to the kindergarten wearing summer clothing and footwear (T-shirts, shorts, skirts, sandals, flip-flops, crocs, ...)
- 7g: Guided motor/sports activities are carried out outdoors in all weather conditions and in all seasons. Therefore, children do not change their clothes.
- 7h: We do not carry out any motor/sports activities.
- 7i: Parents do not agree that children change their clothes and wear (at least) a T-shirt, because they believe their children will catch a cold or get ill.
- 7j: Parents do not agree that children change into suitable sports clothing (T-shirt, shorts and adequate footwear – sneakers), because they believe their children will catch a cold or get ill.
- 7k: Parents forget to bring their sports equipment.
- 7l: At the first parent-teacher meeting, we do not tell parents how important adequate sports equipment is.

CONCLUSION

Our study has shown that teachers are aware that suitable sports equipment allows children to move easily and safely during physical activities, and that they also know which equipment is suitable. Yet, only a third of respondents stated that children from their group change into suitable sports clothing before motor/sports activity. The most common reasons are lack of time and parental disapproval. If we want to accustom children to change their clothes before physical activity, we also have to make their parents aware of how important suitable sports equipment is. Based on the results of our study, parents should be acquainted with the importance of thermoregulation at the parent-teacher meeting. And thermoregulation should serve as an argument why children should wear suitable sports equipment for motor/sports activities. Special attention in relation to the use of suitable motor/sports equipment should be devoted to the awareness and education of preschool teachers working with groups of children aged up to 3 years old. As an institution that complements the family, a kindergarten should influence the lifestyle and habits of children in a safe manner, and safety is also assured by suitable sports equipment.

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NON-ALCOHOLIC FATTY LIVER DISEASE NAFLD IN OBESE CHILDREN: THE POSITIVE EFFECTS OF LIFESTYLE INTERVENTION

NEALKOHOLNA ZAMAŠČENOST JETER PRI DEBELIH OTROCIH: POZITIVNI UČINKI SPREMEMBE ŽIVLJENJSKEGA SLOGA

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ABSTRACT

Nonalcoholic fatty liver disease (NAFLD) is currently the most common cause of liver disease in children and adolescents, due to the increase in the prevalence of overweight and obesity. The main goal of the treatment is to modify the life style, starting with a healthy diet and an increase of physical activity. This article reviews the pediatric fatty liver disease, the new insights in prevention and the future directions.

Keywords: Nonalcoholic fatty liver disease, fructose, obesity, inactivity.

IZVLEČEK

Nealkoholna zamaščenost jeter (NAFLD) je trenutno najpogostejši vzrok bolezni jeter pri otrocih in mladostnikih, zaradi povečanja pojava prekomerne telesne teže in debelosti. Glavni cilj zdravljenja je sprememba življenjskega sloga, z zdravo prehrano in povečanjem telesno-gibalne aktivnosti. Članek obravnava nealkoholno zamaščenost jeter, kot posledico debelosti, nova spoznanja na področju preventive in prihodnje usmeritve.

Ključne besede: nealkoholna zamaščenost jeter, fruktoza, debelost, neaktivnost.

INTRODUCTION

Over the last two decades, the emergence of non-alcoholic fatty liver disease (NAFLD) is rapidly becoming one of the most important chronic liver diseases in children and adolescents (Schwimer et al., 2006). The rise in prevalence of overweight and obesity may explain the cause of liver disease in paediatric populations worldwide (Barshop et al., 2008). NAFLD affects 2.6 % to 9.8% of children and adolescents and increases up to 77% among adult obese individuals (Chan et al., 2004 & Nobili et al., 2008). NAFLD is strongly associated with obesity, insulin resistance, dyslipidemia and is now regarded as the liver

manifestation of the metabolic syndrome (MetS) that is induced by a group of risk factors that raises the risk for heart disease, diabetes and other health problems, diagnosed by a co-occurrence of three out of five of the following medical conditions: abdominal (central) obesity, elevated blood pressure, elevated fasting plasma glucose, high serum triglycerides, and low high-density cholesterol (HDL) levels.

Some of the long term prognosis of paediatric NAFLD have reported well documented cases of cirrhotic stage disease that occur in some children (Schwimer et al., 2006). Pathologic studies demonstrated that atherosclerosis is an early process beginning in childhood, with fatty streaks observed in the aorta and the coronary and carotid arteries in children and adolescents (Stary et al., 2000).

Evidence that not all of the obese patients develop NAFLD suggests that the disease progression is depending on complex interplay between environmental factors and genetic predisposition.

This review article discusses the beneficial effects of lifestyle intervention such as physical activity and nutrition in children with NAFLD.

METHODS

Data are selected from the literature found through the following web browsers Articles: Springer Link, Web of Science, Science Direct and Interscience.

RISK FACTORS FOR DEVELOPMENT OF NAFLD

Obesity and insuline resistance are the main risk factors for paediatric NAFLD. Two other critical risk factors for NAFLD are represented by the gender and the ethnic back-ground. NAFLD is more common in boys than in girls (Browning et al., 2004). This has been explained by estrogens that have a liver protective role, possibly mediated by the beneficial effect on insulin action. It has been shown that estrogens deficiency increased fat mass and body weight in postmenopausal women (Lovejoy et al., 2008). The risk linked to the ethnic background has been investigated in large multiethnic populations. The prevalence of NAFLD was highest in the American Hispanic population (45%) and the lowest among African Americans (24%), while Caucasians showing an intermediate prevalence (33%). Ethnic differences could be due to different degree of insulin resistance, visceral adiposity, genetic factors, socio-economic factors including type of diet, exercises and living location (Graham et al., 2009).

Dietary risk factors for development of NAFLD are diets high in carbohydrates, mainly due to high fructose and sucrose intake, high omega 6 polyunsaturated fatty acids (PUFAs) and low omega 3 PUFAs (Marzuillo et al., 2014; Papandreou et al., 2012).

TREATMENTS

The only accepted therapy for paediatric NAFLD is lifestyle modification with diet and physical exercise. Weight loss programme leads to significant improvement in liver histology, liver enzymes, insulin resistance and lipid levels and reduces adipose tissue inflammation (Pacifico et al., 2011). The goal of lifestyle interventions should be gradual, and induce controlled weight loss. It was demonstrated that physical activity and its synergic effect play a key role when combined to diet modification. Increasing energy expenditure is an additional way to reducing daily calories. It has been shown that with moderate daily exercise program associated to dietary changes liver histological features improved in children with NAFLD (Nobili et al., 2008). Interestingly, it was also reported that a 2-y lifestyle intervention, including personalized diets and increased physical activity (45 min/ daily aerobic physical exercise), was associated with a mean weight loss of 5 kg, resulting in a significant improvement in liver histology and in serum liver enzyme alanine transaminase (ALT) and a decrease of lipid levels and insulin resistance.

The positive effects of lifestyle intervention on paediatric NAFLD could be increased and applied as preventive strategies, but two elements limit this advance (Nobili et al., 2009). The first element is that there are no current guidelines about the opportune dietetic regimens and physical activity. The second element is that the concept of diet and physical activity, particularly in children, is perceived negatively or is totally personalized by patients and their parents, thus dramatically lowering and/or delaying the efficacy of lifestyle approaches (Alisi and Nobili, 2012).

Conlon et al. (2013) propose existing guidelines from American Diabetes Association (ADA, 2013) as complementary for NAFLD, as common co morbidities with insulin resistance and cardiovascular disease are shared. These recommendations consist out of dietary patterns that include daily carbohydrates from fruit, vegetables, whole grains and legumes and two or more servings of fatty fish per week, with the exception of fried fish. Families of affected children's should be counselled on healthy habits, appropriate nutrition practices and balanced diet (Barlow et al, 2007). Such practices include regular consumption of fruits and vegetables; moreover, fruit and/or vegetables must be present in every meal of the day, which provides a lower energy density of meals and prevents overeating (Jurdana, 2013).

Table 1 - Example of individual diet plan for 5-year child, containing 6,3 MJ (1500 kcal).

Meal/dish	Quantity (g)	Energy (kcal)	Energy in meal (%)
Breakfast		278,90	19
Brown bread	70,00	167,75	
Edam cheese	40,00	97,41	
Green peppers	20,00	3,67	
Cherry tomatoes	50,00	10,07	
Fruit tea without sugar	200,00	0	

Morning snack		186,86	
Banana smoothie: Banana	50,00	43,76	12
Milk 3.5% fat	100,00	64,24	
Oatmeal	20,00	78,86	
Lunch		592,13	
Soup of mixed vegetables	200,00	73,25	39
Brodet (fish stew)	180,00	174,34	
Polenta	250,00	203,64	
Green salad with rapeseed oil	150,00	50,90	
Light vanilla ice cream	50,00	90,00	
Water with squeezed lemon juice	200,00	0	
Afternoon snack		155,13	
Strawberries	100,00	21,83	10
Yogurt, whole milk	150,00	100,02	
Wholemeal craker	8,00	33,28	
Dinner		293,82	
Whole wheat bread with linseeds	50,00	100,40	20
Barley stew with leeks	200,00	193,42	
Total		1506,84	100

An example of an adequate daily menu is presented in Table 1. The menu consists of five servings; in each are included fruits or vegetables. The percentage of energy in each meal and the percentage of energy from nutrients are in accordance with the national recommendations for a healthy diet for five-year-old children (Gabrijelčič Blenkuš et al., 2005). The ratio between n-3 and n-6 PUFAs can be improved by regular consumption of rape seed oil and marine fish at least twice a week (as shown in the menu). In the presented daily menu the ratio between n-3 and n-6 PUFA is 1:3.

CONCLUSION

Non-alcoholic fatty liver disease, because of the rise in the prevalence of childhood obesity, is becoming one of the most important chronic liver diseases among children. The main treatment for NAFLD is to promote gradual weight loss through lifestyle modification starting with a healthy diet and an increase of physical activity. Lifestyle modification strategies focused on promoting increased parental self-efficacy and parental motivation to promote healthy lifestyle behaviour are important components in the treatment of obese children with NAFLD (Iñiguez et al., 2014). However unfortunately little is known regarding parental perspectives about the barriers and facilitators that influence the ability to promote healthy lifestyle behaviours in children with NAFLD, and therefore we conclude that weight loss with family based treatments is the most acceptable management: Eating patterns and physical active lifestyle are learned at an early age, therefore it is necessary to teach children, and in particular, their parents, how to compose a properly meal and which foods to choose in the daily nutrition.

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DOES PHYSICAL ACTIVITY AFFECT SPECIFIC RHYTHMIC GYMNASTICS SKILLS IN CHILDREN?

ALI GIBALNE AKTIVNOSTI VPLIVA NA POSEBNE RITMIČNE GIMNASTIKE SPRETNOSTI OTROK?

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ABSTRACT

The main aim of current research was to determine the relationship between the physical activity and achieved levels of specific motor skills in rhythmic gymnastics in 6-year-old children. Seventy preschool children participated (30 girls and 40 boys). Overall, 20 rhythmic gymnastics skills tests were constructed. Statistically significant correlation was not found for any of the applied apparatus. So, children who spend more time participating in active play, not necessarily have to be better in performing specific motor skills of rhythmic gymnastics. In future research it is advisable to do a better selection of children from different backgrounds to ensure the heterogeneity of the sample.

Keywords: aesthetic activities, motor skills, preschool children, sedentary behavior

IZVLEČEK

Glavni cilj sedanje raziskave je bil ugotoviti povezavo med telesno aktivnostjo in doseglja raven določenih motoričnih sposobnosti v ritmični gimnastiki v 6-letnih otrok. Sedemdeset predšolski otroci sodelovali (30 deklic in 40 dečkov). Na splošno je bilo zgrajenih 20 ritmična gimnastika testi sposobnosti. Statistično značilna korelacija ni bil najden za katerega koli od uporabljenega aparata. Torej, otroci, ki preživijo več časa, ki sodelujejo v aktivni igri, ni nujno, da so boljši pri opravljanju določenih gibalnih spretnosti ritmični gimnastiki. V prihodnje raziskave je priporočljivo narediti boljšo izbiro otrok iz različnih okolij, da se zagotovi heterogenost vzorca.

Ključne besede: estetske dejavnosti, motorične sposobnosti, predšolski otroci, sedeči vedenje

INTRODUCTION

Rhythmic gymnastics for beginners stands in complete contrast to the competitive sphere of this sport. Such program is equally focused on entertainment, active participation and enjoyment. In this environment the sport is not sexually determined, where girls and boys of different ages equally participate. Also, it attracts children of all levels of motor skills. Discovering one's own abilities through body movement and manipulation of apparatus is what motivates children to perform increasingly complex movements. Children start this program in the age of four, and until the age of seven they already start with the first competitions.

A lifestyle that includes involvement in physical activity is recognized as a key factor in healthy living among individuals of all ages (Corbin & Pangrazzi, 1998). According to Shephard (1997) repeated physical activity results in the development of motor skills and coordination. Furthermore, children with poorer motor skills are less physically active than children whose level of skills is higher. Also, the relationship between motor skills and physical activity could be an important part of health at an early age, especially in relation to the prevention of obesity (Williams et al., 2008). The above facts clearly define the cause-effect relationship between physical activity and motor skills, but it is not clear to what extent physical activity affect the acquisition of specific motor skills of a certain sport, in this case, rhythmic gymnastics.

In order to accurately determine the above relationship precise estimation of physical activity must be applied. If a larger number of participants is present then the application of a questionnaire becomes the most valid method of assessment, if not the only feasible. The most experienced researchers are unanimous in saying that the use of a questionnaire in children younger than 10 years is not suitable (Montoya et al., 1996; Fox and Riddoch, 2000, Fulton et al., 2001, Kohl et al., 2000) and therefore, the most widely used method for estimating physical activity is a questionnaire for parents.

Since it was not proven that the acquisition of specific skills requires a certain level of physical activity, it is important to determine their conditionality in rhythmic gymnastics, especially at a young age because such a finding could scientifically justify early involvement of children in the sport. The aim of this study was to determine the relationship between the physical activity and achieved levels of specific motor skills in rhythmic gymnastics.

METHODS

Seventy preschool children participated (30 girls and 40 boys; mean age 6 ± 0.5). All of them were chosen randomly and they all gave their informed consent, as their parents gave official written consent. The study included children with no health problems or significant motor disorders. Their average body height was 122.5 ± 5.0 cm, with average body weight of 24.49 ± 3.78 kg, average body mass index being 16.28 ± 1.71 . Those children who were involved in RG outside the preschool institution were not included in the investigation.

Selection of tests for specific rhythmic gymnastics skills assessment was done according to existing apparatus techniques in Federation Internationale de Gymnastique (FIG) Code of Points in such way that one test for each technique was designed. Overall, 5 tests were constructed for each apparatus which gives a total of 20 tests. Qualitative approach was used for evaluation of each skill. Thus, each test was divided into three phases (segments) and each stage had to meet certain criteria. If the respondent met the criteria he was assigned the score 1, and if he did not meet the criteria, he received a score 0. The maximum number of points that the respondent could get on a single test was 6 because each test was repeated twice. Specific skills assessment was done after 9 weeks of the treatment, since the children's initial level of such skills at the beginning of the program was zero. Each child was tested throughout one session and all participants were tested in the range of one week. All skills were videotaped and later assessed individually by three experienced RG teachers and coaches according to the procedures described above.

Physical activity assessment was carried out with the help of a questionnaire for parents. The "Netherlands Physical Activity Questionnaire" (NPAQ) which provides a global picture of the daily children's activities (Montoya et al., 1996) was used. This questionnaire was chosen because it focuses on the features of the child's behavior in leisure time and the choice of non-organized leisure activities that are assumed to be associated with the level of physical activity. This information is important for two reasons. First, children of this age often have not been involved in organized sports activities that are reported in other surveys. Secondly, in this way the description of the characteristics of the specific activity is avoided, as for example, the frequency or intensity, which is quite difficult to keep track of. NPAQ questionnaire consists of two parts: physical activity assessment part (PA) and sedentary behavior assessment part (SB). The first part comprises 7 claims that parents respond to by the Likert scale (1-5) depending on the extent to which they agree with the statement. The total score is the mean of all responses. The second part that assesses children's sedentary behavior contains only two questions that

relate to the average daily time spent in sedentary activities (watching television and playing computer). The overall result is expressed by summing the two responses.

Data were analyzed using the Statistica for Windows 11.0 package and statistical significance was set at $P < 0.05$. Basic descriptive statistics were calculated for all variables (mean values and standard deviations). Kolmogorov-Smirnov test was used for determining the normality of the distribution (K-S). Finally, the correlation between the physical activity and specific skills with each apparatus was investigated with the use of Pearson correlation.

RESULTS

Table 1. Basic descriptive statistics and Kolmogorov-Smirnov test for normality (K-S) for all applied variables

	Mean±SD	K-S
ROPE	18.86±4.37	0.09
HOOP	18.85±3.86	0.08
BALL	19.48±3.98	0.07
RIBBON	20.43±4.83	0.10
PA	3.71±0.51	0.14
SB	119.86±55.36	0.15

Legend: PA – physical activity, SB – sedentary behavior; $d=0.16$ for $N=70$ ($p<0.05$).

Table 2. Results of correlation analysis between physical activity measures and level of certain apparatus skill

	ROPE	HOOP	BALL	RIBBON
PA	0.13	0.21	0.08	0.10
SB	-0.08	-0.11	0.10	-0.01

Legend: PA – physical activity, SB – sedentary behavior

Analyzing the results in Table 1 we notice that K-S test showed no significant deviation from the normal distribution for the total sample of respondents in all analyzed variables. Also, it is obvious that the children performed ribbon skills at the highest level. By analyzing the results of correlation values in Table 2 we see that it is not possible to establish a statistically significant association between the physical activity (PA), sedentary behavior (SB) and the overall level of specific rhythmic gymnastics skills.

DISCUSSION

Children who are physically more active over the age of preschool have the opportunity to improve their motor skills (Graf et al., 2004). During active play, children learn and improve basic movable patterns of crawling, standing, walking, running and jumping. However, limited physical activity can threaten the development of these skills, and also body composition, all as a result of reduced levels of energy consumption (Booth et al., 2005).

The results show that physical activity, measured with the use of a questionnaire about unorganized activities of children, does not correlate with the achieved level of specific motor skills in rhythmic gymnastics. This means that children who spend more time in active play are not necessarily better in performing specific rhythmic gymnastics skills. Since no relevant studies on the relations between physical activity and specific motor skills were found, these results can be compared only with the results of the correlation of physical activity and basic motor skills. Looking at those studies it is possible to conclude that the authors haven't gotten consistent results. Specifically, Saakslähti et al. (1999) find no correlation between the physical activity and basic skills on a sample of children aged 3 and 4 years. Likewise, Žuvela (2009) comes to similar results in a sample of children from 8 years old.

An additional reason to the absence of significant correlation between these variables can be found in the extent of physical activity. Although general studies demonstrate reduced physical activity of children, it is important to say that today there rarely exists a generally inactive child. This study comprised respondents from two kindergartens that pay sufficient attention to the need for daily physical activity, it is possible to conclude that the participants were above averagely active. Confirmation of the above is given by Janz et al. (2005) who conducted a research of physical activity in preschool children (6 years) using the same questionnaire (NPAQ). The authors report an average score of 3.3, which is lower than the results of this study (3.7). Also, according to the results of the minimum and maximum results it can be noted that respondents were fairly uniformed. All of this could contribute to the results of the correlation analysis. Selection of children from different backgrounds might solve the problem of the homogeneity of the sample and contribute to a better understanding of the relationship between physical activity and specific rhythmic gymnastics skills.

CONCLUSION

Based on the obtained results it can be concluded that rhythmic gymnastics skills can be acquired regardless of the amount of physical activity. The fact that rhythmic gymnastics skills are not limited solely to the locomotor performance, but largely consisted of manipulating various apparatus is certainly another reason for such statement.

The absence of significant correlation between the physical activity and specific motor skills indicates that children who spend more time participating in active play, not necessarily have to be better in performing specific motor skills. It is possible to draw a parallel with researches that investigate relations of physical activity and fundamental movement skills which also found no significant relationships in younger and even in slightly older children. Another reason could represent above-average level of activity of participants in this study. In future research this problem is advisable to resolve with a better selection of children from different backgrounds to ensure the heterogeneity of the sample.

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PREDICTORS OF BASKETBALL PLAYER'S PERFORMANCE: FROM MID-CHILDHOOD TO YOUNGER ADULTS

PREDIKTORJI USPEŠNOSTI KOŠARKARJA: OD SREDNJEGA OTROŠTVA DO ZGODNJE ODRASLOSTI

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ABSTRACT

The aim of this study was to systematically collect data of physical characteristics, psycho-social status, motor and functional abilities of 110 athletes of the three main basketball clubs in the area of Slovenian coast between the age of 8 to 32 from categories U10, U12, U14, U16, U18 and Seniors and thereby build a model for success in basketball. The athletes underwent a number of tests and measurements including physical characteristics, grip strength test (F_{grip}), tensiomyography twitch contraction times (Tc) of three leg muscles, *vastus lateralis* (Tc_{VL}), *biceps femoris* (Tc_{BF}) and *gastrocnemius medialis* (Tc_{GM}), Sit and Reach Test distance ($d_{S\&R}$), squat jump (h_{SJ}) and counter movement jump (h_{CMJ}) heights, agility T-test time (t_{T-test}) and Multistage Fitness Test based VO_2 max estimation (VO_2 max). The average number of scored points per match was used as a competition success (dependent) parameter (CS). A multiple linear regression analysis showed that CS could be explained with a relatively high correlation coefficient $R = 0.714$ ($p < 0.005$), which explained 51% of the variance. The most important predictors of basketball players' performance were: h_{CMJ} , F_{grip} , Tc_{BF} and t_{T-test} . The results of the present study could be useful for the identification of perspective young athletes and/or for a better planning and adapting of the training process to individuals' or groups' specificities and needs.

Keywords: basketball, physical characteristics, psycho-social status, motor ability, functional capacity, TMG, development

INTRODUCTION

Basketball is one of the sports where Slovenian teams are reaching biggest success and is played at each university in the world, also in Slovenia. University of Primorska has its own University Basketball Club Koper (UBC Koper), where its members (teachers, students, researchers and employees) and also younger athletes (categories U10, U12, U14, U16 and U18) undergo the training process. In addition, there are two more basketball clubs the

Slovenian coast area, Basketball Club Koš Koper (BC Koš Koper), and Basketball Club Portorož (BC Portorož), both of which also offer trainings for players of all age groups.

Recent studies which looked at physical characteristics and motor abilities of professional basketball players underline the necessity of following general and basketball-specific physical characteristics and motor abilities. Boone and Burgois (2013) wished to gain insight into morphological and physiological profile of elite players in the Belgian first division in relation to the position they play. They measured height and weight, percentage of body fat and motor abilities (endurance run, 5-m sprint, 10-m sprint, 5x10 m sprint, squat jump and counter movement jump as well as isokinetic strength test) on a sample of 144 players. They concluded that physiological profile of professional basketball players in Belgium differs by the position they play. High endurance, speed, and agility were characterized for position "guards" and muscle strength was higher for positions "centers" and "power forwards".

Alemdarglu (2012) studied correlation among various functional tests in professional basketball players. They carried out the following measurements: anthropometry (body height, body mass, muscle mass, hand and arm span), grip strength, squat jump and counter movement jump, running speed on 10 m and 30 m, agility (T-test), aerobic endurance (Multistage Fitness Test – Beep test), isokinetic strength test for lower limbs (knee extension and flexion) and maximal anaerobic power test on the cycloergometer (Wingate test).

Besides lower limb muscles strength and power, basketball players also need enough strength and power of upper limbs, since the whole kinetic chain of arm and shoulder muscles is activated in catching, dribbling and throwing the ball. Therefore, Gerodimos (2012) proposed the use of hand dynamometer to measure grip strength in young basketball players in order to measure upper limb strength.

The tensiomyography (TMG) twitch contraction parameter measurements of several leg muscles were first performed by Šimunič (2011) on several groups of football players, aged from 13 to 25 years. He discovered that leg muscles contraction times is an important information for their development, as well as a good predicting factor for the success of football players.

To our knowledge and based on a review of existing literature, there has been no study undertaken to follow physical and motor development and thereby related success of basketball players of different ages. Therefore, the aim of this study was to define a developmental model for success of young basketball players which would allow for an

identification of children and adolescents with predispositions for basketball as well as better planning and adapting of the training process to individuals' or groups' specificities and needs.

METHODS

Subjects

110 basketball players, aged between 8 and 32 years (Table 1), volunteered to participate in the study and have undergone various tests of physical characteristics, psycho-social status and motor and functional abilities. A written informed consent was acquired from each participant or their parents in case of participants younger than 18 years old.

Table 1: Descriptive data (average \pm SD) of participants' basic characteristics.

	U10	U12	U14	U16	U18	Seniors
Parameter	N = 30	N = 15	N = 26	N = 13	N = 10	N = 16
Age (years)	9.8 \pm 0.7	11.7 \pm 0.5	13.5 \pm 0.6	15.2 \pm 0.6	17.3 \pm 0.7	22.8 \pm 3.9
Body height (cm)	147.3 \pm 7.3	158.4 \pm 11.2	172.4 \pm 10.8	181.0 \pm 6.4	185.8 \pm 8.6	195.3 \pm 9.0
Body mass (kg)	42.0 \pm 8.7	48.0 \pm 8.2	62.2 \pm 15.1	71.3 \pm 10.4	80.7 \pm 9.4	92.0 \pm 11.6
Body mass index (kg·m⁻²)	20.9 \pm 7.7	19.8 \pm 3.1	20.6 \pm 3.7	22.0 \pm 2.8	21.4 \pm 4.6	23.8 \pm 1.5

Measurements

The measurements were performed, first, in December 2013, where physical characteristics, psycho-social status, motor and functional abilities were acquired and, second, in March 2014, where competition success (CS) data (average of points per match) were obtained. Organization, implementation and sequence of the first set of measurements in December 2013 were as follows:

1. Motivation and anxiety questionnaire
2. Sociometric testing
3. Physical characteristics (body height, body mass, body mass index, arm span (from left to right middle finger) which are held at shoulder height, hand span (the biggest possible distance between small finger and thumb), percentage of body fat using bioelectric impedance method (Maltron 916S, Maltron International Ltd., Essex, UK))
4. Grip strength (F_{grip}) measured with hydraulic hand dynamometer (JAMAR[®] Hand Dynamometer, Homecraft Ltd., Nottinghamshire, UK)

5. Contraction times of *vastus lateralis* (T_{cVL}), *biceps femoris* (T_{cBF}) and *gastrocnemius medialis* (T_{cGM}) muscles, measured using TMG system (TMG-BMC d.o.o., Ljubljana, Slovenia)
6. Warm-up (6 minutes of stepping on a 25-cm bench at 120/min)
7. Distance of the Sit and Reach Test ($d_{S\&R}$)
8. Squat jump (h_{SJ}) and counter movement jump height (h_{CMJ}) using a force plate (HE600X600, AMTI, Watertown, MA, USA)
9. Time required to perform the agility T-test (t_{T-test})
10. VO_2max calculated from the Multistage Fitness Test (VO_2max).

Data analysis

Data were analyzed using IBM SPSS Statistics 20.0 software (IBM Corporation, Armonk, New York, USA). Beside basic statistical parameters a multiple linear regression analysis was performed in order to define a model of competition success in basketball where the average number of scored points per match was the dependent parameter. Statistical significance was set at the p-level < 0.005.

RESULTS

A multiple linear regression analysis showed that CS, which was defined with the number of scored points per match made a model with a relatively high correlation coefficient $R = 0.714$ ($p < 0.05$), which explained 51% of variance. The most important predictors of basketball players' performance were h_{CMJ} , F_{grip} , T_{cBF} and t_{T-test} , as shown in Equation 1. It should be noted that the first predictor (h_{CMJ}) explains 35 % of the total variance, while the other three together just 16 %.

$$CS = 0,213 \cdot h_{CMJ} + 0,127 \cdot F_{grip} - 0,106 \cdot T_{cBF} - 0,815 \cdot t_{T-test} \quad \text{Equation 1}$$

The developmental trends of the parameters that significantly correlated and defined CS showed to be logarithmic for the h_{CMJ} and F_{grip} , which both increase with age, while for the t_{T-test} showed to be polynomic, where the athletes seem to be the fastest between the age of 18 and 22. However, no developmental trend and therefore no change could be seen for the T_{cBF} (Figure 1).

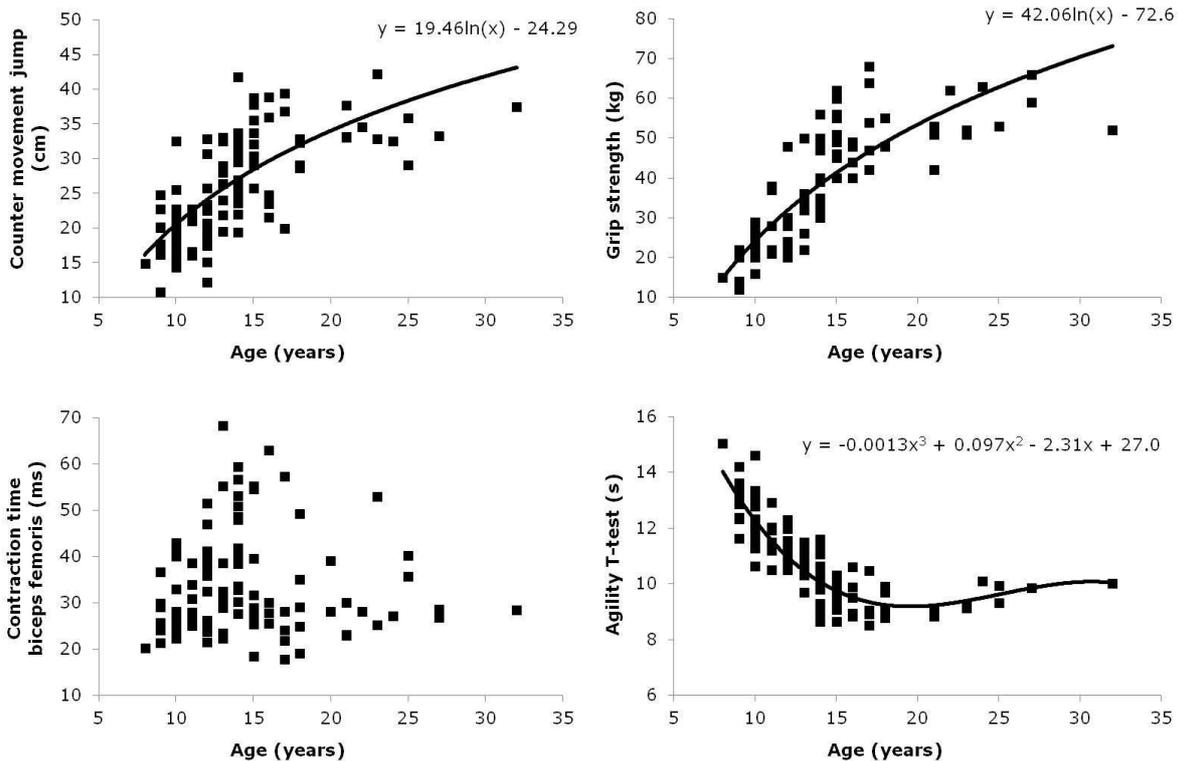


Figure 1: Trends of development of the parameters that correlated significantly with the competition success. Upper left panel: Counter movement jump height (h_{CMJ}); Upper right panel: Grip strength (F_{grip}); Bottom left panel: Hamstring TMG contraction time (T_{CBF}) – no change with the development could be seen; Bottom right panel: Time to perform the agility T-test (t_{T-test}).

DISCUSSION AND CONCLUSIONS

The results of this study showed that 51% of the variance of the points that a player scores in a game can be explained only by four measurements: height of the counter movement jump, grip strength, contraction time of the hamstring muscle and time to perform the agility T-test. However, due to a big co-linearity with other parameters, age was not considered among the predictors. Psychological and sociological parameters were also not taken into consideration and the competition success was defined merely as the average number of scored points per match. Nevertheless, CMJ height showed to be the best prediction parameter (35 % of explained variance) which indicates high importance of the lower limb muscles power in the stretch-shortening conditions. This allows the athletes not only to jump higher but also to run and change directions faster and thus being more effective and successful in the game. The other three parameters explained only 16 % of the variance, showing that upper limb strength, lower limb muscles contraction speed (especially hamstrings') and agility are also very important for the success in basketball.

Among all variables, the TMG twitch contraction time of *biceps femoris* muscle proved to be also a good predictor for success in basketball. However, in comparison with the other three

predictors it did not change with age, while T_c of the VL increased and that of the GM decreased linearly (data not shown here). Large variability of the T_{CBF} between the age of 12 and 17 could be a warning signal for the increased risk for injuries, since the functional characteristics of skeletal muscles in that period do not follow the rapid changes of the skeleton. In several previous studies (Šimunič et al., 2008; Šimunič 2011; Grabljevec et al., 2009; Zagorc et al., 2010; Rodriguez Ruiz et al., 2011; Praprotnik et al., 2001; Rey et al., 2012) the TMG contraction time parameter was already detected as an important factor for the ageing process, rehabilitation after knee/hip surgery as well as a predictor for success in others sports. Our study has shown that, in addition to football as reported by Šimunič (2011), the T_c parameter has a similar importance also in basketball.

To conclude, the results of the present study could be useful for the identification of perspective young athletes and/or for a better planning and adapting of the training process to individuals' or groups' specificities and needs. Future studies should look for additional parameters for success of basketball players, such as number of jumps, number of scored points and a qualitative assessment of their coach, which could allow to adapt the current model.

Acknowledgements

We wish to dedicate special thanks in particular to the basketball clubs that volunteered to join the study, all players and their coaches. Thanks goes also to all researchers of the Institute for Kinesiology Research, Science and Research Centre and to students of the Applied kinesiology study program at the University of Primorska who contributed in the measurement process. The study was performed in the framework of the project "UP ZA KOŠARKO [HOPE FOR BASKETBALL]", led by assoc. prof. dr. Boštjan Šimunič and co-financed by the Foundation for sport, Dunajska cesta 51, 1000 Ljubljana.

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THE EFFECTS OF PROGRAMMED TRAINING ON CHANGES OF MORPHOLOGICAL CHARACTERISTICS IN SEVEN-YEAR-OLDS

VPLIV PROGRAMIRANEGA TRENINGA NA SPREMEMBE MORFOLOŠKIH ZNAČILNOSTI SEDEMLETNIKOV

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ABSTRACT

The study was performed with the aim of determining the effects of additional 9-month programmed soccer training on changes of morphological characteristics in boys. The sample consisted of 90 seven-year-olds, divided into an experimental (N=40) and a control (N=50) group. The experimental group included subjects who, in addition to regular physical education classes, also had three training units per week of additional training during nine months, whereas the control group included subjects who attended only regular physical education classes. The variable sample for assessing morphological characteristics consisted of 14 standard anthropometric measures. Based on the obtained results of discriminant canonical analysis in the final measurement it is clear that measures of body voluminosity are more prominent in the experimental group, whereas measures for assessing adipose mass are more prominent in the control group. From the analysis of changes between the initial and the final measurement, it is inferred that additional training, in addition to physical education classes, prevented the accumulation of subcutaneous adipose tissue in the experimental group. When analysing the differences in means of the results from the initial to the final measurement it can be noticed that in the experimental group measures of transverse dimensionality of the skeleton were significantly more increased and body mass and subcutaneous adipose tissue were reduced in relation to the control group. The results indicate that the additional programmed training, as opposed to just regular physical education classes, by applying specific operators, led to greater changes of morphological characteristics, which is manifested in skeleton development, reduction of adipose tissue and increased muscle tissue.

Key words: soccer, boys, experimental and control group, discriminant analysis;

IZVLEČEK

Raziskava je izvedena zato, da bi se ugotovil vpliv dodatnega 9-mesečnega programiranega treninga na spremembo morfoloških značilnosti pri sedemletnih dečkih. Vzorec zajema 90 dečkov, ki so bili razdeljeni v eksperimentalno (N=40) in kontrolno (N=50) skupino. Eksperimentalna skupina je bila sestavljena iz dečkov, ki so devet mesecev obiskovali poleg rednega pouka telesne in zdravstvene vzgoje tudi tri vadbene enote. Kontrolna skupina je bila sestavljena iz dečkov, ki so obiskovali samo redni pouk telesne in zdravstvene vzgoje. Vzorec spremenljivk za oceno morfoloških značilnosti je bil sestavljen iz 14 standardnih antropometričnih merjenj. Na osnovi pridobljenih rezultatov diskriminantne kanonske analize pri končnem merjenju je jasno, da so pri eksperimentalni skupini bolj izražene voluminozne telesne mere, pri kontrolni skupini pa mere glede ocene adipozne mase. Iz analize sprememb med začetnimi in končnimi meritvami izhaja, da je dodatni trening s poukom telesne in zdravstvene vzgoje preprečil kopičenje podkožnega maščobnega tkiva pri eksperimentalni skupini. Z razliko povprečne vrednosti rezultatov med začetnim in končnim merjenjem lahko ugotovimo, da so se v primerjavi s kontrolno skupino pri eksperimentalni skupini bistveno povečale mere transverzalne dimenzionalnosti skeleta in da je prišlo do zmanjšanja telesne teže in podkožnega mastnega tkiva. Na osnovi rezultatov ugotavljamo, da je dodatni programirani trening v nasprotju samo z rednim poukom telesne in zdravstvene vzgoje in z uporabo posebnih orodij povzročila večje spremembe morfoloških značilnosti, kar se kaže z razvojem skeleta, zmanjšanjem maščobnega tkiva in povečanjem mišičnega tkiva.

Ključne besede: nogomet, kontrolna in eksperimentalna skupina, diskriminantna analiza;

Introduction

The most turbulent period of human life after birth, especially in kinesiological sense, is certainly the period of growth and development. In younger school children growth and development is slower and entering the stabilization phase. Moreover, by entering the school institution children considerably decrease their overall kinesiological engagement because due to their school and other obligations their time and space for play are greatly reduced, as opposed to the preschool period when they were abundant. From the kinesiological point of view, physical activity is the most interesting parameter because it can rather easily be influenced, but also because its contribution to growth and development is great and valuable (Sivrić, Erceg and Milić, 2014; according to Malina and Bouchard, 1991). Physical activity, when organized properly and age appropriate, has a positive influence on body growth, especially on the growth of skeletal, muscular and circulatory system, as well as body composition (Parizkova, Čermak and Horna, 1977; Malina and Bouchard, 1991; Katić, Babin, Rausavljević and Blažević, 1996). Although changes in anthropological characteristics

at a younger school age are primarily conditioned by the growth and development process, it is to be assumed that under the influence of different transformational processes those changes will be additionally emphasized (Malina and Bouchard, 1991).

Soccer itself is characterized as a part of the dynamic group of sports and according to the criterion of structural complexity it belongs to the group of complex sports. Efficacy of a soccer player is determined by the level and structure of a great number of abilities, characteristics and skills (Sivrić et al., 2014; according to Dujmović, 2000).

Reduced physical exertion and insufficient activity diminishes motor function, which negatively affects harmonious development and health of the organism, given that physical activity is a positive stimulus for the development of functional abilities as a whole. Physical activity activates the locomotor system, it is essential for the transformation of energy which is indispensable for the activity of all cells in the organism, and can be treated as a determinant for harmonious development of all characteristics of a child. That is why increased physical activity is an important environmental factor that affects growth and maturation. There is a large number of indications that show that physical education in Croatia does not stimulate the development of basic morphological dimensions adequately (in the part where it is possible). The number of physical education classes is insufficient, and it is sometimes conducted in inadequate material conditions. The insufficient frequency of physical activity and relatively passive environment provide modest possibilities of support for child's overall growth and development, and possible omissions at this age usually cannot be compensated and frequently mark the limits of later possibilities. Even though a child's organism is formed to a great extent, its plasticity still allows corrections and influences, and if appropriate attention is lacking, different deviations find fertile ground.

The main problem of the research is the analysis of changes in morphological characteristics of first grade elementary school students under the influence of programmed soccer training. The main aim of the research is to determine the effects of the programmed training on changes in morphological characteristics of first grade elementary school students, recorded at two points in time.

METHODS

The study was performed on a sample of 90 boys, first grade students of elementary school from Split, of chronological age of 7 years. The subject sample was divided into an experimental (N=40) and a control (N=50) group. The experimental group included subjects who, in addition to 3 regular physical education classes per week, also had 3 training units of additional treatment of soccer school per week during 9 months. The control group included subjects who attended only regular physical education classes. The only criterion of student selection was for them to be clinically healthy and not actively involved in other

extracurricular activities. It must be specially emphasized that all children in the experimental group followed a special program, implemented by an expert group of the same coaches (professors of kinesiology), and they participated in a minimum of 80% of training and physical education classes. Also, teachers, in accordance with the instructions given, conducted physical education classes with children in the control group. Those children that attended a minimum of 80% of classes were taken into account.

The sample of variables for assessing morphological characteristics included 14 standard anthropometric measures (Mišigoj - Duraković, 1995) based on which the assessment of four latent anthropometric dimensions is possible: longitudinal dimensionality of the skeleton: body height, leg length and arm length; transverse dimensionality of the skeleton: shoulder width, pelvis width, wrist diameter and knee diameter; body volume and mass: body mass, forearm circumference, calf circumference and thoracic circumference; subcutaneous adipose tissue: triceps skinfold, back skinfold and abdominal skinfold.

Basic statistical parameters (mean, standard deviation, minimum and maximum result, measures of distribution skewness and kurtosis) of all variables for the overall sample were analysed. Normality of distribution was tested by the Kolmogorov-Smirnov procedure. Differences between the control and the experimental group in the initial and the final measurement were determined by discriminant canonical analysis. Changes between the initial and the final measurement were analysed by multivariate and univariate analysis of variance. Univariate analysis of variance of differences in means between the groups from initial to final measurement was also performed. To determine latent morphological and motor dimensions on variables of differences the intercorrelation matrix for the overall sample was calculated, which was subjected to principal components analysis, and varimax rotation was done for all principal components whose variance exceeded 1.

RESULTS AND DISCUSSION

It was determined that there was not a single value of the KS-test that exceeded the limit value of the Kolmogorov-Smirnov procedure for the observed subject sample. In the final measurement a numeric increase of mean value was noticed in all variables. In a 9-month period, measures for assessing morphological characteristics increased in boys, generally because of the influence of growth and development and partially because of the effects of soccer school treatment. A trend of increase of standard deviation in almost all the variables can also be noticed. The Leg length, Calf circumference and Abdominal skinfold variables are the exception as they did not show the mentioned increase. The reason must be looked for in the fact that boys were divided into two groups, one of which was under systematic kinesiological treatment, and in the period of 9 months the boys made an uneven „progress“ in the measured values.

Table 1 The results of discriminant analysis between the control and the experimental group of boys aged 7 years in morphological variables for the initial and the final measurement

VARIABLES	INITIAL MEASUREMENT			FINAL MEASUREMENT		
	CONTR.	EXPER.	F	CONTR.	EXPER.	F
Body height	128.58±4.67	128.57±5.66	0	131.95±5.09	132.03±5.93	0
Leg length	70.40±3.45	70.28±3.45	-0	72.95±3.30	73.01±3.47	0
Arm length	55.05±2.46	55.45±2.87	0.14	56.51±2.44	57.15±2.88	0.08
Shoulder width	28.26±1.21	28.33±1.50	0.04	28.55±1.12	29.44±1.48	0.24
Pelvis width	20.08±1.08	20.01±1.62	-0.1	20.85±1.11	21.18±1.58	0.09
Wrist diameter	4.32±0.27	4.37±0.31	0.2	4.43±0.27	4.56±0.31	0.16
Knee diameter	7.91±0.33	7.93±0.56	0.03	7.99±0.39	8.13±0.56	0.1
Body mass	27.39±3.62	27.43±5.13	0.01	29.27±3.98	28.93±5.35	-0.02
Forearm circumference	18.50±1.50	18.69±1.43	0.12	19.14±1.54	19.55±1.52	0.09
Calf circumference	26.33±2.02	26.39±2.45	0.02	27.15±1.95	27.07±2.47	-0.01
Thoracic circumference	61.66±3.60	62.34±5.17	0.15	62.45±3.53	63.22±5.44	0.06
Triceps skinfold	10.10±2.56	10.06±3.63	-0.4	11.81±2.64	9.81±3.04	-0.51
Back skinfold	6.42±2.27	6.36±2.86	-0.1	7.05±2.38	5.97±2.52	-0.21
Abdominal skinfold	6.25±2.56	6.48±5.01	0.08	6.58±2.25	5.92±4.33	-0.09
Centriods	-0.41	0.58		-1.14	1.63	
CanR			0.44			0.81***

F = structure of discriminant function; CanR = coefficient of canonical discrimination; *p<0.05; **p<0.01; ***p<0.001

Based on the discriminant function Can R=0.44 with the level of significance at 0.05, it can be seen in Table 1 that in the initial testing a statistically significant discriminant function in the space of morphological characteristics of the two groups cannot be formed, so according to this criterion, they belong to the same population subgroup. The discriminant function was defined by positive projections of variables of longitudinal dimensionality of the skeleton, transverse dimensionality of the skeleton and body volume. Variables assessing subcutaneous adipose tissue are at the negative pole of the function. The other variables were not considerably projected on either of the function poles. The position of group centroids (C:contr=-0.41; C:exp=0.58) defines the experimental group as the group with more prominent measures of volume, body mass and transverse dimensionality of the skeleton. In the final measurement statistically significant discriminant function p<0.001 with the canonical coefficient of correlation of Can R=0.81 is recorded. Also, a very similar structure of discriminant canonical analysis (C:contr=-1.14; C:exp=1.63) is noticed. The transformational process caused positive changes in most morphological characteristics of the experimental group. The greatest changes occurred in the measures of subcutaneous adipose tissue in which differences in the second measurement were greatly increased

(reduction of skinfold in the experimental group). According to the aforementioned, it can be stated with great probability that the soccer school treatment affected the growth of the bones in width and the increase of muscle mass in 7-year-old boys.

Table 2 Multivariate and univariate quantitative changes of morphological variables between the initial and the final measurement for the control and the experimental group

VARIABLES	MANOVA CONTR.			MANOVA EXPER.		
	Wilk's lambda	Rao's R	p	Wilk's lambda	Rao's R	p
	0.03	97.87	0	0.01	162.41	0

VARIABLES	CONTROL GROUP			EXPERIMENTAL GROUP		
	INIT.	FINAL.	F-test	INIT.	FINAL.	F-test
Body height	128.58±4.67	131.95±5.09	135.30***	128.57±5.66	132.03±5.93	331.45***
Leg length	70.4±3.45	72.95±3.30	499.97***	70.28±3.45	73.01±3.47	127.17***
Arm length	55.05±2.46	56.51±2.44	145.78***	55.45±2.87	57.15±2.88	213.42***
Shoulder width	28.26±1.21	28.55±1.12	18.71***	28.33±1.50	29.44±1.48	194.53***
Pelvis width	20.08±1.08	20.85±1.11	256.75***	20.01±1.62	21.18±1.58	155.25***
Wrist diameter	4.32±0.27	4.43±0.27	182.19***	4.37±0.31	4.56±0.31	247.50***
Knee diameter	7.91±0.33	7.99±0.39	19.34***	7.93±0.56	8.13±0.56	66.67***
Body mass	27.39±3.62	29.27±3.98	85.53***	27.43±5.13	28.93±5.35	132.45***
Forearm circumference	18.50±1.50	19.14±1.54	127.87***	18.69±1.43	19.55±1.52	202.28***
Calf circumference	26.33±2.02	27.15±1.95	87.35***	26.39±2.45	27.07±2.47	61.29***
Thoracic circumference	61.66±3.60	62.45±3.53	27.37***	62.34±5.17	63.22±5.44	29.55***
Triceps skinfold	10.10±2.56	11.81±2.64	71.26***	10.06±3.63	9.81±3.04	3.47
Back skinfold	6.42±2.27	7.05±2.38	8.45**	6.36±2.86	5.97±2.52	24.03***
Abdominal skinfold	6.25±2.56	6.58±2.25	5.82*	6.48±5.01	5.92±4.33	3.3

F - test – value of univariate test; Wilk's lambda and Rao's R – multivariate tests of changes; p – significance level of multivariate tests of changes. *p<0.05; **p<0.01; ***p<0.001

It can be seen in Table 2 that Wilk's lambda for the control group has a value of (0.03), i.e., a 97% statistical significance of global changes, whereas for the experimental group it has a value of (0.01), i.e., a 99% statistical significance of global changes in the area of the anthropometric variables used. By analysing the predictors of partial changes (F-test) in univariate analysis of variance, it can be stated that in the period between the initial and the final measurement significant changes occur in all the measured variables in the control group of boys, which was to be expected. Based on partial parameters between those

measurements it can be seen that in this period the boys grew and developed, so considerable changes occurred in their morphological structure. Significant increase of subcutaneous adipose tissue is also noticed, which indicates a lack of physical activity of the boys in the control group. This particularly refers to the measure of triceps skinfold which recorded the most significant increase ($p < 0.001$). Also, during the period of 9 months, significant changes occurred in the experimental group of boys in all the variables except two variables of subcutaneous adipose tissue.

Table 3 Univariate differences in morphological changes (final – initial measurement) between the control and the experimental group, Varimax factors of variables of differences for the overall sample of boys

VARIABLES	x2-x1		F-test	V1	V2	V3	V4	V5	V6
	contr.	exp.							
Body height	3.36	3.46	0.06	-0.13	0.76	0.01	-0.1	0.03	0.39
Leg length	2.54	2.72	0.57	0.12	0.71	-0.3	-0.4	-0.2	-0
Arm length	1.45	1.7	2.04	0.62	-0.04	-0.2	0.1	-0.1	0.1
Shoulder width	0.28	1.12	62.72***	0.28	-0.02	-0	-0.2	0.77	0.15
Pelvis width	0.76	1.17	17.42***	0	0.05	0	-0.9	0.08	-0
Wrist diameter	0.11	0.18	27.76***	-0.03	0.18	0.03	0.11	0.85	-0.2
Knee diameter	0.08	0.2	18.75***	0.22	0.69	-0.1	-0	0.34	-0
Body mass	1.88	1.5	2.07	-0.07	0.04	0.84	0.09	-0	0
Forearm circumference	0.65	0.86	6.52*	-0.26	-0.64	-0.4	-0.1	0.03	0.73
Calf circumference	0.81	0.68	1.25	0.01	0.06	0.01	0.12	-0.1	0.85
Thoracic circumference	0.8	0.88	0.14	0.21	-0.1	0.67	-0.4	0.01	0.44
Triceps skinfold	1.7	-1.05	106.67***	-0.63	0.09	0.02	0.41	-0.4	0.17
Back skinfold	0.63	-0.49	17.59***	-0.75	-0.17	-0.1	0.07	-0.2	-0
Abdominal skinfold	0.43	-0.75	19.49***	-0.69	-0.29	-0.1	0.14	-0.2	0.09
LAMBDA				3.05	1.58	1.32	1.24	1.09	1.03
VARIANCES %				21.8	11.3	9.41	8.88	7.79	7.41

x2-x1 – differences in means between the final and the initial measurement; F - test – univariate test of differences; V – significant varimax factors according to the Guttman – Kaiser criterion ($\lambda > 1$) on variables of differences; LAMBDA - eigenvalues; VARIANCES % - percentage of variance explained by each latent dimension * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

The difference in means between the results of the final and the initial measurement for both groups was calculated and presented in Table 3. The level of significance of differences of changes was tested by applying the univariate analysis of variance. To determine latent morphological dimensions on variables of differences, a correlation matrix was calculated for the overall sample and subjected to the principal components analysis, and varimax rotation

was done for all principal components whose variance exceeded 1. The most significant differences are noticed in the triceps, back and abdominal skinfold variables. Significant differences are also seen in the variables assessing transverse dimensionality of the skeleton. Given that generally a reduction of body mass and subcutaneous adipose tissue occurred in the subjects of the experimental group, a presumption could be made about the beneficiary effects of physical exercise on growth and development. The differences in variables assessing transverse dimensionality of the skeleton in favour of the experimental group can be explained by the fact that at the age of 7 years a process of substantial growth intensity of bone segments in width begins, which is probably contributed also by greater physical activity (soccer school treatment). From the factor analysis results on the variables of differences it is possible to determine the correlation of changes between the manifest variables. It will be established that the change of one variable conditions changes in the other one and vice versa, in a certain time period. Thus, 6 latent dimensions were isolated from 14 manifest morphological variables. Simple structure of the first varimax factor (V1) which was explained by high projections of all skinfold measures and low projections of other variables can be noticed. Height, leg length and knee diameter variables had the highest projections on the second varimax factor (V2). Therefore, longitudinal growth was also accompanied by growth of knee bones in width. The body mass and thoracic circumference variables were highly correlated with the third varimax factor (V3). Both variables assess body volume and mass, thus, high correlation of their changes in time is not surprising. The fourth varimax factor (V4) is a monofactor which is highly projected on only by the pelvis width variable. Measures for transverse dimensionality of the skeleton had the highest projections on the fifth varimax factor (V5). Therefore, those two measures are highly correlated to each other, i.e., a change of one variable also means a change of the other variable. The forearm and calf circumference variables are highly correlated with the sixth varimax factor (V6).

CONCLUSION

The main aim of the present study was to determine the effect of additional 9-month programmed soccer training on changes in some morphological characteristics in 7-year-old boys. Based on the results obtained by discriminant canonical analysis in the final measurement it is clear that measures of body voluminosity were more prominent in the experimental group, whereas measures assessing adipose mass were more prominent in the subjects of the control group. Primarily growth and development, followed by the 9-month period of physical education classes and additional soccer school treatment, significantly affected morphological characteristics of boys in the experimental group, manifested primarily in preventing negative progression in measures assessing subcutaneous adipose

tissue. From the analysis of changes between the initial and the final measurement on both samples it is inferred that additional training, along with physical education classes, prevented the accumulation of subcutaneous adipose tissue in boys in the experimental group. Statistically significant changes in variables assessing adipose mass, directed towards the increase of adipose tissue in the control group of boys are worrisome. The results are probably the consequence of classical work methods in physical education classes which cannot, with their intensity and volume of work, produce significant positive quantitative changes. The results of changes in the experimental group indicate that growth and development, in addition to appropriate kinesiological engagement, led to positive changes. The difference in means of the results from the initial to the final measurement shows even greater differences between the groups and, in addition to the already mentioned variables, new variables are noticed which significantly discriminate the analysed groups. Thus, it can be noticed that measures of transverse dimensionality of the skeleton were significantly more increased in the experimental group, with the reduction of body mass and subcutaneous adipose tissue, in comparison to the control group. These changes can be attributed to the increase of muscle mass in subjects of the experimental group. Varimax factors of variables of differences for the overall sample were also calculated and 6 factors were isolated. It can be seen from the results that high correlations occur usually between those variables that assess the same latent dimension. The results indicate that in the experimental group, in relation to the control group, greater changes of morphological measures occurred, which proves that additional programmed training, implemented by a kinesiologist, has a positive effect on the skeleton development, reduction of adipose and increase of muscle tissue. It can be concluded that, as opposed to regular physical education classes, additional programmed training, by applying specific operators, led to the desired changes of morphological characteristics in the experimental group of subjects. In the control group, changes of soft tissue which are not desirable can be clearly noticed, and they were caused by insufficient kinesiological engagement. The present study again confirms the widely confirmed finding that insufficiency of physical activity leads to accumulation of adipose tissue in younger school children.

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CORRELATION BETWEEN CERTAIN PHYSICAL CHARACTERISTICS AND MOTOR SKILLS OF STUDENTS

POVEZANOST NEKATERIH TELESNIH RAZSEŽNOSTI IN MOTORIČNIH SPOSOBNOSTI ŠTUDENTOV

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ABSTRACT

This paper presents a comparative study on the relationship between certain physical characteristics and motor skills of students. We used a non-random sample of specific populations of students in early childhood education. Data were collected by a quantitative method. As the measurement instrument, motor tests were used that apparently explain the explosive power, repetitive strength, coordination and precision and measurement of certain physical characteristics. For data processing, we used a quantitative method. Based on the calculated t-test, we find that the difference in motor abilities between students with normal weight and students that are overweight and obese is not statistically significant. Based on the Pearson's correlation coefficient, we find a weak correlation between motor skills and physical characteristics.

Keywords: students, physical dimensions, motor skills

IZVLEČEK

V prispevku je predstavljena primerjalna raziskava o povezanosti nekaterih telesnih razsežnosti in motoričnih sposobnosti študentov. Uporabili smo neslučajnostni vzorec iz konkretne populacije študentov programa predšolska vzgoja. Podatke smo pridobili s kvantitativno metodo. Za merski instrument smo uporabili motorične teste, ki domnevno pojasnjujejo eksplozivno moč, repetativno moč, koordinacijo in preciznost ter meritve nekaterih telesnih razsežnosti. Za obdelavo podatkov smo uporabili kvantitativno metodo. Na osnovi izračuna t-testa ugotavljamo, da razlika v rezultatih motoričnih sposobnosti med študenti z normalno telesno težo in študenti z prekomerno telesno težo in debelostjo ni statistično značilna. Na osnovi Pearsonovega koeficienta korelacije ugotavljamo šibko povezanost med motoričnimi sposobnostmi in telesnimi značilnostmi.

Ključne besede: študenti, telesne razsežnosti, motorične sposobnosti

INTRODUCTION

A time of rapid technological development, haste and a user-oriented mindset have transformed the evolutionary needs and habits that man had established throughout the millennia, making us, at best, superficial and inconsiderate towards ourselves and others. Exercise and physical activity have been losing out as primeval values. Lack of exercise and sports activity reduces physical effectiveness and, as stated by Prof. Tome (1986): "Biologically speaking, mankind has started to lack. If that had been the case in primeval nature, man would have disappeared!" However, a lack of exercise does not merely result in a lack in biological terms, as humankind has also started lacking humanity, exhibiting alienation and a hostile attitude towards themselves and others around them (Škof, 2010).

Excess weight and obesity can be assessed in various ways, although Body Mass Index (BMI), defined as the ratio between weight or appropriate body mass in kilograms and the square of height given in metres (kg/m^2), constitutes the most widely applied method on a global scale that has proven useful primarily to group people in terms of excess weight and obesity, although it fails to elaborate on the precise amount of bodily fat (Pietrobelli et al., 1998). Despite a few shortcomings, BMI continues to be the most widespread measure of identifying excess weight and obesity in the world, especially for research done on large samples where other methods have proven to be practically useless (Malina and Katzmarzyk, 1999; quoted after Završnik and Pišot, 2005).

The underlying causes of the increase in relative weight in the present day are highly complex and are most frequently associated with the modern lifestyle (Hill and Peters, 1998; deriving from Pišot and Planinšec, 2005). It is highly unlikely that genetic habits and metabolic alterations would have resulted in such a widespread phenomenon during the last three years alone, but it is more likely to be rooted in culturally bound alterations characterised by a continuous decline in physical activity (Pišot and Planinšec, 2005).

The modern way of life requires continuous physical and mental resistance that is often subject to fluctuations and lacks the time required to restore itself quickly, thus forcing the body to have a certain amount of reserves that enable it to resist harmful environmental effects to the greatest extent. Regular physical activity and a healthy diet constitute two prerequisites for proper resistance of the body to disease (Pokorn, 1998; quoted; Videmšek et al., 2003).

Locomotor skills are required for all movements and establish our locomotor status. They help us perform specific tasks, enabling us to do something. Videmšek et al. (2003) list six primary manifest forms of locomotor skills: strength, speed, mobility, coordination, balance, precision and endurance as a functional skill.

Caspersen, Powel and Christenson (1985; reproduced from Šimunič et al., 2010) have defined locomotor skills as a set of inherent or gained skills that facilitate physical activities, although it needs to be noted that the level thereof can be measured by various tests.

Exercise and locomotion are essential for our health, but the development of civilisation has resulted in a continuous decline in the relevance of exercise as a factor in our everyday lives. Modern technology has made our lives, work and even play easier. Even though it has contributed to a greater quality of life, it has, simultaneously, adversely affected a healthy way of life (Završnik and Pišot, 2005).

Our research has basically served to identify the correlation between physical characteristics and motor skills of students by making use of a non-random sample from a concrete population, i.e. 63 students enrolled in the pre-education course of studies.

Five motor skills tests that apparently serve to illustrate explosive strength (standing long jump), repetitive strength (tuck jump left-right), coordination (zigzag running; running following rolling) and precision (ball target throwing) and weight and height measurements by calculating the BMI have served as the measuring instruments (Pistotnik, 2011; Rajtmajer, 1997).

Descriptive statistics have helped us calculate mean values of physical characteristics (independent variable, the results are illustrated in Chart 1) and motor skills tests results (dependent variable, standardised value results are illustrated in Chart 2).

The sample has been divided into two groups - a group of students in the normal weight range ($ITM < 24.9$; 48 students, 76.2 %) and a group of overweight and obese students ($ITM > 24.9$; 15 students, 23.8 %) - that have been subsequently compared (t-test and Pearson's correlation coefficient).

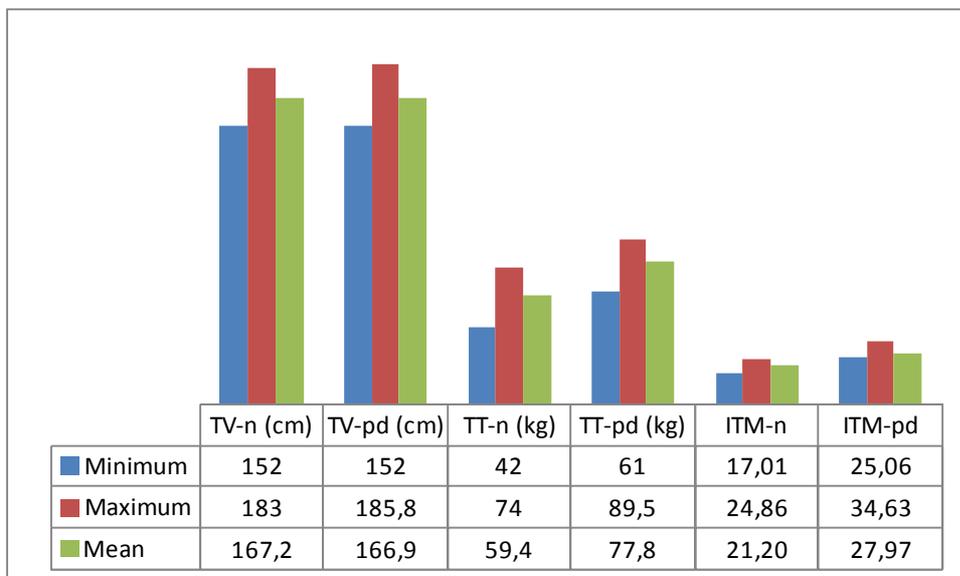


Chart 1: Mean values of certain physical characteristics.

Chart 1 illustrates the results of various calculated height, weight and BMI values. Practically no differences were found between students in the normal weight range (TV-n, TT-n, ITM-n; Height-v, Weight-n, BMI-n) and overweight and obese students (TV-pd, TT-pd, ITM-pd; H-oo, W-oo, BMI-oo) in terms of their height, whereas major differences have been observed in terms of weight (18.4 kg on average) and consequently also in terms of the BMI value (6.77 on average).

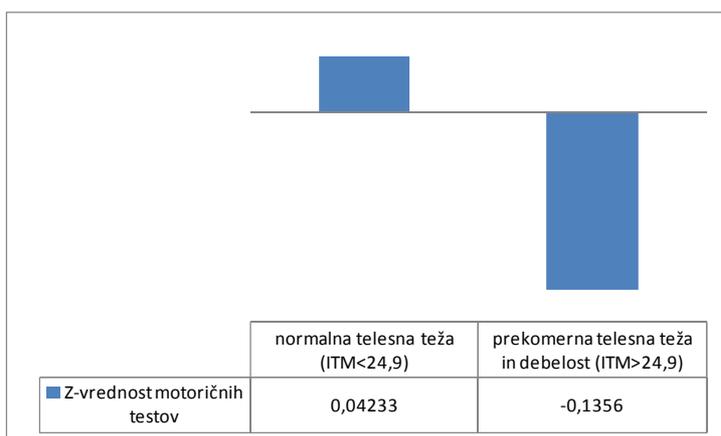


Chart 2: Total Z-value of motor skills tests in view of BMI

Normalna telesna teža (ITM < 24,9) – Normal weight range (ITM < 24.9)

Prekomerna telesna teža in debelost (ITM > 24,9) – Excess weight and obesity (ITM > 24.9)

It is clear from Chart 2 that students in the normal weight range and overweight and obese students greatly differ in terms of their motor skills results. After calculating a t-test with a

$P < 0.05$ error probability, no statistically significant difference in motor skills between the two student groups has been found ($p = 0.364$).

The correlation between motor skills and physical characteristics has been calculated by means of the Pearson's correlation coefficient. Correlation strength has been established on the basis of the coefficient value scale (reproduced from Pearson's correlation coefficient, b.d.). In the light of our calculation, it has been found that total variance between height and motor skills of students in the normal weight range amounts to 22.0 % and between weight and motor skills to 22.4 %, whereas total variance between height and motor skills of overweight and obese students amounts to 24.4 % and between weight and motor skills to 11.9 %. We have thus come to the conclusion that a weak correlation between motor skills and physical characteristics exists for all students measured.

CONCLUSION

The research has shown a weak correlation between motor skills and physical characteristics. The difference in motor skills results between students in the normal weight range and overweight and obese students has also been found to be non-statistically significant. The difference is, however, greatly in favour of students in the normal weight range, thus demonstrating that motor skills are less developed in overweight or obese students, whose level of fitness is likely poorer than the level of fitness of students in the normal weight range. In terms of health, it is also alarming that almost one quarter of measured students are either overweight or in the obesity range. No data on the sports activities and health status of the students have been obtained for the purpose of our research. In the future, it would prove beneficial to include a larger number of students enrolled in more than one course of study and to examine the impact of motor status on physical characteristics of the student population and which sports activities contribute to good motor status to the greatest extent. Both would serve to maintain a good level of fitness and consequently also good health of students.

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ENVIRONMENT CHARACTERISTICS AND PHYSICAL ACTIVITY OF PRESCHOOL CHILDREN

OKOLJSKI DEJAVNIKI IN GIBALNA / ŠPORTNA AKTIVNOST PREDŠOLSKIH OTROK

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ABSTRACT

Environmental factors are suggested to play one of the important roles in the quantity of physical activity (PA) and other obesity-related behaviours. Including access to recreational facilities, the residential location (village, suburban and urban area) and living conditions (living in a house with backyard or in a flat) could be one of the issues of child's sufficient PA and his/her body mass index (BMI). Very few studies investigated the impact of neighbourhood environments and PA among children and youth population (Dowda et al., 2011; Franzini et al., 2009; Davidson et al., 2006; Sallis et al., 2000). In our study we analysed the differences of PA and BMI of 93 children (46 girls, 4- to 5-year old children) according to their residential location and living conditions. Data were collected by measurements, questionnaires and semi-structured interviews with parents. Although we did not find any significant effect of the environment residential location on BMI and PA, we found a significant effect of living condition (living in a house or flat) on the quantity of PA ($p = 0.013$) and also border significant interaction of residential location * living condition on PA ($p = 0.067$). The results were confirmed by parents' statements that children, who live in a house, play more outside (in the backyard, for instance) in comparison with those who live in flats. Despite some shortcomings of the study (small sample, narrow categorisation of built environment and low age of children) some promising indicators, which confirm the importance of build environment characteristic for children's active behaviour, were found. This implements the need and the importance for further research by considering a larger sample of Slovenian population and its longitudinal dimension.

Keywords: preschool children's PA, active behavior, living conditions and build environment characteristics.

IZVLEČEK

Novejše raziskave izpostavljajo bivanjsko okolje kot enega pomembnejših dejavnikov, ki vplivajo na količino gibalne/športne aktivnosti (GŠA) posameznika. Vključno z dostopnostjo in možnostmi za gibanje in izvajanje drugih oblik športa, lahko lokacijo bivanja (ruralno, obmestno in urbano območje) in bivalne pogoje (hiša z dvoriščem oz. stanovanje v bloku, urejenost okolice), štejemo za pomembne dejavnike, ki pogojujejo količino GŠA in indeks telesne mase (ITM) posameznika. Še vedno pa so redke raziskave, ki so proučevale vpliv grajenega okolja in bivalnih pogojev na otroke in mlade (Dowda et al, 2011;. Franzini et al, 2009;. Davidson et al, 2006;. Sallis et al, 2000), zato je naš namen, da ugotovimo ali se količina GŠA in ITM 93 otrok (46 deklic; starost med 4-5 let) razlikuje glede na specifično grajeno okolje in bivalne pogoje. Uporabili smo podatke antropometričnih meritev, vprašalnikov in pol-strukturiranih intervjujev s starši. Raziskava sicer ni pokazala statistično pomembnih povezav lokacije bivanja in ITM ter količine GŠA, pokazala pa je statistično pomembno razliko med tipom bivalnih pogojev (hiša z vrtom, dvoriščem ali stanovanje v bloku) in količino GŠA ($p = 0,013$). Kaže pa se tudi mejno pomembna povezava med lokacijo bivanja (grajeno okolje) in tipom stanovanja na količino GŠA ($p = 0.067$). Rezultate potrjujejo tudi trditve staršev, ki poročajo, da otroci, ki živijo v eno ali dvodružinskih hišah, več časa aktivno preživijo zunaj na dvorišču oziroma vrtu, kot tisti, ki živijo v blokovskih stanovanjih. Kljub določenim pomanjkljivostim študije (majhen vzorec, ozka kategorizacija lokacije bivanja in bivalnih pogojev ter nizka starost otrok), lahko izpostavimo, da spremljani bivanjski dejavniki kažejo vpliv na količino otrokove GŠA. Potrebno bi bilo razmisliti o nadaljnjem raziskovanju okoljskih dejavnikov GŠA na večjem vzorcu otrok slovenske populacije kot tudi njegov longitudinalni učinek.

Ključne besede: gibalna / športna aktivnost predšolskih otrok, aktivno vedenje, značilnosti bivalnih pogojev in grajenega okolja.

INTRODUCTION

Many researches have reported that built environment shapes behavior and health outcomes: more walkable neighborhoods and access to parks and recreational facilities correlate with higher levels of PA and lower body mass index (BMI) (Giles-Corti & Donovan, 2002 a,b; Sealens; Sallis, Black, & Chen, 2003). Neighborhood characteristics are at least as significant as individual characteristics in determining the likelihood of obesity (Harrington & Elliot, 2009; Santana, Santos & Nogueira, 2009). Specific attributes of built environment encourage PA, such as the suitability of neighborhood for walking for the purpose of recreation and transportation;

accessible urban and recreational parks etc. When the neighborhood and its layout discourage or prevent PA, such neighborhood becomes “obesogenic”.

Despite the fact that environmental factors are suggested to play one of the important factor in the quantity of physical activity (PA) and other obesity-related behaviors, still very few studies investigated the impact of neighborhood environments on PA and obesity-related behavior among youth population (Dowda et al., 2011; Franzini et al., 2009; Davidson et al., 2006; Sallis et al., 2000).

Based on above facts and available data for additional analysis of possibilities to access recreational facilities, the form of residential location (rural, suburban and urban area) and the type of living conditions (living in a house with backyard or in a flat) could be one of the issues of child's sufficient quantity of PA and his/her body mass index (BMI).

METHODS

Within the scope of the project “Analyzing fundamental motor patterns, skeletal and muscle adaptation on specific sedentary lifestyle factors amongst 4- and 7-year-old children” 93 preschool 5-year-old children (48 girls) from 8 units of Kindergarten of Koper and their parents were examined. Data were collected with measurements, questionnaires (data of PA on daily basis) and semi-structured interviews with parents under the supervision of University of Primorska; Science and Research Centre, Institute for Kinesiology Research.

All subjects came from the Slovenian city of Koper and its suburbs (53,000 inhabitants, average residential density 170inh/m² with 10 kilometer circular buffer (geographical boundary size). We divided the residential location in rural, suburban and urban (city center, new city) location. Living conditions or accommodation were divided in three groups: the first group included those who live in single or two-family houses with backyard, the second group includes those who live in buildings with multiple dwellings, and the third group includes those who live in blocks of flats.

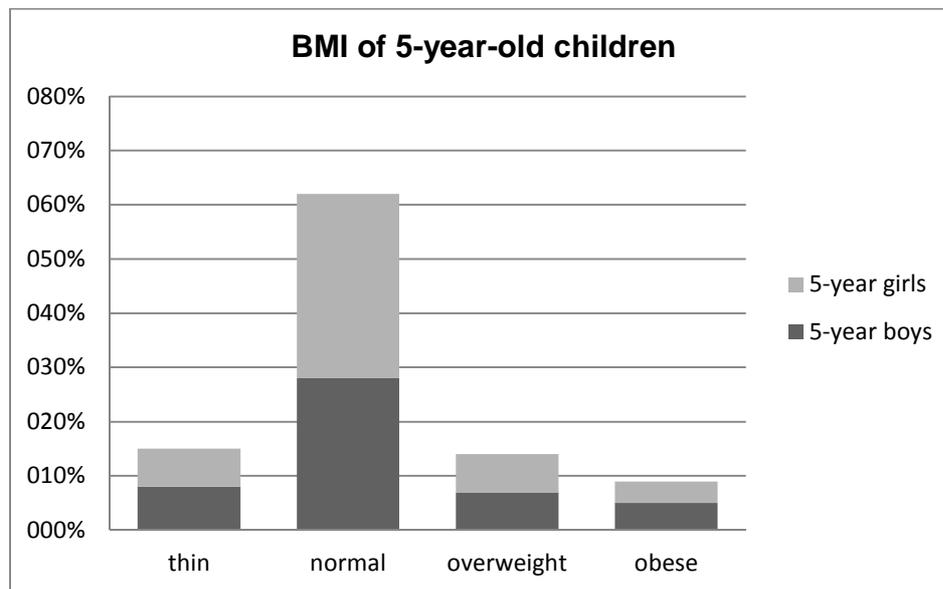
Children's BMI were measured with Maltron-BioScan. Data on BMI, residential location, living condition (accommodation), and place where children spend most of their leisure time, were analyses with IBM SPSS Statistics 19.0 software (SPSS, Inc., Chicago, Ill, USA).

The quantity of children's PA was collected by parents' subjective estimation of child's PA on a weekly basis. Specific qualitative data were collected also by interviewing parents, mostly mothers, thus enabling us further qualitative comparison with quantitative data. Data were collected from December 2009 until May 2010.

RESULTS

The results of children's BMI showed that the majority of boys and girls achieved normal BMI (28.0% of boys and 34.0% of girls). Although there were some underweight children (8.00% of boys and 7.00% of girls), the percentage of overweight (7.00% of boys and 7.00% of girls) and obese (5.00% of boys and 4.00% of girls) exceed 20% of the population what is quite a concerning fact. BMI data showed no correlation to residential location of children.

Figure 1: Children's BMI by gender



Further data analyses show a significant effect of living condition or accommodation (house, flat) on child's PA ($p = 0.013$) and also border significant interaction of residential location * accommodation on PA ($p = 0.067$).

Table1: The effect of accommodation (flat, house) and residential location (rural, suburban, urban) on the quantity of PA

source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Residential location	971.274	2	485.637	.191	.827	.005
Accommodation	23412.807	2	11706.404	4.598	.013	.113
Residential location * accommodation	14280.095	2	7140.048	2.805	.067	0.72

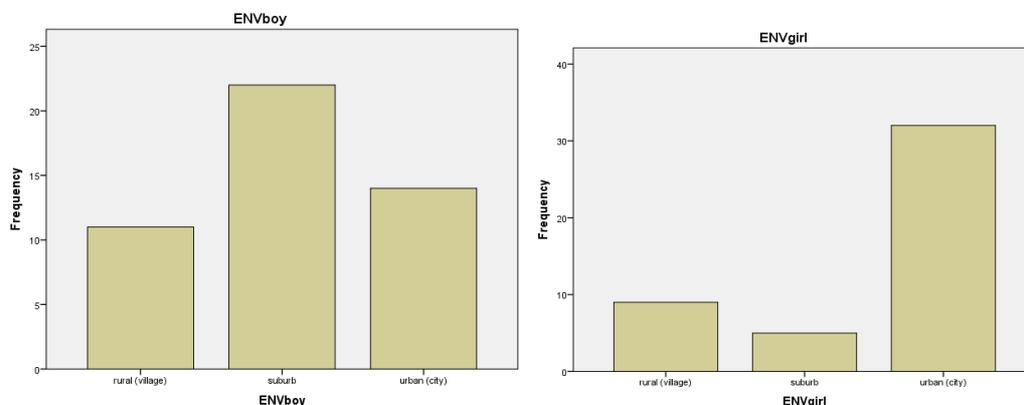
The results confirm the reported data from parents' interviews, where children, who live in a house, play more outside (e.g. in backyards) and their intensity was also reported as higher quantity of mediate and vigorous PA (MVPA) on a daily basis. House backyard was reported as especially useful place for child's activity while parents do their housework (cooking, cleaning, ironing etc.). In the opposite, children who are living in flats have to wait for adults to accompany them to the playground or other places in their neighborhoods, so that the possibility for them to play and spend time outside, strongly depends on parents' availability.

There results also reflect the data of sufficient quantity of PA; where almost 20% of children did not succeed the amount of PA to be sufficiently active, according to the WHO recommendation (\square 30 minutes/day "inactive", <60 minutes/day "not sufficiently active"; 60–420 minutes/day "active", > 420 minutes/day "very active"). Luckily there are more than one third of children sufficiently active and almost 40% of them were very active mostly thanks to the backyard PA.

Table 2: The quantity of PA by sufficiency and gender

PA	GIRLS		BOYS	
	Frequency	Percent	Frequency	Percent
unactive	1	2,2	1	2,1
not suff. active	10	21,7	8	17,0
suff. active	18	39,1	13	27,7
very active	16	34,8	21	44,7
no data	1	2,2	4	8,5
Total	46	100,0	47	100,0

Figure 2: Residential location of boys and girls



According to residential location the majority of children lived in an urban area (in old city centre or new city) 49% (n = 46), 29% (n = 27) in suburban and 21% (n = 20) in rural area. Most of the children come from middle class families and live in single or two-family houses (48.4%, n = 45), and 28% of them in block of flat. Many of single or two-family houses are common for both the old city centre and also the new part of the city what are specific built environment characteristics of Koper and not so common for other European cities. It is therefore not surprising that there is a positive correlation between accommodation and the quantity of PA, where children lived in houses surrounded with backyards, parks and recreational facilities.

Table 2: Living condition (accommodation) and gender

		Frequency all	% all	F (boys)	% (boys)
Valid	Missing data	1	1,1	1	1,1
	Family house	45	48,4	28	30,1
	Apartment house	21	22,6	11	11,8
	Flat	26	28,0	7	7,5
	Total	93	100,0	47	50,5

These results also confirm the data we gathered with the question: Where do the children spend most of their leisure time? More than 55% of them spent their time playing in the house backyards, secondly just one quarter in protected playgrounds. According to the sedentary lifestyle common for contemporary society almost 7% of children spend their time inside (child's room or living room) and this needs special attention.

Table 3: Place where children spend most of their leisure time

	Frequency	%
No data	1	1.1
Houseyard	52	55.9
Meadow , forest	4	4.3
Protected playground	22	23.7
Street play	1	1.1
Other (plowed field,	7	7.5

ranch..)		
Child's room or living room	6	6.5
Total	93	100.0

DISCUSSION

Preschool years are very important to prevent the onset of overweight and obesity and to support children's health related behaviors, especially the quantity and quality of PA (Troiano and Flangel, 1998). In this research, the results have showed some facts which confirm possible positive or negative effect of built environment and accommodation to the quantity of children's PA. Specific characteristics of Koper with many single or two-family houses with backyards provided supportive environment for children's PA. Also other PA facilities; many easy accessible playgrounds in old city centre and in new neighborhoods were the factors for stimulating the children's PA. On the other hand, we have to be aware of the shortcomings of families who lived in blocks of flat. Their children are not in favour, mostly because of their age, of the safety reason and the necessity of being monitored by their parents; they could not be left alone in the yard in front of the block of flats. For that reason their PA is much depended on parents' time to spend with them and that was possibly the main reason that children spent more of their leisure time inside (in their rooms) and their quantity of PA is mainly lower or was reported to be inactive or not sufficiently active.

Knowing the possible effect of the built environment and living conditions on children's PA it is important that the public and local policy-makers are aware of the need to build a safe and stimulating environment for children to play and be physically active.

CONCLUSION

Despite some shortcomings of the study (small sample, narrow categorisation of built environment and low age of children, subjective assessment of PA) we found some promising indicators which confirm the importance of built environment characteristics for children's active behavior which were found also in previous studies. This supports the need and the importance for further research by considering a larger sample of population and the longitudinal dimension. The importance for intervention by the local policy-makers and community to build playgrounds, and safe and accessible public recreational facilities are also suggested.

Acknowledgments

I would like to thank to the participants; children and parents of the project “Analyzing fundamental motor patterns, skeletal and muscle adaptation on specific sedentary lifestyle factors amongst 4- and 7-year-old children” took part in the years 2009-2011. I am also grateful to my colleagues of the Institute for Kinesiology Research and the head of the project prof. Rado Pišot for their effort to successful implementation of the project.

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EFFECTS OF PROGRAMMED EXERCISE ON DEVELOPMENT OF MOTOR ABILITIES OF PRE-SCHOOL BOYS

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ABSTRACT

Pre-school age is a very sensitive period for development of motor abilities, especially when it comes to learning and adopting a wide range of motor skills. The majority of motor abilities and routine is acquired and developed during childhood and pre-school age is a period when those abilities can be particularly influenced on.

The aim of this research was to determine the effect of programmed exercise on development of motor abilities of pre-school aged boys and to compare them with respondents not involved in organized physical activity. Therefore, battery of 7 motor tests was used: 20 meters dash, obstacle course backwards, arm plate tapping, standing long jump, seated straddle stretch, bent arm hang and sit-ups in 60 seconds. The sample of respondents was divided in three subsamples based on the age.

Results of MANCOVA showed statistically significant improvement of motor abilities of the experimental compared with the control group in all three age subgroups. These results unambiguously bring to conclusion that programmed physical exercise for 9 months has positive influence on development of motor skills of boys, especially in sensitive period like pre-school age.

Keywords: motor abilities, programmed exercise, pre-school age, boys

INTRODUCTION

Pre-school age is a very important period for human motor behavior because it is crucial in the development of fundamental motor skills, among them coordination, speed, strength, flexibility, balance, and precision, and it is difficult to compensate the lack of this abilities later on (Gallahue & Donnely, 2003; Živčić, Trajkovski-Višić & Sentderdi, 2008). The mastery of certain fundamental motor skills is a prerequisite if we are to function on a daily basis and participate in later physical or sport-specific activities. The motor development is of a great importance because of influence on intellectual, social and emotional characteristics of the

children, and through the development of motor activities, children's cognitive, emotional, and social skills will be developed (Živčić, Trajkovski-Višić & Sentđerdi, 2008).

Results of the studies involving motor skills of pre-school children have indicated that they undergo changes, and that their development is not linear (Popović et al., 2006). Numerous studies showed that well designed programs adjusted to pre-school children have showed a significant improvement of motor skills (Kosinac, 1999; Sääkslahti et al., 2001; Špelić et al., 2002; Videmšek et al., 2003; Mesaroš-Živkov & Markov, 2008; Jonić, Projović, & Janković, 2009; Rodić, 2010; Stupar, 2011; Savičević, Suzović & Dragić, 2012). Previous researches suggest general (gross) physical activities programs of low intensity (training sequences) and of dynamic character based on natural forms of movement and modalities of their combinations for children aged from six to ten, whereas the emphasis is placed upon the development of wide scope of motor knowledge, abilities and skills (Savičević, Suzović & Dragić, 2012).

One of the most comprehensive studies (Sääkslahti et al., 2001) examined the impact of four-year program on the motor development of children. The sample consisted of 184 children (84 girls and 100 boys), mean age of four years at the beginning of the program. The children were randomly divided into two groups. Experimental group participated in the program "APM inventory" designed by Numminen (1995) with the aim of developing basic motor skills. The results showed that the children in the experimental group significantly differed from children in the control group. They had better developed dynamic balance, motor abilities, and abilities of manipulation with objects and they took part in outdoor games more frequently. Research results have confirmed that programmed activities have positive impact on fundamental motor skills in pre-school age.

In order to obtain positive influence on the development of motor abilities in pre-school children, and to make children learn a variety of skills through natural forms of movement and different playing activities, in non-competitive environment, a special sports program was developed. Objectives of the program were to develop the basic skills that will enable involvement in different sports activities in the future and improvement of psychological and health status. The purpose of this paper was to determine the changes in some of the motor abilities of boys (five to seven years old), involved with nine-month long experimental program and also differences between them and control group of boys of the same age, not involved with organized physical activity.

METHODS

The sample consisted of pre-school aged boys (5-7 years of age). Based on decimal age of examinees two groups were formed (Table 1).

Table 1. Age groups of boys

Group of respondents Age	Group 1 5.00-5.99	Group 2 6.00-7.00	Σ
Boys involved in organized training	45	40	85
Boys not involved in any kind of organized training	41	40	81
Σ	86	80	166

Based on previous researches (Bala, Kiš & Popović, 1996; Popović, Cvetković & Grujičić, 2006; Bala & Popović, 2007; Bala, Popović & Jakšić, 2009), the battery of tests for the evaluation of motor abilities was made of following: for the assessment of coordination: 1) obstacle course backwards; for the assessment of running speed: 2) 20 meters dash; for the assessment of the swiftness of the alternative arm movements: 3) arm plate tapping; for the assessment of body flexibility: 4) seated straddle stretch; for the assessment of explosive strength of lower extremities: 5) standing long jump; for the assessment of static strength of arms and shoulders: 6) bent arm hang and for the assessment of repetitive strength of trunk: 7) sit-ups in 60 seconds.

Program of sport school for children (5-7 years old) includes 60 minutes training, two times a week. These trainings are conducted from September 2013. to June of the next year. Depending on the decisions of parents, some of the children had also a 60-minutes-long swimming training, once a week. From the great variety of physical training exercises, those that have influence on the development of the children's organism in general, were used (natural movement structures and exercises on the apparatus and floor), as well as the exercises for the development of functional and motor abilities, but sense of rhythm also (elements of athletics, elementary games, martial arts, open-air activities, natural movement structures that follow music, such as aerobic, dance, ballet etc.). Only boys involved with this kind of organized training for at least one year continuously, were respondents used for this research. Boys of the control group were involved in the physical activities in the pre-school institution. Classes of physical education were realized by teachers in rooms not specialized for physical activity or in the kindergarten's yard.

For every motor ability test, as well as every age group, mean (M) and standard deviation (SD) were calculated. The significance of difference in results of motor ability variables in final compared with initial measurement, for every group of respondents, was determined using paired samples t-test. For the assessment of the treatment effects on transformation of motor abilities between groups of respondents in every age category MANCOVA was used, while ANCOVA was used for the evaluation of difference in single motor variables. The level of statistical significance was $P \leq 0.05$.

This work was realized within the research project "Possibilities of improvement of intellectual, motor and cardio-respiratory abilities of children by means of kinesiological activities", which is funded by the Ministry of Education and Science of the Republic of Serbia, and realized by Faculty of Sport and Physical Education, University of Novi Sad.

RESULTS

In Table 2, mean (M) and standard deviation (SD) of the initial and the final measurement of both groups of boys are given. Average age of the respondents of the first group was 5.58 (± 0.39) age for the control and 5.47 (± 0.33) age for the experimental group. Average age of the respondents of the second group was 6.47 (± 0.32) age for the control and 6.49 (± 0.35) age for the experimental group.

Table 2. Basic descriptive statistics of motor variables 5-7 year-old boys

Gr	VARIJABLES	5-6 years old boys				6-7 years old boys			
		INITIALLY		FINAL		INITIALLY		FINAL	
		SD	M	SD	M	SD	M	SD	M
	20m dash (s)	5.73	0.42	5.54	0.43	5.37	0.41	5.30	0.45
C	Obstacle course back. (s)	29.30	7.23	27.09	6.72	27.42	6.94	25.59	5.84
O	Arm plate tapping (freq.)	13.23	1.91	14.22	2.22	14.03	2.15	15.37	2.32
N	Seated straddle stretch	32.95	4.99	35.51	4.82	36.88	8.15	39.35	8.62
T	(cm)								
R	Standing long jump (cm)	100.0	16.14	105.6	16.7	105.4	16.2	111.8	15.9
O		1		7	6	5	4	5	4
L	Bent arm hang (s)	9.62	7.57	9.52	6.37	11.87	9.84	9.94	5.42
	Sit-ups in 60s (freq.)	18.33	8.48	15.82	8.42	15.92	8.34	17.35	8.61
	20m dash (s)	5.46	0.54	5.17	0.45	4.94	0.42	4.66	0.35
E	Obstacle course back. (s)	25.73	7.82	19.86	5.06	20.01	5.26	16.41	4.43
X	Arm plate tapping (freq.)	15.93	2.93	18.44	3.41	18.35	2.82	20.98	3.33
P	Seated straddle stretch	34.71	5.78	39.20	6.15	35.80	5.15	41.63	4.98
E	(cm)								
R	Standing long jump (cm)	113.1	17.98	121.7	15.0	126.8	14.9	136.4	14.4
I		1		3	1	0	1	8	6
M	Bent arm hang (s)	13.79	7.92	16.42	8.84	11.44	6.65	15.70	9.73
	Sit-ups in 60s (freq.)	14.36	8.18	22.16	8.14	19.65	6.28	27.25	6.43

Gr – examined group (CONTROL – control group, EXPERIM – experimental group)

M – mean

SD – standard deviation

For the assessment of statistically significant differences in means of results of final and initial measurement for every examined group and every motor ability variable paired samples t-test was used (Table 3 and Table 4).

Table 3. The results of paired samples t-test for both treated groups age 5-6 years

Gr.	VARIABLE	M	SD	t	p
C O N T R O L	20m dash 1 – 20m dash 2	0.19	0.27	4.39	0.00
	Obstacle course back.1 – Obstacle course back. 2	2.21	6.28	2.19	0.03
	Arm plate tapping 1 – Arm plate tapping 2	-1.00	2.14	-2.92	0.01
	Seated straddle stretch 1 – Seated straddle stretch 2	-2.56	2.99	-5.36	0.00
	Standing long jump 1 – Standing long jump 2	-5.67	12.12	-2.92	0.01
	Bent arm hang 1 – Bent arm hang 2	0.10	6.26	-0.10	0.92
	Sit-ups in 60s – Sit-ups in 60s 2	2.51	5.45	2.88	0.01
E X P E R I M E N T A L	20m dash 1 – 20m dash 2	0.30	0.38	5.27	0.00
	Obstacle course back.1 – Obstacle course back. 2	5.86	4.87	8.08	0.00
	Arm plate tapping 1 – Arm plate tapping 2	-2.51	2.06	-8.17	0.00
	Seated straddle stretch 1 – Seated straddle stretch 2	-4.49	3.86	-7.80	0.00
	Standing long jump 1 – Standing long jump 2	-8.62	11.50	-5.03	0.00
	Bent arm hang 1 – Bent arm hang 2	-2.62	5.56	-3.16	0.01
	Sit-ups in 60s – Sit-ups in 60s 2	-7.80	5.11	-10.23	0.00

t – t-test results

p – level of statistical significance

Table 4. The results of paired samples t-test for both treated groups age 6-7 years

Gr.	VARIABLE	M	SD	t	p
C O N T R O L	20m dash 1 – 20m dash 2	0.07	1.95	2.35	0.03
	Obstacle course back.1 – Obstacle course back. 2	1.83	3.71	3.12	0.01
	Arm plate tapping 1 – Arm plate tapping 2	-1.35	1.78	-4.81	0.00
	Seated straddle stretch 1 – Seated straddle stretch 2	-2.48	1.96	-7.98	0.00
	Standing long jump 1 – Standing long jump 2	-6.40	8.56	-4.73	0.00
	Bent arm hang 1 – Bent arm hang 2	1.93	7.18	1.70	0.10
	Sit-ups in 60s – Sit-ups in 60s 2	-1.43	9.19	-0.98	0.33
E X P E R I M E N T A L	20m dash 1 – 20m dash 2	0.28	0.22	7.89	0.00
	Obstacle course back.1 – Obstacle course back. 2	3.60	2.91	7.83	0.00
	Arm plate tapping 1 – Arm plate tapping 2	-2.63	2.27	-7.31	0.00
	Seated straddle stretch 1 – Seated straddle stretch 2	-5.83	3.40	-10.82	0.00
	Standing long jump 1 – Standing long jump 2	-9.68	11.33	-5.40	0.00
	Bent arm hang 1 – Bent arm hang 2	-4.26	7.96	-3.38	0.00
	Sit-ups in 60s – Sit-ups in 60s 2	-7.60	4.70	-10.24	0.00

From Tables 3 and 4, the improvement of results in all motor ability variables of the experimental group, as well as majority of variables of the control group, is clearly notable. The exceptions are variables for the assessment of static strength of arms and shoulders and for the assessment of repetitive strength of trunk which have unchanged or even worse results in the final measurement of the control group in both age categories. However, the results of the experimental group show larger improvement. This can be seen in higher values of difference between the two groups of respondents, but also in statistical significance evaluated using paired samples t-test.

The significance of effects of physical training compared with control group in motor ability variables were evaluated using MANCOVA (Table 5).

Table 5. The results of multivariate analysis of covariance (MANCOVA)

VARIJABLES	5-6 year-old boys				6-7 year-old boys		
	Gr	EMM	f	p	EMM	f	p
20m dash (s)	E	5.26	3.67	0.05	4.86	17.96	0.00
	C	5.43			5.10		
Obstacle course back. (s)	E	21.46	8.29	0.01	19.33	14.09	0.00
	C	25.25			22.67		
Arm plate tapping (freq.)	E	17.20	5.73	0.02	19.08	7.75	0.01
	C	15.67			17.27		
Seated straddle stretch (cm)	E	38.87	8.01	0.01	41.97	10.48	0.00
	C	35.89			39.01		
Standing long jump (cm)	E	116.08	1.40	0.24	127.56	5.30	0.02
	C	112.19			120.77		
Bent arm hang (s)	E	14.15	1.47	0.23	15.85	8.67	0.01
	C	12.14			9.79		
Sit-ups in 60s (freq)	E	22.61	22.23	0.00	25.01	7.51	0.01
	C	15.29			19.59		
		F=7.60	P=0.00		F=6.99	P=0.00	

EMM – Estimated marginal means

F – F-test for MANCOVA

P – level of statistical significance for F

f – f-test for ANCOVA

p – level of statistical significance for f

The relatively high value of F-test according Wilks λ criteria of $F=7.60$ for the first and $F=6.99$ for the second age category, as well as the highest level of statistical significance, i.e. $P=0,00$ for both age categories, unambiguously point to the determined significant difference in motor abilities between the two examined groups after nine months. Results of ANCOVA, i.e. differences in progress of every single motor ability variable, for the first age category (5-6 years), show statistically significant improvement of every variable except standing long jump and bent arm hang, in which the larger improvement of results of the experimental group was noted, but not statistically significant. In the other, older age category, statistically significant improvement of all motor ability variables in favor of experimental group can be seen.

DISCUSSION

The results of basic descriptive statistics and paired samples t-test point to statistically significant improvement of results in majority of examined variables in both age categories of respondents not involved in any kind of organized training. This is in concordance with the previous research in the field of development of motor abilities of pre-school children

(Popović et al., 2006). However, the stagnation or even deterioration of repetitive strength of abdominal wall and also static strength of arms and shoulders in both age categories of the control group is noticed, which in the abovementioned previous research was not found. The results of experimental group unambiguously indicate statistically significant progress in all motor ability variables in both age categories at the highest level of statistical significance, even in the variables that are dependent on the mechanism of excitation duration (sit-ups in 60s and bent arm hang).

It should be mentioned that far better results of experimental group in majority of motor ability variables was already clearly notable on the initial measurement. That can be explained by the fact that the majority of boys, especially the older ones, had already been involved in the programs of sport school for one season and during that period they had improved their motor abilities and thereby showed better results on the initial measurement. The exception is variable for the assessment of repetitive strength of trunk, which is even better in younger control group, but that is probably the consequence of specificity of the sample of two examined groups.

However, the realistic and statistical significance of the results' improvement between the two groups in the period of 9 months was verified by MANCOVA, which brings the results of both groups of respondents of the initial measurement on the same level. The progress of the experimental group was statistically significant for all motor ability variables, especially in the older category. The similar results were obtained in some of the previous research (Kosinac, 1999; Sääkslahti et al., 2001; Špelić et al., 2002; Videmšek et al., 2003; Mesaroš-Živkov & Markov, 2008; Jonić, Projović, & Janković, 2009; Rodić, 2010; Stupar, 2011; Savičević, Suzović & Dragić, 2012). This confirms the conclusion of many authors that the biological growth and development of pre-school children by themselves are not stimulant enough for larger improvement of motor skills. Therefore, well designed and organized physical exercises are crucial during that period of life (Gallahue & Donnely, 2003; Đorđić, 2006; Popović et al., 2006.). In the younger group, only the progress for variables sit-ups in 60s and bent arm hang was absent.

By using interesting and diverse exercises, in sports school, boys develop coordination in the first place, but speed, agility, all types of strength, flexibility, balance and other motor abilities as well. Work on the improvement of all types of coordination suggested by some authors (Pišot & Planinšec, 2005), makes boys better in solving complex motor tasks, using their potentials more rationally and economically and thereby enabling the other motor abilities to manifest at their maximum. That is why, by the progress in coordination, in pre-school period, all other types of motor abilities are developed indirectly. Surely, this is not the only reason for the improvement of the motor abilities variables in this research, especially if a great number of programs applied during trainings is considered, among them all kinds of sprint

exercises with fast changes of direction, used for development of speed and agility, swift and precise manipulation with different kinds of balls, static or in motion, independently or in pairs, which improves, not only coordination, but the speed of alternative arm movements and many jumps on one or both legs, etc. and these result in progress in explosive strength of lower extremities especially. Holds on apparatus, which engage either arms or shoulders muscles or flexors of the hip joint, as well as frequent engagement and development of extensors of hip joint, require strengthening and continuous development of all body segments from the boys in sports school, which is proven by better progress compared with the control group of respondents. Mandatory part of each training are stretching exercises, especially those for stretching extensors of hip joint, as well as lower extremities. This can be an explanation for significant improvement of flexibility in experimental group compared with the boys of the same age, who were not involved with any kind of organized training.

CONCLUSIONS

Pre-school age is a very sensitive period for development of motor abilities, but very few children are involved in sports in this period, while the frequency, intensity and contents of exercises in pre-school institutions are not enough for further development of motor skills. Modern lifestyle and the expansion of television, internet, video games, made children more passive for physical activity. Also, while spending time in one of the abovementioned activities, children consume unhealthy food and beverages, which leads to formation of more adipose tissues, which increases the risk of staying that way (Đorđić, 2006).

This confirms the conclusion of many authors that the biological growth and development of pre-school children by themselves are not stimulant enough for larger improvement of motor skills. Therefore, well designed and organized physical exercises are crucial during that period of life (Gallahue & Ozmun, 1998, Gallahue & Donnely, 2003; Đorđić, 2006; Popović et al., 2006). Correct selection and schedule of training two times a week, in the duration of 60 minutes, provide not only normal growth and development, improvement of motor skills and improvement of general status of organism for children, but also positive influence on cognitive abilities (for younger children) and conative characteristics. Hence, it can be concluded that training in sports school has great benefits on health and development of children and represents an ideal base for long-term preparation for practicing sports and physical activity in life in general. Thereby, it can be assumed that using versatile programs of physical exercises in sports school, some segments of anthropological status of children, and especially motor abilities status, can be transformed and improved.

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CORRELATION BETWEEN BASIC AND SPECIFIC MOTOR ABILITIES IN JUNIOR FEMALE JUDOKAS

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ABSTRACT

The aim of this study was to determine the correlation between the results obtained in basic motor-functional tests and specific judo tests. Our study sample included 13 active junior female judokas (aged 17 ± 2.1 years, height 168 ± 4.48 cm, body weight 69 ± 15.49 kg) with training experience of 8.4 years, and medals won in both national and international competitions. The judokas underwent a battery of tests consisting of 10 motor-functional tests that served as predictor variables, as well as 4 specific judo tests used as criterion. The correlation matrix showed significant correlation between the motor-functional variables and specific judo test results. Forward stepwise multiple regression analysis was used to determine the influence of motor-functional predictors on the results of specific judo tests. A significant correlation was determined in every specific judo test, with emphasis on variables, which estimated functional endurance, coordination and strength.

Keywords: anthropological characteristics, combat sport, female judokas, judo-specific tests

INTRODUCTION

Judo is a combat and an Olympic sport created in Japan in 1882, belonging to the category of grappling-throwing sports. The success in judo fight is defined as a victory achieved with the help of some of the techniques: throwing (nage-waza), chokehold (shime-waza), joint lock (kansetsu-waza) or holding (osae-komi-waza). The judo performances are very complex, especially because it is determined by different technical, tactical and physiological parameters (Detanico et al., 2012). Therefore, it is necessary to ascertain the success determining the dimensions, their frequency and mutual relation (Franchini et al., 2008). The identification of judo success abilities presents the basis of successful performance and application of judo techniques in the direct combat with the opponent. Past research conducted via testing the athletes and interviewing the trainers gave only a partial answer about the relation between the influence of certain abilities, or, their importance and hierarchy (Krstulović et al., 2005; Lech et al., 2011; Krstulović & Sekulić 2013). The right choice of tests, with confirmed metric characteristics and reliable evaluation of the abilities important for success in this sport, is very important in determining the success factors.

Besides the basic morphological, motor and functional status tests, the specific judo tests are present in diagnosing the current condition of the judokas, providing the trainers with specific feedback. Lately, a great number of researchers was involved in constructing and validating specific judo tests (Sterkowicz et al., 1999; Lidor et al., 2006; Almansba et al., 2007; Santos et al., 2010), applying them in testing primarily elite senior judokas. However, the lack of research in which the mentioned specific tests are compared, is noticeable, especially on the sample of elite female judokas of younger age groups, such as the one used in this research. Therefore, it was the aim of this research to determine the relation between specific judo abilities and standard basic motor-functional abilities in elite junior female judo athletes.

METHODS

Subjects

The research was conducted on the sample of 13 female judokas aged 17 ± 2.1 years, height 168 ± 4.48 cm, body weight 69 ± 15.49 kg, and training experience of 8.4 ± 2.2 years. All the examinees were black belt holders, active competitors and winners of medals at the national and international competitions.

Variables

The sample of variables consisted of 10 basic motor-functional abilities evaluation tests, and 4 specific judo test as an evaluation of specific motor abilities. The following tests were chosen for evaluation of basic motor-functional abilities: speed – running 30m distance (MR30), coordination – ground agility (MGA) (Metikoš et al. 1989) and hexagon test: (MHEX), isometric endurance - pull up holding time (MPHT), dynamic endurance - sit ups in 30 sec. (M30SU), explosive strength - sargent test (MST), maximal strength – handgrip test (MHG), balance - flamingo test (MF20), flexibility – sit and reach test (MSR) and aerobic endurance - yoyo test (MYOYO). Four specific judo test have been chosen for evaluation of specific motor abilities: Special judo fitness test (SJFT) (Sterkowicz et al. 1999), uchikomi fitness test (UFT) (Almansba et al. 2007), Santos test (ST) (Santos et al. 2010), 10 items specific judo test (10ISJT) (Lidor et al. 2006).

Data analysis

Data processing methods consisted of calculating the descriptive statistic parameters of arithmetic mean (AM), minimum value (MIN), maximum value (MAX), standard deviation (SD), and values of determination for the normal variable distribution by Kolmogorov-Smirnov (K-S) test. The Pearson correlation coefficient was used to determine the relation between certain motor-functional variables and the results in specific judo tests.

Forward stepwise multiple regression method determined the influence of the group of motor-functional variables on the result in specific judo tests. After conducting the measuring, the obtained results were processed by the *Statistica for Windows Ver. 8.0.* programme.

RESULTS

Table 1 shows the results of descriptive statistic parameters for all the applied variables. The K.S test determined normal distribution of all the variables. Of all the specific tests, the SJFT was used most often, so it is possible to compare the results with the results of previous research on the sample of female judokas. Drid et al., (2009) obtained SJFT index (final HR (bpm) + HR 1min after the end of the test (bpm)/ total number of throws) of 11.3 ± 1.0 on the sample of 8 elite senior female judokas, and Wolska-Paczoska (2010) obtained index of 14.4 ± 1.26 on the sample of 15 female judokas, aged 16-18 years. Table 2 shows the coefficient correlation matrix between the motor-functional variables and the specific judo tests variables, tested on the $p < 0.05$. Table 3 shows four regression analyses for all the specific judo tests in the area of motor-functional variables. It is obvious that the forward stepwise regression method showed a different number of predictor variables included in the regression model for each individual criterion. The four regression analyses were significant, with high values of correlation coefficients (from $R = 0.89$ to $R = 0.98$) and high percentage of explained variance (from $R^2 = 0.79$ to $R^2 = 0.96$). Most correlated specific test with motor-functional variables was 10 items specific judo test (M30SU, MYOYO, MHEX, MGA, and MR30). It is noticeable that each specific test was significantly related to at least four motor-functional variables. The MYOYO and M30SU variables were significantly related to each specific judo test, while the MHEX was related to all the specific judo tests, except for the Uchikomi fitness test. On the other hand, the MPHT, MST, MHG and MF20 did not have significant correlation with any of the specific tests. The highest correlation coefficient was -0.87, and the lowest 0.07.

Table 1: The descriptive statistic parameters for all the applied variables: arithmetic mean (AM), minimum value (MIN), maximum value (MAX), standard deviation (SD) and KS (d) – Kolmogorov-Smirnov test considered significant for $d > 0.36$

	AM	SD	MIN	MAX	K-S(d)
MR30	5.4	0.4	4.9	6.2	0.17
MGA	11.6	1.6	9.2	14.4	0.15
MPHT	48.7	26.6	11.5	93.8	0.19
M30SU	31.2	3.9	25.0	36.0	0.20
MST	38.7	4.4	32.0	45.0	0.16
MHG	35.2	6.9	27.6	53.0	0.14
MHEX	12.6	1.5	10.7	15.5	0.17
MF20	4.1	1.8	1.4	7.1	0.17
MSR	85.5	10.0	70.0	97.0	0.21
MYOYO	395.4	176.3	200.0	780.0	0.25
SJFT	14.41	1.93	11.57	19.53	0.22
UFT	47.00	6.31	36.00	60.00	0.16
ST	513.33	189.85	169.0	840.00	0.14
10ISJT	140.69	33.24	104.0	220.00	0.20

Table 2: The coefficient correlation matrix between the motor-functional variables and variables of specific judo tests ($p < 0.05$)

	SJFT	UFT	ST	10 SSJT
MR30	0.47	-0.73	-0.61	0.66
MGA	0.76	-0.36	-0.53	0.70
MPHT	-0.13	0.19	0.07	-0.45
M30SU	-0.66	0.70	0.68	-0.87
MST	-0.28	0.42	0.48	-0.38
MHG	-0.28	0.27	0.32	-0.13
MHEX	0.60	-0.44	-0.62	0.78
MF20	-0.19	0.55	0.11	-0.22
MSR	-0.58	0.58	0.54	-0.57
MYOYO	-0.71	0.72	0.73	-0.78

Table 3: Regression analysis for four specific judo tests: multiple regression (R), determination coefficient (R^2), regression coefficient standardised value (β), level of significance (p)

	SJFT	UFT	ST	10ISJT
VARIABLES	β	β	β	β
MR30		-0.14*		
MGA	0.86**		-0.30*	0.45*
MPHT				-0.61*
M30SU				0.25*
MST	-0.30*	0.37*	0,37*	-0.43*
MHG				-0.29*
MHEX	-0.47*			
MF20		0.41*		
MSR		0.27*		0.05*
MYOYO	-0.67**	0.39*	0.70*	-0.34*
R	0.93	0.94	0.89	0.98
R²	0.86	0.88	0.79	0.96
p	0.00	0.00	0.02	0.00

**p<0.01; *p<0.05

DISCUSSION

Considering the fact that the lower SJFT index means better results a conclusion can be made, that the average results in this research were on the level of those from the research by Wolska-Paczoska (2010), also measured on the junior female judokas. The variables of ground agility (MGA) and endurance evaluation (MYOYO) had significant relation with the criterion (SJFT index, $p<0.01$). The results of numerous research showed that judo was an activity that strives towards the movement precision, and the competition success was correlated to coordination and time of reaction (Lech et al., 2011; Krstulović et al., 2006). The significant relation between the MYOYO variable and the mentioned criterion can be confirmed through research by Franchini et al., (2011) who found a high relation between the tests of the energy systems and SJFT test. The parameters of heart frequency and number of throws were observed in calculating the SJFT index. Since the frequency was measured in recovery phase as well, it is logical that the judokas with lower heart frequency in recovery had better aerobic capacities, as well as better SJFT index. The agility evaluation variable and the explosive strength evaluation variable were also accepted in the regression *forward* model, but with no statistical significance.

Five motor-functional abilities evaluation variables were accepted in the regression *forward* model, using the *forward stepwise* regression method for the *uchikomi fitness* test. With the $p=0.03$ level of significance, only the balance evaluation variable (MF20) significantly contributed to the model. Balance is very important in judo, and it involves the ability to maintaining balance and the ability to restore balance quickly after it was disrupted. The elite level of judo techniques performance means a fast, precise, strong performance of throws while maintaining stability at the same time. The aim of the *Uchikomi fitness* test was to perform the largest possible number of technique repetitions, with lifting the partner from the ground. The examinee has to throw the partner out of balance, keep the stable support points, and head towards the following partner as soon as possible, with the aim of repeating the same action.

The regression analysis for the Santos test in the area of motor-functional variables showed that three predictor variables were included in the regression model. The MYOYO, MVSM and MGA variables explained 86% of the total variance of the applied criterion variable. Out of the three variables in the model, only the endurance evaluation variable (MYOYO, $p=0.01$) significantly contributed to the model. The task of the Santos test was to perform a larger number of throw attempts, with each following level, similar to Yoyo test, where the aim was to gradually increase the speed of running. Both tests had intervals of progressive work and constant rest, regardless the fact that the *Yoyo* evaluated the general-basic, and *Santos* the specific judo endurance, the expected high correlation of the two variables was obtained. *Forward stepwise* regression method and the 10 items test criterion included 7 motor-functional abilities evaluation variables into the regression model. The MST ($p<0.05$), MPHT ($p<0.05$), MGA ($p<0.05$) and MYOYO ($p<0.05$) variables had a significant relation with the criterion.

The aim of the test was to perform ten different tasks, which comprise the general-basic activities and judo specific activities, successfully and as a fast as possible. The specific tasks that female judokas had to perform in the test demanded a high level of explosive power. Fast throw technique performance, fast release from the grappling technique, short heat of maximum sprint and jumping over a bench surely were agreeable with the judokas with a higher level of explosive power. One of the tasks in the test was climbing the rope at 3.3 m high. Judokas who achieved lower results in the pull up endurance test had problems performing this task. The coordination evaluation variable (ground agility) had a very high correlation with the criterion, meaning that the test demanded a very fast, precise and coordinated performance of different movements. Two tasks in the 10 items test (release from judo grappling techniques: *kesa gatame* and *yoko shiho gatame*.) had similar movement structure to those of the applied coordination evaluation test (ground agility), therefore it's significant relation with the criterion was expected. The variable of aerobic

endurance (MYOYO) had a very high relation to the criterion, same as in all the previous specific judo tests. A high level of aerobic and anaerobic endurance, desirable in elite judokas, has many times been scientifically determined, no matter was the criterion any of specific judo test or competitive success (Franchini et al., 2011).

CONCLUSION

The lack of experimental studies on the sample of elite judokas of younger age groups, especially women, is noticeable. It is not simple to answer the question which are the anthropological success determinants, because judo is a extremely complex sport in which the competitive success is determined by a number of characteristics and abilities, the psychological and energetic potential of the individual and technical-tactic performance, realised in the direct combat with the opponent. The authors of the specific judo tests tried to simulate judo combat as best as they could. Comparison of the abilities important for each specific tests shows that tests have some general, but also specific determinants of success. It seems that the ability of aerobic endurance greatly determines the success in specific judo tests. High level of coordination, especially agility, also significantly relate to the specific judo tasks, while the remaining motor-functional determinants partially described success in a certain test. The explosive and static strength also significantly determined the success in two specific tests, while a significant relation with balance evaluation test was noticed in one test. Observing the correlation matrix it can be concluded that besides the aerobic endurance evaluation variable, the muscle-endurance evaluation variable was significantly related to every test.

One of major limitations of this research is small sample of subjects. The future research should have more subjects and compare the obtained results of the specific tests with the competitive success of female judokas, and conclude which specific test determines the competition success in judo.

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KOLIČINA IN INTENZIVNOST GIBANJA MED URO ŠPORTA V 3. RAZREDU OSNOVNE ŠOLE

THE QUANTITY AND INTENSITY OF PHYSICAL ACTIVITY DURING PHYSICAL EDUCATION IN 3rd GRADE PRIMARY SCHOOL CHILDREN

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IZVLEČEK

Cilj prispevka je bil ugotoviti efektivni čas ure športa (ŠPO) in čas, ki so ga otroci preživeli v srednji in visoki intenzivnosti (MVPA). V celotno raziskavo je bilo vključenih 189 tretješolcev (94 dečkov in 95 deklic), starih 8 - 9 let, iz petih naključno izbranih obalnih osnovnih šol. Na vsaki šoli smo z merilnikom pospeška izmerili količino in intenzivnost gibanja treh ur ŠPO, ki so jih vodile razredne učiteljice in/ali športni pedagogi. Ugotovili smo, da povprečni čas ure znaša $36,6 \pm 7,7$ minut, od tega je pripravljalni del $14,9 \pm 7,7$ minut, glavni del $19,3 \pm 7,1$ minut in zaključni del $1,8 \pm 2,4$. Čas v MVPA znaša $13,2 \pm 4,1$ minut, brez statističnih razlik med spoloma. Ura ŠPO, izvedena na zunanjem igrišču, je trajala v povprečju 7 minut manj kot v telovadnici, pa tudi čas v MVPA je bil krajši za 1,5 minute. Otroci, ki so bili vodeni s strani učitelja in športnega pedagoga hkrati, so dosegli povprečno 3,5 minut krajši čas v MVPA, medtem ko med vodenjem zgolj učitelja in vodenjem zgolj športnega pedagoga ni razlik. Poleg tega smo ugotovili tudi, da se čas v MVPA sorazmerno krajša z naraščanjem števila aktivno sodelujočih otrok. V raziskavi smo opazovali le čas v MVPA pri ŠPO, ne pa njene vsebine, zato moramo biti previdni pri zaključkih. Trdimo pa lahko, da bi vsakodnevna ŠPO podaljšala tedenski čas v MVPA le za 6 %. Prav tako bi se s postavitvijo dveh blok ur tedensko čas v MVPA izboljšal le za 4 %.

Ključne besede: gibalna/športna aktivnost, efektivni čas, otroci, merilnik pospeška.

ABSTRACT

The purpose of this study was to establish physical education (PE) lessons' effective time and the time that children spent in moderate to vigorous physical activity (MVPA). The study involved a total of 189 third-grade pupils (94 boys and 95 girls), aged 8 to 9 years, from five primary schools in the Slovenian Coast region. We used accelerometer in each school to

measure the quantity and intensity of activity during three PE lessons led by classroom teacher and/or PE teachers. We found that the average duration of a PE lesson was 36.6 ± 7.7 minutes: lesson preparation time took 14.9 ± 7.7 minutes, the main part took 19.3 ± 7.1 minutes and conclusion took 1.8 ± 2.4 minutes. Time spent in MVPA was 13.2 ± 4.1 minutes, with no statistical differences between genders. An average PE lesson carried out on the outside playground lasted on average 7 minutes less than the lesson in a gym, and the average PE lesson's effective time was shorter by 1.5 minutes as well. The children led by both teachers together showed on average 3.5 minutes shorter time spent in MVPA. There were no statistical differences between a PE teacher and a classroom teacher. Furthermore, it was revealed that the time spent in MVPA decreases proportionally with the increase in the number of children participating actively in the PE lesson. The research included only time spent in MVPA during PE lessons and not their content, therefore it should be evaluated with a certain degree of discretion. However, it can be concluded that everyday PE lessons would extend the time spent in MVPA by only 6% a week. Similarly, two joint PE lessons twice a week would increase the time spent in MVPA by only 4% per week.

Key words: physical/sports activity, effective time, children, accelerometer.

INTRODUCTION

The modern lifestyle is becoming increasingly sedentary. This way of life requires less physical but more and more mental effort of people. Because of school/workload people are more and more stressed, which makes them less willing to spend their free time doing physical/sports activities. Unfortunately, this trend has also been passed on to children. We have noticed that they spend more time in front of a computer, a television screen and playing digital games than they devote to physical activity. This is reflected and leaves consequences in several areas. The most important is the health aspect. Children are, due to inactivity and inadequate nutrition, exposed to an increased risk for the occurrence of various diseases, such as cardiovascular disease, type 2 diabetes, high blood pressure, stroke and other diseases in later life periods (Cepanec, 2013). In addition, a child's proper motor development cannot be achieved without the physical/sports activity. To some children PE is the only physical/sport activity, because they also choose other activities which are not of physical nature. That is why PE is very important for them. In the first and the second triad, PE is on the school curriculum three times a week and twice in the third. If children choose the optional sports program, carried out by some elementary schools, than PE is performed five times a week. In their article, Corbin and Pangazi

(2003) state that a regular, everyday PE is a good opportunity to ensure a greater quantity of time that is required to meet the recommended children MVPA. The question is, what is the quantity and the intensity of MVPA that the third graders receive during a PE lesson.

METHODS

Sample

Altogether 189 3rd grade children (94 boys; aged 8 – 9 years) from 5 randomly selected primary school from Slovenian Coastal region were recruited in the study. We introduced all details to principals, physical education teachers and parents. The study motivation was presented in the way that physical education teachers were not motivated to influence the study results. Parents gave written consent prior study onset.

Research design and instruments

In every school we measured physical activity phenotypes during three physical education classess that were led by educators and/or physical education teachers. Physical activity was monitored by accelerometer (Actigraphy GT1M, Actilife, USA) that were worned on hip for the whole duration of physical education class. Fiveminutes prior and after the class accelerometers were placed and removed from the children, respectively. Children not teachers did not know the real purpose of the acceleroemters to assure blind study design.

Data processing and statistics

Acceleromter data were downloaded onto the PC with 15-second epoch applied. To distinguish between physical activity phenotypes, we took into consideration threshold values proposed by Mahmutović and Volmut (2012).

- Physical inactivity: < 134 counts per 15-second,
- Light physical activitiy: 135 – 633 counts per 15-second,
- Moderate physical activitiy: 634 – 1853 counts per 15-second,
- Vigorous physical activitiy: > 1853 counts per 15-second,
- MVPA – effective time of physical education time: time spend in moderate and vigorous physical activity.

The data were processed with the statistical package SPSS (Chicago IL, USA). After the data normality was confirmed all data are presented with mean with standard deviation. We applied one-sample t-test to check the differences from expected value: One-way ANOVA was used to

check the differences between teachers (educators, physical education teachers, both). Pearson correlation was used to correlate effective time with the number of participating children. All statistical decisions were considered at $p < 0.10$.

RESULTS

We have found that time children spend in MVPA during physical education was $13,2 \pm 4,1$ minutes, in boys $13,5 \pm 4,3$ minutes, and in girls $12,9 \pm 4,0$ minutes, with no gender differences ($P = 0,338$). Average time of physical education was $36,6 \pm 7,7$ minutes, from where introductory part $14,9 \pm 7,7$ minutes, main part $19,3 \pm 7,1$ minutes and the final part $1,8 \pm 2,4$ minutes. When physical education class was carried out outside lasted 7 minutes less than inside with MVPA being shorter for 1.5 minutes ($P = 0,011$). Interestingly, we also confirmed significant teachers effect ($P = 0,001$), where the lowest MVPA (-3,5 minutes) was found if both educator and teacher led physical education class together ($P = 0,005$). However, there were no differences between educator and physical education teacher. Finally, we confirmed significant negative correlation between time spend in MVPA and the number of children participating in the class ($r = -0.12$, $P = 0.092$).

DISCUSSION

Children are in MVPA for only 39 minutes per week during PE lessons at school. Following the recommendations of the World Health Organization, 2010, they should be in MVPA for at least 420 minutes per week. PE is now covering only 9.3% of weekly recommendations.

If children had PE five times a week (every day) for one school hour (45 minutes), they would be in an appropriate MVPA for only 65 minutes, so MVPA would increase by only 6% on a weekly basis (on a weekly basis 15.3% of weekly recommendations). If they had four PE lessons per week placed in two joint PE lessons, which means that PE would occur twice a week for 90 minutes, they would be in a MVPA for only 55.8 minutes, so MVPA would increase on a weekly basis by only 4% (on a weekly basis 13.3% of weekly recommendations) because in one PE lesson (45 minutes) children spend 14.4 minutes in MVPA and 27.9 minutes in two joint PE lessons (90 minutes) (Wang, Pereira and Mota, 2005). If an average effective time that Fairclough and Stratton state in their study (2006) was up to 50% of a total PE lesson, then PE would fulfill about 21% of weekly recommendations. The introduction of two joint PE lessons raises the question of whether the students of class level would be able to participate so long in a MVPA since tiredness and a lack of motivation could lead to injuries or a false learning of

motor tasks. We therefore think that it would be unreasonable to increase the number of PE lessons per week.

We have found that children spend 13.2 ± 4.1 minutes in MVPA during physical education. Štemberger's study (2005) shows that the average MVPA time, measured with a stopwatch, is 9 minutes. Fairclough and Stratton study (2006) shows that the average time in MVPA of various studies, carried out by direct observation or accelerometers, was $37.4\% \pm 15.7\%$ of a total PE lesson (16.8 minutes on average in one PE lesson), but with measuring effective time with a heart rate monitor this time increased and reached $49.1\% \pm 20.5\%$ of a total PE lesson (it is 22.1 minutes on average in one PE lesson). This means that the result may vary depending on the measurement instrument. In one Texas school children had a lower value because they spent in average only 3.8 minutes for MVPA (Simons-Morton, Taylor, Snider and Huang, 1993).

We have calculated that an average MVPA time for boys was 13.5 ± 4.3 minutes, and for girls 12.9 ± 4.0 minutes. We have found that there were no gender differences. Štemberger's study (2005) shows that there were found no statistically significant differences between boys and girls. Even in Fairclough and Stratton study (2006) was found that only four of thirteen examined studies detected statistical difference between genders.

We have noticed that an educator or other teachers, who had a lesson before PE, did not want to finish their lessons earlier so that children could start in time with the next lesson – sport. Many times their lessons were extended by a few minutes. In addition, physical education teachers must finish PE lesson a few minutes earlier so that children have enough time to change and prepare for the next lesson. In this way, educators and PE teachers are left with less time to perform lessons. Thus, an average time of PE in the gymnasium lasts for 36.6 minutes and on the outside playground on average for 7 minutes less. In Štemberger's study (2005) it was measured that an average time of a total PE teaching lesson lasted for 34 minutes.

PE lesson was divided into three parts, namely preparatory part, which on average lasted for 14.85 minutes, the main part which on average lasted for 19.3 minutes and the final part, which lasted for only 1.8 minute. In Štemberger's study (2005) it was calculated that preparatory part on average lasted for 10 minutes, main part for 20 minutes and the final part for 4 minutes.

In addition, with the increase in the number of actively participating children, the time in MVPA decreases, so it is important that classes do not have too many pupils. Therefore, educators

(most of which are independently leading PE lesson and have to control more than 25 children) prioritize the safety of children. In addition, they have to prepare all the tools and props that they need during a lesson. The loss of time due to prop set up could be solved in such a way that students who come first set up the room and students who finish last put the props away. In between the lessons, the educator or physical education teacher would only slightly adjust the training environment and sport props for every age group. Even foreign studies indicate that students in classes which count more than 45 pupils, are more than 50% less physical/sport active than students from smaller classes. (Center to Eliminate Health Disparities and Samuels and Associates. 2007; Failing Fitness).

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EATING HABITS AND PHYSICAL ACTIVITIES OF CHILDREN IN PRIMARY SCHOOL

PREHRANSKE NAVADE IN ŠPORTNA AKTIVNOST OSNOVNOŠOLCEV

Mateja REPOVŽ LISEC

ABSTRACT

The paper presents the results of the analysis of the state of eating habits as well as physical activity of primary school children in the region Posavje and compare the results regarding age and gender. In the survey 362 children took part who attended third, sixth and ninth class of a 9-year primary school in year 2007 and fifth class of an 8-year primary school.

It has been found out that there is a difference among children of different age regarding the frequency of everyday meals. The majority of children that leave out certain meals attend the ninth grade. Calculations have shown a trend that children and teenagers eating more meals a day possess a lower BMI (body mass index). Furthermore, it has been calculated that boys drink more liquids during the day than girls. Pupils who drink more liquids a day have a higher BMI. According to the results, boys do sports more often than girls. Mostly children and teenagers with a normal body mass take part, less often children and teenagers with an excessive body mass and the least often children and teenagers in the obesity category. Similar differences have been noticed between children with different BMI regarding the frequency of past time sports activity. Statistically important difference has been noticed between boys and girls in ninth classes in appropriateness of their BMI. More boys (84.6%) than girls (80.4%) have an appropriate body mass.

Keywords: eating habits, sports activity, pupils, healthy lifestyle, excessive body mass

IZVLEČEK

Z delom smo želeli analizirati stanje prehranjevanja in gibalne/športne aktivnosti osnovnošolskih otrok v Posavski regiji in primerjati rezultate glede na starost in spol. V raziskavo je bilo vključenih 362 učencev, ki so v letu 2007 obiskovali 3., 6. in 9. razred devetletne osnovne šole, ter 5. razred osemletne osnovne šole.

Ugotovili smo, da prihaja med različno starimi učenci do razlik glede pogostosti uživanja posameznih dnevnih obrokov. Največ učencev, ki izpuščajo posamezne dnevne obroke, je v devetih razredih. Izračuni so pokazali trend, da imajo otroci in mladostniki, ki zaužijejo več obrokov dnevno, nižjo ITM-vrednost (indeks telesne mase). Rezultati so pokazali, da dečki čez dan spijejo več tekočine kot deklice. Izkazalo se je, da imajo učenci, ki zaužijejo večjo količino tekočine na dan, višjo ITM-vrednost. Prav tako so se podobne razlike izkazale med učenci z različnimi ITM-vrednostmi v pogostosti ukvarjanja s športom v prostem času, rekreativno. Ugotovili smo, da prihaja do statistično pomembnih razlik med dečki in deklicami devetih razredov v ustreznosti ITM-vrednosti. Več dečkov (84,6 %) kot deklic (80,4 %) ima primerno telesno težo.

Ključne besede: prehranske navade, športna aktivnost, učenci, zdrav način življenja, prekomerna telesna teža

INTRODUCTION

Healthy nutrition and physical/sports activity of children and teenagers are key for a healthy physical and mental development in the young age, as well as when they are old. Unsuitable food and the lack of physical/sports activity can lead to higher body mass, deterioration of wellness, lack of self-esteem and lower productivity levels. Adults and teachers must be aware of the problem of the unsuitable body mass, consequences of the lack of taking care for their health, not only as eating habits but also in the field of physical/sports activity (Repovž Lisec, 2011).

Balanced, various and healthy nutrition that contains enough nutrients is a key for the right growth as well as physical and mental development of the children (Heseker, Oepping, 2007). In the first triennium (six to eight year-olds) are children mature enough that they understand, why food is important for their health and well-being. If children are informed about the principles of the healthy diet, they will implement their knowledge when they make their own decisions. In the second and third triennium (nine to fourteen year-olds), children begin to make their own decisions about food. It is not wrong, if occasionally children eat less nutritious food. However, it should not become a habit (Gavin et al. 2007).

The number of meals per day has a significant influence on health. In the population that eats less than three meals per day the level of obesity are higher. Work efficiency is higher as well, when taking at least four meals daily, because the motivation for work decreases after about 4 hours from the last meal (Pokorn, 1996).

Fabry et.al. (1966, in Rolland – Cachera, Bellisle, 2002) have studied and compared results of children from three primary schools. Children between the ages 6 to 16 years participated. In the first school children were given three meals a day, in the second seven and in the third five. Energy value was the same in all three schools. After one year of observations, they have found out that the predisposition for obesity has risen for children, aged 10-16 that have 3 meals daily.

Many children can sustain a proper balance between energy input and energy consumption. That enables them in the long term to keep energy balance in spite of high oscillation at the input and consumption and thus a stable body mass. The lack of physical/sports activity or more and more sedative lifestyle of children is the reason for a positive energy balance in the body (Završnik, Pišot, 2005).

Pupils should be active every day. That can be during school or breaks (regular sports classes, active breaks, a minute for health, moving as didactics medium). The above-mentioned physical/sports activities should be an integral part of the everyday school activities. Furthermore,

we must keep in mind that children like activities where they play and socialize with their friends and at the same time they are physical active and relieve the mental stress (Repovž Lisec, 2011).

School environment in which children spend most of their day is often not suitable for children's traits, that is why they can experience health issues already in the childhood, such as poor posture, breathing illnesses and obesity (Šimunič et al., 2008).

The studies have shown that unhealthy nutrition and lack of sports/physical activity can be a serious problem in Slovenia and elsewhere, so they need to be solved.

Pišot et al. (2006) have observed in the study Relationship between life quality and nutrition habits and physical/sports activity (n = 832) the lack of physical/sports activity, which lead to a worse motor skills development.

WHO study for 2001/2002 (Currie et al., 2004) took place in 22 European countries. There were 115981 children, aged 11, 13 and 15 years. Participants were given the instructions and explanations of physical/sports activity as "every activity that increases the heart rate and breathing". Results have shown that approx. one third of the participants are active. There were differences between countries. In Austria, Greece, Wales, Latvia, Germany, Estonia, Italy, Belgium, France, Finland, Malta and Hungary there were less than 20% of 15-year-old girls physically active. In all countries boys were more active than girls, at least 60 minutes a day 5 days a week, although the differences in gender were very small in some countries (e.g. Netherlands, Italy). Physical activity of children decreases with age (Armstrong, 2007).

Also, in 2005 and 2006 there was a study done where physical activity of Slovenian pupils aged 11.5, 13.5 and 15.5 was examined. They found out that there are differences in activity in regard to gender, age and socio-economical status of the family. Girls do sports more active, up to 1 hour a week; boys are more often physically active, at least 2-3 hours a week. 11-year-olds are more often active than 15-year-olds (Scagnetti, 2007).

Todd and Currie (2004) in the study HBSC, in which almost all European countries and North American countries took part, state that more than a quarter of participants (26%) spend a lot of time in front of the TV every day, at weekends there are 45%. There are of course many differences between countries in watching TV during the week (from 11% in Swiss to 46% in Israel) and at the weekends (from 28% in Italy to 70% in Ukraine). In most countries, boys more often spent their free time watching TV or playing computer games than girls. The use of computer increases with age, especially between 11 and 13 years.

Institute for the protection of health defines in the Health statistical yearbook (Gabrijelčič Blenkuš et al., 2005) the health state of pupils and youth in Slovenia based on the systematic examination at all schools in 2004/2005. They found out that 13.4% of children have poor nutrition. Consequently, 2.8% of children have poor body development and 16.4% poor posture.

The purpose of the research

The goal of this research is to determine and analyze the frequency of meals the pupils have and compare the results with regard to age as well as determine the differences between boys and girls with regard to daily amount of drunken water. Furthermore, our goal was to analyze and present the frequency physical/sports activity of the kids with regard to gender and age, and determine the state of nutrition with regard to the physical/sports activity of the kids as well as analyze the calculated BMI values of kids in the Posavje region with regard to gender and age.

Hypotheses

H1: Between different age groups there are statistically significant differences in regard to the frequency of their meals.

H2: There are no statistically significant differences between boys and girls with regard to daily amounts of drinks.

H3: Boys more often take part in physical/sports activity than girls.

H4: Pupils with appropriate BMI-values more often do physical/sports activities than pupils with higher BMI-value.

H5: Pupils in upper grades more often do physical/sports activity than pupils from lower grades.

H6: There are no statistically significant differences between boys and girls with regard to the appropriateness of their body mass.

METHODS

Sample of participants

Sample has been chosen on purpose, and so that a representative sample in the primary schools in the Posavje region has been taken into account. From 22 primary schools, 10 participated. 362 pupils participated (161 boys and 199 girls) that in 2006/2007 went to 3rd, 6th, and 9th grades of a 9-year primary school and 5th grade of an 8-year primary school in the Posavje region, aged eight, eleven and fourteen.

While preparing and carrying out this research, we observed the ethical principles for epidemiology-related work. Each individual participated out of their own free will and was notified about the purpose of the research. We acquired the written consent of their parents beforehand. Furthermore, also the headmasters and teachers at the schools, whose pupils have been included in the sample, were notified of the purpose and methods of the research. All acquired data were used strictly for research purposes only and the participants have full anonymity.

Sample of variables

Sample of variables was a questionnaire written for the purposes of this study. The bases for the study were taken from the CINDI-study from a book Risky Behaviours with regard to health and some health states for adults in Slovenia (Zaletel-Kragelj et al., 2004). The questionnaire had 21 questions in 3 parts. From the content point of view, questions consisted of the basic data about pupils, nutritional habits and physical/sports activity of pupils. The validity of the questionnaire has been checked with the factor analysis. Reliability of the questionnaire has been calculated on the basis of the Cronbach Alpha coefficient and equals 0.592 for all variables with regard to eating and drinking frequencies and 0.762 for all variables with regard to frequencies of doing physical/sports activity of the pupils.

Methods of data analysis

Data was statistically analysed in the SPSS software (Statistical Package for the Social Sciences). The differences between the groups of participants have been calculated with χ^2 -test. As a limit of statistical significance we have taken the level of 5% statistical risk ($p = 0.05$). Results were presented in written form or with charts and graphs.

RESULTS AND DISCUSSION

We have found out that there are differences between pupils of different age with regard to frequencies of daily meals. Most pupils that never eat breakfast are in the 9th grade (12.1%) and in the 6th and 5th grades (10.9%). In the third grade, only 3.4% of pupils never eat breakfast. Morning meal is eaten every day in the week by 67.8% of third graders, 55.4% of the fifth graders/sixth graders and 41.2% of the ninth graders. Afternoon meal and dinner is left out more often by older pupils. From the data, correlations between BMI-values and number of meals have been calculated. From the results, a trend has been observed that pupils and teenagers with more meals per day have lower BMI-value. We assume that having a larger number of (smaller) meals per day prevents hunger, meaning that overall, they eat less.

Results have shown that boys drink more liquids than girls (table 1), which has also been proven by a statistical significance ($\chi^2 = 12.922$; $df = 4$; $p = 0.012$). A recommended daily intake of liquids is from 1 to 2 litres. 46.5% of boys and 36.7% of girls drink from 1 to 2 litres daily, whereas 2 litres or more are drunk by 19.5% of boys and 11.2% of girls. Between boys and girls there were no statistically significant differences in the frequency of drinking fruit juices, non-alcoholic drinks and water. There are differences in frequency of drinking energy drinks and sports drinks. These drinks were more often drunk by boys than girls. We believe differences exist between the volume of drunken liquids between boys and girls based on their different body mass. Girls normally have lower body mass than boys. Boys do more sports and have higher need to drink more. A teenager needs to drink, with regard to their body mass, 1.5 litres of liquids per day (Vrdelja, 2008).

Table 1: Amount of drunken liquids with regard to gender

		Amount of drunk liquids per day					Total	
		up to 2 dl	2 dl–0.5 l	0.5 l-1 l	1 l–2 l	2 l or more		
Gender	Boy	Number	2	8	44	74	31	159
		Percentage	1.3%	5.0%	27.7%	46.5%	19.5%	100.0%
	Girl	Number	6	15	81	72	22	196
		Percentage	3.1%	7.7%	41.3%	36.7%	11.2%	100.0%
Total		Number	8	23	125	146	53	355
		Percentage	2.3%	6.5%	35.2%	41.1%	14.9%	100.0%

The value of the Pearson correlation coefficient r_{xy} for the correlation between the BMI-values and the daily quantity of drunk water equals 0.12, which means that the correlation is positive and statistically significant ($p = 0.047$). The results show that pupils with higher BMI-values drink more liquids per day. We can assume these kids drink more so called "high caloric drinks, which causes their BMI values to rise.

With regard to the frequency of physical/sports activities it was determined that there are no differences between boys and girls in terms of the frequency of training in sports clubs and in school. The results showed that boys more frequently do physical/sports activities in their free time, non-professionally, than girls ($\chi^2 = 17.448$; $df = 8$; $p = 0.115$) (Table 2). The largest share (23.4%) among the participants still represents those pupils that don't do any physical/sports activities even in their free time. The share of the girls with regard to the frequency of doing physical/sports activities is dropping. It is believed, the differences arise due to the nature of socialising between boys and girls. Boys often spend their free time on sporting grounds, where they play football and basketball, while girls would rather spend it for chatting with their friends or reading. Strel et al. (2007) discovered that girls more frequently use their free time for reading (two times more often) or use their mobile phones, than boys.

There are certain sports that are attended to equally by boys and girls. Boys more frequently use their free time for running, cycling, ball games, football and basketball, while girls more frequently spend their free time rollerblading, hiking, dancing or playing badminton. Brettschneider and Naul (2007) state that in all European countries, running, aerobics, ice skating, cycling, football and basketball are the most common sports activities.

Table 2: Frequency of doing physical/sports activities in the free time, non-professionally, with regard to gender

Frequency of doing physical/sports activities in the free time, non-professionally								Total
Never	Once per week	Twice per week	Three times per week	Four times per week	Five times per week	Six times per week	Seven times per week	

Gender	Boy	Number	31	15	18	28	18	14	9	27	160
		Percentage	<u>19.4%</u>	9.4%	11.3%	17.5%	11.3%	8.8%	5.6%	16.9%	100.0%
	Girl	Number	52	26	28	39	16	17	3	13	194
		Percentage	<u>26.8%</u>	13.4%	14.4%	20.1%	8.2%	8.8%	1.5%	6.7%	100.0%
Total	Number	83	41	46	67	34	31	12	40	354	
	Percentage	<u>23.4%</u>	11.6%	13.0%	18.9%	9.6%	8.8%	3.4%	11.3%	100.0%	

The differences between the pupils with different BMI-values with regard to the frequency of doing physical/sports activities, proved to be statistically important within certain sports (walking, running hiking/mountaineering and skiing). All these sports activities are most frequently attended by pupils with appropriate BMI-values, less by pupils with above-appropriate BMI-values and the least by pupils suffering from obesity. Physical activity causes oxidative metabolism in the body, which in turn causes a consumption and loss of energy, which consequently leads to the lowering of body mass.

Furthermore, similar differences were observed in the frequency of doing physical/sports activities in the free time, non-professionally, which is shown in the Table 3 ($\chi^2 = 25.354$; $df = 14$; $p = 0.031$). Pupils with above-appropriate body mass are often less interested in doing physical/sports activities due to their self-image. While in school they may still follow the example of their schoolmates, they find it easier to spend their free time at home, watching television or sitting behind a computer. Zurec (2007) states that practical experiences are crucial for developing physical/sports predispositions in a child.

Table 3: Frequency of doing physical/sports activities in the free time, non-professionally, with regard to the BMI-value

		Frequency of doing physical/sports activities in the free time, non-professionally									
		Never	Once per week	Twice per week	Three times per week	Four times per week	Five times per week	Six times per week	Seven times per week	Total	
V BMI	AV	Number	53	23	31	54	28	25	10	26	250
		Percentage	<u>21.2%</u>	9.2%	12.4%	21.6%	11.2%	10.0%	4.0%	10.4%	100.0%
	PV	Number	11	11	10	11	5	2	1	5	56
		Percentage	<u>19.6%</u>	19.6%	17.9%	19.6%	8.9%	3.6%	1.8%	8.9%	100.0%
	DV	Number	11	4	1	1	1	2	0	5	25
		Percentage	<u>44.0%</u>	16.0%	4.0%	4.0%	4.0%	8.0%	0.0%	20.0%	100.0%
	Total	Number	75	38	42	66	34	29	11	36	331
		Percentage	<u>22.7%</u>	11.5%	12.7%	19.9%	10.3%	8.8%	3.3%	10.9%	100.0%

DESCRIPTION:

V BMI = BMI-value

NV = appropriate BMI-value

PV = above- appropriate BMI-value

Pupils of different ages do different physical/sports activities in their free time. There were differences observed in the frequency of training in sport clubs with regard to age. Ninth-graders train in sport clubs with the highest frequency, while third-graders do so with the lowest frequency. Ninth-graders more frequently spend their free time for dancing, as well as playing basketball, volleyball, handball and badminton, than pupils from other grades. Sixth-graders and fifth-graders of the nine-/eight-year schools respectively more often spend their free time for cycling and hiking/mountaineering, while third-graders spend their free time mostly for playing with their friends and doing various sports, involving a ball. All group games require training and constant practising of certain elements, as well as understanding of the rules. Third-graders are still only at the beginning of their schooling, while they will start learning about the elements of group sports in the second triennium.

It was determined that the difference between ninth-grader boys and girls, with regard to healthy BMI-values (Table 4), is statistically significant. More boys (80.4%) than girls (84.6%) have appropriate body mass. At other grades, there were no differences regarding gender. Furthermore, the results did not show any statistically important differences between differently-aged pupils.

Table 4: BMI-values of the 9th graders in regard to gender

			BMI-value			
			Appropriate BMI-value	Above-appropriate BMI-value	Obesity	Total
Gender	Boy	Number	33	2	4	39
		Percentage	<u>84.6%</u>	5.1%	10.3%	100.0%
	Girl	Number	45	10	1	56
		Percentage	<u>80.4%</u>	17.9%	1.8%	100.0%
	Total	Number	78	12	5	95
		Percentage	<u>82.1%</u>	12.6%	5.3%	100.0%

Our research showed (Table 5) that 1/5 of kids in Posavje have above-appropriate body mass. We can determine that the share of such kids is dropping with age. It is assumed, this is due to the body-image, which is becoming increasingly important with age. Some pupils, especially girls would do anything for a good body-image, even at the cost of their health. Most frequently they would decline food, because they believe it is itself fattening. But the right way to achieve the ideal body mass is by regular exercising.

Table 5: BMI-values with regard to age

		BMI-value				
		Appropriate BMI-value	Above- appropriate BMI-value	Obesity	Total	
Grade	3 rd /9	Number	72	21	13	106
		Percentage	67.9%	19.8%	12.3%	100.0%
	5 th /8 and 6 th /9	Number	102	24	7	133
		Percentage	76.7%	18.0%	5.3%	100.0%
	9 th /9	Number	78	12	5	95
		Percentage	82.1%	12.6%	5.3%	100.0%
	Total	Number	252	57	25	334
		Percentage	75.4%	17.1%	7.5%	100.0%

Overweight people are no longer merely a problem of the developed countries; they are increasingly more frequent in developing countries too. Heseker and Oepping (2007) state that in Germany, there are 15% of overweight boys and girls aged 3 to 17, including 6.3% of youngsters who see themselves as such. There is a large increase in overweight and obese kids in schools, while the increase is a bit smaller with youngsters. Brettschneider and Naul (2007) compared overweight kids from different European countries, aged 13 and 15 and from 7 to 10. They concluded that the percentage of overweight kids is the highest in southern Europe and the lowest in Scandinavia.

CONCLUSION

Research results enable for a better overview of the existing state of eating habits and physical/sports activities of pupils in Posavje. The task of people in touch with youngsters is that they are aware of the weight problems and the consequences of the lack of self-health care (regarding intake of food as well as physical/sports activities), and they work on preventing this problem from occurring with the youngest kids, or if already present, they find solutions, such as organizing an experience-rich environment. We believe, the physical education curriculum should be improved and its share increased in all grades, as well as there should be nutrition-based content added, as an interdisciplinary cooperation. In the future, we will need to further increase the importance of educating the kids regarding eating habits and regular physical/sports activities.

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THE ROLE OF A SPORTS MANAGER IN REDUCING THE INCIDENCE OF SPORTS INJURIES AMONG ADOLESCENTS IN GYMNASTICS

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ABSTRACT

The article presents the results of a study whose purpose was to examine ways to reduce the incidence of sports injuries in adolescents engaged in gymnastics. A survey was conducted based on a non-random sample of 46 athletes in sports and rhythmic gymnastics. The self-report method (interviews) was applied and carried out in the context of an epidemiological card for each athlete in the period 2011–2012. Factors of the causes of injuries were structured into three categories: training, athlete, and environment. The data were analysed with descriptive statistical parameters, analysis of variance and qualitative analysis. We found the incidence of injuries from the epidemiological cards and, by using the self-report method, we also acquired the young athletes' views about what had caused their injuries. We discovered that the most common cause the athletes mentioned was an unadjusted training process. The results of the analysis show that we can reduce the incidence of sports injuries through ensuring the most competent cooperation is in place with a sports manager who leads the team and thereby brings about the appropriate integrated training.

Keywords: gymnastics, self-report, sports injury, competent sports manager

INTRODUCTION

Gymnastics is defined as a polystructured (a large number of different structures of movements), conventional (agreed model of movement) type of sports (Kolar & Piletič, 2005). Average training lasts 5 hours a day, usually four times a week separated into two units and 5 to 6 days a week (Caine, Cochrane, Caine, & Empera, 1989) (Sands, 2000), (Samardžija, 2012). The loads on an athlete can reach 17.5 times their body weight (Kruse & Lemmen, 2009), (Markolf, Shapiro, Mandelbaum, & Teurlings, 1990) (Sands, 2000). In addition to these high loads, artistic gymnastics is one of the most physically demanding sports that requires all motor abilities to be extremely well-developed because in the competition regulations for the four apparatuses in women's artistic gymnastics and for the

four props and six apparatuses in men's artistic gymnastics there are around 1,000 different elements for each sector separately (2013-2016 Code of Points WAG, 2013; 2013-2016 Code of Points MAG, 2013).

Given the extreme complexity of this type of sport, there is a need for coordinated and effective mutual cooperation among different experts from relevant fields who, together with the coach, form a behavioural team that collaborates with athletes (Samardžija MP, 2014). Kolar et al. (2006) define the interdisciplinary approach as a relatively holistic approach to training (Kolar, Smith, & Piletič, 2006).

The key person to establish a behavioural team is the coach who ensures comprehensive care for the athlete: plans the work, carries out the trainings, controls the athlete's performance, advises the athlete etc. (Tušak & Tušak, 2003). The support team monitors and manages the athlete's preparation in all areas: technical and tactical preparation, physical preparation, health status, psychological preparation etc.

Retar et al. (2013) understands management in sport as "the process of coordination of key resources and effective cooperation with relevant stakeholders which facilitate the effective exercise of commercial and recreational objectives of the organization and/or athletes in important processes management". At the same time, they use the phrase a competent coach and a competent expert whereby they define the competencies required for sports management positions as "the ability to use knowledge, skills, personal qualities, experiences and motivation to uniquely efficiently perform the expected job or role" (Retar, Plevnik, & Kolar, 2013). The support team is meant to protect the athlete, especially his/her favourable health status, with various systemic measures. One of the biggest obstacles on the way to a motivated athlete achieving their goals is a sports injury. In order to protect athletes from injury, we need to know the biomechanics of the elements, the incidence and mechanisms of sports injuries, as well as the athlete's perception of both injury and management of the training process, including competition. After conducting a literature review, Samardžija et al. (2014) conclude that the incidence of acute injuries in gymnastics is 54.9% and 45.1% for chronic injuries. At the same time, they note that the resulting ratio of acute and chronic injuries cannot be applied to all quality levels of athletes. This explains why we still do not have a common methodology for this type of research in gymnastics.

In the case of athletes whose weekly load exceeds 20 hours, a different ratio is expected, namely more chronic and fewer acute injuries, as indicated in certain studies (Samardžija Atiković, & Kolar, 2014).

Sports psychology addresses this problem through the analysis of sports activities and sports performance (Tušak & Tušak, 1994). An injury is a potent objective stressor for an athlete,

after which he or she has various cognitive, emotional and behavioural responses (Kandare & Tušak, 2010). After becoming injured, athletes display lower self-confidence and self-esteem (Tušak & Tušak, 2003). We should therefore balance an athlete's post-injury treatment and rehabilitation in both the medical and psychological fields. If psychological factors are ignored, one part of an athlete remains untreated (Kandare & Tušak, 2010).

A survey of the key competencies of Slovenian sports managers (Retar, Plevnik, & Kolar, 2013) found that the social competencies of managers such as "developing a positive working environment", "presentation of professional and moral authority" and "appropriate organization and delegation of tasks" are also very important, helping to explain both the sports and business performance of sports organisations. As athletes take account of both the formal and moral authority of their coach and the sports manager participates in the selection of coaches and the supervision of their work, we find that sports injuries can be reduced by competent sports managers ensuring a high-quality selection of coaches, their responsible supervision of work, and lifelong learning.

METHODS

Sample

The study included 46 high-quality athletes: six from men's artistic gymnastics, fourteen from women's artistic gymnastics, and 20 from rhythmic gymnastics. All of the measurands aged 14 and above were categorised (junior, national and perspective status). All athletes under the age of 14 years in the younger category had to have achieved a rank of the top three at the National Championship (NC) or Slovenia Cup (SC) and ranking in the top three-quarters of performers at international competitions (OKS – Criteria, 2014).

Measurement protocol

A self-report method with a questionnaire was used. Risk factors of injuries were organised according to (Meeuwisse, 1994):

- Internal factors (with a direct connection to the athlete):
 - preparation programme of the athlete – a direct impact of the coach: inferior technique, improper methodology, overload, poor security, inferior mobility, inferior strength, inferior stamina, inadequate load and more; and
 - personal preparation of the athlete – a direct impact of the athlete: fatigue, insufficient warm-up, restlessness, tension, poor concentration, lack of a serious approach, overestimation, fear, fright before competition, lower motivation and more.

- External factors:
 - inadequate temperature, inadequate lighting, inadequate humidity, bad apparatus, poorly prepared apparatus and more.

Athletes were given a choice of 26 responses/answers which were separated into three groups. They could choose several responses/answers at once to obtain the best description of the cause of their injury. The survey covered a period of two calendar years (2011 and 2012).

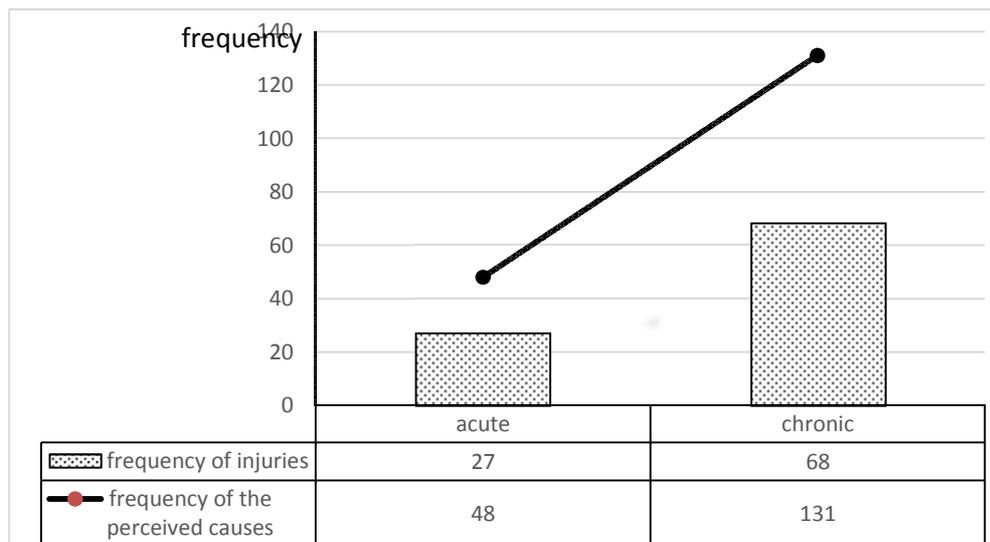
Data processing and analysis of data

The factors (internal and external) which, according to the athletes, are the cause of their injury are grouped into three categories: TRAINING – preparation programme of an athlete (direct impact of the coach); ATHLETE – personal preparation of an athlete (direct impact of the athlete) and ENVIRONMENT – external factors. Quantitative data were grouped into three basic groups (men's artistic gymnastics, women's artistic gymnastics, rhythmic gymnastics). The analysis was carried out at the level of descriptive statistics and one-factor analysis of variance, after which Tukey's post-hoc test was carried out. The data obtained were processed using IBM® SPSS® Statistics 20 and Microsoft Office 2013 Excel.

RESULTS AND DISCUSSION

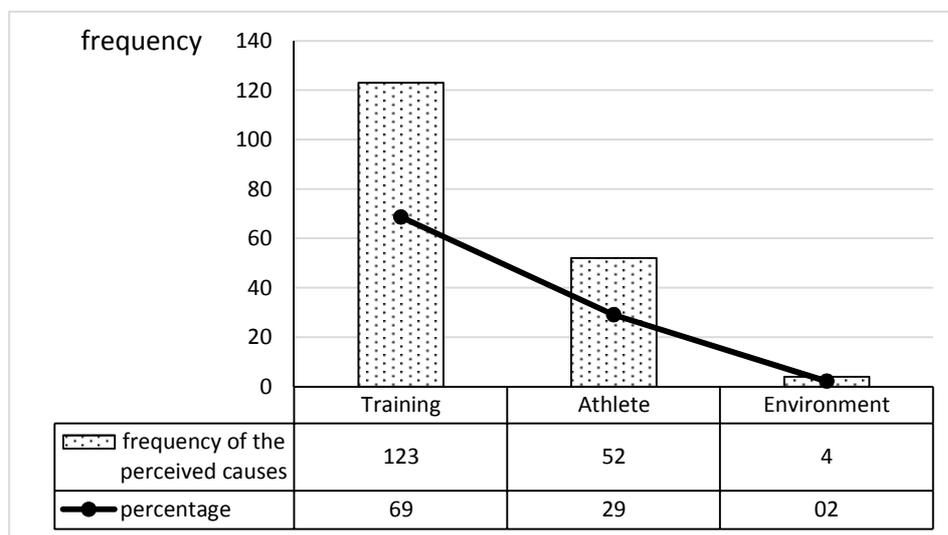
In the analysed period, an overall incidence of 95 sports injuries was found, of which 27 were acute sports injuries and 68 chronic sports injuries (Figure 1). In this study, we identified an acute injury as an injury that happens suddenly due to which for at least one day the athlete carries out training that is adjusted by 30% or more or must be absent from training, and chronic injury as an injury where the pain increases gradually due to which for at least one day the athlete carries out training adjusted by 30% or more or must be absent from training.

Figure 1: Frequency of sports injuries and frequency of the perceived causes of injury



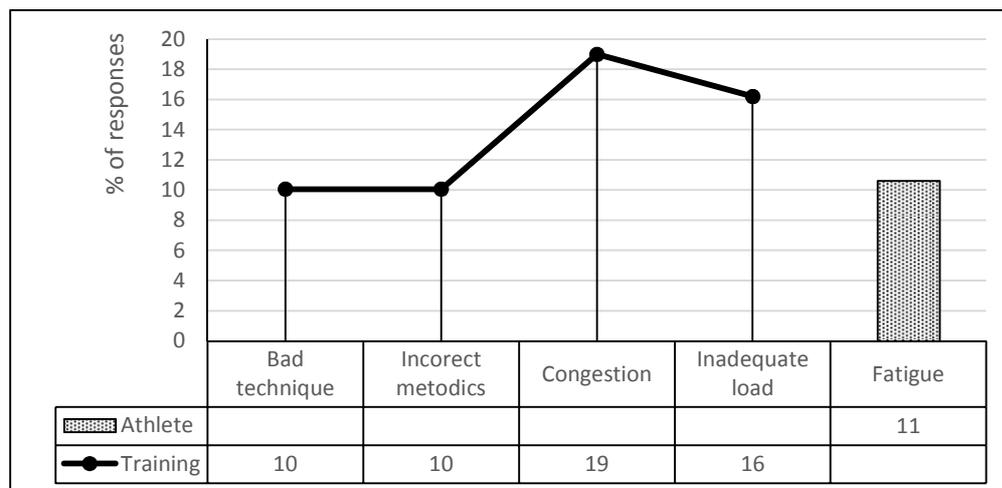
The athletes described the incidence of acute injury with 48 responses/answers, and of chronic injury with 131 responses/answers which they believe best describe the cause of their injury (Fig. 1), meaning that each acute injury is described by 1.78 and each chronic injury by 1.92 responses/answers.

Figure 2: Number of responses (causes) that describe the cause of injury by categories – TRAINING, ATHLETE, THE ENVIRONMENT – and their percentage shares



The athletes are critical and mostly hold the opinion that the cause of their injury lies in factors related to their training. More than two-thirds (68.7%) of the responses are associated with factors of training, nearly one-third (29.1%) with internal factors, and 2.2% with external factors.

Figure 3: Percentage share of the most frequent responses (causes) describing the cause of injury according to the observation unit



The responses that achieved a 10% or greater share of the total number of responses are shown in Figure 3. The results indicate that the subjective feelings of an athlete highly point strongly to the areas, which are led by the coach and his team of experts who are involved in preparing the athlete. Of the 26 possible responses that describe the injury, the athletes identified 66% of the causes of damage in five responses.

Table 1: Statistical differences between sectors with regard to the overall incidence of responses of an observed unit

	Sum of Squares	df	Mean Square	F	Sig.
Training	70.799	2	35.399	4.947	0.009
Athlete	3.376	2	1.688	0.212	0.809
Environment	9.000	2	4.5	0.563	0.686

When analysing the groups by analysis of variance, we found a statistically significant difference between sectors in the field of TRAINING where the result is 0.009 and which, at a 5% level of risk ($p = 0.05$) between sectors, shows there are significant differences in the incidence of responses. In the fields of ATHLETE and ENVIRONMENT, the differences are not statistically significant.

Table 2: Post-hoc analysis between the sectors in the overall incidence of responses in the context of training

Dependent Variable			Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Training	MAG*	WAG**	.253	.681	.926	-1.36	1.87
		RG***	-1.351	.668	.111	-2.94	.23
	WAG	MAG	-.253	.681	.926	-1.87	1.36
		RG	-1.605*	.536	.009	-2.88	-.33
	RG	MAG	1.351	.668	.111	-.23	2.94
		WAG	1.605*	.536	.009	.33	2.88

MAG* Men`s artistic gymnastics; WAG**woman artistic gymnastics; RG***Rhythmic gymnastics

It is clear from the output results of the analysis of variance and its 'post-hoc' test, that significant differences exist between the women's artistic gymnastics and rhythmic gymnastics sectors. Between men's and women's artistic gymnastics and men's artistic gymnastics and rhythmic gymnastics there are no statistically significant differences in the incidence of responses/answers with which an athlete clarifies their personal perception of injury at a 5% level of risk.

An overall incidence of 95 sports injuries was found (27 acute injuries and 68 chronic injuries) in the analysed period, with 68.7% of the responses referring to training area as the cause of injury, 29.1% the athlete area and 2.2% the environment. The results indicate the lack of a social support coach.

We found that athletes take the formal authority of their coach into account. The coach's low level of informal authority is present, while the athlete feels a general level of authority. The level of confidence in the programme is low, and thus there is a feeling that safety is on a low level. The basic starting points for reducing the incidence of injuries are bound to improve the communication between athletes and coaches, taking the opinion of the athlete into account and the athlete's active involvement in the preparation of a programme which can encourage and provide competent sports managers who choose to organise and supervise the work of sports coaches. Measures to help reduce the number of injuries and alter the perception of an athlete include: to improve the social skills of trainers and sports managers; to improve communication in the athlete-coach relationship; to improve the planning and management of the training process and to take the athlete's opinions into account (Retar, Plevnik, & Kolar , 2013). Accordingly, measures should focus on better cooperation of the support team and

encouraging the sports manager to coordinate all stakeholders involved to ensure optimum work outcomes.

It is clear from the study that the sports manager plays a great role and has big responsibilities in the support team. As an integrator of these risk factors and a manager of an athlete in a demanding interdisciplinary approach and team collaboration, a sports manager is in reality in addition to the coach a key figure in reducing the risk of sports injuries among young athletes (Samardžija, 2014).

Samardžija (2014) identifies the coach as a central expert of the support team, which set targets and defines the way to achieve the goals, and the sports manager as someone who builds the support team up, establishes links, communication rules and channels of communication, establishes a system of control and so on. The manager's task is to accept or reject the trainer's programme on the basis of their competence and their ability to facilitate implementation of the programme. The competencies a sports manager acquires are critical for linking the support team with the content of the programme and the coordination of all processes on the way to achieving the goals (Retar, Plevnik, & Kolar, 2013).

CONCLUSION

The study "Key competences of Slovenian sports managers" (Retar, Plevnik, & Kolar, 2013) pointed out the great importance of managers' social competencies, such as:

"developing a positive working environment", "presentation of professional and moral authority" and "properly organized and delegated tasks", which explain both the sports and business performance of sports organizations. As athletes take account of both the formal and moral authority of their coach and the sports manager participates in the selection of coaches and supervision of their work, we find that sports injuries can be reduced by competent sports managers, with a high-quality selection of coaches, their responsible supervision of work, and lifelong learning.

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THE BENEFIT OF DANCE-MOVEMENT THERAPY FOR CHILDREN

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ABSTRACT

Dance-movement therapy uses dance and creative movement as a fundamental tool in the therapeutic process. Dance is a condition of an individual's emotions and energy and also desire to externalize ones internal condition. Relationship between the body musculature and psychological attitude is reflected in positive or negative impact of the status of a body on mental and emotional well-being and the same is vice versa. Researches confirm positive effects of dance-movement therapy as an alternative support in pediatrics. Child's personal expression while dancing means a release of his feelings. A successful dance-movement therapist recognizes disorders, physical or mental nature, and helps the child to overcome them. New-age dance-movement therapy deals with children with different disabilities: with autistic children, children with disorders in physical and mental development, hospitalized children with cancer, children exposed to violence and children with other special needs.

Keywords: dance-movement therapy, alternative medicine, dynamic psychiatry, pediatrics

INTRODUCTION

Dance-movement therapy is a form of therapy, where dance and creative movement are the fundamental means of the therapeutic process. The original idea of dance-movement therapy was based on the use of dance move as a psychotherapeutic tool and is based on the concept that the body and psyche are inseparable units. As such, they have begun to use it on individuals with mental disorders, assuming that dance movement reflects the inner emotional state of the body. Dancing is not just an exercise which is expected to be properly executed but a state of an individual's emotions, energy and the desire for expression of the internal state to the outside (Chaiklin, 2009). Mental and emotional imbalance can cause tense body movement and lumpish moves. The relationship between musculature motion of the body and psychological behavior is reflected also as a positive or negative impact on the mental state of the body and emotional well-being. After therapy, changes in motional behavior should show physiological changes, especially improved health state. Therefore the aim of dance-movement therapy is to achieve improved emotional, cognitive, social and physical state of an individual (Chaiklin, 2009, Geršak, 2005, Levy, 1988).

DEVELOPMENT OF THE DANCE-MOVEMENT THERAPY

Meerlo (1960, in Levy 1988) explains that the history of dance dates back to tribal communities, where entire villages were establishing a healthier balance in the community with group dances under the leadership of a shaman. It was believed that dance, religion, music and medicine are combined together. Dancing has helped self-healing the community and even today it has retained its healing meaning and significance (Možina, 2004).

According to Ammon (1986, in Možina, 2004) and Chaiklin (2009) the dance movement evolved in the direction of artistic expression. The result were many dance techniques with very little understanding about the impact of dance on dancers itself. Modern medicine and psychotherapy have set a concept in researching of its therapeutic effects and were initially focused only on the body and secondarily on the mind. Psychoanalysts were performing therapies only in verbal way and without any movement insertions. In the early twentieth century the contemporary dance developed a desire for spontaneous and creative movement of the dancers. This was actually state of expression of the internal emotions and this caused a shift to the integration of dance-movement insertions of therapeutic approaches. Purpose was to liberate the natural flow of bodily expression, own to an individual. With this, the foundation of dance-movement therapy were set in the years 1940 – 1950 (Ammon, 1986, in Možina, 2004, Chaiklin, 2009, Levy, 1988).

Understanding an individual's personal dance expression and discovering it, meant to the initial dance therapist a touch inside of the dance. Promoting the development of this »inner dancing« has revealed the knowledge of the unconscious movement (Levy, 1988). Aktas (2005), Chaiklin (2009) and Levy (1988) are defining Marian Chace as the original initiate of implementation of the dance-movement therapy.

Marian Chace was focused on children and their insistence on dancing hours since 1930, eventhough their intention was not to become professional dancers. She carefully observed the child's movement and then gradually adjusted the teachings to the needs of each individual. Her students were made possible to attend educational hours on the integration of body movements to achieve the individual's personal harmony. With this kind of approach, she has helped people with emotional, mental and physical problems. Her work was recognized by the psychiatrists and in the year 1942 she was invited to cooperate with St. Elizabeth hospital in Washington (Atkas, 2005, Chaiklin, (2009).

However, the dance-movement therapy primarily found itself in the background on the wards of psychiatric hospitals. With the opening of private studios the professional dancers led expansion and use of dance-movement therapy also in other areas (Levy, 1988). In the year 1966, American Dance Therapy Association (ADTA) was formed in America, thus setting dance-movement therapy recognized in the professional sense.

Regardless of the field of therapeutic work (pedagogical, medical, rehabilitational, counseling, supportive) it is important that the form and content of aid through the use of dance-movement medium is methodologically verified. It is necessary to anticipate and to examine the potential benefits of such therapies in working with individuals or group therapy. Through releasing and relieving stress, the dance can help an individual to reduce, eliminate or avoid the emotional tension in the body, chronic pain and other problems, Hanna (1995) states.

Today, the dance-movement therapy is sometimes recognized as a separate discipline with its own guidelines and with established educational process (Vivod-Rajh, 2008).

In Slovenia, there are studies of dance-movement therapy in the context of post-graduate study at the Faculty of Education, University of Ljubljana. First workshops on Faculty of Education which included all four areas - art, drama, music, dance-movement, happened already in 1992, otherwise, postgraduate specialist studies »Help with art« is taking place since 1996. Mentioned specialist study is trying to develop a form of assistance with arts (art therapy) through a two-year education as supportive or independent form of therapy in special and rehabilitation pedagogy, social pedagogy, educational and therapeutic work in kindergartens, schools, hospitals, old people's homes, rehabilitation centers and other institutions (Vivod-Rajh, 2008).

DANCE-MOVEMENT THERAPY WITH CHILDREN

As described by Kralj (2012) dance meets the child's natural need for movement and satisfies motor and physiological goals as also allows the child's intellectual development. With dancing the child acquires a sense of time and space. Dancing means to children relaxation and entertainment, where they can be aware of and express their emotions, impressions and mood. Dance-movement creativity happens most often in a group, therefore, the need for child companionship, communication and socialization is met. This positive effects of dance on children, as previously mentioned, have been spotted already by Marian Chace. The children are looser in the movement expression since this is a natural and relaxing way of expression for them, which makes them happy and satisfied, inducing feelings of pleasure and balancing the organism. Children express their emotional well-being through the body much more than adults (Kralj, 2012). American psychologist M. Frostig (1993, in Kralj 2012) argues that by promoting and inserting movement and dance we influence children's physical abilities, their way of motion, mental ability to solve problems, overcome fear, pain, and sympathy with others.

Psychoanalysts continuing researching the effects of dance movement on children also today. Studies are taking place otherwise on whealthy children as well on children with

special needs. The latter group includes children with physical and mental disabilities, autistic children, children with eating disorders and identity disorders, hospitalized children with cancer, children with traumatic experiences, gifted children and children with other behavioral disorders. Worldwide there are clinics where such children are also helped by using benefits of dance-movement therapy. Unfortunately, the management of clinics and doctors in clinics are insufficiently aware of the great therapeutic potential of dance and give dance therapy only the value of occupational therapy. This is partly happening also in Slovenia, but it is nevertheless gratifying that dance-movement therapy lives, at least in the context of occupational therapy (Možina, 2005).

Lemon (1998) says that meetings in the hospital with a dancing-movement therapist in a small groups or bedside allow the child to trust the therapist and feel in a safe environment to express their physical and emotional needs. Qualified dance movement therapist with kinesthetic approach encourages children to use the full potential of movement to overcome and express the stress and pain in their medical condition.

In 2008 first dance-movement therapy Drea's Dream was placed in Los Angeles within ChaseChild Life Program, specifically for children with cancer (Andrea Rizzo Foundation, 2014).

Mendelsohn (1999, in Aktas, 2008) describes that dance-movement therapy with children undergoing prolonged hospitalization, endeavours to release the child's feelings and reduce their anxiety or fears in its own therapeutic process. In this way, children experience disease status also in a more active and not passive form.

For children who have a mental or physical disorders, as stated by Kralj (2012) we can notice a lack of positive interests, undeveloped work habits, asocial behavior, and possibly aggression. With the correctly targeted pulses of dance-movement therapy such a child can divert behavioral pattern whereby of the utmost importance is to distinguish between the behavior and personality of the child. Even Frostig (1989, in Kralj, 2012) mentions that participation in creative movement and dance reduces conflict behaviors and aggression among young peers. In children with behavioral problems, sometimes dance-movement therapy also reveals undiscovered potentially gifted children (Kralj, 2012).

Hartshorn et al. (2001) study confirmed the positive impact of dance-movement therapy for autistic children. The results of the two month study were autistic children who wander less time, more quickly respond to tasks, show a positive attitude to touch, less time oppose to the teacher than those in the control group (Hartshorn et al., 2001).

It is obvious that the dance is because of its multi-dimensionality and large integrative possibilities so valuable therapeutic medium to work with children (Možina, 2005).

DANCE-MOVEMENT THERAPIST AND THE CHILD

Dance movement therapists work within a wide range of theoretical approaches. These affect the way to understand the issues of a child, their relationship and the use of methods and techniques. By analyzing the movement of the child, dance-movement therapist gains insight on its use of the body as a whole, his posture, breathing, orientation in space, a sense of awareness of a particular move. By embracing and supporting the child's movement expression, dance movement therapist encourages the development and integration of new movement patterns, experiences and supports the child's awareness between its motional activities, emotions and thinking (Fifolt, 2009).

Dance-movement therapist can determine the course of therapy in an individual or in a group form. Plan must be appropriate therapeutic strategy for treatment, creating a safe environment in which a child will be trustful. In the dance-movement therapy accessories for movement stimulation are also used (relaxation balls, colored ribbons, balloons) and adequate musical stimulation. Dance-movement therapist must support children to work together in a group and to learn from each other. Therapist may choose also implementation of dance-movement therapy outdoors in nature.

Veronica Sherborne (in Kralj, 2012) defines the essential qualities of dance-movement therapist such as emotional stability, ability to connect with those affected and seek his strong points, must be able to observe and be capable of intuitive decision-making. Therapist must also have a sense of humor and a gift for playing. Activities should be interesting, enjoyable, and should cause comfort. Sometimes a dance movement therapist must be flexible, durable, self-sacrificing but always professional.

FINDING PERFECT DANCE-MOVEMENT THERAPIST

We must not confuse the term dance animator / teacher / instructor and dance-movement therapist. Although the dance-movement therapy was developed initially on the dance floor, professional dancers/teachers had to acquire additional knowledge of psychology for quality therapeutic technique. This still raises the question of the field which would actually include all the qualities of a professional dance-movement therapist. So, dance-movement therapist must have strong knowledge in the areas of movement expression, anatomy, psychology and social pedagogy. As mentioned, usually there are professional dancers trying to achieve more pedagogical experiences of psychology or on the other side there are psychoanalysts, rehabilitation personnel, teachers trying to develop dancing skills. Either way it is a lack of complete knowledge for both groups. Kinesiology is one of the sciences which could formulate dance-movement therapist because it possesses the necessary qualities and even some more additional in its educational program. Some educational institutions abroad,

like New York City's Pratt Institute, demand knowledge of Kinesiology when matriculating to studies of dance therapy.

DISCUSSION

Dance-movement therapy offers a wide range of therapeutic interventions when dealing with children. In Slovenia, there is education for dance-movement therapist in the context of specialized studies on Faculty of Education in Ljubljana but this raises the question of whether the dance-movement therapy is satisfactory only with pedagogical approach? In our country are only few organizations that carry out this type of therapeutic workshops and have expert support, one is SZUT (Slovenian association of art therapists - Slovensko združenje umetnostnih terapevtov) launched in 2004 in Maribor. As a student of Applied Kinesiology I strive to the fact, that to a Kinesiologist the dance-movement therapy should represent a model in working with children with different problems, psychological, cognitive or physical. The science of Kinesiology itself integrates all areas of mentioned disciplines.

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ADVANCED MOTOR BEHAVIOR IN DIFFERENT PERIODS OF CHILDHOOD

NAPREDNO OBNAŠANJE MOTORJA V RAZLIČNIH OBDOBJIH OTROŠTVA

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ABSTRACT

The aim of this study was to assess specific aspects of motor development (times of occurrence of walking and crawling) and all the features that might be connected with the presence of talent. The study included a total number of 174 children aged 6,5 to 7 years. Motor behaviour was evaluated by using a battery of 7 motor tasks. After motor testing, all the children were divided into three groups according to their motor performance (according to Z value). A specially designed questionnaire was used as the instrument of the survey method. Parents identified their child's developmental traits in the field of motor development from their memories (the time the child started to walk and began to crawl). A statistic procedure ANOVA was used for determining the differences in the times when the groups formed according to their motor performance started to walk and crawl. The results indicate that there is a statistically significant difference in times of occurrence of walking between the motorically most successful children and children with an average and the weakest motor success rate ($F=8,27$; $p=0,01$). Motorically most successful children (group 1) on average started to walk earlier, at 11.3 months, while the remaining children from the sample started to walk at 12.3 months (group 2) and 12.9 months (group 3). Differences in times of occurrence of crawling between the groups were not proven. Although not statistically significant, it must be noted that the motor most successful children in group 1 began to crawl at 7.34 months, children in group 2 at 7.53 months and a group of children from 3 at 7.84 months. However, although the chosen approach to the assessment of early motor progress and the results can not give a conclusive diagnosis of motor performance (talent), they may be a signal to parents and other relevant adults to what to pay attention to in certain periods of motor development of a child.

Keywords: motor precocity, occurrence of walking and crawling

INTRODUCTION

The question whether a faster maturation in the motor domain is a certain companion of motor performance, or whether it can predict it, still has no definite answers. The early years of education should be aimed to guarantee every child's optimum development. The decisions taken on precocious children education should be based on each child's information and data, on an appropriate diagnosis to his personality and a prediction for its development. The hope that the advantages of the "temporary" development become permanent rests on a continuing enrichment, educational strategies as well as on encouraging to do social relations (Karasik et al., 2011; Perić & Tišma, 2014; Perleth et al., 1993; Stojanović, 2014; Sturza Milić, 2010). Giftedness occurs in people from infancy through adulthood (Gagne, 2010; Harrison, 2004). While gifted preschoolers are less frequently acknowledged within the gifted education research and literature, they can be described as those who show promise of performing at high levels because of their advanced or accelerated development (Clark, 2002; Morelock et al., 2003; Sturza Milić, 2009). The precocious development of very young children may occur in linguistic skills, motor skills, cognitive skills, academic aptitude, music and art, and personal or interpersonal skills, although it is not limited to these categories (Gojkov et al., 2002; Sturza Milić, 2014). A certain number of authors argues that it is possible on the basis of a set of evidence of development (in different developmental areas) to identify gifted among average children (Benito, 2003; Gagne, 2010; Gojkov et al., 2002). This focus stems from the perception that gifted children mature earlier than average in the following areas: motor and social development, language and learning. The explanation for this thesis is found in the fact that the domains of children's development (physical, social, emotional and cognitive skills) are closely related and influenced by each other (Clearfield, 2004; Cohen, 1989; Gallahue, 2010; Rajević, 2010; Sturza Milić, 2008, 2012; 2014; Tamis-LeMonda & Adolph, 2005). For example, increased mobility in babies and toddlers allows them to explore their world and this expansion also affects their cognitive development (Bredenkamp & Copple, 1997). This early development is seen as affecting the whole child, with the recognition that each precocious ability has significant impact on the other areas of development. Experimental studies in large groups of children showed that there are distinct temporal differences among children regarding the times when they begin to crawl and walk (Herlok, 1970). Gross (1993) found that the age at which a child starts to walk is normally in concordance with the pace of its overall development. Studies have shown that those children who have been slow to creep, were also slow in climbing and catching. There is a lot of data which suggest that the pace of development in the course of life remains the same, e.i., that children who initially develop quickly remain that tempo later in life. In gifted children

that system can be particularly rapid, because the development stems from very "fertile soil". A pioneer in the study of giftedness, Terman, proved as far back as in 1926 that even moderately gifted children tend to crawl, start to walk and run earlier than their peers. In exceptionally gifted children, this difference is even more obvious. Gross (1999) noted that many studies have shown that gifted children motorically make progress faster in the first years of life compared to children who are not gifted. It was found that intellectually gifted children with IQ above 160 start to crawl and walk earlier than the average population. It seems to be proved that the existing relation between the capacities identified in precocious children and their later development lies in influences coming from early favorable environments, their familiar factors and the educational and professional opportunities provided. Considering the precocity concept mainly as the capacity of constructing the environment rather than an idea on acquisition, performances, motivation or level of aims, can be important especially in the case of identifying the gifted coming from poor families, since they will be identified on the basis of their potential even before such potentials become "listless" because of lack of individual experiences, which are generally very few (Karasik et al., 2011). Most researchers usually point the fact that if children are not early identified, it may happen that those children are not encouraged in a proper and challenging way, and, therefore, their giftedness level will not reach its peak of development (Benito, 2003, Sturza Milić, 2009). Therefore, the main goal of any identification process is to provide proper educational experiences to encourage any gifted child's continuous development. When children are concerned, it is evident that there are differences in the time of occurrence and development of the fundamental forms of movement and that the motor development in some children may be more advanced in comparison to other children (Biringen et al., 2008; Gross, 1999; Hewston et al., 2005; Malina, 2004, Sturza Milić, 2009; Vereijken et al., 2011). Malina (2004) provides data concerning early motor development (in the first two years of life), noting that 10% of children make extremely fast progress in all motor characteristics. Many authors classify walking and crawling into two most important milestones in child development (Adolph, 2003; Čeklić, 2014; Gallahue, 2010; Kimura-Ohba et al., 2011; Sturza Milić, 2014; Tamis-LeMonda & Adolph, 2005). If the motor ability of a child is tried to be explained from the perspective of the development of neo-Piagetian theory (Loewan, 2006) the question arises whether the central conceptual structures (i.e. the development of fundamental movement) differ, and how they develop in successful motor (gifted) children? The hope that the challenge of "temporary" development will become permanent is based on continuous enrichment and educational strategies. On the other hand, evaluating the current level of conceptual development of characteristics of children in one domain, and then based on the

knowledge of the next step in the sequence of development, enables the building of a conceptual bridge from the present to the subsequent level. The final results of such educational approach can be achievements that are stable and provide a basis for other tasks within the domain. Unfortunately, longitudinal studies that would connect the motor performance of children with early indicators of advanced motor development are very rare. There is more speculation than scientifically proven facts about this relation. When intellectually gifted children are in question, more researches prove that in these children motor development follows the intellectual and that it is more advanced than within the average population (Gojkov et al., 2002; Gross, 1999; Harrison, 2004; Jackson, 1994; Van Tassel-Baska, 1983). Maksić (1998) argues that with gifted children the speed of development which is more advanced compared to the others is emphasised, i.e., that at one point they had to be like that in order to be identified as gifted. In his research Gagne (2004) notes the importance of precocity (earlier maturity in certain developmental characteristics) for the development of talent. Here has been the idea of the effort required to support the child's motor development for a certain number of years in the contemporary society (Valsiner, 1997). This idea is based on two assumptions accepted in contemporary cultures. The first of these is in the essence of the claim that motor experience in the infant period leads to earlier motor development, while the other states that developmental achievements cannot be lost, but can simply be accumulated in time. With this assumption a claim about the need for a fully utilized time follows. However, the question is whether the second statement is proved? Will the children who are motor advanced in the first years of life compared to the other children keep this advantage and develop progressively in later periods? Due to the fact that previously mentioned issues have been insufficiently studied the aim of this paper has been to examine whether central conceptual structures (fundamental movements – occurrence of walking and crawling) develop and manifest earlier in motor precocious children.

METHOD

The study included a total number of 174 children aged 6,5 to 7 years. All the children attended preschool institutions in Vršac, Serbia. The children included in the sample were healthy, with no physical disabilities or other deficits, and coming from different social environments. Written informed consent was obtained from all the parents of children prior to their participation in the study. The study was in accordance with the Code of Professional Ethics at the University of Belgrade (ethical standards for scientific investigations involving human participants). The research was undertaken in 2013. A method of motor testing and a survey method were used in the study. Motor behaviour was evaluated by using a battery of 7 motor tasks designed

according to the previous studies and existing batteries of tests for child's motor activity, depending on motor and functional abilities, program contents and basic principles of educational work with children.

The applied motor battery consisted of the following tasks: Standing long jump (SLO); Running 20 m (R20); Polygon with obstacles backwards (POB); Moving hands along bent surface (MHBS); Sit-ups (SIU); Tapping rate (TAP); Deep forward bend while seated straddled (DSS). Motor tasks were adjusted to the sample of children and had shown optimal measuring characteristics in previous research (Međedović et al., 2014; Sturza Milić, 2009, 2013).

A specially designed questionnaire was used as the instrument of the survey method. Parents/guardians identified their child's developmental traits in the field of motor development from their memories (the time the child started to walk - WALK variable and began to crawl - variable CRAWL). In accordance with the recommendations of previous research (Harrison, 2004; Sturza Milić, 2009) the questionnaire contained a part which was aimed at assisting parents in terms of understanding and recognition of the first walking and crawling movements in children.

The results from separate motor tasks have been standardized and turned into one Z-value. The entire sample has according to Z-values of the cluster analysis been divided into three subgroups: group 1 - respondents with the highest Z-value (20% of the total sample), group 2 - respondents with an average Z-values (60% of the total sample) and group 3 - respondents with the lowest Z-value (20% of the total sample). A statistic procedure ANOVA was used for determining the differences in the times when the groups formed according to their motor performance started to walk and crawl.

The data were analyzed by the statistic package SPSS 15.0 for Windows. We used the standard method of descriptive statistics, measures of variability (standardized deviation - Z value) and univariate analysis of variance (ANOVA).

RESULTS

After motor testing of the complete sample, the results from separate motor tasks have been standardized and turned into one Z-value. The entire sample has according to Z-values of the cluster analysis been divided into three subgroups: group 1 - respondents with the highest Z-value (20% of the total sample, N=34), group 2 - respondents with an average Z-values (60% of the total sample, N=106) and group 3 - respondents with the lowest Z-value (20% of the total sample, N=34).

We were interested in whether there is any difference between the groups formed by the motor performance in the time of occurrence of walking and crawling. To determine this, we applied univariate analysis of variance (ANOVA). Dependent variables were the time when children started to walk (WALK) and the time when the children started to crawl (CRAWL). Table 1 shows the basic descriptive parameters and differences in univariate space for the three groups regarding the time of walking:

Table 1: The significance of the difference in times of walking (WALK) in relation to the motor performance of the children

Groups according to motor performance	N	M WALK (months)	Sd	F	p
1	34	11.46	1.95	8.27	0.01*
2	106	12.37	2.29		
3	34	12.97	2.74		

N - number of subjects, M – arithmetic mean, SD – standard deviation, F – multivariate test; p - level of statistical significance; * statistically significant $p < 0.05$

The results of univariate analysis of variance (ANOVA) revealed statistically significantly earlier time of occurrence of walking (WALK) in motorically most successful children (group 1) compared to children with motor mediocre success (group 2) and the weakest motor success (group 3), at the level of statistical significance of $p < 0.05$ (Table 1). It can be seen that the lowest average value of the time of occurrence of walking (11.46 months) was generated by the motor most successful children (group 1). Children from the two largest groups, on average, started to walk at 12.37 months, while children from Group 3 who showed the worst results on motor testing, started to walk at 12.97 months. By the analysis of variables crawling (CRAWL), the results of univariate analysis of variance (ANOVA) showed no statistically significant earlier occurrence of crawling in motor most successful children (group 1) compared to children with motor mediocre success (group 2) and the weakest motor success (group 3). Although not statistically significant, it must be noted that the motor most successful children in Group 1 began to crawl at 7.34 months, children in group 2 at 7.53 months and a group of children from 3 at 7.84 months. The results are shown in Table 2.

Table 2: The significance of the difference in time of crawling (CRAWL) in relation to the motor performance of the children

Groups according to motor performance	N	M CRAWL (months)	Sd	F	p
1	27	7,34	1,36	5,59	0,009
2	78	7,53	1,55		
3	29	7,84	1,22		

N - number of subjects, M – arithmetic mean, SD – standard deviation, F – multivariate test; p - level of statistical significance

It is necessary to emphasize that, a certain number of surveyed preschool children did not crawl at all, i.e. that one part of the children “skipped crawling” in the strict ladder of early motor development, which has been observed in other studies as well and is considered a well-established phenomenon in motor development (Herlok, 1970; Gross, 1999; Gojkov et al., 2002; Malina, 2004; Sturza Milić, 2009, 2012). Out of 174 surveyed preschool children, according to their parents' responses, it was observed that 40 children (22.9%) did not crawl in the first year of life (before they started walking). This tendency has been respected and reflected on the reduced number of children in the sample for the variable crawling (CRAWL). Group 1 (7 children did not crawl; N=27); Group 2 (28 children did not crawl; N=78); Group 3 (5 children did not crawl; N=29).

DISCUSSION

The aim of this study was to assess specific aspects of motor development (times of occurrence of walking and crawling) and all the features that might be connected with the presence of talent. Also, the features on which further triage could be applied in an effective and reliable way for all children whose age requires decisive educational interventions for further advanced development. Variables that were treated in this study from the segment of motor behavior were the time when the child begins to crawl (CRAWL) and walk (WALK). Crawling is not considered a necessary stage of the maturation, which has been confirmed by this research, since 22.9% of the surveyed children did not crawl in the first year of life, which is in concordance with the results of a number of researches (Gross, 1999; Gojkov et al., 2002; Malina, 2004; Sturza Milić, 2012). Values of the times of occurrence of crawling (with the surveyed children who crawled), are also correspondent with the results of other studies (Adolph & Berger, 2006; Gillman, 2010; Gojkov et al., 2002; Malina, 2004, Sturza Milić, 2014). Walking, with its exceptional significance for the entire subsequent development of man, has maturation in its essence, and this is, we believe, the cause of the relative homogeneity of the results obtained in this study (the mean

time of the occurrence of walking of formed groups range from 11.46 to 12.97 months). Related to this, and for our research significant, is the position which claims that the age when a child starts to walk can be in concordance with the pace of the overall development of the child. The views about the crucial role of motor skills for many intellectual and other activities in childhood are well known. This reminder of the known facts of development has been taken in order to create a context for thinking about the findings of this study. The results indicate that there is a statistically significant difference in times of occurrence of walking between the motorically most successful children and children with an average and the weakest motor success rate. Differences in times of occurrence of crawling between the groups were not proven. The results of this study relating to the time of occurrence of walking in tested children indicate that motorically most successful children started to walk earlier than the others, at 11.46 months, and started to crawl at 7,34 months, which corresponds with the results of similar studies (Gross, 1999; Malina, 2004; Sturza Milić, 2009) that confirm that the average time of occurrence of walking in motor advanced children is at about 11 months, and crawling at around 7 months. Studies that have examined motor development of gifted children also report data that these children started to walk earlier than average, at 11 months (Benito, 2003) and 11.58 months (Gojkov et al., 2002) and that early occurrence of walking can be a signal of overall advanced development (Benito, 2003; Biringen et al., 2008; Clearfield, 2004; Vereijken et al., 2009). The question whether a faster maturation in the motor domain is a certain companion of motor performance, or whether it can predict it, still has no definite answers. Although in this study it was observed that the motorically most successful children started to walk and crawl earlier than the other children in the sample, it cannot be claimed with certainty that the advanced early motor development of the child is a certain evidence of later motor performance (giftedness). Such a conclusion is not possible, primarily because of the small number of respondents, a small number of variables of early motor development (just walking and crawling), insufficiently studied relation between precocity and giftedness, present problems in regard to the proper defining and understanding of occurrence of walking and crawling and consequently, the possible subjectivity of the parents. However, although the chosen approach to the assessment of early motor progress and the results can not give a conclusive diagnosis of motor performance (talent), they may be a signal to parents and other relevant adults (preschool teachers, teachers, doctors) to what to pay attention to in certain periods of motor development of a child. It is drawing attention to "what to pay attention to" in certain developmental areas of a child that can provide timely more dedicated and responsible attitude of adults (Karasik et al., 2011; Sturza Milić, 2014; Vereijken et al., 2009). It is highly possible

that in childhood, there is only the potential for talent and that optimal conditions are necessary for its development (Maksić, 1998). An observed advanced feature of motor development of the child (the occurrence of walking before or at 11 months and crawling before or at 7 months) with further impetus in early childhood by parents and other adults, may later be evaluated by some scientifically standardized tests or methods that will determine their final diagnosis. It is hoped that the conclusions of this study will, to certain extent, influence the attitudes of parents and teachers towards the importance of early education, and also the need for regarding the identification of gifted behavior as a continuous process, which is based on the finding that the talent is a set of developmental capacities that grow and require reevaluation as long as the process of maturation of a child lasts. Accordingly, this study actualizes the importance of cooperation of “relevant adults” (parents, teachers, doctors, experts, sports officials and others) in terms of diagnosis and further encouragement of motor behavior of gifted children in different periods of childhood. Certainly, this question remains open and hopefully inspiring for future extensive research, especially as the common view of many researchers is that there is little research in the field of high capacities and that the reason probably lies in the lack of a common, interdisciplinary approach.

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TOXIC METALS AND CHILDREN: EXPOSURE AND POTENTIAL ADVERSE HEALTH EFFECTS
TOKSIČNE KOVINE IN OTROCI: IZPOSTAVLJENOST IN MOREBITNE POSLEDICE ZA ZDRAVJE

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ABSTRACT

Persistent toxic metals such as cadmium (Cd) accumulate in the environment through either natural or anthropogenic sources. Exposure of children to these toxic metals in the prenatal period and early childhood represents a serious concern for their health. This may be especially critical at an early age due to the increased metal accumulation and limited excretion from the body. This work reviews cadmium exposure routes and their exposure levels in children, and the associated health effects. The main exposure routes are through food, environmental tobacco smoke, polluted air and house dust. Furthermore, the risk of exposure through toys should also be considered. While most studies indicate that maternal blood cadmium does not usually transfer across the placenta, there are records of altered motoric and perceptual behaviour in children that have been associated with elevated in-utero cadmium exposure. Cadmium accumulation in the body can result in neurological effects and immune system disorders in children, while degenerative skeletal diseases and kidney damage usually manifest themselves at an older age.

Keywords: Toxic metals, Toxicology, Health effects, Children, Exposure

IZVLEČEK

Toksične kovine, kot je kadmij (Cd) se kopičijo v okolju, bodisi preko naravnih ali antropogenih virov. Izpostavljenost toksičnim kovinam v prenatalnem obdobju in v zgodnjem otroštvu predstavlja tveganje za zdravje otrok. Zaradi povečanega kopičenja kovin v telesu in počasnega izločanja iz njega je izpostavljenosti v zgodnji dobi še posebej nevarna. V članku so

obravnavane poti in stopnje izpostavljenosti otrok kadmiju in s tem povezane posledice za zdravje. Glavne poti vnosa kadmija v telo so preko hrane, tobačnega dima, onesnaženega zraka in hišnega prahu. Poleg tega je potrebno upoštevati tudi tveganje zaradi izpostavljenosti preko igrač. Čeprav večina študij kaže, da se kadmij običajno ne prenaša preko placente, obstajajo dokazi o njegovem vplivu na spremembe gibalnih in zaznavnih vedenj pri otrocih izpostavljenim povišanim vrednostim kadmija v prenatalnem obdobju. Povišane vsebnosti kadmija v telesu lahko povzročijo nevrološke bolezni in motnje imunskega sistema pri otrocih, medtem ko degenerativne bolezni kosti in poškodbe ledvic se običajno izrazijo v odrasli dobi.

Ključne besede: toksične kovine, toksikologija, vplivi na zdravje, otroci, izpostavljenost

INTRODUCTION

Cadmium can be found in our environment in the air, the soil and the water. It can be released in the environment as a result of natural volcanic activity, weathering and erosion or from human activities (UNEP, 2010). Cd release as a result of human activities, such as fossil fuel combustion, some types of industrial processes, mining, smelting and refining activities, municipal waste incineration, electronic waste and road transport is causing growing concern (EEA, 2011). Cd is used in a wide variety of products (batteries, plastics, toys, metal coating) which can be a source of exposure or as waste pollutes the environment at the end of their life (ATSDR, 2012; UNEP, 2010).

Atmospheric deposition of toxic metals and the application of fertilizer and sewage sludge to agricultural land contaminate the soil and water. Toxic metals can accumulate in aquatic organisms and agricultural crops and can therefore enter the food chain. Their wide distribution and mobilization in the environment can lead to an increase in human exposure (WHO, 2007).

In our review we focus on children Cd exposure in Europe. To evaluate the risk to human health, reliable data of the exposure are essential. Exposure can be assessed through environmental monitoring or through human biomonitoring (HBM). The assessment based on environment measurements includes oral, inhalation and dermal routes of exposure. HBM is a method for determining internal exposure by measuring the concentration of chemicals in the human biological media, such as blood, urine and breast milk (Schulz, Wilhelm, Heudorf, & Kolossa-Gehring, 2011).

Cd exposure and accumulation may start early in life, beginning with maternal transfer through the placenta and subsequently through breast milk. Foetal and infant exposure is associated with increased level of maternal exposure (EFSA, 2012).

Exposure to Cd is mainly via food intake and contaminated house dust. (EFSA, 2012; JECFA, 2011; UNEP, 2010). Non-food ingestion, like toys and jewellery, may also constitute another source of Cd exposure for children (JECFA, 2011).

Potential adverse health effects of toxic metals (such as cadmium) exposure in infants and children increase due to a greater accumulation in their bodies (greater absorption from the gastrointestinal tract and diminished capacity to eliminate through both renal and biliary excretion pathways) and their immature detoxification mechanisms. Because of undergoing development, acute or chronic chemical exposure has the potential risk to produce serious health effects that may persist or develop further at a later age (Dourson, Charnley, Scheuplein, & Barkhurst, 2004; Scheuplein, Charnley, & Dourson, 2002).

The last few decades have seen an increase in concern about the health risks from exposure to low levels of cadmium and other toxic metals, because of their potential neurological and neurobehavioral effects and toxicity to the bone, kidney and other biological tissues (ATSDR, 2012; EFSA, 2012; JECFA, 2011).

ENVIRONMENTAL EXPOSURE

Inhalation exposures

The absorption of inhaled Cd is approximately 25 – 50%, depending on particle size (JECFA, 2011). Children differ from adults in their inhalation rates and exposure risks. Due to a higher breathing frequency (up to twice that of a resting adult on a body weight basis), children exposed to the same concentrations of cadmium as adults may receive a larger dose. Moreover, in comparison to adults, children's developing respiratory tract is generally more sensitive to environmental pollutants (EPA, 2008). EFSA estimated the intake of Cd through inhalation of air for European children at 0.0033 µg/kg b.w. per day (EFSA, 2012).

Some studies have evaluated the effects of Cd exposure from environmental tobacco smoke (ETS) in children (Özden et al., 2007; Willers, Gerhardsson, & Lundh, 2005). According to the findings, passive smoking increases the uptake of ambient Cd in children (Özden, et al., 2007; Willers, Schütz, Attewell, & Skerfving, 1988).

Oral exposures

In infants and young children, Cd absorption through the gastrointestinal tract is estimated to be between 1 – 10% (JECFA, 2011). Factors that increase the absorption rate of Cd following oral ingestion are insufficient intake of iron, calcium and zinc (JECFA, 2011).

Breast milk

The main factors related to the presence of Cd in breast milk were found to be tobacco smoke, pollution levels and dietary habits (Chao et al., 2013; García-Esquinas et al., 2011; Nishijo et al., 2002). The transfer of cadmium to breast milk is usually low (5 – 10 %) and the health risks for breastfed infants appear to be small (Koyashiki, Paoliello, & Tchounwou, 2010; Radisch, Luck, & Nau, 1987).

Food ingestion

It is difficult to estimate intake levels for the general population because exposure from food can vary according to different levels of contamination and food consumption. In polluted sites with increased cadmium concentrations, this metal was found to exceed the limits in some home grown vegetables and agricultural crops (Pruvot, Douay, Hervé, & Waterlot, 2006; Uršič, 2009). Moderate to high dietary cadmium intake by children and adults has been reported especially for industrialized areas (Wilhelm, Wittsiepe, Schrey, Budde, & Idel, 2002). Furthermore, children's level of exposure can be increased due to a greater amount of food consumed in relation to body weight.

The food groups that contribute to the major part of the dietary cadmium exposure of EU children were found to be potatoes and potato products, food for infants and small children, grain-based products, root vegetables, fine bakery wares, infant formulae and chocolate products (EFSA, 2012).

Recent estimates by JEFCA and EFSA of the average metal intake across the EU are approximately in the same range. Estimated min and max middle bound mean exposure to Cd across EU countries range 2.61 - 2.74 µg/kg b.w. per week for infants (< 1 year), 3.84 - 6.77 µg/kg b.w. per week for toddlers (1 - 3 years), and 3.13 - 5.03 µg/kg b.w. per week for other children (3 - 10 years) (EFSA, 2012).

Non food ingestion - Soil and dust

The amount of soil ingested by children can be significantly high due to their mouthing behaviour. They can swallow soil, dust, or sand while they play on the floor or on the ground

(EPA, 2008). The estimated daily ingestion of soil, indoor dust or both soil and dust, in mg /day is 30, 30, 60 respectively for infants and 50, 60, 100 for children 1 to < 6 years (EPA, 2008).

In the worst case scenario the exposure level reaches 0.607 µg/kg b.w. per day of Cd ingested from contaminated (13 mg/kg) dust (EFSA, 2012).

Toys

Children's toys and jewellery may contain significant levels of Cd and other toxic metals (Hillyer, Finch, Cerel, Dattelbaum, & Leopold, 2014). Children can be exposed to Cd by mouthing or swallowing small parts of toys. Despite the fact that toys are required to be safe, some toys contain inherent amount of metals which cannot be completely eliminated. In order to protect the consumer, the Toy Safety Directive 2009/48/EC (TSD) set a migration limit value for certain elements, including Cd (EC, 2009).

Based on TDI assumption for defining migration limit value, the German Federal Institute for Risk Assessment (BfR) calculated the maximum child oral Cd intake through toys (including dry, liquid and scraped-off). A child with a body weight of 7.5 kg can be exposed to 0.56 µg/kg. b.w. of Cd per week through toys (BfR, 2009). Taking into consideration the object mouthing behaviour of children (Xue et al., 2007), toys may represent a significant source of exposure for children, with the risk hazard index over 1 (Guney & Zagury, 2014).

Placenta

Pregnant women who are exposed to toxic metals can pass those metals on to their foetuses. Maternal smoking is a significant route of exposure and is associated with a higher Cd concentration in the placenta (Amaya et al., 2013).

The transplacental transfer of metals occurs with a different ratio because the placenta functions as a protective barrier for some metals, while for others it seems to enhance transport (Goyer, 1990). According to some studies, Cd foetal / maternal cord blood ratio is below 1, with the concentration of Cd in cord blood roughly 50% of the concentration in maternal blood (Jin et al., 2013).

New findings of prenatal Cd and lead (Pb) co-exposure suggest that during early pregnancy the antagonistic interaction between Pb and Cd levels in maternal blood occurs at low concentration of both metals and that there is a synergistic effect modification between Pb and Cd levels during the late pregnancy period (Kim et al., 2013).

HUMAN BIOMONITORING

Blood and urine are usually chosen as biomarkers for assessing Cd exposure. Because kidney is considered a critical organ for Cd accumulation and toxicity, biomarkers of exposure to Cd are set as early indicators of impaired kidney function. Blood (B-Cd) is an indicator of previous and recent exposures, while urinary cadmium (U-Cd) is an indicator of chronic exposures reflecting renal concentration and thus a more sensitive biomarker for kidney toxicity (Hays, Nordberg, Yager, & Aylward, 2008).

DEMOCOPHES started a European harmonized approach to HBM. 17 European countries produced reliable and comparable data of exposure to mercury, cadmium, tobacco smoke and some phthalates in children and their mothers. In general their results showed that in younger children (6-8 years) exposure levels were higher than in older children (9-11 years) (DEMOCOPHES, 2013).

17 EU countries showed the median and the 90th percentile U-Cd value in children 0.07 and 0.22 µg/l respectively (DEMOCOPHES, 2013). Country-specific data are lacking. Data available for two countries are summarized in table 1. Another study compared 6 EU cities and showed the median value of B-Cd in the range between 0.11 - 0.17 µg/l (Hrubá et al., 2012). In comparison to German children, higher values of B-Cd were found in children from France, 0.46 µg/l, Poland, 0.07 µg/l, Czech R., 0.20 µg/l (Burbure et al., 2006) and Slovenia (Tratnik et al., 2013) (data summarized in table 2).

On the basis of general population-based biomonitoring data from three studies (1996 – 2006), EFSA concluded that there is no indication of decreasing cadmium exposure in areas with no particular industrial cadmium emission, while in some areas it shows an increasing trend (EFSA, 2012).

Table 1. U-Cd levels across European countries

Area	Age	Survey years	Sample size	GM (µg/l)	Reference
EU (17)	6-11	2010-12	1844	0.07	(DEMOCOPHES, 2013)
Belgium	6-12	2012	125	0.04	(Pirard et al., 2014)
Germany	6-12	2003/06	1354	0.08	(Schulz et al., 2007)

Table 2. B-Cd levels across European countries

Area	Age	Survey years	Sample size	GM (µg/l)	Reference
EU (6)	7-14	2007/08	221	0.11 - 0.17	(Hrubá, et al., 2012)
Slovenia	6-11	2011	174	0.24	(Tratnik, et al., 2013)
Germany	6-12	2003/06	1245	< 0.12	(Schulz, et al., 2007)
Czech	8-12	2006	79	0.20	(Burbure, et al., 2006)

Health based guidance value

Several international bodies carried out a health-based guidance value or a health-based human biomonitoring (HBM) value based on epidemiological studies and meta analysis. Due to an increasing concern about low-level Cd exposure in the general population and health outcomes, all of them (JEFCA, EFSA, ATSDR, HBM) have recently reviewed scientific information, carried out an updated risk assessment and lowered previous health-based guidance values for Cd in urine.

Based on the identified critical endpoint for early effects of kidney damage of 1 µg Cd/g creatinine in urine, EFSA derived the tolerable weekly intake (TWI) of 2.5 µg Cd/kg b.w (EFSA, 2012). The German human biomonitoring commission set the HBM value for cadmium in urine of children at 0.5 µg/l (HBM-I: control value) and 2 µg/l (HBM-II: action level) (Schultz, et al., 20011).

HEALTH EFFECT

Few studies are available for adverse health effects of cadmium exposure in children. Some of them are summarized in table 3.

Neurodevelopment

The blood–brain barrier does not prevent cadmium to reach the brain during early development stages in children. By directly reaching the central nervous system, Cd may have an impact on neurodevelopment (Cao et al., 2009). Kim et al. have reported a possible antagonistic interaction between Pb and Cd in maternal blood during early pregnancy that impacts cognitive development of infants, and the synergistic effect during late pregnancy, by which adverse Pb effects on cognitive and psychomotor development were only significant at high Cd levels (Kim, et al., 2013). Other studies have provided evidence that prenatal exposure to Cd and Pb negatively correlates with motor and perceptual abilities of 6-year-olds (Bonithon-Kopp, Huel, Moreau, & Wendling, 1986; Kim, et al., 2013) and have indicated that prenatal exposure to cadmium at low levels associates with lower IQ scores of 5-year-old children (Kippler, Tofail, et al., 2012; Tian et al., 2009). It has also been shown that early life Cd exposure, at levels present in most countries, may cause subtle effects on the dopaminergic system of children (Burbure, et al., 2006).

Kidney

Cd starts accumulating in the kidney from birth and continues over time due to very long biological half-life ranging from 10 – 30 years. Early-life exposure to low levels of Cd may cause subtle effects on the children's renal system with a proximal tubular reabsorptive dysfunction

(Burbure, et al., 2006; Schulz, et al., 2011). Accumulation through age may pose irreversible damage to the kidney (Järup & Åkesson, 2009).

Bone

Many studies examine the association between low-level exposure of cadmium and bone effects in the general population (Åkesson et al., 2006; Alfvén et al., 2000; Engström et al., 2011; Hays, et al., 2008; Järup & Åkesson, 2009). Cadmium can cause bone demineralization, either through a direct bone damage or indirectly as a result of the renal dysfunction. Summarized studies indicate U-Cd points of departure for possible effects on bone at 0.5 µg/g creatinine (EFSA, 2012). Sughis et al. suggest that even in young children, the same low-level environmental exposure to cadmium is associated with bone demineralization and bone resorption (Sughis, Penders, Haufroid, Nemery, & Nawrot, 2011).

Other

Early-life low-level Cd exposure in breastfed infants is positively associated with increased oxidative stress (Kippler, Bakhtiar Hossain, et al., 2012). Studies on pregnant mice have demonstrated that even an exposure of 0.21 µg Cd/kg b.w. per day during pregnancy may result in long-term adverse effects on the immune system of the offspring (Hanson et al., 2012).

Table 3. Study outcomes

Age	Study design	Reference value-µg/l	Outcomes	reference
Prenatal	Prospective longitudinal study (n=884)	B-Cd: 1,5 B-Pb: 12.7	Cognitive and motor development	(Kim, et al., 2013) Pb and Cd co-exposure
Prenatal	Cross-section (n=1305)	U-Cd: 1.8	Neurodevelopment	(Kippler, Tofail, et al., 2012)
Prenatal Infants	Animal study Cross-section (n=96)	↓Cd Breast-milk Cd: 0.13	Immunosuppression Oxidative stress	(Hanson, et al., 2012) (Kippler et al., 2012)
Children (8-12 y.)	Cross-section (n=804)	U-Cd: 0.58 µg/g crea B-Cd 0.31 U-Cd: 1.5 µg/g creat B-Cd ≥ 0.51	Tubular dysfunction Dopaminergic systems	(Burbure, at al., 2006) co-exposure with Pb and Hg
Children (>6 y.)	Cross-section (n=155)	U-Cd: 0.5 µg/g creat	Bone demineralization	(Sughis, et al., 2011)

CONCLUSION

Children exposure to Cd may start with prenatal exposure. Studies show that Cd level in mothers due to contaminated food or tobacco smoke may pose a risk to their foetuses.

Food is the main source of Cd exposure in children but other sources can contribute significantly as well. In the worst-case scenario for EU young children the contribution of each

source is 160 % food, 22 % dust, and 22 % toys of the total TWI. Given that the Cd dietary intake of children regularly exceeds the TWI value, health risks cannot be excluded. Other sources that constitute an additional burden should be better defined and minimised, in order to prevent an increasing exposure in children.

Studies on health effects of prenatal and postnatal cadmium exposure are limited. They suggest that low-level Cd exposure is associated with subtle tubular effects and bone demineralization, while the impact on neurodevelopment becomes evident at higher Cd exposures. Human biomonitoring in EU countries shows U-Cd level at which health risks may occur. Given the potential for adverse health outcomes at low levels of Cd exposure reinforce the need to control and regulate all potential sources of prenatal and postnatal exposure.

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THE USE OF ACTIVE TRANSPORT TO AND FROM SCHOOL

UPORABA AKTIVNE POTI V ŠOLO IN IZ NJE

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ABSTRACT

The aim of this research was to assess the use of active transport to and from school in primary school children of the first education cycle. It was found, active transport can be an important opportunity to increase our physical activity; however, passive transport has increasingly been invading its use.

Parents of 1907 children, aging from 6 to 8 years and recruited randomly from basic schools all over Slovenia were surveyed on the ways of transport to and from school. We found that only 20% of 6-year olds use active transport (walking or cycling) to and/or from school. However, the share increases with children's age. We found no significant differences either between genders or for age x gender interaction. We found also that distance from school is an important factor for the use of active transport; however, it explains only 14.2% of its variance.

Considering the large number of foreign studies that point to positive effects of active transport to and from school on the amount of physical/sport activity, and thus on meeting the framework recommendations for daily physical activities its accelerated promotion should also be advised in Slovenia.

Keywords: children, physical/sport activity, active transport

IZVLEČEK

Namen prispevka je preučiti uporabo aktivne poti otrok prve triade osnovne šole, v šolo in nje. Aktivna pot je lahko pomemben del zdravega načina življenja. Kljub pozitivnim vplivom le-te na zdravje, okolje in skupnost, je vožnja z avtomobili in drugimi prevoznimi sredstvi nadomestila aktivno pot v šolo in nje.

Starše 1907 otrok, starih med 6 in 8 let, smo anketirali o uporabi načina poti otrok v šolo in iz nje. Ugotovili smo, da se le 20% prvošolcev uporablja hojo ali kolesarjenje v šolo oziroma iz nje, vendar se ta delež s starostjo otrok povečuje. Med spoloma ni bilo značilnih razlik, prav tako ne v interakciji starost x spol. Ugotovili smo tudi, da je sicer oddaljenost od šole

pomemben faktor uporabe aktivnega transporta, vendar razloži le 14.2% variance njegove uporabe.

Glede na to, da številne tuje raziskave navajajo pozitivne vplive aktivne poti v in iz šole na količino gibalne/športne aktivnosti ter doseganje dnevnih okvirnih priporočil gibalne aktivnosti bi bilo smiselno, da se ga tudi v Sloveniji prične pospešeno spodbujati.

Ključne besede: otroci, gibalna/športna aktivnost, aktivna pot

INTRODUCTION

Walking and cycling represent active ways of transport to and from school that can be an important form of physical/sport activity to reach the minimum recommended physical activity thus playing an important role in children's healthy way of life (Faulkner, Buliung, Flora in Fusco, 2009). With girls positive correlation was found between the use of active transport and cognitive potential (Martinez-Gomez et al., 2011) and that both with boys and girls there was a positive correlation with the improvement of general endurance, while Loucaides and Jago (2006) report even there is a significant correlation between body mass and the way of transport to and from school.

Through their project *Dobimo se na postaji* – [Let's meet at the stop/station] The Ministry of Infrastructure and Spatial Planning of the Republic of Slovenia informed and raised awareness of children and their parents about the importance of active or healthy ways of transport. There is, however, no report about its scientific results.

With massive use of active ways of transport, multi-layer effects on the reduction of motor transport and carbon emissions, reduction of noise from traffic, and the use of fossil fuels could be achieved while also increasing social interaction as well as potential for physical/sport activities (Bauman, Rissel, Garrard, Ker, Speidel, and Fishman, 2008). Foreign research shows children and youth who walk or cycle to and from school have higher quantities of physical/sport activities and reach the daily levels of physical/sport activities more easily than those who commute to and from school by car or by bus (Sirard, Riner, Mclver, and Pate, 2005; Chillón et al., 2010; Duncan, Duncan, and Schofield, 2008; Loucaides and Jago, 2008).

As in Slovenia there had been no study that would address the proportion of children who make use of active transport to and from school we decided to perform one. The aim of the study was to find out what proportion of children in the first three-year cycle of basic school make use of active (walking or cycling) transport to and from school and whether there were any differences according to age or gender.

METHODS

The sample of the surveyed

The sample of the surveyed was randomly selected and includes 29 randomly selected basic schools from different Slovenian regions: Savinja, Lower Sava, Southeast Slovenia, Central Slovenia, Carniola, Inner Carniola-Karst, Gorizia, and Coastal-Karst. The sample included 1907 parents of 6 to 8 years old children (Table 1). After prior arrangement with each basic school, we made a detailed presentation of the purpose and the objectives of the study to parents and school heads, distributed the forms for consent to participate in the study and the survey questionnaires, and agreed the way of returning the latter. Previously consent to participate in the research was obtained from all the surveyed. The survey questionnaire was returned by 1217 parents of children (63.8 %). All ethical issues were solved within the research group of the Institute for Kinesiology Research of the UP Science and Research Centre. All personal data remained anonymous. The whole process of data collection was performed in line with the Personal Data Protection Act (Official Gazette RS No. 59/1999).

Table 1: The size of the sample of the surveyed participating in the "Active Transport" research

	Grade 1	Grade 2	Grade 3
Boys	199	140	221
Girls	185	197	275

Measurement instrument

The survey questionnaire - the standardised questionnaire (Sallis, <http://www.drjamesallis.sdsu.edu/measures.html>) adapted to the specific needs of our study was applied. It contained a qualitative and a quantitative part. The parents' responses were analysed by the elements. From the high (63.8 %) return rate we can conclude parents understood the set questions and answered them validly and that the intake sample does not represent a significant decline from the population of all contacted parents.

The research design

A cross-sectional non-experimental study was carried out. In April and May 2011 agreements were concluded with the heads of the selected schools and their consent obtained at the selected point in time to invite the parents to fill in the survey questionnaire. Prior to this the form for consent to participate in the study containing precise information on the purpose and objectives was sent to the parents. The parents who agreed to participate were sent the survey questionnaires with precise instruction for filling in and returning the questionnaires.

Statistical processing

For each child we computed the proportion of performed journeys to and from school and then calculated the total average share of active journeys for each individual child. Using Pearson's correlation we tested whether the share of active journeys correlated with the children's distance from school. With 2-factor ANOVA the differences in the shares of active journeys according to the age and gender were examined. Statistical decisions were taken at the risk level $p < .05$.

RESULTS

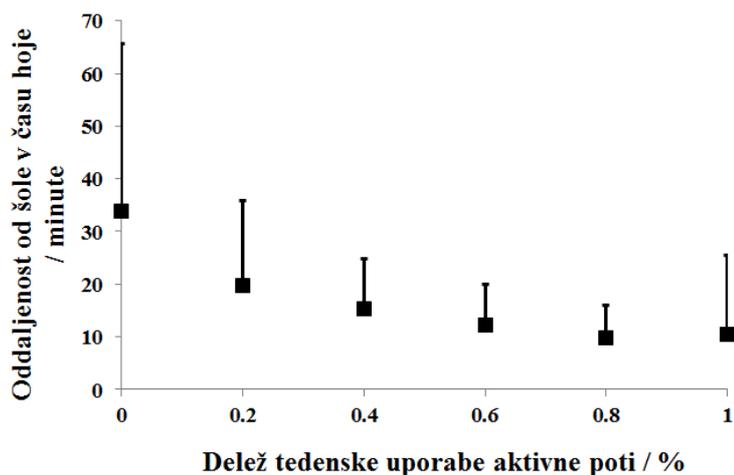
On the basis of the results of the study we conclude the share of using active transport to school ($P < 0.001$) and from school ($P < 0.001$) significantly increases with the age of the students (grade). There were no significant differences between the genders or in the interaction age x gender (Table 2), although with girls the share of the use of active transport was close to significant ($P = 0.070$), which indicates with girls it increases evenly while with boys it increases at the moment of transition to grade 2.

Table 2: The share of active transport (walking and cycling) to and from school

		Grade 1	Grade 2	Grade 3
The share of using active transport to school / % of days a week	Boys	19.3 ± 0.4	25.9 ± 0.4*	24.8 ± 0.4*
	Girls	13.8 ± 0.3	21.8 ± 0.4*	23.8 ± 0.4*
The share of using active transport from school / % of days a week	Boys	26.0 ± 0.4	33.0 ± 0.4	33.0 ± 0.4*
	Girls	22.0 ± 0.4	26.0 ± 0.4	30.0 ± 0.4*

* different from the value for grade 1 at $P < 0.001$

We also examined how the use of active transport correlated with the child's distance from home to school, which is presented in Picture 1. Statistically a significant correlation can indeed be confirmed between both variables ($r = -0.38$, $P < 0.001$), this means, however, the distance explains only 14.2 % of the variance in using active transport. Other factors involved in the use of active transport lie elsewhere.



Picture 1: Comparison of the distance from school (in minutes walking) and the share of use of active transport a week

DISCUSSION

The results of our study demonstrate only about 20 % of first graders use walking or cycling to and from school and that the share increases with children's age. Roland et al. (2003) found significantly different results for English 5 to 10 years old children with as many as 62 % of children using active transport to and from school. Cooper et al. (2003) obtained similar results, likewise for 10 years old English children. As many as 49 % of 5 to 6 years old and 62 % of 10 to 12 years old Australian children use walking or cycling to travel to and from school (Timperio et al., 2006). Aarts et al. (2013) report as many as 75 % of Danish primary school children use active transport to and from school, underlining age and distance from school are the crucial preconditions for the selection of the way of transport.

We see the first reason why the use of active transport of first graders to and from school is so low in the provision of Road Traffic Safety Act, Article 91 of which requires "on their way to and from pre-school or first grade of school children must be accompanied by an adult. With parents', adoptive parents', guardians' or foster carers' consent they can also be accompanied by other children older than 10 years or by minors. With parents', adoptive parents', guardians' or foster carers' consent the children who go to first grade of basic school can also come to school unaccompanied in the slow traffic zones" (Road Traffic Safety Act, official consolidated text, ZVCP-1-UPB, p. 6021). The other reason is because of time constraints, inadequate traffic arrangement, or fear from strangers, parents do not allow their children to go to school by themselves, so most parents prefer transport by car (McDonald and Aalborg, 2009).

The frequency of the use of children's active transport to and from school depends on a number of factors, such as physical environment of school, family's socio-economic status,

children's social network, and cultural norms. Physical environment is one of the main reasons in selecting the active use of active way of transport. Distance from home to school is one of the strongest factors of active transport, confirmed by a number of studies (Davison, Werder and Lawson, 2008; Nelson, Foley, O'Gorman, Moyna, and Wood, 2008; Pont, Ziviani, Wadley, Bennett, and Abbott, 2009. With the support of GPS devices Dessing et al. (2014) found in their study on average 6 to 11 years old Danish children walk a 422 metre distance to school at the speed of 5.2 km/h. The author reports the percentage of children who walk to school decreases with distance, while the percentage of cyclists and transport by motorvehicles increase.

The use of active transport also decreases due to improperly build environment, which does not allow safe walking or cycling to school (OPPI, 2007), increase in the use of automobiles, the process of urban decentralisation, female employment and consequently arrangements for child care and concern for children's safety (Mackett and Paskins, 2008).

We believe because of all the above reasons children use this kind of transport to and from school less and less (Cooper et al., 2003; Cooper et al., 2005; Department for transport, 2007; McDonald, 2007; van der Ploeg, Merom, Corpuz and Bauman, 2008). Because a number of studies have proved children who walk or cycle to and from school spend a larger number of minutes in high intensity than those who are driven to school (Saksvig, Catellier, Pfeiffer et al., 2007; Tudor - Locke, Ainsworth, Adair, Popkin, 2003), however, intervention programmes have been introduced in many countries to encourage children and their parents to use active ways of transport. We wish to propose, therefore, future Slovenian studies should implement such forms of intervention programmes that will allow to examine to what extent active transport contributes to increase in the intensity and total amount of physical/sport activity, and to what extent it influences children's health (body mass, BMI ...). Policies as such should also be in favour of this kind of studies, as they are closely related to children's health, low-carbon society, spatial planning, infrastructure, and environmental cleanliness.

CONCLUSION

Data from various studies (Verloigne et al., 2012; Biddle, Gorely, Marshall, Murdey, and Cameron, 2004; Owen, Leslie, Salmon, and Fotheringham, 2000) are cause for concern, as they show on average children and adolescents are physically inactive more than 10 hours a day and that a large number do not reach the recommended amounts of physical/sport activity. This exactly is a good evidence to prove the urgency of intervention programmes focused on the reduction of inactivity and encouraging children to physical/sport activity. Active transport to and from school is no doubt such form of intervention programme, as the time of total inactivity is replaced by low intensity physical/sport activity.

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ŠPORTNO PLEZANJE V VRTCU KOT PRIMER DOBRE PRAKSE

SPORT CLIMBING IN THE KINDERGARTEN AS AN EXAMPLE OF GOOD PRACTICE

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POVZETEK

V prispevku smo predstavili plezanje in njegov pomen za gibalni razvoj otrok. Plezanje je ena od naravnih oblik gibanja, ki predstavlja gibalno abecedo človeka in s tem nedvomno eno od pomembnejših nalog gibalnega učenja. Prav tako vpliva pozitivno ne le na gibalni razvoj otroka temveč tudi na otrokov kognitivni, emocionalni in socialni razvoj. Plezanje namreč predstavlja gibalno reševanje prostorskih problemov, ki poleg motoričnega razvoja pri otroku vpliva tudi na psihosocialne veščine in značilnosti (Pistotnik, 2011). Z raziskavo smo želeli ugotoviti ali so vzgojitelji¹ v vrtcih kompetentni za izvajanje gibalne/športne dejavnosti v povezavi s plezanjem, ter v kolikšni meri ga vključujejo v vadbo. Zaradi omejitev raziskovanja ugotovitev ne moremo posplošiti na celotno populacijo slovenskih vrtcev. Lahko pa rezultati prispevajo k prepoznavanju pomena in pozitivnega vpliva plezanja na celostni razvoj predšolskih otrok in k pospeševanju vključevanja plezanja v gibalne/športne dejavnosti (GŠD) v vrtcu.

Za plezanje po igralih je v vrtcih dobro poskrbljeno, igrala so ponavadi polna otrok, ki se ob tem tudi zelo zabavajo. Nekatere druge plezalne naprave, kot so žrd, vrv, vrvna lestev, so za otroke manj zanimive. Pogosto uporabljeni napravi sta letvenik in lestev. Plezalna stena je v vrtcih relativna novost, tudi plezalne stene z umetnimi oprimki v športnih dvoranah so nastale večinoma v zadnjem desetletju ali dveh. Sodobna mala plezalna stena, s pisanimi oprimki primernih oblik in na pravih mestih, bi lahko plezanje zelo približale otrokom, a je za to potrebno nekaj več (plezalnega) znanja in spretnosti med vzgojitelji, kar pa zmorejo praviloma le tisti, ki so tudi sami spoznali športno plezanje. Zaenkrat jih ni veliko. Ugotovili smo, da je plezanje prepoznano kot pomemben del otrokovega gibalnega razvoja tudi s strani vzgojiteljev in ga tudi vključujejo v gibalne/športne dejavnosti v vrtcih. Z izvedbo plezalnega športnega dopoldneva pa smo predstavili primer dobre prakse vključevanja plezanja v gibalne/športne dejavnosti v vrtcih.

Ključne besede: plezanje, predšolski otroci, vzgojitelji, plezalne naprave, naravne oblike gibanja, gibalni razvoj otrok.

ABSTRACT

In the article Sport climbing in the kindergarten as an example of good practice we presented climbing and its importance in the motor development of children. Climbing is one of the natural forms of movement and the children love it. Climbing has a positive impact on the overall development of the child; not only motor but also cognitive abilities. Climbing represents a physical way to solving spatial problems which, in addition to the motor development of the child, also affects psychosocial skills and characteristics (Pistotnik, 2011). The survey was to determine whether preschool teachers in kindergartens are competent to carry out sports activities in relation with climbing, and the extent to which they include it in the exercises. Due to the limitations of instruments in the research findings cannot be generalized to the entire population of the Slovenian kindergartens. Alternatively, the results can contribute to the recognition of the importance and positive impact of climbing on the overall development of children and to promote the integration of climbing in the sports activities in kindergarten. It's well taken care of for climbing in a kindergarten. Different climbing contraptions are usually full of children who are having a lot of fun. Some other climbing contraptions such as vertical pole, rope and rope ladder are less interesting for the children. Wall bars and ladder are the often used climbing contraptions. A climbing wall in a kindergarten is a relative novelty. Even the climbing gyms with an artificial wall and grips have started to appear mainly in the last decade or two. The modern small climbing wall with colorful grips of appropriate forms and in right places could bring climbing closer to the children, but it requires a little more (climbing) knowledge and skills which, among preschool teachers, possess only those, who are familiarized with climbing. Not many so far. Overall, we can see that climbing is recognized as an important part of a child's motor development by preschool teacher and they also include it in physical activities in the kindergarten. By carrying out the sport climbing morning, we presented an example of good practice in the integration of climbing in the sports activities in kindergartens.

Key words: climbing, preschool child, preschool teachers, climbing contraptions, natural forms of movement, children's motor development.

UVOD

V prispevku predstavljamo predšolskim otrokom prilagojeno športno plezanje kot učinkovito podporo gibalnemu razvoju otrok. Plezanje je ena od naravnih oblik gibanja, ki predstavlja gibalno abecedo človeka in s tem nedvomno eno od pomembnejših nalog gibalnega učenja

(Moscha, 2004). Zavedanje o pomenu vključevanja plezanja v zgodnji otrokov razvoj je prisotno tudi pri vzgojiteljih v vrtcih, ki so praviloma opremljeni z napravami, ki to omogočajo. Različne plezalne naprave: letveniki, plezalne lestve, raznovrstna plezala in tudi male plezalne stene omogočajo vključevanje plezanja v gibalne/športne dejavnosti v vrtcu. Z raziskavo smo želeli ugotoviti, kako in v kolikšni meri starost vzgojiteljev vpliva na vključevanje plezanja v gibalne/športne dejavnosti, še posebej na vključevanje male plezalne stene. Izhajali smo iz predpostavke, da je mlajšim vzgojiteljem športno plezanje bližje, bolj poznano in so se z njim tudi pogosteje srečali, saj gre za relativno mlad šport, ki se je v rekreativni obliki razmahnil šele v zadnjih desetletjih. Poleg tega pa smo proučevali, ali ukvarjanje s športom poveča tudi zavedanje o pomenu plezanja na otrokov gibalni oz. celostni razvoj. V prispevku uporabljamo besedo vzgojitelj, ki pomeni vzgojiteljica, pomočnica vzgojiteljice, vzgojitelj in pomočnik vzgojitelja/-ce.

Plezanje in druge oblike naravnih gibanj

Človek je že od nekdaj rad plezal in v davni mu je bila to življenjska potreba. Danes nekateri plezajo iz veselja, drugi s plezanjem preizkušajo svoje spretnosti in pogum, tretji si s plezanjem krepijo mišičje in telo, nekaterim pa je plezanje postalo preprosto njihov način življenja. Plezanje kot način življenja oziroma oblika rekreacije pa je bil povod, da so se začeli ukvarjati s športnim plezanjem. Danes se s športnim plezanjem ukvarjajo ljudje različnih starosti. Nekateri plezajo, ker se radi gibajo v naravi, in jim športno plezanje omogoča združiti prijetno s koristnim na svežem zraku, spet drugim je športno plezanje postalo način življenja. Vse bolj pa prihaja v ospredje tudi športno plezanje kot sredstvo športne vzgoje mladih (Moscha, 2004). Plezanje je ena izmed naravnih oblik gibanja, ki jih je človek razvil v filogenezi in na osnovi katerih so se oblikovala zahtevnejša gibanja. Predstavljajo gibanja, ki jih je človek razvil in osvojil skozi evolucijo (postopen pozitiven razvoj). Z njihovo pomočjo, se je človek ohranil kot vrsta, saj je hkrati s spreminjanjem in prilagajanjem gibalnih vzorcev vplival tudi na razvoj svojih mentalnih funkcij in tako zaradi tega zagospodoval nad drugimi živimi bitji na Zemlji (Pistotnik, 2011). Danes ugotavljamo, da je treba mladostnike že marsikatero od naravnih oblik gibanja učiti, saj jih v vsakdanjem življenju spoznajo redkeje ali sploh nimajo možnosti za to (plezanja, skoki, tek). Naravne oblike gibanja predstavljajo gibalno abecedo človeka in s tem eno od pomembnejših nalog gibalnega učenja, zato je treba otrokom omogočiti, da se z njimi seznanijo. Pri delu z otroki se je tako treba zavedati pomena pogoste uporabe naravnih oblik gibanja in vpletanja teh v redno vadbo, saj so pomemben dejavnik otrokove gibalne izobrazbe. Otroštvo je namreč tisto življenjsko obdobje, ko lahko prav s širokim izborom naravnih oblik gibanja močno vplivamo na razvoj gibalnih sposobnosti (moč, gibljivost, koordinacija, ravnotežje ...) in prav te so precej povezane z uspešnostjo pri plezanju (Moscha, 2004).

Danes naravne oblike gibanja niso več gibanja, ki bi jih človek potreboval za preživetje, temveč so gibanja, ki se uporabljajo za bolj kakovostno življenje človeka, tj. za ohranjanje zdravja in za dvig človekove delovne sposobnosti (Pistotnik, 2011).

Plezanje vključuje oblike gibanja, pri katerih se vadeči premika v različnih vesah ob pomoči okončin. To je gibanje, katerega osnove otrok razvije že v prvih mesecih življenja. Opazimo ga takoj, ko otrok obvlada lazenje in ga radovednost s tal preusmeri k raziskovanju više ležečih površin. Šele kasneje, ko otrok shodi, postane močnejši, okretnejši, in če ima na voljo ustrezne razmere, se lahko razvije plezanje v pravem pomenu besede. Pri plezanju gre za gibalno dejavnost, ki se izvaja v smeri, nasprotni sili težnosti. Med plezanjem se premikamo v različnih vesah in z rokami, nogami in trupom poskušamo obvladovati ravnotežni položaj, ki nam omogoča vzpenjanje po steni. S plezanjem otrok razvija moč trupa, rok in prstov, gibljivost v ramenskem in kolčnem sklepu, koordinacijo v smislu učinkovitega reševanja prostorskih problemov in ravnotežje (Moscha, 2004).

Plezanje kot igra

Igre so zelo pomembno sredstvo športne vadbe, saj vsebujejo specifičen naboj, ki otroke motivira na takem nivoju, da so se za njihovo izvedbo običajno pripravljani maksimalno potruditi. Pri plezanju igre tako predstavljajo pomembno uporabno sredstvo, s pomočjo katerega lahko vadeči igraje, tj. sproščeno in nezavedno, ne da bi jim napor predstavljal težavo, dosežejo zastavljene cilje (Pistotnik, 2011). Otroek je v igri samostojen, ustvarjalen in izraža to, kar trenutno doživlja ter uživa v dejavnosti, četudi ne doseže konkretnih rezultatov. Otroekova igra je neizčrpen vir raznovrstnih idej in možnosti, ki jih verjetno ne bomo nikoli izčrpali. In glede na to, da sta potrebi po gibanju in igri osnovni otrokovi potrebi, naj se igra kot rdeča nit prepleta skozi vse otrokove dejavnosti (Videmšek in Pišot, 2007).

Otroci se učijo plezati z igro in učenje plezanja je uspešnejše takrat, ko otrok to doživlja kot prijetno, sproščeno igro in ne kot stresno borbo, navaja Guček (2010). In naloga odraslih, ki delajo s predšolskimi otroki ni le, da so pri svojem delu strokovni, vestni in dosledni, temveč tudi ta, da so razgledani in ustvarjalni v smislu pestrega načina podajanja informacij in športno plezalnih znanj. To pomeni, da so se otrokom sposobni približati tudi skozi igro ali v obliki nalog in vaj. Igre in naloge, ki jih odlikuje pestrost in raznolikost gibalnih nalog, so za otrokov razvoj poglobitnega pomena in zato je pomembno, da vadba športnega plezanja ostane čim dlje v obliki gibalnih iger. Preko iger naj otroci rešujejo najrazličnejše gibalne naloge, vanje pa lahko vpletamo lažje in kasneje vse težje plezalne prvine (Moscha, 2004).

METODE DELA

Za zbiranje podatkov in ugotavljanje obstoječega stanja ter stališč vzgojiteljev smo kot instrument raziskovanja uporabili anketni vprašalnik z Likartovo skalo, pridobljene podatke

smo za statistično analizo obdelali s pomočjo programa MS Excel. Pri raziskovalnem delu smo uporabili kvantitativni metodološki pristop, ki je temeljil na podatkih, zbranih s spletnim anketnim vprašalnikom. S pomočjo spletnega orodja »1 ka« smo izdelali spletno anketo, s katero smo proučevali kompetence vzgojiteljev pri vključevanju plezanja v gibalne/športne dejavnosti v vrtcu. Z namenom pilotskega testiranja instrumentarija smo vzorčni spletni anketni vprašalnik posredovali priložnostno izbranemu vzorcu 10 vzgojiteljev. Dobili smo 6 vrnjenih vprašalnikov. Anketiranci niso imeli pripomb glede razumljivosti zastavljenih vprašanj. Na podlagi mnenja pilotskih anketirancev, da ni nerazumljivih vprašanj in da spletno izpolnjevanje vprašalnika poteka tekoče, smo sklepali, da je vprašalnik primeren za izvedbo naše ankete. Anketo smo zaključili 31. 5. 2014, ko je anketo dokončalo 123 anketirancev, 14 pa jih je anketo delno izpolnilo, kar predstavlja skupaj 137 ustrezno izpolnjenih anket. Neustreznih odgovorov na anketo imamo 46, torej je bilo skupaj vseh, ki so se odzvali na anketo 182. Skoraj vsi anketiranci so ženske, večina starostne skupine 31–40 let, s srednješolsko stopnjo izobrazbe in najpogosteje zaposlene na delovnem mestu vzgojitelja. Vseh anketirancev je bilo 137.

Ključne omejitve, ki izvirajo iz uporabljenega instrumentarija so predvsem nabor vprašanj, ki tvorijo anketni vprašalnik, uporaba spletne ankete kot način merjenja in samoporočanje kot oblika pridobivanja ocen kompetentnosti vzgojiteljev.

REZULTATI

		Ali vključujete športno plezanje v vaše gibalne/športne aktivnosti v vrtcu?						Skupaj
		1 - nikoli	2 – zelo redko	3 - redko	4 - pogosto	5 - zelo pogosto	6 - vedno	
Ali ste bili športno aktivni?	da	28	26	17	18	12	4	105
	ne	8	3	3	10	0	0	24
	Skupaj	36	29	20	28	12	4	129

Preglednica 1: Pogostost vključevanja plezanja v GŠD, športno aktivnejših

Iz preglednice 1 v kateri so zajeti podatki anketirancev, ki so anketo izpolnili ustrezno, teh je bilo 129, in so bili športno aktivni je razvidno, da športna aktivnost ne pripomore k temu, da bi plezanje pogosteje vključevali v GŠD v vrtcu.

		Zakaj vključujete plezanje v gibalne/športne aktivnosti?				
		ker menim, da bistveno prispeva k gibalnemu razvoju otroka	ker menim, da bistveno pripomore k celostnemu razvoju otroka	ker je vseč otrokom in ob tem uživajo	Drugo	Skupaj
V katero starostno skupino spadate?	do 20 let	0	0	0	0	0
	21 - 30 let	2	10	2	0	14
	31 - 40 let	7	11	7	0	25
	41 - 50 let	4	8	5	1	18
	51 let ali več	2	9	5	0	18
	Skupaj	15	38	19	1	73

Preglednica 2: Zavedanje o pomenu plezanja glede na starost anketirancev

V preglednici 2 so podatki anketirancev, ki vključujejo plezanje v GŠD v vrtcu in so anketo ustrezno izpolnili, teh je bilo 73. Iz nje je razvidno, da se tako mlajši kot starejši vzgojitelji zavedajo pozitivnega vpliva plezanja na otrokov celostni razvoj.

		Kako pogosto vključujete plezanje po mali plezalni steni v gibalne/športne dejavnosti v vrtcu?						
		1 - nikoli	2 - zelo redko	3 - redko	4 - pogosto	5 - zelo pogosto	6 - vedno	Skupaj
V katero	do 20 let	0	0	0	0	0	0	0

starostno skupino spadate?	21 - 30 let	14	4	5	3	2	0	28
	31 - 40 let	26	5	5	2	3	3	44
	41 - 50 let	15	4	2	5	2	3	31
	51 let ali več	6	3	4	2	3	2	20
	Skupaj	61	16	16	12	10	8	123

Preglednica 3: Vključevanje plezanja po mali plezalni steni glede na starost vzgojiteljev

Preglednica 3, ki zajema podatke ustrezno izpolnjenih anket, prikazuje, da ne glede na starost, vzgojitelji (teh je bilo 123) redko vključujejo plezanje po mali plezalni steni v GŠD v vrtcu.

PREDSTAVITEV IN IZSLEDKI RAZISKAVE

Plezanje uvrščamo med naravne oblike gibanja, ki so otrokom všečne in lahko vplivajo pozitivno na njihov celostni razvoj in ne le na razvoj gibalnih, temveč tudi kognitivnih sposobnosti. Plezanje namreč predstavlja gibalno reševanje prostorskih problemov, ki poleg motoričnega razvoja pri otroku vpliva tudi na psihosocialne veščine in značilnosti, zato smo želeli ugotoviti, ali so vzgojitelji kompetentni za izvajanje gibalnih/športnih dejavnosti v vrtcu z vključevanjem plezanja v gibalne/športne dejavnosti in ali med njimi obstajajo statistično značilne razlike glede na starost in njihovo športno aktivnost.

Ugotovili smo, da športna aktivnost vzgojiteljev ni podlaga za pogostejše vključevanje plezanja v GŠD v vrtcu. Vprašanje bi se verjetno moralo dotakniti anketirančeve športne aktivnosti na področju plezanja. Bivši ali aktivni športni plezalci bi verjetno pogosteje vključevali plezanje v GŠD, predvsem v obliki plezanja na mali plezalni steni. Ugotovili smo, da tudi starost vzgojitelja ne vpliva na zavedanje o pozitivnem vplivu plezanja na otrokov celostni razvoj. Tega se v povprečju dovolj zavedajo tako mlajši kot tudi starejši vzgojitelji. Tudi na vključevanje plezanja na mali plezalni steni starost vzgojitelja ne vpliva, čeprav bi pričakovali, da mlajši vzgojitelji malo plezalno steno vključujejo pogosteje, saj je športno plezanje relativno mlad šport, ki se je razvijal v začetku osemdesetih let in je v razmahu šele v zadnjem desetletju, kjer se večina otrok z njim sreča vsaj v ČŠOD-ju, zelo dostopni pa so postali tudi številni plezalni tečaji in šole. Športno plezanje je postala množična oblika rekreacije. Da se tovrstni razmah plezalnega športa in s tem vpliv na pogostejšo uporabo npr. male plezalne stene ne kaže tudi pri mlajših vzgojiteljih v vrtcu, domnevamo, da je morda krivo pomanjkanje primernih tovrstnih objektov (naklon stene, oblike in razmeščenost oprimkov, varnostne blazine ...) in morda tudi primernih oblik izobraževanja vzgojiteljev na tem področju. Ugotovili smo, da je plezanje kot ena od oblik naravnega gibanja, tudi če ne

ravno v obliki plezanja na mali plezalni steni, vendarle prepoznano kot pomemben del na področju gibalnega in celostnega razvoja otroka.

Prispevek zaključujemo s priporočili za učinkovito in varno uvajanje prilagojenega športnega plezanja v vrtcih. Po naših izkušnjah morajo biti plezalne stene, na kateri poteka vadba predšolskih otrok, še posebej skrbno oblikovane oz. pripravljene. Primerni nakloni sten in razmestitev oprimkov primerne velikosti so pri tem odločilnega pomena. Za zagotavljanje varnosti pri morebitnih padcih, odskokih na mali (balvanski) steni moramo skrbno namestiti varnostne blazine, ki izključijo prav vsako možnost poškodb pri padcih. Otroke moramo pred samo vadbo seznaniti s pravili uporabe plezalne stene in obnašanja v prostoru, kjer vadba poteka. Priprava na vadbo naj vsebuje konkretne primere tako ogrevalnih plezalnih iger kot plezalnih iger in vaj v glavnem delu. Gibalne/športne dejavnosti predšolskih otrok naj vedno potekajo v obliki igre. Plezalne igre pa morajo biti skrbno izbrane, nadzorovane in vodene, saj le tako lahko postanejo v športu primerno vzgojno in praktično uporabno sredstvo. Priporočamo še izogibanje dlje časa trajajočim statičnim obremenitvam, primerno energijsko prehrano pred in hidracijo med plezanjem ter ustrezno motivacijo otrok, da bo tovrstna gibalna/športna aktivnost pozitivno vplivala na celostni razvoj otroka ter sooblikovala njegov zdrav življenjski slog.

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BIODINAMIČNE ZNAČILNOSTI TEKA OTROK STARIH OD 3 DO 6 LET

BIODYNAMIC CHARACTERISTICS OF THE RUNNING OF CHILDREN AGED 3 TO SIX YEARS

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ABSTRACT

The purpose of the study was to identify the biodynamic characteristics of the running motorics of children aged 3 to 6 years as well as the changes in this motor stereotype that occur in that age period. The sample consisted of 209 girls and boys aged 3, 4, 5 and 6 years from the Domžale area. The basic test consisted of a 10-metre run where we established the speed of the run, the stride length and frequency as well as the contact and flight times. We also considered the parameters of body height, leg length and body mass as well as the ability to throw a ball and perform a standing broad jump. The measurements of speed were made using the Opto-Track technology and the Brower-Timing infra-red photo cell system. We used the program Apas for the calculation of biodynamic parameters of running. Data processing was done using the program for statistical analysis SPSS. We calculated arithmetic mean, standard deviation, minimal and maximal result for each group of morphological and biodynamic variables. The relationship between variables was assessed by correlation analysis for each category of children aged from 3 to 6 years. We also established the strong dynamics of the development of running speed in this age period which is mainly a consequence of the correlation with the stride length and contact times. Body height and leg length importantly influence the running speed. At some of their ages, we found a statistically significant correlation between the standing broad jump and ball throw and the running speed of children at this age.

Key words: running, biodynamics, technique, locomotor speed, pre-school children

IZVLEČEK

Namen raziskave je bil ugotoviti biodinamične značilnosti tekaške motorike otrok starih od 3 do 6 let in spremembe tega gibalnega stereotipa, ki nastanejo v tem razvojnem obdobju. V vzorec merjencev je bilo zajetih 209 deklic in dečkov, starih 3, 4, 5 in 6 let iz Domžalske regije. Osnovni test je bil tek na 10 metrov, pri katerem smo ugotavljali hitrost teka, dolžino in frekvenco koraka ter kontaktne in letne čase. Pri tem smo upoštevali še parametre telesne višine, dolžine noge in telesne teže ter sposobnost v metu žoge in skoku v daljino z mesta.

Meritve hitrosti so bile izvedene s pomočjo merilne tehnologije Opto-track in sistema infrardečih fotocelic Brower - Timing Sistem. Biodinamične parametre teka smo izračunali z programom APAS. Vsi podatki so bili obdelani s standardnim statističnim programom SPSS. Za vsako skupino smo za morfološke in biodinamične spremenljivke izračunal aritmetično sredino, standardni odklon, minimalni in maksimalni rezultat. Povezave med spremenljivkami smo ugotavljali s korelacijskimi analizami za vsako kategorijo otrok od 3. do 6. leta starosti. Ugotovili smo izrazito dinamiko razvoja hitrosti teka v tem starostnem obdobju, ki je predvsem posledica povezanosti z dolžino koraka ter kontaktnimi časi. Telesna višina in dolžina noge pomembno vplivata na hitrost teka. Prav tako lahko pri nekaterih starostih ugotovimo značilno povezanost skoka v daljino z mesta in meta težke žoge s tekaško hitrostjo otrok v tem starostnem obdobju.

Ključne besede: tek, biodinamika, tehnika, lokomotorna hitrost, predšolski otroci

UVOD

Dolžina in frekvenca koraka sta pomembna parametra teka. Oba parametra sta medsebojno odvisna in individualno pogojena s procesi centralne regulacije gibanja, morfološkimi in fiziološkimi značilnostmi, motoričnimi sposobnostmi in energetskimi dejavniki. Tek je sestavljen iz repetitive korakov. Dosedanje raziskave govorijo, da je dolžina koraka predvsem odvisna od telesne višine oz. dolžine noge ter sile, ki jo razvijejo ekstenzorji kolčnega, kolenskega in skočnega sklepa v kontaktni fazi. Frekvenca koraka pa je odvisna od delovanja centralnega živčnega sistema na kortikalni in subkortikalni ravni in je genetsko močno determinirana. Razmerje med obema parametroma je pri posamezniku individualno definirano in avtomatizirano. Povečanje frekvence ima za posledico manjšo dolžino koraka in obratno. (Čoh, 2001; Čoh, 2009).

Tek je ena od najbolj naravnih oblik človekovega gibanja, ki se začne oblikovati že v zelo rani mladosti. Predmet pričujoče študije je bil ravno tek pri otrocih v predšolski dobi. V predšolskem obdobju se dogajajo najpomembnejše spremembe v otrokovem življenju. Poteka skokovit razvoj na vseh področjih, saj je vse, s čimer se srečuje, zanj novo. Posamezna področja otrokovega razvoja (telesno, gibalno, čustveno, spoznavno in socialno) pa so med seboj tesno povezana. Marjanovič - Umekova (2004) ugotavlja, da otrokovo doživljanje in dožemanje sveta temeljita na informacijah, ki izvirajo iz njegovega telesa, zaznavanja okolja, izkušenj, ki jih pridobi z gibalnimi dejavnostmi ter gibalno ustvarjalnostjo v različnih situacijah. Gibalni razvoj je v človekovem razvoju v ospredju predvsem v prvih letih življenja. Je odraz zorenja (na katerega vplivajo predvsem genetski, pa tudi okoljski dejavniki), ki določa univerzalno sosledje ponavljanja posameznih gibalnih sposobnosti v razvoju, ter posameznikovih izkušenj, ki vplivajo zlasti na hitrost doseganja mejnikov v

gibalnem razvoju. Nanj vplivajo rast, zorenje, izkušnje, učenje, adaptacija (Cemič, 1997; Škof 2007)

Zaradi še trajajočega procesa mielinizacije živčnih poti in centrov, ter posledično še ne natančno opredeljenih odgovornih mehanizmov regulacije gibanja, ne moremo z gotovostjo opredeliti, katera od motoričnih sposobnosti prevzema odgovornost pri manifestaciji določenih gibalnih nalog (Pišot, Šimunič, 2006). Ena izmed teh gibalnih nalog je torej tudi tek, ki se sprva pojavlja kot hoja. Kot je bilo že prej napisano, je tek sestavljen iz repetitive korakov. Čoh (2002), Malina (2004) ter Videmšek in Pišot (2007) pravijo, da do konca drugega leta večina malčkov dokaj usklajeno teče in skoči s tal z obema nogama. Prvi poskusi teka so zelo podobni hitri hoji, tako da je eno stopalo vedno na tleh. Otrokov noge so ob teku še vedno zelo toge, zato s celimi stopali izmenično trdo pristaja na tleh. Koraki so ob teku še različno dolgi, otroci pa imajo težave z ohranjanjem ravnotežja. V tretjem letu so otrokovi koraki med tekom vedno daljši in enakomernejši, še vedno pa ima težave s hitrim zaustavljanjem in spreminjanjem smeri teka. Tek je bolj vijugast, slabo koordiniran in traja le nekaj metrov. V prvi polovici četrtega leta se večina otrok lahko zaustavi v razdalji štirih metrov. V tem letu torej obvlada pravilno hojo, njegov korak je daljši, zanesljivejši, pogosto prehaja iz hoje v tek in obratno. Tek pogosto povezuje s skoki. V petem letu pa se otroci brez težav lahko hitro ustavijo ali spreminjajo smer tudi pri različnih igrar. Pet do sedem letni otrok ima zelo ugodna morfološka razmerja, ki mu omogočajo zelo dobre pogoje za njegove gibalne dejavnosti. Hoja in tek sta dobro koordinirana, otroci tečejo sproščeno in tudi tehnično pravilno. Srčno-žilni in dihalni sistem, ki sta v največji meri povezana z vzdržljivostjo otrok, imata velike prilagoditvene sposobnosti. Otroci so za tek zelo motivirani, če je le ta organiziran v obliki iger. Otrokova sposobnost teka se v obdobju celotnega otroštva razvija v skladu z njegovimi gibalnimi sposobnostmi (močjo, hitrostjo in koordinacijo gibanja).

Temeljni namen našega raziskovanja je bi ugotoviti in proučiti razvoj nekaterih morfoloških značilnosti in biodinamičnih značilnosti teka otrok starih od 3 do 6 let, predvsem z vidika razvoja frekvence in dolžine koraka, kontaktnih in letnih časov, telesne višine, telesne teže in dolžine nog. Osnovni test, ki smo ga uporabili v študiji, je bil tek 10 m z letečim startom. V nalogi smo si zastavili tudi naslednje cilje in hipoteze.

CILJI

1. Ugotoviti osnovne morfološke značilnosti (telesna višina, telesna teža, BMI) otrok starih od 3 do 6 let.
2. Ugotoviti osnovne biodinamične značilnosti teka otrok (hitrost teka, frekvenca koraka, dolžina koraka, kontaktni čas) starih od 3 do 6 let.
3. Ugotoviti razvoj nekaterih osnovnih motoričnih sposobnosti (skok v daljino z mesta, met žoge) otrok starih od 3 do 6 let

4. Ugotoviti povezanost morfoloških značilnosti, biodinamičnih značilnosti in testov osnovne motorike pri otrocih v starosti od 3 do 6 let.

HIPOTEZE

H1: Morfološke značilnosti otrok imajo pozitivno povezanost z rezultati tekaške motorike.

H2: Telesna višina je pozitivno povezana z dolžino koraka.

H3: Dolžina koraka in frekvenca koraka sta obratno sorazmerno povezani.

H4: Dolžina koraka je odvisna od trajanja kontaktne faze.

H5: Dolžina in frekvenca koraka se povečujeta z starostnim razvojem otrok.

H6: Kontaktni čas se skrajšuje z starostnim razvojem otrok.

H7: Otroci se glede na spol ne razlikujejo v parametrih tekaške motorike.

H8: Otroci se glede morfoloških značilnosti ne razlikujejo glede na spol.

METODE DELA

Vzorec merjencev

V raziskavo je bilo, po predhodni privolitvi staršev (izpolnili so obrazec o strinjanju testiranja njihovih otrok) in po dogovoru z vodstvom Vrtca Domžale vključenih 209 otrok, starih 3, 4, 5 in 6 let, iz osrednje slovenske regije – natančneje, iz domžalske občine. Otroci so bili razdeljeni po spolu in starosti.

Starost in spol	N	ATV	ATT
3 letni dečki	27	100,4cm +/- 3,8	16,1kg +/- 1,5
3 letne deklice	23	99,7cm +/- 3,7	15,5kg +/- 1,8
4 letni dečki	28	107,6cm +/- 3,7	18,9 +/- 1,8
4 letne deklice	43	107,5cm +/- 5,1	18,4 kg +/- 2,8
5 letni dečki	24	113,5cm +/- 5,4	20kg, +/- 2,8
5 letne deklice	23	114,1cm +/- 4,4	20,6 +/- 2,6
6 letni dečki	20	119,9cm +/- 5,3	24kg +/- 3,2
6 letne deklice	21	121,8cm +/- 3,95	24,3 +/- 3,5

Na osnovi predmeta in problema ter ciljev, ki smo si jih zastavili, smo v morfološkem podprostoru zajeli naslednje spremenljivke:

ATT – telesna teža

ATV - telesna višina

ADN – dolžina noge

V motoričnem prostoru pa smo zajeli naslednje spremenljivke:

TEK 10 M Z LETEČIM ŠTARTOM

SDM – skok v daljino z mesta

MTŽ – met težke žoge

METODA OBDELAVE PODATKOV

Podatki so bili zbrani in obdelani po standardni metodi obdelave, kot jo zahteva APAS. Pri statistični obdelavi podatkov smo uporabili programski paket SPSS. Za vsako skupino smo za vse spremenljivke izračunali aritmetično sredino, standardni odklon, minimalni in maksimalni rezultat. Izračunali smo še povezave med posameznimi izmerjenimi spremenljivkami na osnovi Pearsonovega koeficienta korelacije s stopnjo tveganja $p < 0.05$.

IZVEDBA MERITEV

Meritve smo izvajali meseca aprila in maja 2013. Vsak otrok je dvakrat izvedel test: tek na 10 metrov z letečim štartom, pri čemer smo merili kinematične spremenljivke: dolžino korakov, frekvenco korakov, čas in hitrost teka, kontaktni čas, čas leta. Vsem otrokom pa smo izmerili tudi morfološke spremenljivke: telesno težo (ATT), telesno višino (ATV), dolžino noge (ADN), skok v daljino z mesta ter met 1 kg težke žoge. Pri testih skok v daljino z mesta in met težke žoge je imel vsak merjenec dva poskusa. Meritve teka so bile opravljene v telovadnici vrtca Domžale, enote Gaj. Otroci so tekli v šolskih copatih. Pri meritvah smo uporabili tehnologijo – merilni sistem opto-track. Poleg tega pa tudi sistem infrardečih fotocelic (BROWER – Timing Sistem), s katerimi smo merili čase na vsakih 10 metrov. Meritve meta 1 kg težke žoge so bile opravljene na igrišču vrtca, v peskovniku. Meritve skoka v daljino so bile opravljene na posebnem 4-metrskem oblazinjenem traku, namenjenem merjenju skoka v daljino. Meritve TT, TV in DN pa so bile opravljene v igralnicah vrtca. Otroci so bili izmerjeni bosi. Merilni inštrument pri TT je bila tehnična Soehnle; Merilni inštrument pri TV in DN je bil 160 cm dolg merilni trak. Meritve je izvedla ekipa Fakultete za šport.

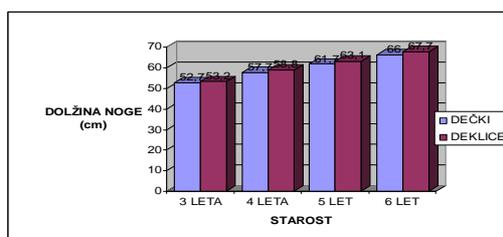
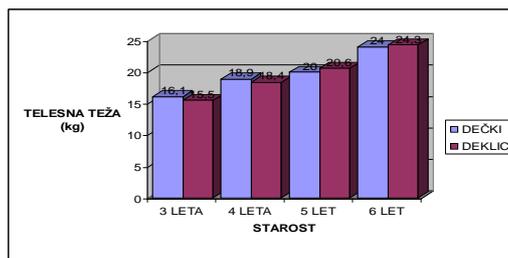
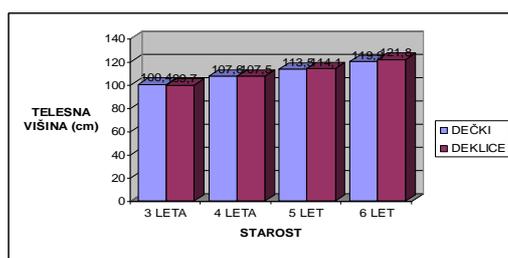
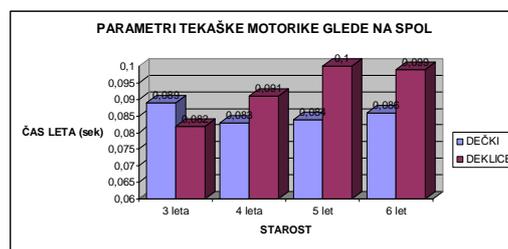
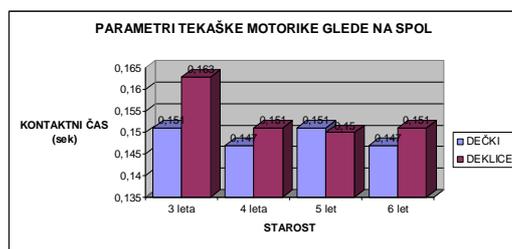
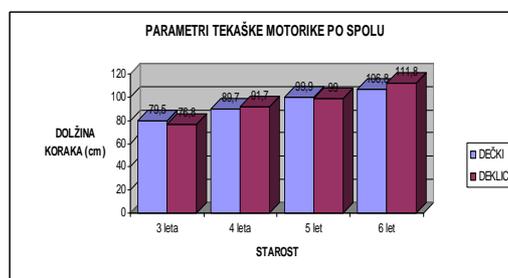
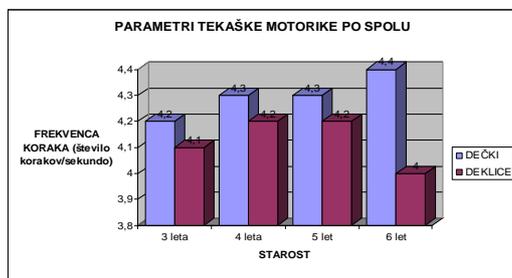
REZULTATI IN RAZPRAVA

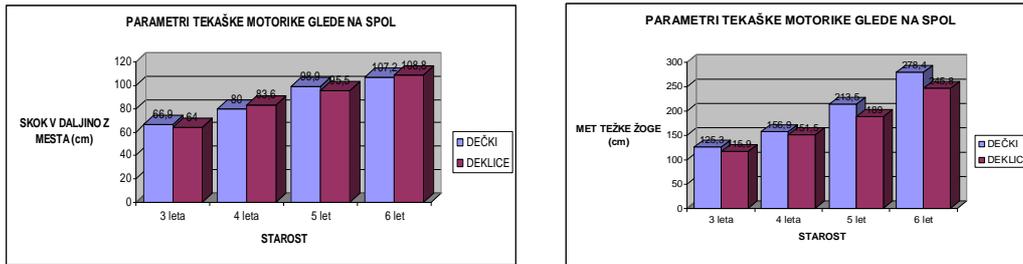
Ugotovili smo izrazito dinamiko razvoja hitrosti teka v tem starostnem obdobju, ki je predvsem posledica povezanosti z dolžino koraka ter kontaktnimi časi. Telesna višina in dolžina noge pomembno vplivata na hitrost teka pri 3 letnih deklicah, 4 letnih otrocih in 5 letnih dečkih. Prav tako lahko ugotovimo značilno povezanost skoka v daljino z mesta in meta težke žoge s tekaško hitrostjo otrok v tem starostnem obdobju.

Pred interpretacijo je treba posebej poudariti nekatere značilnosti, ki so se pojavljale pri meritvah. Predšolski otroci so v fazah razvoja, zato je bilo nekaj težav pri izvedbi meritev, kar lahko pomeni da, če bi bili otroci vajeni tovrstnih meritev, bi mogoče dobili drugačne

rezultate. Nekateri otroci namreč še ne znajo metati žoge in jih je bilo to potrebno naučiti. Nekateri otroci niso znali sonožno skočiti v daljino in jih je bilo tudi to potrebno naučiti. Nekateri otroci so se bali teči in je bil potreben poseben pristop ter motivacija, da so nalogo izvedli.

Ob interpretaciji video posnetkov sem prišla do nekaterih ugotovitev, in sicer: večina otrok je v prvem teku tekla bolje, kot v drugem teku. V drugem teku so tekli bolje 3 in 6 letni otroci. 3 letni otroci imajo korak krajši od enega metra, zato je bilo za interpretacijo rezultatov težje določiti levo ali desno nogo, ki se pojavi v 5. metru. Večina otrok ima različno dolga koraka desne in leve noge, redki so otroci, ki imajo koraka obeh nog enako dolga. Zelo redki otroci tudi tečejo z enakomerno frekvenco, kar je povezano z dolžino koraka.





Slika 1: Morfološki in biodinamični parametri teka na 10 m pri otrocih starih 3 do 6 let

Na osnovi meritev, ki smo jih opravili, lahko ugotovimo, da frekvenca koraka pri predšolskih otrocih, tako dečkih kot deklicah, rahlo narašča. Pri deklicah narašča do 5. leta, v 6. letu pa rahlo pade, pri dečkih pa do 6. leta naraste za 0,15 Hz. Rezultat, ki smo ga dobili pri deklicah je presenetljiv. Sklepamo dvoje: do takega rezultata je mogoče prišlo zaradi slabše koordinacije - v predšolskem obdobju otroci namreč hitro rastejo, zato se morajo tudi ves čas adaptirati na povečane telesne mere, kar pripomore k stalnemu navajanju na koordiniranje gibov; drugi razlog rezultata pa bi lahko bil krepko povečana dolžina koraka deklic v 6. letu. Pri deklicah se namreč dolžina koraka v treh letih poveča kar za 35 cm. Tudi pri dečkih se dolžina koraka močno poveča, vendar le za 27,3 cm. Dolžina in frekvenca koraka sta obratno sorazmerni spremenljivki - daljši korak ima za posledico manjšo frekvenco korakov (in obratno), iz česar lahko sklepamo na najverjetnejši razlog našega rezultata. Čas teka na 10 m se krajša, pri deklicah za 0,98 sek, pri dečkih za 0,82 sek. Čas leta se pri deklicah podaljša za 0,017 ms, pri dečkih pa se skrajša za 0,003 ms. Kontaktni čas se pri deklicah v treh letih skrajša za 0,012 ms, pri dečkih pa za 0,004 ms. Skok v daljino z mesta se med 3. in 6. letom močno poveča. Pri dečkih za 40,3 cm, pri deklicah pa za 44,8 cm. Tudi dolžina meta težke žoge se krepko poveča. Pri dečkih za 153,1 cm, pri deklicah pa za 129,9 cm. Telesna višina, telesna teža in dolžina noge v skladu z razvojem naraščajo. Telesna višina se poveča za 6-7 cm na leto, kar je za 1 cm več, kot navajajo številni avtorji raziskav. To povezujemo s tem, da se trend naraščanja telesne višine povečuje že v predšolskem obdobju. Telesna teža se v naši raziskavi med 3. in 4. letom pri dečkih poveča za 2,8 kg, pri deklicah pa za 2,9 kg. Med 4. in 5. letom se pri dečkih poveča za 1,1 kg, pri deklicah za 2,2 kg, med 5. in 6. letom pa pri dečkih za 4 kg, pri deklicah pa za 3,7 kg. Povečanje telesne teže je večje, kot so ugotovili avtorji (Strel in sod. 2002 – v Pišot, Šimunič, 2006) v dosedanjih raziskavah. V slovenskem prostoru je opazna pospešena rast v višino in pospešeno pridobivanje telesne teže pri osnovnošolskih otrocih. Iz naše raziskave pa je razvidno, da se ta trend pojavlja že tudi pri predšolskih otrocih. Ta podatek velja samo za osrednjo slovensko regijo, saj smo raziskavo naredili le v tej regiji.

Na podlagi korelacijskih tabel lahko podamo naslednje ugotovitve. Največ korelacijskih povezav imajo 5 letni dečki in 4 letne deklice. Čas teka je pri vseh starostih in obeh spolih visoko negativno povezan z dolžino koraka.

Pri treh letih so najvišje in statistično značilne korelacije med časom teka in dolžino koraka, časom teka in skokom v daljino z mesta ter med časom teka in kontaktnim časom. Dolžina koraka je statistično značilna in visoko povezana s časom teka in hitrostjo teka. Kontaktni čas je statistično značilen in visoko povezan s časom teka. Visoka povezanost, ki je statistično značilna, se pojavlja tudi med dolžino noge in telesno višino ter dolžino noge in telesno težo, pa tudi med telesno višino in telesno težo. To kaže na integralni morfološki razvoj otrok v tem starostnem obdobju (Malina, 2004). Prav tako lahko ugotovimo, da je tekaška motorika otrok v tem starostnem obdobju odvisna od telesne rasti in razvoja motoričnih sposobnosti. Pozitivna povezanost kontaktnih časov in časa teka kaže na povečano odzivno moč otrok.

Otroci pri štirih letih dosegajo visoke in statistično značilne korelacije med časom teka in dolžino koraka ter časom teka in kontaktnim časom. Dolžina koraka je v visoki korelaciji s časom teka in telesno višino. Kontaktni čas je v visoki korelaciji s časom teka in hitrostjo teka. Visoke in statistično značilne korelacije se pojavljajo tudi med telesno višino in dolžino noge ter med telesno višino in dolžino koraka. Prav tako med skokom v daljino z mesta in časom teka ter skokom v daljino z mesta in dolžino koraka.

Pri petih letih so visoke korelacije med časom teka in dolžino koraka ter časom teka in kontaktnim časom. Dolžina noge je v visoki korelaciji s telesno višino in telesno težo. V visoki in statistično značilni korelaciji pa sta tudi skok v daljino z mesta in met težke žoge. Testa sta tipična predstavnika hitre moči. Sklepamo lahko, da postaja eksplozivna moč ključni dejavnih učinkovitosti teka pri otrocih že v tem starostnem obdobju.

Pri šestletnih otrocih so visoke korelacije med časom teka in dolžino koraka ter med časom teka in kontaktnim časom. Dolžina koraka je v visoki korelaciji tudi s frekvenco koraka, frekvenca koraka pa tudi s časom leta. Visoka korelacija se pojavi tudi med telesno višino in telesno težo ter telesno višino in dolžino noge.

Pričakovali smo povezanost med frekvenco koraka in hitrostjo teka, vendar se je izkazalo, da se ta pojavi le pri 4 letnih deklicah, in še to je le srednje visoka povezana. Sklepamo, da je do takega rezultata prišlo zaradi dolžine koraka, ki se močno podaljšuje in kontaktnih časov, ki se skrajšujejo. Zanimiva je ugotovitev, da pri 6 letnih dečkih skok v daljino z mesta nima povezave prav z nobenim merjenim parametrom.

SKLEP

Na osnovi meritev in obdelave podatkov naše raziskave je mogoče ugotoviti, da tako dečki kot deklice v predšolskem obdobju močno napredujejo v parametru čas teka in dolžina

koraka, medtem ko se parameter frekvenca koraka ne spremeni v veliki meri. Pri deklicah se izboljšata parametra čas leta in kontaktni čas, predvsem v petem letu, ko dosežejo najboljši rezultat. Pri dečkih se v obeh parametrih pojavijo manjše razlike, rezultati celo nihajo. V skoku v daljino z mesta napredujejo tako dečki kot deklice. V tretjem letu dosežajo boljše rezultate dečki, v četrtem deklice, v petem dečki in v šestem zopet deklice. Razlika je zgolj v nekaj centimetrih. Največja razlika med spoloma se pojavlja v metu težke žoge, in sicer od petega leta naprej, razlika narašča v korist dečkov. Met težke žoge je pokazatelj hitre moči. Očitno se že v tem starostnem obdobju kažejo določene razlike med spoloma, ki so posledica anatomsko-fizioloških razlik med dečki in deklicami.

Med dečki in deklicami se torej pojavljajo določene razlike, vendar v zelo majhnih merah – gre le za nekaj centimetrov, kilogramov, milisekund. Pojavljajo se na način, ko v nekaterih parametrih dosežajo boljše rezultate dečki, v drugih pa deklice, torej še ne moremo splošiti, da so med dečki in deklicami razlike in da kateri od spola bolj napreduje. Predšolsko obdobje je obdobje, v katerem poteka razvoj na različnih področjih hkrati, zato je potrebno interpretirati rezultate bolj celostno. Hitra rast organskih sistemov, ki poteka v tem obdobju, hkrati poteka z zorenjem centralno živčnega sistema, ki je pri vsakem posamezniku na njemu lastni stopnji. Parametri so torej odvisni od mnogih področij, tudi od okolja, ki otroku omogoča/ne omogoča raznovrstne gibalne izkušnje.

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KAPLJICA MIGA – CENTER AKTIVNOSTI V VODI

KAPLJICA MIGA – CENTRE OF WATER ACTIVITIES

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IZVLEČEK

Kapljica Miga je zamisel za podjetje, ki je nastala, kot seminarska naloga v okviru predmeta na fakulteti. Podjetje bi ponujalo različne aktivnosti v vodi za ljudi vseh starosti. Ponudba aktivnosti in ozadje podjetja sta predstavljena v prvem delu članka. V uvodu sta predstavljena tudi teoretična ozadja o pomenu gibalne dejavnosti za otroke ter razlike in prednosti vadbe v vodi v primerjavi z vadbo na kopnem. V glavnem delu prispevka sta predstavljena Aqua Zumba in plavalni tečaj; dve dejavnosti, ki naj bi jih podjetje Kapljica Miga ponujalo za otroke. V članku je opisano ozadje Aqua Zumbe, predstavljeni so učinki takšne vadbe na človeško telo in sestava vadbene enote. V poglavju Plavalni tečaj je definirano plavanje, opisani so tečaji za posamezno starostno skupino in podan je primer vadbene enote na plavalnem tečaju.

Ključne besede: vodne aktivnosti, Aqua Zumba, plavalni tečaj

ABSTRACT

Kapljica Miga is the idea for the company, which was created as seminar at a course on the faculty. Company would offer a variety of water activities for people of all ages. Offered activities and background of the company are presented in the first part of the article, as well as the theoretical background of the importance of physical activity for children and the differences and benefits of exercise in water compared to exercise on land. In the main part of the article are presented Aqua Zumba and swimming course; two activities, which would company Kapljica Miga offer for children. In this article, there is described the background of Aqua Zumba, presented are the effects of such workout on the human body and the composition of the training unit. In chapter Swimming course is defined swimming, described are the courses for each age group and given is the example of training unit at the swimming course.

Key words: water activities, Aqua Zumba, swimming course

UVOD

V članku bom predstavila poslovno idejo, ki sem jo ustvarila in podrobno opisala pri predmetu Pedagoške, andragoške in didaktične osnove v kineziologiji v sklopu učnega programa Aplikativne kineziologije na Fakulteti za matematiko, naravoslovje in informacijske tehnologije. Naloga je predstavila vsebinsko plat centra vodnih aktivnosti Kapljica Miga, ki uporabnikom ponuja različne dejavnosti v vodi. Podjetje bi ponujalo širok spekter različnih vodnih aktivnosti, kot so: Aqua Zumba, vodna aerobika, vodni fitnes, vadba v vodi za nosečnice, vadba v vodi za seniorje in plavalni tečaj. Ker so bile aktivnosti podjetja namenjene vsem starostnim skupinam, bom idejo prilagodila ter se v tem članku osredotočila na dejavnosti namenjene otrokom. S tem bo dosežen cilj prispevka, predstaviti tržno priložnost vključevanja mlajših v vodene vadbe, ob upoštevanju teoretskih paradigem stroke. Videmšek in Visinski (2001) opisujeta gibalno dejavnost, kot eno najpomembnejših področij v otrokovem razvoju, saj otrok z gibalno dejavnostjo razvija gibalne, funkcionalne, spoznavne, socialne in čustvene sposobnosti. Avtorici dodajata, da lahko z ustrezno izbranimi programi, oblikami in metodami dela na ta področja tudi pozitivno vplivamo. K temu bi stremelo tudi podjetje Kapljica Miga z ustrezno usposobljenim kadrom in dejavnostmi, ki bi bile prilagojene otrokovim sposobnostim, lastnostim in potrebam.

Posebnost podjetja Kapljica Miga bi bila tudi v tem, da bi vse aktivnosti potekale v vodi. Gibanje v vodi se razlikuje od gibanja na kopnem. Šajber (2006) pravi, da v vodi ravnotežje ohranjamo brez čvrste podlage, otežene so možnosti za dihanje, spremenjeno je zaznavno-gibalno delovanje, skelet je manj obremenjen, srčno-žilni sistem deluje v drugačnih razmerah, energijska poraba pa je večja. Knopf (2012) prednostim vadbe v vodi v primerjavi z vadbo na kopnem dodaja manjšo možnost poškodb, boljši spanec, boljšo držo telesa, izboljšano samopodobo, zmanjšanje stresa in napetosti, socializacijo ter nova prijateljstva.

AQUA ZUMBA

Hoeger W. in Hoeger S. (2013) opisujeta zumbo, kot novejši plesni fitnes program, ki ga je v sredini devetdesetih let ustanovil Alberto »Berto« Perez v Kolumbiji. Zaradi priljubljenosti so zumbo leta 1999 iz Kolumbije prenesli v Združene države Amerike in nato še v druge države po svetu. Zumba združuje dve zvrsti glasbe, latinskoameriško in popularno glasbo (cumbia, salsa, merengue, reggaeton, tango, rock and roll,...), s plesom, da je vadba bolj zabavna. Sprva je vadba potekala na kopnem, kasneje, ko so se razvile različne vrste zumb, pa tudi v vodi – Aqua Zumba.

Matthews (2012) opisuje zumbo, kot zabaven način dviga srčnega utripa, izboljšanja ravnotežja in agilnosti ter krepitve spodnjega dela telesa in trupa. Isti avtor dodaja, da zaradi latinskoameriške glasbe krepimo občutek za ritem in koordinacijo. Glasbene prvine, kot so

ritem, tempo in harmonija, Pišot in Jelovčan (2006) opisujeta, kot dejavnike, ki v otroku sproščajo čustva, ki poglobljajo doživljanje plesnih dejavnosti.

Pri Aqua Zumbi so uporabljena zelo podobna gibanja, kot pri navadni zumbi, le da so koraki izvedeni počasneje zaradi upora vode, kar pa naredi vadbo nižje intenzivno.

Aqua Zumba za otroke bi bila namenjena osnovnošolskim otrokom, ki bi pod strokovnim vodstvom usvajali osnovne zumba korake v vodi. Glasba, koreografije in plesni koraki bi bili posebej prilagojeni njihovi starosti. Namen Aqua Zumbe za otroke je skozi latinskoameriško in popularno glasbo ter osnovnimi zumba koraki navdušiti otroke za rekreacijo v vodi ter zabava in sprostitev v družbi prijateljev.

Vadbena enota Aqua Zumbe bi trajala 45 – 60 minut. Pričela bi se z ogrevanjem, katerega cilj bi bil ogreti in pripraviti telo na nadaljnji napor. Ogrevanju bi sledil glavni del, ki bi temeljil na principu intervalnega treninga. Izmenjevali bi se različni zgoraj omenjeni glasbeni ritmi v hitrejšem in počasnejšem tempu. Vadba bi se zaključila s sklepnim delom v katerem bi z različnimi vajami ohladili telo.

Aqua Zumbo bi vodil inštruktor aqua zumbe, ki je pridobil licenco na izobraževanju v okviru strokovnega izobraževanja pri Zumba Fitness, LLC.

PLAVALNI TEČAJ

»Plavanje predstavlja človekovo obvladovanje vode z lastnimi silami, ki mu omogočajo varno gibanje v želeni smeri na vodni gladini ali pod njo« (Kapus, 2001). Hoeger in Hoeger (2012) opisujeta plavanje kot aerobno vadbo, ki vključuje vse glavne mišične skupine. Avtorja dodajata, da je plavanje dober način vadbe za tiste, ki ne zmorejo dalj časa hoditi ali teči.

Kapus (2001) loči učenje plavanja glede na razvojna obdobja na programe učenja plavanja za:

- dojenčke (od prvega meseca do 2. leta),
- malčke (od 2. do 4. leta),
- starejše predšolske otroke (od 4. do 6. leta),
- mlajše šolarje (od 6. do 10. leta),
- starejše šolarje (od 10. do 14. leta),
- dijake (od 14. do 18. leta),
- odrasle (od 18. do 60. leta) in
- seniorje (nad 60. letom).

Podjetje Kapljica Miga bi nudilo učenje plavanja za starejše predšolske otroke, mlajše šolarje, starejše šolarje in seniorje.

Plavalni tečaj za starejše predšolske otroke bi bil primeren za otroke od 4. do 6. leta starosti. Začetne ure plavalnega tečaja bi bile namenjene prilagajanju v vodi, kasnejše pa učenju plavalnih tehnik. Učenje bi potekalo z uporabo raznovrstnih plavalnih pripomočkov, vendar bi bil cilj tečaja, da po opravljenem tečaju otroci samostojno plavajo brez uporabe pripomočkov. Cilj plavalnega tečaja za mlajše šolarje bi bil usvojitve osnovnih tehnik prsnega plavanja, hrbtne plavanja, kravla in tehnike delfin. Udeleženci tečaja bi se naučili tudi skokov v vodo, osnovnih obratov in starta. Plavalni tečaj za starejše šolarje bi bil namenjen otrokom med 10. in 14. letom, ki so že usvojili osnovno znanje plavanja. Udeleženci tečaja bi nadaljevali z učenjem osnovnih tehnik prsnega plavanja, hrbtne plavanja, kravla in tehnike delfin. Poleg plavalnih tehnik bi se učili tudi nadvodnih obratov za vsako tehniko in skokov v vodo.

Plavalni tečaj pri podjetju Kapljica Miga bi potekal dvakrat tedensko po eno uro za vse starostne skupine. Plavalne tečaje bi vodil učitelj plavanja, ki si je licenco za učenje pridobil pri Plavalni zvezi Slovenije. Na plavalnem tečaju bi uporabljali različne plavalne pripomočke s katerimi bi omogočili otrokom lažje gibanje v vodi in popestrili učenje plavanja. Šajber (2006) našteva naslednje plavalne pripomočke, ki bi jih uporabljali tudi pri podjetju Kapljica Miga: plavalni obroči, rokavčki, napihljivi jopiči, plavalne žoge, baby sedeži, Fredovi plavalni obroči, plavuti, plavalne deske različnih oblik, plovci, pasovi, plavajoči penasti tulci oziroma t.i. »črvi«.

ZAKLJUČEK

Podjetje Kapljica Miga bi ljudem omogočalo strokovno vodeno vadbo v vodi. Zaradi pestre ponudbe dejavnosti bi lahko vsak posameznik zase našel vadbo, ki ga veseli in v kateri uživa, poleg tega pa bi tudi za svoje zdravje naredil nekaj koristnega. Dejavnosti, ki so namenjene otrokom, vplivajo na otrokov celosten razvoj in mu med drugim omogočajo razvoj gibalnih sposobnosti, usvojitve novih gibalnih znanj, socializacijo, nova prijateljstva, boljšo samopodobo in boljšo telesno držo. Pri Aqua Zumbi bi vadeči s plesom na latinskoameriško in popularno glasbo v vodi krepili glavne mišične skupine, povečevali občutek za ritem in koordinacijo, predvsem pa se zabavali in navdušili nad vadbo v vodi. Poleg Aqua Zumbi bi podjetje Kapljica Miga otrokom ponujalo tudi plavalni tečaj, kjer bi se otroci naučili plavati, starejši pa bi svoje znanje plavanja utrdili in nadgradili z učenjem osnovnih tehnik plavanja. Vse dejavnosti, ki bi jih ponujalo podjetje, bi bile vodene s strani strokovno usposobljenih vaditeljev oziroma učiteljev, ki imajo občutek in smisel za otroke.

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SMUČARSKI TEČAJ KOT DODATNA DEJAVNOST V VRTCU

SKI COURSE AS AN ADDITIONAL ACTIVITY IN THE KINDERGARTEN

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POVZETEK

V času od 25.1. do 25.2.2014 smo v sklopu vrtca Vrhovci izvajali dodatno dejavnost – smučarski tečaj, je bil organiziran in voden s strani zaposlenih vrtca. Tečaj je potekal kontinuirano štiri zaporedne sobote, izvajali pa smo ga na različnih lokacijah, na Pokljuki, v Kranjski Gori in na smučišču Velika dolina. Delo na snegu je potekalo od 9h do 13h. V smučarski tečaj je bilo vključenih 40 otrok vrtca Vrhovci, iz različnih enot in oddelkov, starosti 4-6 let. Otroci so imeli različno smučarsko znanje, od popolnih začetnikov, do tistih ki so t.i. samostojni smučarji. Otroke smo tako, glede na izpolnjen vprašalnik o znanju smučanja, razdelili v homogene smučarske skupine, upoštevajoč smučarsko predznanje prijavljenih otrok. Učenje smučanja je sledilo principom slovenske alpske šole smučanja, z upoštevanjem specifik učenja predšolskih otrok. Tako so otroci preko igre usvajali znanje in se prilagajali na opremo in sneg, se spoznavali z osnovnimi oblikami drsenja, prenašali težo, spreminjali smer in nenazadnje navezovali zavoje ter se vzpenjali s pomočjo traku ali vlečnice. Tečaj so z navdušenjem sprejeli tako otroci kot njihovi starši. Slednji so že pobudniki novih idej športnih dodatnih dejavnosti v vrtcu.

Ključne besede: smučarski tečaj, predšolski otrok, organizacija

ABSTRACT

Ski course was organized between 25th of January and 2nd of February 2014. It was organized as an additional activity for kindergarten children. It was organised and run by the kindergarten staff. Ski course was held continuously for four consecutive Saturdays at different ski resorts – Pokljuka, Kranjska Gora and Velika dolina. Work on the snow held from 9am to 1pm. Forty preschool children were included from different units and departments, aged 4-6 years. Children have had different skiing skills, from complete beginners to those who can be called independent skiers. Children were divided into homogeneous groups by skiing skills. Prior to the course parents filled up a questionnaire about their child skiing skills and experiences on the snow. Ski course followed the principles of Slovenian alpine ski school, taking into account the specifics of teaching preschool children. Through games, children were adapting to the ski equipment and snow. They were faced with the basic forms

of sliding, transferring weight, changing direction and ultimately connecting turns. They assimilated to the stripe and T-bars. Both, children and their parents were excited about the course. Parents already suggest new ideas for sports enrichment activities in kindergarten.

Keywords: ski course, preschool children, organization

UVOD

Potrebi po gibanju in igri sta primarni otrokovi potrebi. Z gibanjem telesa je pogojeno zaznavanje okolice, prostora, časa in samega sebe. Ko otrok začne obvladovati svoje roke, noge in trup, sčasoma začneja čutiti veselje, varnost, ugodje, se dobro počuti, pridobi samozaupanje in samozavest (Kurikulum za vrtce, 1999). Gibalni razvoj je v ospredju predvsem v prvih letih življenja in poteka od naravnih in preprostih oblik gibanja do sestavljenih in zahtevnejših športnih dejavnosti. V predšolskem obdobju otroci z igro pridobivajo raznovrstne gibalne izkušnje, ki jim prinašajo veselje in zadovoljstvo (Kurikulum za vrtce, 1999). Med cilji v kurikulumu za vrtce je opredeljena tudi igra in gibanje na snegu, z in brez rekvizitov. S smučarskim tečajem smo otrokom omogočili in jih načrtno pripravljali na koordinirano gibanje na snegu – kompleksno športno dejavnost. Glede na to, da se vse vrtčevske skupine ne odločajo za zimsko obliko bivanja v naravi, smo s ponujeno dodatno dejavnostjo – smučarskim tečajem, dali možnost zainteresiranim otrokom in staršem iz različnih enot in oddelkov, da se pridružijo smučarskim dnevom pod organizacijo vrtca.

Učenje alpskega smučanja predšolskih otrok

Učenje alpskega smučanja predšolskih otrok sledi slovenski alpski šoli smučanja z določenimi specifikami upoštevanja gibalnega, emocionalnega in psihosocialnega razvoja predšolskega otroka. Pri učenju smučanja predšolskih otrok je tako potrebno upoštevati ne le razvojnih zakonitosti, temveč tudi sposobnosti posameznega otroka ter njegovo dedno opremljenost, spodbudnost okolja, že pridobljena znanja, karakter, čustva, morfološke značilnosti, motorične sposobnosti, kognitivne sposobnosti, zdravstveni status, funkcionalne sposobnosti in socialni prostor. Zanimariti pa ne gre niti pozitivnega transferja iz drugih gibalnih dejavnosti, ki ga lahko prenesemo na učenje smučanja (Pišot, 2012). Usvajanje smučarskega znanja pri predšolskih otrocih temelji na igri in zabavi na smučeh, seveda z upoštevanjem vseh varnostnih pravil, ki veljajo na smučišču. Hkrati pa ne smemo pozabiti na izziv pridobivanja novih gibalnih znanj. Razsežnost gibalne učinkovitosti pri alpskem smučanju prehaja od natančnosti, (kontrolne) hitrosti, pravočasnosti, ritma do mehke koordiniranega zavoja (Pišot, 2012).

Metodika učenja smučanja mlajših otrok

1. Prvi stik z otroki – navezovanje komunikacije in motiviranost otrok
2. Prihod na mesto vadbe in pregled opreme
 - a. Organizacija transporta
 - b. Pregled ustreznosti opreme otrok
3. Prilagajanje na smučarsko opremo, splošno ogrevanje, kompleks gimnastičnih vaj
 - a. Navajanja na oblačila, čelado, rokavice
 - b. Interakcija s snegom
 - c. Izvedba kompleksa gimnastičnih vaj
4. Prilagajanje na smučarske čevlje
 - a. Krajši sprehod (od avtobusa do smučišča)
 - b. Tekalne igre, štafetne igre in poligoni
5. Prilagajanje na smuči – podaljšano stopalo
 - a. Vpenjanje smučarskega čevlja na smučko – prsti-peta
 - b. Različna drsenja na mestu, dvigovanje ene smuči, poskoki, hoja s smučko, prestopanje okoli svoje osi, skiro, vaje v parih, trojkah,... (najprej vse samo z eno smučko, nato z obema).
6. Drsenje s smučmi na ravnini
7. Padci in vstajanje
 - a. Na ravnini in na zelo položnem terenu
8. Vzpenjanje v breg
 - a. Smuči so v vodoravnem položaju pravokotno na vpadnico
 - b. »smrekca«
9. Smuk naravnost
 - a. Osnovni položaj – uravnotežen položaj telesa
 - b. Spreminjanje težišča (prenos teže levo-desno) – rahle spremembe smeri
10. Zaustavljanje – plužni položaj smuči in prenos teže
11. Smuk poševno – prečenje smučišča (pomen varnosti)
 - a. Izvajanje pluženja med prečenjem in varno zaustavljanje na robu
12. Bočno drsenje – nastavek in popuščanje robnikov
13. Prenos teže na ravnini in blagi naklonini
14. Klinasti lok – zavoje k bregu
 - a. Pahljača zavojev
 - b. Gibanje gor-dol, prenos teže
15. Navezovanje klinastih zavojev
16. Zavoje s klinastim odzivom
17. Osnovno vijuganje

18. Uporaba smučarske vlečnice

- a. Tekoči trak
- b. Vlečnica – imitacija potega, odpravljanje napak (Kranjčič, 2012).

Poleg prilagojene metodike in predstavljanja smučarske storitve, so pri mlajših otrocih zelo pomembni tudi didaktični pripomočki, saj pomagajo vzdrževati raven motivacije, zlasti pri tistih otrocih, ki nimajo visoke ravni notranje motivacije. Razlaga mora biti primerna starosti in razumevanju otrok, bolj kot sama razlaga pa odtehta demonstracija učitelja in sprotno popravljanje med samo vožnjo. Vendar pri popravljanju ne smemo pozabiti, da je pohvala veliko bolj spodbudna od graje (Pišot, Kipp in Supej, 2010).

Organizacija in izvedba smučarskega tečaja

Oblikovanje predloga

V tem šolskem letu (2013/2014) je delo strokovne sodelavke za dodatno strokovno pomoč otrokom s posebnimi potrebami, v našem vrtcu opravljala sodelavka, ki ima poleg specialno pedagoške izobrazbe tudi izobrazbo profesorice športne vzgoje. Od tu do ideje, da bi to leto (pri nas je bila le za eno leto, za čas nadomeščanja porodniške) popestrili športno dogajanje v našem vrtcu, je bil le korak. Naša strokovna sodelavka je z velikim veseljem bila pripravljena sprejeti vlogo vodje tečaja. Za pomoč pri organizaciji in izvedbi tečaja sva se takoj javili še dve vzgojiteljici, ki nama je delo z otroki na gibalnem področju v veselje in izziv. Za učenje otrok smo pridobili tudi licencirane učitelje smučanja. Brez podpore vodstva vrtca, seveda ne bi šlo. Ko jim je bila ideja predstavljena, so jo tudi oni z navdušenjem podprli.

Zbiranje prijav

Staršem smo predlog o smučarskem tečaju najprej predstavili na Svetu staršev, po njihovem zelo pozitivnem odzivu pa smo nadaljevali z obvestili staršem s plakati, poleg katerih so bile na voljo tudi prijavnice. Zanimanje staršev za tečaj je bilo na naše prijetno presenečenje veliko, zato so bila mesta hitro zapolnjena. Število mest je bilo omejeno s številom mest na avtobusu.

Sestanek s starši

Po preteku roka za prijave oz. po zapolnitvi mest, smo za starše organizirali informativni sestanek, kjer so bili obveščeni o poteku tečaja, poleg tega pa so imeli možnost tudi izraziti svoje mnenje, dileme, predloge. Na sestanku smo bile prisotne vodja tečaja, obe spremljevalki in ravnateljica vrtca. Slednja je predstavila formalnosti (podpis pogodbe, možnosti odpovedi pogodbe, zavarovanje, prevoz...), vodja tečaja pa je predstavila strokovni del izvedbe tečaja (potek smučarskega izleta, program dela na snegu, potrebna oprema, ...).

Učitelji smučanja

Poleg sestanka s starši smo organizirali tudi sestanek s smučarskimi učitelji, na katerem smo se dogovorili o njihovi stalni pristnosti na tečaju, za vse štiri planirane dni izvedbe. Na sestanku so jim bile predstavljene skupine otrok, dogovorili smo se kdo bo vodil katero od skupin (začetniki, nadaljevalci...), da so lahko temu ustrezno pripravil svoj načrt za delo z otroki na snegu. Dogovorjeno je bilo tudi, kako bo poskrbljeno za logistični del poteka tečaja – vodenje otrok na stranišče, animacija otrok, ki predčasno prenehajo z učenjem, razdeljevanje malice... Za ta del, sva poskrbeli obe vzgojiteljici, ki sva bila prav tako prisotni na sestanku z učitelji, zato da smo lahko sproti usklajevali predloge za način dela na smučišču, zaradi česar je učenje lahko potekalo čim bolj neovirano.

Avtobus

Za avtobusni prevoz smo se dogovorili z avtobusnim prevoznikom, s katerim vrtec večkrat sodeluje in je pri izvedbi tega tečaj pokazal veliko mero fleksibilnosti, saj smo v bili dogovorjeni, da v primeru odpovedi tečaja (npr. slabo vreme) to lahko naredimo še dva dni pred odhodom. Sicer pa smo rezervacijo avtobusa urejali en teden pred odhodom, za vsak smučarski izlet sproti.

Zavarovanje

Otroci in spremljevalci smo bili zavarovani za primer:

- nezgodne smrti,
- trajne izgube splošne delovne sposobnosti,
- prehodne nesposobnosti za delo,
- nadomestilo za bolnišnični dan,
- odgovornost sklenitelja proti zavarovanim osebam,
- odgovornost sklenitelja za poškodovane stvari.

Malica

Za malico, ki je vključevala čaj, sadno in čokoladno rezino, sendvič in sadje je poskrbel vrtec. Malico smo skupaj s smučarsko opremo zjutraj prinesli na smučišče. Prvi obrok – sadje – smo zaužili že takoj po prihodu (9:00), naslednji obroki je bil ob 11:00, zadnji pa ob 13:00 pred odhodom domov. Pri pripravi hrane so bile upoštevane tudi potrebe otrok z dietami, kar ni zanemarljivega pomena, s čimer so bili preprečeni nepotrebni zdravstveni zapleti.

Izbira lokacije

Lokacija je bila po strokovni presoji vodje tečaja izbrana na podlagi poznavanja slovenskih smučišč, ki imajo primeren teren za učenje otrok smučarjev začetnikov. Poleg tega pa smo upoštevali tudi vremensko napoved in stanje na cestah.

Izbira datumov

Termin izvedbe tečaja je bil v prvi vrsti izbran glede na termin šolskih počitnic in je bil zato izbran mesec dni pred začetkom le-teh, saj smo se želeli izogniti pretirani gneči na smučišču.

Na izbiro datumov pa je vplivalo tudi vreme, zaradi katerega smo prestavili en smučarski izlet.

Delo na snegu

Po prihodi na izbrano lokacijo je celotna ekipa spremljevalcev (učitelji smučanja, vzgojiteljski kader) otrokom pomagala pri nameščanju opreme – dodatne nogavice, podkape, čelade, smučarska očala, smučarski čevlji, rokavice – in se nato odpravili do smučišča, kjer smo najprej pojedli sadno malico, po njej pa smo imeli skupno ogrevanje na snegu – kompleks gimnastičnih vaj, enostavne igre lovljenja. Nato so bili otroci razdeljeni v skupine, kjer je vsak učitelj začel s svojim načrtanim programom učenja smučanja.

Analiza in pomanjkljivosti

Gledano v celoti, predvsem pa z vidika zadovoljstva večine staršev in zadovoljstva ter pridobljenega smučarskega znanja otrok, je smučarski tečaj kljub nekaterim zapletom dobro uspel.

V času izpeljave tečaja se je zaradi slabega vremena zamaknil termin izvedbe zaradi česar se je nekoliko spremenila prvotna učiteljska zasedba, kar pa na srečo zaradi že prej predvidenih možnosti zamikanja terminov, ni bil večji problem saj smo imeli že predhodno izbran tandem rezervnih učiteljev.

Izvedba tečaja je nosila s seboj še idejo, sodelovanja s skladom vrtca Vrhovci. Sklad deluje po principu nadstandarda, za dejavnosti, ki jih vrtec iz rednega financiranja ne more omogočiti oz. za tiste dodatne dejavnosti ki niso v okviru predpisanega programa. V vrtcu Vrhovci se denar v prioritetno namenja za pomoč otrokom iz socialno ogroženih družin. Torej plačevanju prispevka za vrtec v naravi, plačilo predstav, izletov, prevozov, ipd.

Cena tečaja je bila pod konkurenčna, kljub vsem predvidenim stroškom pa bi del denarja ostal za prispevek skladu vrtca, z namenom nakupa nove športne opreme. Zaradi številnih odpovedi udeležbe zaradi bolezni otrok pa je bil ta namen žal onemogočen.

ZAKLJUČEK

Smučarski tečaj kot dodatna dejavnost je bil v vrtcu velik uspeh. Udeležilo se ga je 40 otrok starosti 4-6 let. V spremstvu petih učiteljev smučanja in dveh vzgojiteljic ter pod budnim očesom ravnateljice vrtca, smo izpeljali 4 smučarske izlete. Uspešni so bili prav vsi mladi smučarji, saj so se tudi čisti začetniki v štirih dnevih tečaja naučili vožnje z vlečnico, samostojnega vijuganja in zaustavljanja. Otroci so ob koncu tečaja dobili diplome, ki so jih ponosno razkazovali staršem, prav tako pa tudi ostalim otrokom v vrtcu in vzgojiteljicam. Glede na uspešnost izpeljanega smučarskega tečaja, si obetamo lastno organizacijo tudi nadaljnjih smučarskih tečajev in še kakšne druge športne dodatne dejavnosti v vrtcu.

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JOGA IN OTROCI – KRATKA PREDSTAVITEV JOGE ZA OTROKE Z ANALIZO MNENJ O NJENIH KORISTIH

YOGA AND CHILDREN – INTRODUCTION TO YOGA FOR CHILDREN AND OPINION SURVEY ON ITS BENIFITS

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IZVLEČEK

V šolah in vrtcih, pa tudi športnih centrih se v zadnjem času vedno pogosteje pojavlja vadba joge za otroke. Ponujena je samostojno kot krožek, interesna dejavnost, lahko pa se prepleta med druge dejavnosti, npr. pri predmetu šport, kot aktivni ali sprostilni odmor v šoli ali vrtcu, uvodna motivacija za obravnavo novih vsebin, oblika dejavnosti za delo z otroki s posebnimi potrebami, kot del treninga drugih športov (plezalcev, plesalcev, karateistov ...) ipd. V članku sem predstavila njene zgodovinsko filozofske okvire, posebno pozornost pa posvetila oblikam in ciljem joge, kot jo izvajamo danes v svojem okolju. Z rezultati ankete sem prikazala, kako naključno izbrani anketiranci opredelijo jogo za otroke, kakšne imajo izkušnje z njo, če jih imajo, ter kakšno je njihovo mnenje o koristnosti tovrstne vadbe.

Ključne besede: otroška joga, netekmovalna dejavnost, telesna aktivnost, moč in gibljivost, osredotočenost, celovito harmonično odraščanje.

ABSTRACT

There has been an enormous increase of interest for yoga for children lately as an activity practiced in kindergartens, schools and sports centers. Whether it is brought as an independent class, scholar activity or it is integrated in other activities, as part of physical education classes, productive school / kindergartens breaks, starting motivation in studying new subjects / elements, as a working tool with physically challenged children, as an additional activity to some sports disciplines (climbing, dancing, karate, ...) etc. The article introduces the philosophical frames of yoga practice through history. It focuses on ways and goals of yoga in the way it is practiced today in our environment. The results of the survey show how randomly chosen respondents define yoga for children, how familiar they are with it if at all, and what benefits it brings according to their opinion.

Keywords: yoga for children, uncompetitive activity, physical activity, power and mobility, focus, integrated harmonious growing up

UVOD

Približujemo se zaključku prvega stoletja, odkar se je joga iz indijskega podkontinenta začela širiti na zahod. Tako med odraslimi kot med otroki se vedno pogosteje pojavlja v našem okolju in nagovarja k izvajanju tehnik za doseganje ravnovesja telesa, uma in duha. Dejstvo je, da na prvi pogled večina jogijskih praks na zahodu danes v marsičem spominja na vrsto telovadbe. Po drugi strani pa vemo, da je joga veliko več od tega. Ta, na videz enostavna telesna vadba, prinaša številne koristi, ki močno presegajo le krepitev mišic in gibljivost sklepov. Ker pa govorimo, da se tisti drugi del nanaša na razumevanje uma in duha in dvigovanju ravni zavedanja, se hitro spotaknemo ob temo o neotipljivem in težko dokazljivem. V trenutku, ko se dotaknemo neotipljivih stvari oz. bolje rečeno tem, ki zahtevajo višje ravni zavedanja, se razumevanje koristi spremeni v nekaj, kar posameznik verjame ali ne, torej »vero«. In če to vero povežemo še z religijo prebivalstva, od koder dejavnost prihaja, se pogosto zgodi, da se joga celo poveže z religijo vzhoda. Namen članka ni opredeljevati, kaj joga je in kaj joga ni. Ker pa se dejavnost v različnih oblikah vedno pogosteje pojavlja med otroki našega okolja je, kot za vsako drugo dejavnost naših otrok, vseeno smiselno poglobiti v njeno zgodovinsko ozadje, predvsem pa predstaviti oblike in cilje joge tukaj in zdaj. Z izvedbo ankete bomo ugotavljali, kolikšen delež naključno anketiranih se ukvarja z jogo, pozna jogo za otroke ter kakšna so njihova mnenja o njenih koristih.

Temelji joge segajo več tisoč let nazaj v zgodovino. Joga se prvič pisno omenja v Vedah (obsežna zbirka besedil, nastala na indijskem podkontinentu) kot izraz, ki pomeni nekaj povezati. Beseda *yoga* pomeni »enost« ali »edinost« in izhaja iz sanskrske besede *yui* (združiti), (Saraswati, 1998). V kasnejših tekstih najdemo izraz joga kot tehniko ali pot, samodisciplinirano dejavnost, skozi katero lahko posameznik stabilnejše, bolj harmonično in bolj polno zaživi. V Sutrah o jogi njen avtor Patandžali razdela tovrstno disciplinirano dejavnost na več »poglavij«, ki zajemajo moralne nauke, dihalne tehnike, tehnike utišanja uma in čustev, vadbo usmerjanja fokusa, tehnike meditacij ter v telo usmerjeno vadbo. Navedeno je, da je za doseganje samorealizacije, celostnega in popolnega življenja smiselno zajeti vse komponente, začnemo pa lahko pri katerikoli od njih.

Na zahodu se je joga uveljavila predvsem kot v telo usmerjena vadba. Pojavljajo se številne oblike joge, večina z glavnim poudarkom na manipulaciji telesa v gibanju, zadrževanju položajev in dihalnimi tehnikami, z namenom rasti zavedanja svojega bivanja ter izboljšanju kakovosti življenja in zdravja na vseh področjih (telesnem, mentalnem, čustvenem in duhovnem) (Stone, 2009). Različne oblike v telo usmerjene jogijske vadbe so se skozi zgodovino prilagodile ciljni publiki in specifikam okolja. Glede na način izvajanja lahko tako zasledimo različne tipe jogijskih vadb. Tako se je kot ena od oblik joge pojavila tudi otroška joga.

Otroci so naravni jogiji. Njihova telesa so prožna, globoko dihajo, imajo dobro telesno držo in popolnoma odprti odnos do življenja. Njihova pozornost je na visoki ravni. Zanima jih trenutek tukaj in zdaj. Pomirja jih red in disciplina, so zelo sočutni (Božič, 2012). Skozi odraščanje se otroško telo in občutki hitro spreminjajo. Njihova pozornost se zelo hitro preseli na svet okoli njih. Hitreje in dlje, kot jim le-ta uide, težje ohranjajo zavest o sebi in posledično vedno težje uspešno delujejo v svojih okvirih.

V naravi človeka je, da si želi življenje olajšati, vedeti, videti, doživeti, prehiteti in razumeti več kot kdajkoli. Nedvomno lahko trdimo, da današnja družba in stopnja civilizacijskega napredka v katerem živimo, otrokom, s številnimi naprednimi orodji in tehnikami, omogoča večje in hitrejše možnosti delovanja na številnih področjih. Umsko in fizično »zajemajo življenje z veliko žlico«. Dogajanje je hitro in zelo tekmovalno. Zaradi naravnosti na »hitro«, »več« in »bolje« pa intenzivno izgublajo občutek za zaznavanje trenutka »tukaj in zdaj«. Pozornost je usmerjena v cilj, ki je seveda zelo visoko zastavljen. Ne glede na to, kako hitro in visoko želimo »leteti«, pa se vsi zavedamo, da je delovanje izven naravnih sposobnosti kratkotrajno in lahko tudi nevarno. Zato je ob takem napredku zelo smiselno posegati tudi po takih dejavnostih, katerih cilj je ohranjati naravno ravnovesje. Če želimo hitrost dogajanja, glasnost okolja, razpršeno koncentracijo, neizprosno tekmovalnost in slabo zavedanje delovanja telesa in duha uravnovešiti, je treba poiskati primerne dejavnosti.

Ena takih, ki je pri tem zelo učinkovita, je joga. Vadba joge otrokom pomaga ohranjati prirojene jogijske sposobnosti in vrline. Uči jih opazovati in ozaveščati delovanje teles zaznavati in sprememb. Pomaga jih ohranjati željeno ravnovesje. Tovrstna vadba zajema v največji meri izvajanje telesnih položajev v kombinaciji z dihalnimi tehnikami in tehnikami sproščanja. Počasno, netekmovalno izvajanje telesnih vaj (jogijskih položajev ali asan) pomaga ozaveščati specifične lastnosti telesa, zmoglosti in omejitve. Osredotočanje na občutke, misli in dih ob vadbi jim pomaga k lažji notranji naravnosti in posledično učinkovitejšemu, predvsem pa celostnemu napredku v vsakem življenjskem izzivu.

Samopoznavanje in samoobvladovanje sta osnovi za uspešnost tudi pri drugih gibalnih dejavnostih. Marsikateri športnik se joge, zaradi njene izrazite koristnosti ravno na omenjenih področjih, posluži kot del treninga z namenom doseganja boljših rezultatov. Elemente jogijskih dejavnosti lahko tako srečamo na treningih nogometa, smučanja, plezanja, plesa in drugih.

Saša Lončar, plesna pedagoginja, o namenu vključitve joge v svoje treninge pravi: »Najprej je treba telo ozavestiti, šele nato ga lahko uspešno postavljamo v neko formo ali tehniko« (Delavnice ustvarjalnega giba, Ljubljana, 2013). V točki poudarjanja diha in kontroli toka misli ob izvajanju se vadba joge bistveno razlikuje od ostalih fizičnih vadb. In če govorim o ozaveščanju diha, lahko omenim dr. Milana Hosto, voditelja astma šole pri bolnišnici Golnik, ki pravi: »Zelo je pomembno, da že otroci znajo ozavestiti dihanje, saj s tem lažje ohranjajo

svojo integriteto. Preko ozaveščenega dihanja lahko človek ujame svojo lastno frekvenco bivanja, ohrani zdravje in polno izživi svoje potenciale« (Delavnice dihalnice, Ljubljana, 2013).

Izvajanje jogijskih položajev, s poudarkom na zavedanju občutkov ob izvajanju in kombinaciji s tehnikami usmerjenega kontroliranega dihanja, lahko imenujemo tudi psihosomatske vaje za ohranjanje ravnovesja v hitrem toku življenjskega dogajanja. Znanje zavestnega opazovanja stanja telesa in iskanja selektivne sproščenosti v velikih izzivih je lahko zelo dobra osnova za vse dejavnosti skozi dan. Viljem Ščuka, pedo-psihoterapevt pravi, da »današnji način življenja zahteva načrtno izvajanje takih dejavnosti, ki spodbujajo samozavedanje, dejavnosti s poudarkom na doživljanju in vrednotenju doživetega. Hitrost dogajanja in nepoznavanje zavesti o sebi je vzrok za izgorelost posameznika in je rak današnje družbe« (Predavanje o izgorelosti, Vrhnika, 2013). Zraven pa še odločno dodaja, da to velja tako za odrasle kot otroke, ki so njihov odsev. Dejstvo je, da je posameznika običajno zelo enostavno motivirati za sodelovanje pri burnih dogodivščinah. Veliko težje pa ga je navajati na samokontrolo, samozavedanje in mir. Pri urah otroške joge pa je ravno to glavni namen – izvajati dejavnosti, ki spodbujajo samozavedanje, samokontrolo in posledično mir, tako v mirovanju kot gibanju.

Izvajanje zapletenih telesnih položajev intenzivno spodbuja razvoj koordinacije, gibljivosti in ravnotežja, njihovo zadrževanje pa povečuje moč in vztrajnost. Vodeno usmerjanje misli ob večjih izzivih otroke uči novih poti za premagovanje miselnih ovir. Ozaveščanje dihanja in učenje novih tehnik dihanja jim dviguje občutenje sebe, povezuje s podzavestjo in uči pomemnosti vloge dihanja v vseh življenjskih izzivih. Poleg gibalno dihalnega dela jogijske praske se na vadbah izvajajo tudi skupinske igre zaupanja, masaž, petja in občutenja vibracij ob petju, izdelovanje mandal in podobno. Vse te vsebine pa nagovarjajo k razvoju celostnega razumevanja delovanja lastnega telesa in okolja. Ali če povemo na primeru. Cilj nogometaša je zadeti gol. Da bi zadel gol, mora imeti vrsto znanj in spretnosti, ki pa morajo biti med seboj primerno usklajene. Zato je tudi pri nogometu smiselno v treninge vključiti učenje dihanja, kontrole misli, občutenje in uspešno usklajevanje delovanja vseh življenjskih funkcij pri konkretnem treningu. Enako bi lahko razložili na primeru treme pred pisanjem šolskega testa ali le zelo napornega in stresnega dogajanja dneva.

Izvajanje joge in znanje tehnik pridobljenih skozi jogo je tako lahko zelo dobro izkoriščeno v podporo vsem tem dejavnostim. Smiselno je izvajati le elemente joge ali v celoti, na treningih ostalih športov, kot aktivni odmor v šoli ali kot samostojna dejavnost. Veliko jogijskih aktivnosti, ki se izvajajo pri delu z odraslimi, se lahko izvede tudi pri delu z otroki, le na njim primernejši način. Tako se na urah otroške joge lahko smiselno vključi pravljice, dramatizacije, igre, petje, ples, umetnost ipd. Do enakih ciljev kot pri odrasli jogi se pri otroški lahko pride tudi s pomočjo dejavnosti, ki na videz z odraslo jogo nimajo nič skupnega.

Izvedba joge za otroke je preišljeno načrtovana. Elementi joge so prilagojeni razvojnim specifikam otrok, tako na fizičnem kot mentalnem in čustvenem področju. Podobno kot pri vsaki vodeni dejavnosti z otroki se je tudi joge treba lotiti z veliko mero znanja in odgovornosti do njenih učinkov.

Kot pri drugih dejavnostih za otroke se tudi tukaj izvajalec poslužuje različnih didaktičnih pristopov in metod dela. Uporablja lahko didaktične pripomočke. Na primer za izvajanje zavestnega trebušnega diha lahko uporabi igračko, ki leži na otrokovem trebuščku. Pri zavestnem podaljševanju izdihala lahko uporabi pihanje v vetrnico ali svilen šal. Ta isti šal lahko uporabi naprej za pravilno postavitev stopala pri izvajanju jogijskega položaja bojvnika ali boljše poravnavo hrbtenice pri položaju mačke. Za številne izvedbe jogijskih položajev je uporabno delo v paru ipd. Seveda mora biti vse prilagojeno razvojni stopnji otrok na vadbi.

Z najmlajšimi učenci poteka vadba predvsem skozi igro in pravljice. Otroci svet gibanja na majhnem prostoru (lahko tudi na blazini) raziskujejo lastna telesa, oponašajo živali in predmete, na začetku največkrat z lastno izmišljenimi telesnimi položaji, pri tem pa ozaveščajo razliko med akcijo in mirovanjem.

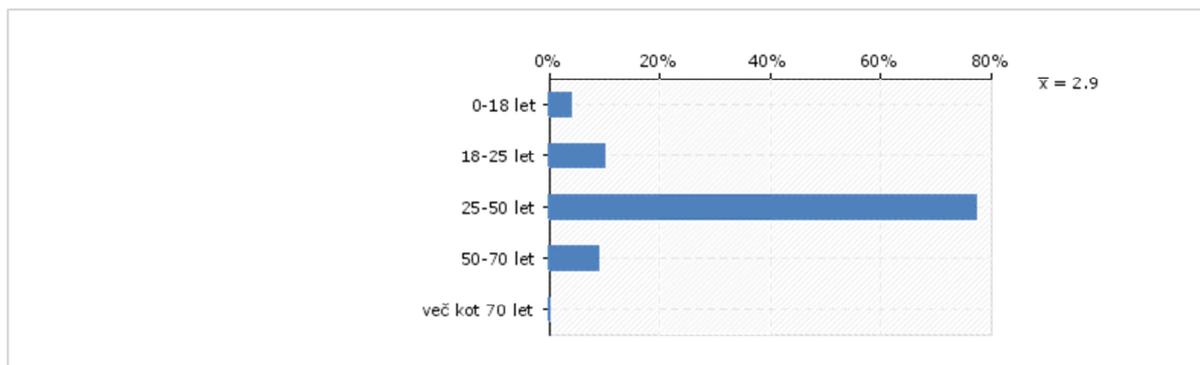
Zanimiv je opis vzgojiteljice, ki o vključevanju joge med predšolske otroke pravi tako: »Jogo in njene elemente sem uvedla v skupino petletnikov in kasneje tudi v skupino dve- do triletnikov. Vse dejavnosti so potekale preko igre, tako da so bile otrokom zanimive in so jih zelo radi izvajali. Obožujejo postavljanje teles v jogijske položaje. Večkrat na dan se zgodi, da se postavljajo v položaje dreves, strešic, bojvnikov ali grbastih mačk z dolgim repom, pa čeprav na urniku takrat nimamo usmerjene jogijske vadbe. Nekateri otroci so imeli sprva težave predvsem z umiranjem in medsebojnimi dotiki, vendar so ob redni praksi in nevsiljivemu pristopu vse to vzljubili in opazila sem velik napredek pri sami dinamiki v skupini (otroci so postali bolj senzibilni in strpni eden do drugega). Menim, da je otroška joga zelo uporabna vadba za boljši telesni, emocionalni in socialni razvoj.« (Horvat Strman, Vrtec H. C. Andersen, Ljubljana, 2014).

Starejši, kot so otroci, bolj izrazita je njihova potreba po večjem izzivu. Tu že pride na vrsto ozaveščanje omejitev gibov posameznih delov telesa moči, fleksibilnosti in ravnotežja, kjer iščejo tanko mejo med prijetnim, a hkrati velikim izzivom ter bolečino, ki jim sporoča, da so šli predaleč. Pri starejših skupinah je že opaziti, kako ob izvajanju jogijskih položajev obmolknejo in brez primerjanja z ostalimi obstanejo v lastnem izzivu giba in občutkov ob njem. Zanimiv je opis učenke sedmega razreda ob izvajanju ene od težjih jogijskih položajev: »Tako težko, pa tako lahko! Zdi se mi, kot bi se v najtežji točki popolnoma sprostila«.

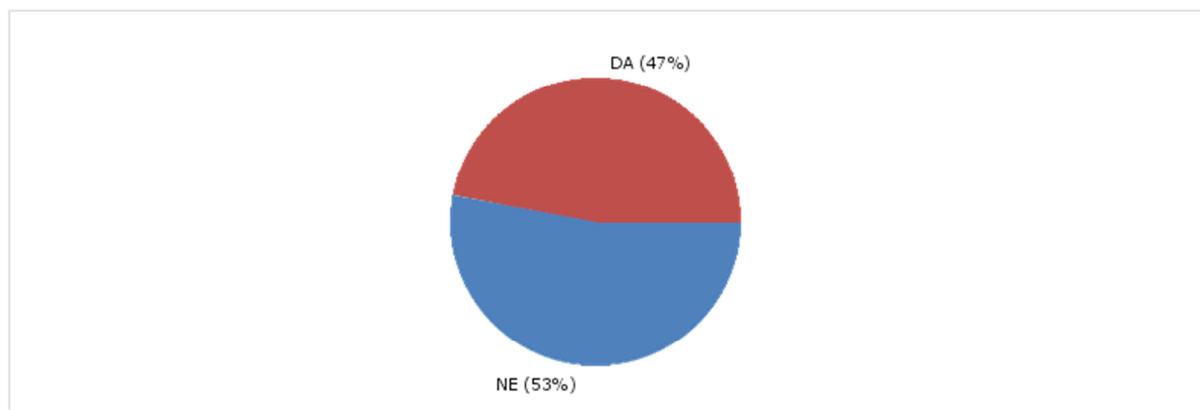
Na tej točki si torej pogledjmo rezultate ankete, katerih glavni namen je prikazati mnenje naključno anketiranih o jogi za otroke. Takih, ki se ukvarjajo s katerokoli od oblik joge, in takih, ki z jogo nimajo nobenih izkušenj.

METODA, REZULTATI IN RAZPRAVA

V raziskavo je bilo zajetih 181 naključnih anketirancev. Večina je stara med 25 in 50 let.

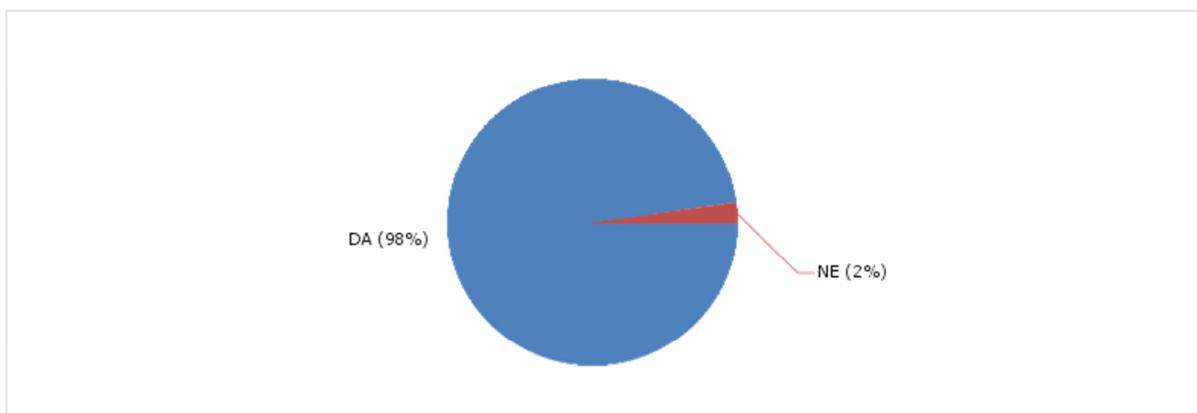


Graf 1: Starost udeležencev



Graf 2: Ali se ukvarjate z jogo (oz. ste se kdajkoli ukvarjali)?

Od vseh anketiranih se malo manj kot polovica ukvarja (ali se je ukvarjala) z jogo. Večina anketiranih opredeljuje jogo kot telesno vadbo. Le nekaj je takih, ki ob telesni vadbi našteje še učenje dihalnih tehnik, meditacij, sproščanja ali razvoj duhovnosti. Večina je tudi mnenja, da ima ukvarjanje z jogo številne koristi. Le te so tudi samostojno ubesedili. Po pogostosti pojavljanja podobne koristi sem jih naštela v vrstnem redu.



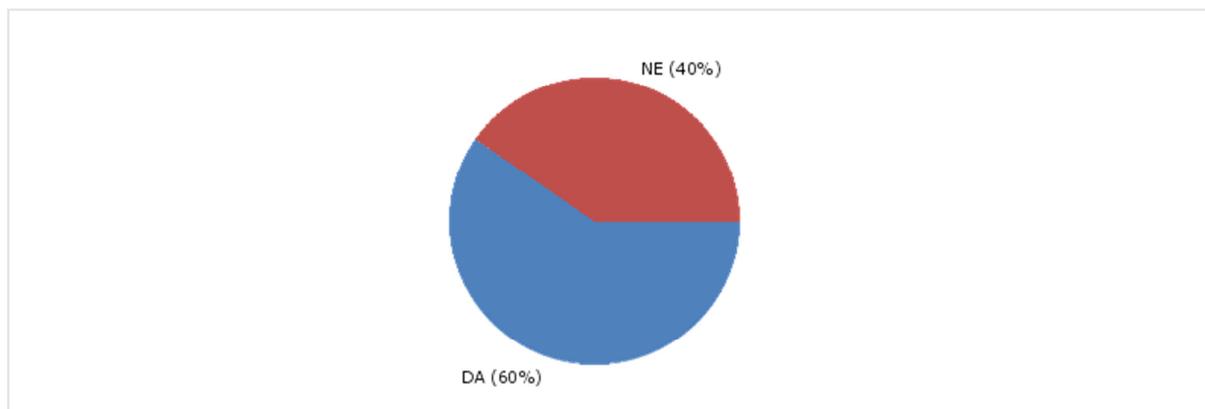
Graf 3: Ali mislite, da ima lahko ukvarjanje z jogo kakšne koristi?

Odgovor	Število podobnih besed
umirjenost, relaksacija, sprostitvev, notranji mir, umiritev, sproščenost	128
gibljivost, gibčnost, prožnost, razteznost, gibljivost hrbtenice	84
boljše zdravje, zdravstveno stanje, psihična in fizična moč, krepitev telesa in duha, boljša kakovost življenja, vitalnost, boljša telesna pripravljenost, boljše počutje, zadovoljstvo, preventiva	56
moč, utrditev, krepitev, stabilizacija, trdnost, kondicija	30
koncentracija, osredotočenost, zbranost	18
harmonija, uravnoveženje, uravnovešenje, povezanost telesa in duha, povezanost s samim seboj, usklajenost, skladnost, harmonija, samospoznavanje	21
občutenje telesa, samozavedanje, ozaveščanje, samozavest	9
boljše, pravilnejše dihanje	8
lepša drža, lepša postava, lepša oblika telesa, vitka linija, oblika postave	8
samonadzor, samoobvladanje	7
duhovna rast	4
obvladovanje, zmanjševanje stresa	5
potrpežljivost, vztrajnost	3
veselje, pozitivnost, pozitivne misli	3
boljša koordinacija, spretnost	3
posvečanje samemu sebi, skrb zase	3
razvoj ravnotežja	2
ustvarjalnost, domišljija	2

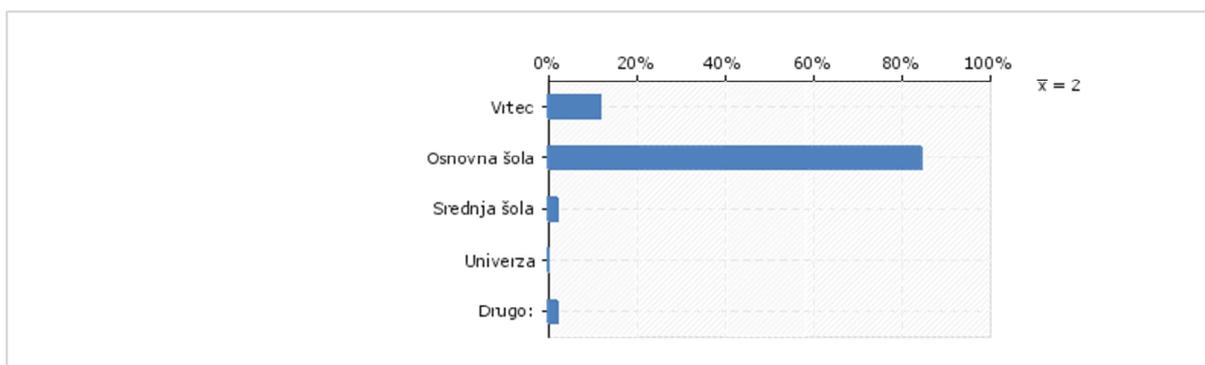
dvig energije, polnjenje baterij	2
Rekreacija	2
cirkulacija	2
Rehabilitacija	1
Samozaupanje	1
čistejše misli	1
lažje učenje	1
Meditacija	1
razvoj senzibilnosti	1

Tabela 1: Kakšne koristi? Naštejete lahko le nekaj besed.

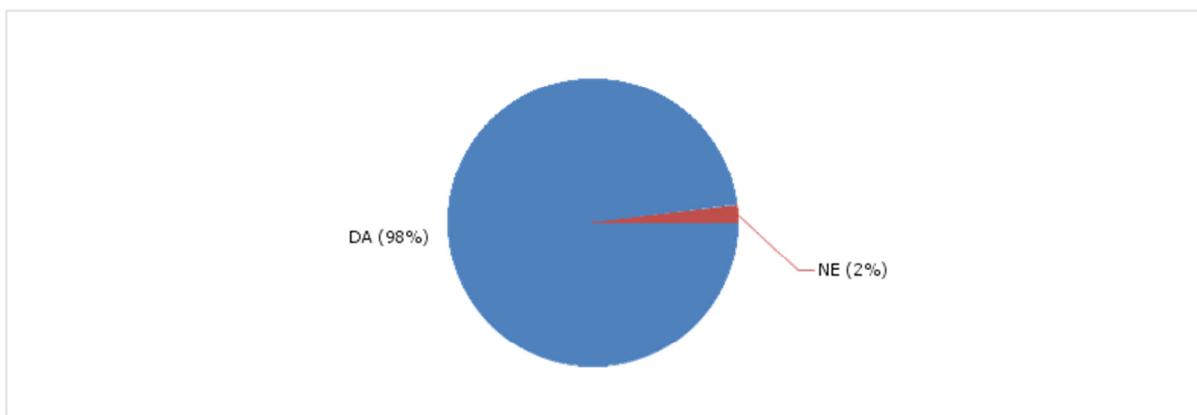
60 % anketiranih ima v svojem poklicu zajeto delo z otroki. Največ teh ima opraviti z osnovnošolskimi ali predšolskimi otroki. Večina vseh pa meni, da bi ukvarjanje z jogo koristilo otrokom.



Graf 4: Ali vaš poklic vključuje delo z otroki?



Graf 5: Katero starost otrok zajema vaš poklic?



Graf 6: Ali menite, da bi ukvarjanje z jogo lahko koristilo otrokom?

Tisti, ki menijo, da ukvarjanje z jogo otrokom koristi, so samostojno ubesedili na kakšen način. Večina odgovorov je bila podobna naštevanju koristi joge za odrasle, torej predvsem umirjanje, sproščanje, gibljivost, koordinacija, koncentracija, zavedanje in obvladovanje telesa. Opaziti pa je bilo tudi nekaj novih opisov, ki jih med odraslimi ni bilo, in sicer: veselje, ugodje, zabava, užitek, igrivost, druženje, spoštovanje in učenje neagresivnosti.

Zanimiva je primerjava vprašanj, iz katere ugotovimo, da 97 % tistih, katerih poklic vključuje delo z otroki, pravi, da je joga za otroke koristna. Na vprašanje, ali bi jih zanimalo izobraževanje za poučevanje tovrstne dejavnosti, je 67 % anketiranih odgovorilo z »da«, 26 % z »morda« in le 5 % z »ne«. Anketirala sem tudi droke, ki jogo obiskujejo kot interesno dejavnost eno ali dve šolski leti. Otroci med sedmim in desetim letom starosti so navdušeni predvsem nad zanimivimi položaji, med katerimi so najljubše narisali. Všeč so jim jogijske igrice, masaže in igranje na tibetanske skledice. Dečkom so najbolj všeč težki jogijski položaji.

Otroci od desetega do petnajstega leta pa so se na odprti vprašanji »Kaj je zate joga?« in »Kakšne koristi občutiš ob vadbi joge?« zelo razpisali. Večina je jogo besedno opredelila kot vrsto telovadbe s sproščanjem. V nadaljevanju si lahko ogledamo nekaj celih povedi, ki so jih zapisali.

- »Po uri joge se počutim bolj sproščeno, pozabim na težave.«
- »Po enem letu joge sem se začela zelo opazovati. Predvsem opazujem svoje telo, pa tudi kaj delam in kaj govorim.«
- »Pridobila sem veliko na samozavesti. To mi je všeč, ker sem se vedno obremenjevala z zunanostjo.«
- »Joga je sprostitutev, ki mi pomaga pri premagovanju ovir v trenutkih, ko nisem prepričana kaj in kako.«
- »Joga je kot sonce v dežju. Je ura, ki jo porabim samo zase in moje telo.«

- »Naučila sem se obvladovati težje situacije (stres, trema). Opažam, da se lažje učim. Postajam bolj razumevajoča do drugih ljudi.«
- »Od kar hodim na jogo se pokonci držim in veliko smejim.«
- »Joga me je naučila meditirati. Občutek imam, da si pri tem očistim telo in se nasploh počutim bolj srečno.«
- »Joga je čas, ko se moje telo odklopi iz tega hitrega tempa življenja. Je čas, ko poslušam sebe in ne drugih.«
- »Pred dvema leti, ko sem začela z jogo, so bila moja pričakovanja popolnoma drugačna od izkušenj, ki sem jih nato dobila. Mislila sem, da je joga sproščanje. Danes vem, da je lahko zelo naporna, ampak iz telovadnice odidem vseeno sproščena.«
- »Meni je joga nekaj sproščujočega. Po uri se počutim odlično. Želim si, da bi bila ura daljša.«
- »To je posebna ura, pri kateri počnem samo to, kar zmorem.«
- »Zame je joga sproščanje. To zame ni kot telovadba, ampak počitek celega dne.«
- »Od joge sem se naučila pravilnega dihanja in smejanja. Na dražljaje v svojem okolju sem se začela drugače odzivati.«
- »Pri jogi postavljamo telo v položaje, pri katerih preizkušamo svoje meje. Ne tekmujejo. Se spoštujemo. Skozi njo spoznavamo svojo bit.«
- »Pri jogi sem se naučila stoje, ki sem se je vedno bala. Pri telovadbi sem zato dobila oceno pet.«
- »Pri jogi sem se naučila, kako se umiriti pred testom.«

Nedvomno bi iz analize anket lahko povzeli, da joga koristi tako odraslim kot otrokom. Med koristmi se najpogosteje navaja učenje umirjanja, sproščanja, razvoj gibljivosti, delo na moči, koordinaciji, koncentraciji in ravnotežju ter spoznavanje in lažje obvladovanje telesa. Zelo sporočilno je morda tudi to, da je večina tistih, katerih poklic vključuje delo z otroki, jogi naklonjenih in bi si želeli na tem področju tudi dodatno izobraževati.

ZAKLJUČEK

Joga je torej starodavna znanost, ki se večinoma kot fizična vadba vedno pogosteje prepleta v življenja otrok v našem okolju. Ne glede na to, od kje izvira joga in kašni so bili prvotni cilji ukvarjanja z njo, lahko rečemo, da je v našem okolju danes razumljena kot netekmovalna vrsta telesne vadbe s številnimi koristmi. Ker pozitivno doprinese k zdravemu in pravilnemu načinu življenja, z izgradnjo ozaveščenja o sebi, svojem telesu, občutkih, zmožnostih, si je nedvomno želimo. Otrokom pomaga oblikovati celovito, harmonično in trdno osebnost, ki jim

bo služila v vseh nadaljnjih dejavnostih v življenju (drugih športih, učenju, socializaciji, obvladovanju stresa, odnosu do okolja in prostega časa).

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DOGING ALI VADBA S PSI

DOGING OR. WORKOUT WITH YOUR DOG

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IZVLEČEK

Koncept vadbe Doging je nastal kot naloga pri predmetu na fakulteti. Doging je vadba, kjer poleg vadečih sodelujejo tudi psi. Namen je prihranitev časa z združitvijo obveznega sprehoda psa in gibalne aktivnosti vadečega v vadbo, poleg tega pa je pes v vadbi dober motivacijski dejavnik, deluje protistresno in lahko služi tudi kot dober terapevt. V uvodu je opisan koncept vadbe ter teoretično ozadje povezave med človekom in psom. V nadaljevanju sem predstavila teoretično ozadje psa kot dejavnika terapije in motivacije, v zadnjem delu članka pa sem še dodatno opisala vadbo in predstavila vse dotične informacije.

Ključne besede: pes, stres, motivacija, človek, vadba

ABSTRACT

The concept of the workout Doging was created as seminar at the course on the faculty. Doging is the name of the workout, where dogs are involved. The purpose of Doging is to combine workout and dog walking. This is time saving, and besides that dog is a good motivational factor, it works as an antistress factor and can also serve as a therapy. In the first part of the article, I described the theoretical background of the connection between dog and a human. In the second I described dog as a motivational factor, antistress factor and animal therapy factor. The last part of the article is about the workout itself and about all the information's based on it.

Keywords: dog, stress, motivation, human, workout

UVOD

Doging, oziroma vadba s psi, je koncept, ki združuje potrebno količino gibalno športne aktivnosti posameznika ter aktiven sprehod psa s prvinami učenja osnovnih ukazov. Ideja temelji na pomanjkanju časa, s katerim se sooča sodobni človek ter na sožitju človeka in psa, ki je znan kot dober protistresni dejavnik. Vadba je namenjena tistim, ki zaradi hitrega

tempa življenja, ob usklajevanju kariere in skrbi za družino in domačo žival, pozabijo nase, ter tudi za tiste, ki bi jim pes lahko predstavljal dober motivacijski dejavnik s katerim bi povečali svoje udejstvovanje v gibalno športni aktivnosti. Dva izmed pomembnih dejavnikov sodobne družbe sta uporabnost in učinkovitost. Vadba s psi združuje oba. Je uporabna saj lahko ob aktivnem sprehodu svojega psa poskrbimo tudi za svoje zdravje in dobro počutje, ker opravimo vadbo, ki je učinkovita, saj v njej poskrbimo za razvoj in izboljšanje vseh sedmih motoričnih sposobnosti, poleg tega pa pozitivno vplivamo na raven negativnega stresa, saj je preživljanje časa s psom že dolgo znano kot najboljše naravno protistresno sredstvo. Vadba izhaja iz terapije z živalmi, ki jo, kot pravita Kranjc in Berčič (2008), po vsem svetu izvajajo v različne namene. Žival posamezniku ponuja brezpogojno ljubezen in lojalnost. Žival ne obsoja, zato je tudi izvajanje gibalno športne aktivnosti v spremstvu živali, v našem primeru psa, bolj brezskrbno in zato bolj učinkovito. Kot pravi Novak (2005), je terapija z živalmi primerna tudi za otroke, saj imajo otroci živali radi, zato so v igri z njimi veliko bolj sproščeni, hkrati pa bolj učljivi. Pri treniranju psa si izboljšujejo samopodobo, z božanjem se sproščajo, z metanjem žogice izboljšajo motorične sposobnosti, hkrati pa se v družbi živali učijo boljšega sporazumevanja z ljudmi. Vadba je torej primerna za vse starosti, oziroma za tiste, kateri so sposobni obvladovati svojega psa.

PES KOT TERAPIJA IN MOTIVACIJA

Kranjc in Berčič (2008) sta v svoji knjigi zapisala, da imajo domače živali odličen vpliv na samozavest in splošno dobro počutje. Zakaj za izvajanje terapije z živalmi najpogosteje uporabljajo prav pse, nam pojasni Baumann (1997). Pravi, da pes zmanjšuje stres, čuti kdaj je lastnik ali lastnica nervozna ter so takrat, kadar so ljudje nerazpoloženi ali jezni, psi do njih praviloma obzirnejši, kot so običajno ljudje (Baumann, 1997). Poleg tega, kot sta to zapisala Kranjc in Bernčič (2008), pes ugodno deluje na stres, zmanjšuje možnost srčnega infarkta ter tudi možnost pojava depresije.

Kot je znano je športnorekreativno udejstvovanje pomemben dejavnik pri ohranjanju in vzpostavljanju duševnega ravnovesja, ki je prav tako pomembna sestavina celovitega zdravja. Še zlasti zaradi razkritega dejstva o tesni medsebojni povezanosti in soodvisnosti človekovih telesnih in duševnih dejavnosti. Gibalno športna aktivnost ima ugodne učinke na človekovo duševnost. Duševno zdravje je prav tako pomembna sestavina celovitega zdravja, k temu pa lahko določen delež prispeva tudi igrivo udejstvovanje s psom (Kranjc, Berčič, 2008).

Športna oziroma športnorekreativna dejavnost povezana s psom je lahko pomemben preventivni dejavnik, ki ljudem pomaga preprečevati, da ne bi zboleli in da bi čim dlje ostali zdravi. Znano je, da redno in sistematično ter zmerno ukvarjanje s športom krepi zdravje, kar seveda velja tudi za športnorekreativno udejstvovanje s psom. Tako lahko govorimo o

številnih ugodnih učinkih telesne vadbe in gibanja na organizem človeka, ki je v sodelovanju s psom še bolj raznoliko in kakovostno. To se kaže na njegovem dobrem fizičnem in psihičnem zdravju in počutju, na njegovi socialni in doživljalski komponenti, na človekovi duševnosti in duhovnosti (Kranjc, Berčič, 2008). Poleg dejstva, da je vadba s psom izboljšuje duševno in fizično zdravje, pa lahko pes predstavlja tudi odličen motivacijski dejavnik, zaradi katerega se posameznik odloča za gibalno športno aktivnost. Za športnorekreativno dejavnost je torej potreben določen dejavnik, ki človeka motivira. Različne raziskave so pokazale, da je to lahko tudi žival, v našem primeru pes. Pes nas lahko spremlja, lahko pa nas tudi motivira, da z gibanjem začnemo, daje nam tudi spodbudo za vadbo (Kranjec, Berčič, 2008).

Kot pravita Kranjc in Berčič (2008) je lastnik psa prisiljen, da se vsaj dvakrat dnevno odpravi s psom na sprehod, ne glede na vreme. Pes torej predstavlja neke vrste zunanjo motivacijo, ker nas enostavno prisili v gibanje. Pes je prijatelj, ki je vedno dobre volje, vedno se želi gibati, in če je zdrav, ostaja igriv skoraj vse življenje. Že sama igra, ki nam jo pes ponuja, pomeni veliko raznolikega gibanja na prostem. Že sprehod je del gibalno športne aktivnosti, vendar pa lahko ob dodanih vajah iz sprehoda naredimo vadbo s katero naredimo veliko tudi zase. Ravno zaradi motivacijskega dejavnika se vadba s psi dobro obnese tudi pri otrocih, seveda njim prilagojena. Kranjc in Berčič (2008) sta zapisala, da naj bi bilo doma v družini čim več različnih rekvizitov za pridobivanje različnih gibalnih izkušenj. Prav je, da vemo, da morajo otroci sprejemati prva gibalna in športna znanja na igriv in sproščujoč način, z veliko zabave, veselja in smeha. Tu je lahko igrivo udejstvovanje s psom vir dodatnega zadovoljstva.

KAJ VADBA PONUJA

Vadba je v prvi vrsti nastala zaradi moje ljubezni do psov ter do gibanja. Povezava obojega v vadbo se je, prav zaradi dejavnikov, naštetih v prejšnjem poglavju, zdela logična. Poleg tega nam vadba omogoča prihranek časa, kar je v modernem svetu, s hitrim tempom življenja zelo pomemben dejavnik. Prav pomanjkanje časa je pogosto glavni razlog za nezadostno gibalno športno aktivnost posameznika. Pri vadbi s psi združimo sprehod, ki je za psa obvezen, ter ga nadgradimo v zanimivo in funkcionalno vadbo, ki zajema vseh sedem gibalnih sposobnosti človeka. Vadba je skupinska, največje število vadečih v eni skupini je 10. Vadba je primerna za vse starostne skupine, pomembno je le, da je vadeči sposoben obvladati svojega psa. Kadar gre za vadbo z otroci pa morajo biti prisotni tudi starši. Glede na starost in fizično, pa tudi psihično pripravljenost vadečih, se naredi program, ki zajema količino vadbe, težavnost in trajanje. Vadba bi potekala vsak dan, tudi ob nedeljah, v dveh terminih, dopoldan in popoldan, vsak posameznik pa se sam odloči, kolikorat jo bo obiskoval. Temu primerno se spreminja tudi cena mesečne članarine. Kadar je le možno, vadba poteka

v naravi, ob zares slabem vremenu pa v pokritem šotoru pasje šole ali v konjušnici. Pomembno je, da je vadba raznolika in vedno zanimiva. Ob vadbi na travnikih se uporabljajo najrazličnejši pripomočki. Od stožcev, obročev, palic, kolebnic, pa tudi raznih ovir in uteži. Pri izvajanju vadbe v obliki fartleka si izberemo teren v naravi, kombinacija gozda, travnikov ter raznih poti. Za izvajane vaj uporabljamo pripomočke, pogosto pa si pri vajah pomagamo kar z tistimi, ki nam jih ponuja narava. Za razvedritev izvajamo vadbo tudi v obliki štafetnih iger, poligona in obhodne vadbe. Vadbo s psi izvajamo tudi na poligonu pasje šole, ter tako poleg gibalno športne aktivnosti za vadečega in psa, naredimo tudi mini pasjo šolo. Vadeči za vadbo potrebujejo športno opremo ter opremo za psa. Pomembno je, da je pes starejši od sedmih mesecev, da je naučen osnovnih ukazov, kot so sedi, lezi in hoja ob nogi ter, da je obvladljiv v interakciji z drugimi psi in vadečimi. Kljub temu, da pri vadbi sodelujejo tudi psi, je vadba v prvi vrsti namenjena in prilagojena ljudem. Pes ob tem opravi aktiven sprehod, ter vadečemu pomaga in ga motivira.

ZAKLJUČEK

Doging je vadba pri kateri sodelujejo tudi psi. Namen vadbe je združitev vsakodnevno obveznega sprehoda, ki ga pes potrebuje, ter vadbe s katero vadeči poskrbi zase in si zagotovi potrebno gibalno aktivnost. Za ljubitelje psov je vadba zelo primerna, saj pes na vadečega deluje motivacijsko, mu pomaga in pozitivno vpliva na nivo negativnega stresa. Pes ne obsoja in tudi ljudje, ki imajo pse, so znani po tem, da so do soljudi bolj strpni in sprejemljivi. Prav zaradi tega je vadbena okolje, ki ga ponuja vadba Doging, prijetno in pozitivno vpliva na gibalno aktivnost in tudi na kvaliteto izvedbe. Ob povpraševanju bi se v bodoče povezali tudi z zavetišči, od koder bi si lahko vadeči, ki doma nimajo psa, le-tega sposodili ter tako psu omogočili sprehod, sebi pa vadbo.

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OBOGATITVENA DEJAVNOST V VRTCU – MALI KENGURUJČKI

AN ENRICHMENT ACTIVITY IN THE KINDERGARTEN

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POVZETEK

Obogatitvena dejavnost je dejavnost, ki jo vrtec organizira občasno in je sestavni del izvedbenega kurikula. Izvaja se na željo staršev in glede na interese otrok. V ospredje postavlja doseganje in uresničitev načel predšolske vzgoje, načela enakih možnosti in upoštevanje različnosti med otroki. Izvedena obogatitvena dejavnost Mali kengurujčki prinaša pozitivne vidike, kot so razvoj gibalnih sposobnosti in spretnosti, boljše počutje, boljši motorični razvoj, sproščenost, razgibanost, discipliniranost, potrpežljivost, boljša samopodoba, krepitev mišic, premagovanje strahu in ovir. Preko dejavnosti se otroci navajajo na sodelovanje v skupini in pri skupni vadbi, učijo se sprejemati poraz, rešujejo konflikte, navajajo se na poslušanje navodil in pravil in, kar je najpomembneje, družijo se s svojimi vrstniki, s čimer se vzpostavlja socialna interakcija.

Ključne besede: obogatitvena dejavnost, predšolski otrok, gibanje

SUMMARY

An enrichment activity is an activity which is organised periodically by the kindergarten and is a constituent part of the curriculum implementation. It is carried out in accordance with the parents' request and children's interests. The aim is to achieve and accomplish the preschool education principles as well as the equal opportunities principles and to consider the diversity of children. The Mali kengurujčki (Little Kangaroos) enrichment activity brings positive aspects, such as development of motor abilities and skills, wellbeing, better motor development, relaxation, motion, discipline, better self-esteem, muscle strengthening, overcoming fear and obstacles. Through the activities children become accustomed to group cooperation and group exercise, they learn to accept defeat, solve conflicts, they learn to listen to instructions and rules and, the most important, they associate with their peers, where social interaction is established.

Keywords: enrichment activity, preschool child, motion

UVOD

Igra in potreba po gibanju sta otrokovi pomembni/osrednji primarni potrebi. Gibalni razvoj otroka poteka od naravnih in enostavnih oblik gibanja do vse zahtevnejših in sestavljenih oblik in dejavnosti. Preko različnih iger in gibalnih nalog otrok pridobiva raznolike gibalne izkušnje, ki ga postavljajo v novo situacijo, mu nudijo veselje, ugodje ali pa zadovoljstvo. Z vzgojiteljevega vidika je pomembno, da sprejema otroka celostno – zaveda se pomena in vloge celostnega razvoja.

Vsak otrok se rodi z določenimi dispozicijami. Okolje, ki vpliva na otroka, in otrokova lastna aktivnost te dispozicije razvija ali pa ne. Spoznavno, čustveno, socialno in gibalno področje razvoja se med seboj tesno povezujejo in se skozi otrokov razvoj prepletajo in dopolnjujejo. Če se dogodita sprememba in napredek na enem področju, to vpliva na spremembe in napredek na vseh ostalih področjih otrokovega razvoja (Pišot in Jelovčan, 2006).

Otrokov razvoj je v predšolskem obdobju integrativen in zelo dinamičen. Gibalna/športna aktivnost (v nadaljevanju GŠA) je v tem obdobju zelo pomembna in predstavlja ključno sredstvo za zagotavljanje in pridobivanje različnih informacij. Preko nje otrok osvaja gibalne izkušnje, ki se trajno zapišejo v motorični spomin, kar nadalje pomeni, da bolj kot je otrok gibalno aktiven in pridobiva kakovostne izkušnje, tem več možganskih povezav razvije. S tem posameznik razvija spomin in lažje osvaja nova gibalna znanja. Potrebno je izpostaviti, da je za otroka pomembno tudi okolje, ki mu nudi različne izzive za razvoj novih sposobnosti in predispozicij. Gre za pridobivanje gibalnih in funkcionalnih sposobnosti, med katere spadajo moč, hitrost, gibljivost, preciznost, koordinacija, ravnotežje in vzdržljivost. Izkušnjsko bogato okolje s primerno količino in kakovostnimi ponujenimi izkušnjami ima velik pomen pri razvijanju nadaljnjih spretnosti. Fizična aktivnost predšolskega otroka v interakciji z okoljem pospešuje proces socializacije, oblikujejo se različne socialne vloge, razvijajo se dimenzije psihosomatskega statusa, interesi in stališča (Pišot in Jelovčan, 2006). V šolskem letu 2012/2013 sva se s sodelavko v Vrtcu Šempas odločili za organizacijo nove dodatne dejavnosti, ki bi zajemala GŠA otrok. Pri pregledu gibalnih dejavnosti znotraj vrtca sva spoznali potrebo po izvajanju obogatitvene dejavnosti pri otrocih med tretjim in četrtem letom starosti. Dejavnost sva poimenovali Mali kengurujčki. Pomembno je, da se otrok začne zavedati zdravega in kakovostnega načina preživljanja prostega časa, pridobiva različne gibalne izkušnje, ob tem pa se druži s sovrstniki, z njimi sodeluje, pomaga in, kar je najpomembneje, vse sprejema skozi igro, ki je zanj v tem obdobju najpomembnejša. V nadaljevanju bom podrobneje opredelila pomen GŠA za otrokov razvoj in cilje, ki jih otrok dosega skozi omenjeno dejavnost, opisala GŠA ter predstavila njene pozitivne in negativne vidike, kot jih vidijo starši in vzgojiteljice otrok, ki so to vadbo obiskovali oziroma jo še obiskujejo.

PREDSTAVITEV PODROČJA IN PROBLEMA

Predšolsko obdobje posamezna področja otrokovega razvoja (telesno, gibalno, spoznavno, čustveno in socialno) tesno povezuje. Otrok dojema svet preko informacij, ki izvirajo iz njegovega telesa, zaznavanja okolja, izkušenj, ki jih pridobi z gibalnimi dejavnostmi, ter z gibalno ustvarjalnostjo v različnih situacijah (Pišot in Videmšek, 2007).

Videmšek in Visinski (2001) navajata, da otrok preko gibanja odkriva svoje telo, preizkuša, kaj njegovo telo zmore, doživlja veselje in gradi zaupanje vase, hkrati pa se mu razvijajo sposobnosti in spretnosti. Z gibanjem otrok raziskuje, spoznava in dojema svet okrog sebe. To privede do doživljanja občutka ugodja, veselja, varnosti in dobrega počutja. V gibalnih dejavnostih ima pomembno vlogo telo. S telesom otrok doživlja smer, položaj, razmerja do drugih. Telo mu omogoča razvoj za občutek ritma, hitrosti in dojetanja časa ter prostora.

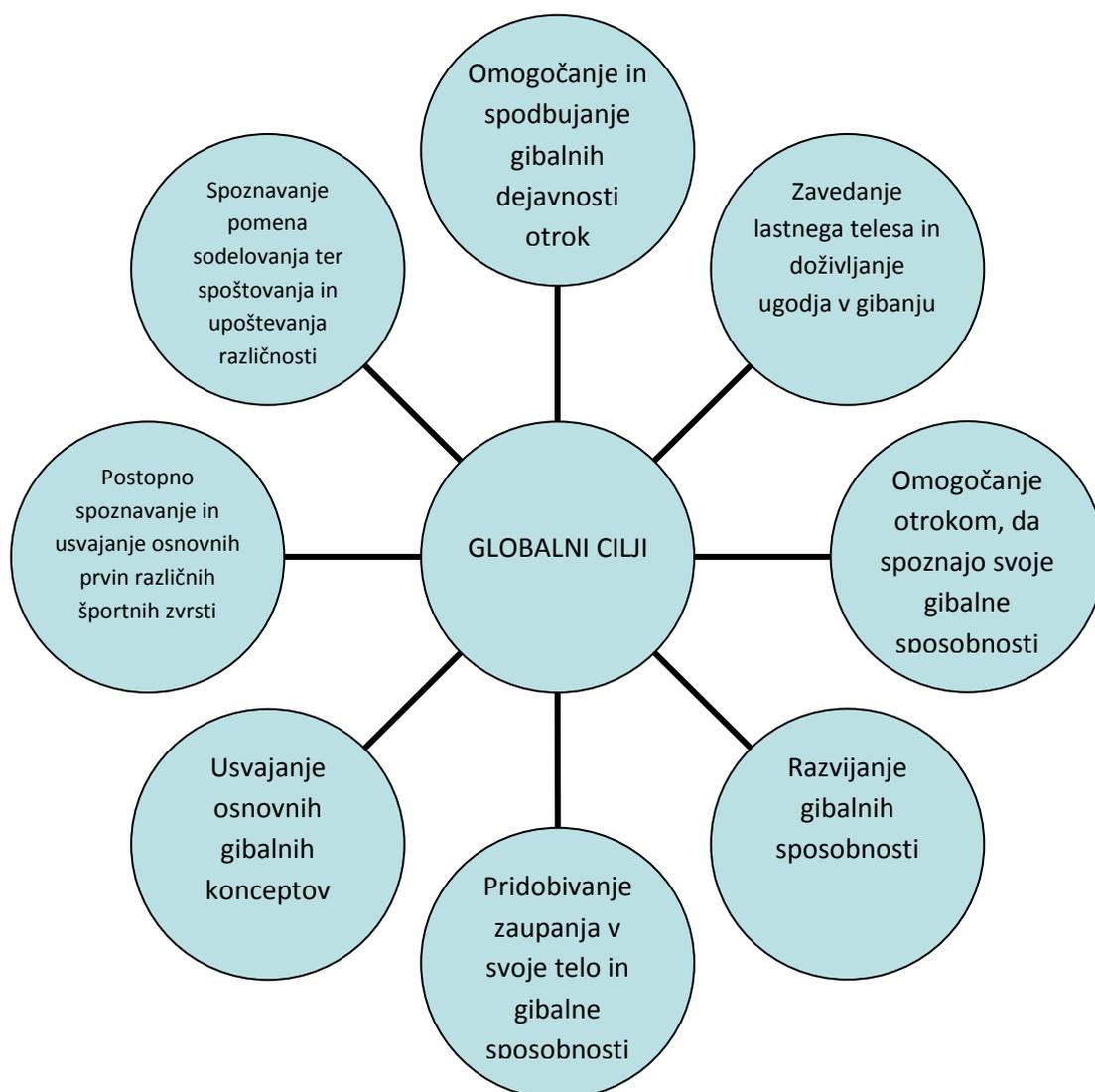
Pomembno je, da vsebina gibalne športne vzgoje izhaja predvsem iz otroka, to pomeni, da se prilagaja otrokovim sposobnostim, lastnostim, potrebam in interesom. S ponujenimi različnimi dejavnostmi pridobiva zaupanje v svoje telo, svoje gibalne sposobnosti, gradi si ustrezno predstavo o sebi, se potrjuje in si ustvarja čustveno vez z okoljem. Potreba po gibanju je otrokova primarna potreba in ob obvladovanju svojega telesa občuti veselje, ugodje, varnost, pridobi občutek samozaupanja in samozavesti. Preko različnih vodenih dejavnosti otrok spoznava smisel in pomen upoštevanja pravil igre, pomen sodelovanja ter spoštovanja in upoštevanja različnosti. V predšolskem obdobju vključujemo v gibanje naravne oblike gibanja, kompleksnejše športne dejavnosti in ritmično-plesne dejavnosti. Pri tem pa je najpomembneje, da uporabljamo različne metode in oblike dela ter raznovrstne pripomočke. Otroke usmerjamo tako, da sami iščejo načine reševanja nalog, tako da na plan privre njihova domišljija pri reševanju novih izzivov, ob tem pa sproščeno izrazijo lastno ustvarjalnost. Vadba mora biti prilagojena vsakemu posamezniku, da otroci ob tem doživljajo najbolj prijetne občutke. Spodbude in bogate izkušnje ter doživetja vodijo k želji in potrebi po športnem udejstvovanju tudi v kasnejših letih (Videmšek in Visinski, 2001).

Dejavnosti, ki jih omenjajo avtorji, se izvajajo pri rednem programu predšolske vzgoje in v popoldanskem času v sklopu obogatitvenih dejavnosti. Iz okrožnice Ministrstva za šolstvo in šport je obogatitvena dejavnost opredeljena kot dejavnost, ki je del izvedbenega kurikula in jo vrtec izvaja občasno. Dejavnost ni obvezna, saj se izvaja na željo staršev in zaradi interesa otrok. Trajanje posameznega srečanja je poljubno. Obogatitvena dejavnost uresničuje načela predšolske vzgoje, načelo enakih možnosti za otroke in starše ter hkrati upošteva različnost med otroki. Poleg tega je dosežena tudi kakovostna in pestra izvedba kurikula (Okrožnica MSS št. 602-5/2007 z dne 28. 6. 2007. V Publikaciji Vrtca Šempas za šolsko leto 2013/2014 (str. 12). Šempas: Prijatelj & prijatelj, d. o. o.).

OSREDNJI DEL – PRAKTIČNI DEL

Obogatitvena dejavnost Mali kengurujčki se je izvajala v šolskem letu 2012/2013 v Vrtcu Šempas. Izvedenih je bilo šestnajst srečanj v šolskem letu. V skupino je bilo vključenih triindvajset otrok, enajst deklic in dvanajst dečkov, starih od treh do štirih let. Glede na število in starost otrok je vodjama dejavnosti – vzgojiteljicama Vrtca Šempas pri izvajanju pomagala še dodatna strokovna delavka vrtca. Vadba je potekala dvakrat mesečno ob četrtnih v popoldanskem času, v času delovanja vrtca. Na izvajanje dejavnosti je otroke opominjal tematski plakat s kengurujem, ki je visel pred njihovo igralnico. Dejavnost je potekala petinštirideset minut. Otroke sva vodji dejavnosti prevzeli v njihovih skupinah in jih odpeljali v šolsko telovadnico, v primeru lepega vremena pa na šolsko igrišče, kjer je vadba potekala. Za vadbo v šolski telovadnici so otroci potrebovali čiste copate, ki so jih starši v vrtec prinesli pred prvim srečanjem v mesecu oktobru, za hrambo copatov pa sva poskrbeli s sodelavko. Takrat sva starše tudi pozvali, da na dan poteka dejavnosti otroka oblečejo v športno opremo, ki je za izvajanje gibalnih nalog izrednega pomena. Otroku nudi ugodje in lažje izvajanje gibalnih nalog. Pri vadbi so bili otrokom ponujeni različni športni rekviziti (žoge, obroči, blazine, gred, klop, skrinja, ribstol, kolebnice, stožci). Gibalna/športna dejavnost je potekala skozi različne učne oblike, uporabljali sva različne učne metode in didaktična načela. Upoštevali sva vsakega posameznega otroka in mu nudili pomoč pri izvajanju zahtevnejših gibalnih nalog. Otroke sva navajali na strpnost, naučili so se počakati v vrsti ali pri izvajanju gibalne naloge, naučili so se nuditi pomoč prijatelju, če jo je potreboval, navajali sva jih na pozorno poslušanje navodil. Gibalna dejavnost Mali kengurujčki je potekala v športnem vzdušju z načeli športnega obnašanja.

Namen izvajanja obogatitvene dejavnosti Mali kengurujčki je bil doseči cilje, ki so opredeljeni v Kurikulu za vrtce. Cilji so razdeljeni na globalne in splošne oziroma operativne cilje. Dejavnosti, ki so bile izvedene za doseganje ciljev, so bile med šolskim letom dopolnjene oziroma dograjene.



Slika 1: Prikaz globalnih ciljev (Vir: Kurikulum za vrtce, 2011)

Načrt Malih kengurujčkov je bil oblikovan že v začetku šolskega leta. Okvirno je bilo dogovorjeno število srečanj in vloga vzgojiteljic izvajalk. Posamezno srečanje so sestavljale etape vadbenega procesa: uvodni del (5 do 10 min), glavni del (25 do 30 min) in zaključni del (5 do 10 min). Uvodni del je vseboval elementarne igre s preprostimi poznanimi pravili in raztezne ter krepilne vaje. V glavnem delu vadbene ure smo preko organizacijskih metod ali oblik izvajali različne vsebine GŠA, kot so naravne oblike gibanja, atletska in gimnastična abeceda, igre z žogo in drugo. V zaključnem delu so otroci sodelovali pri pospravljanju orodja, za tem je sledila sprostitveno-umiritvena igra. Naloge vzgojiteljic izvajalk so bile iskanje otrokom primernih iger za posamezno srečanje in vodenje le-teh, zagotavljanje reda

in discipline v skupini, podajanje jasnih ter kratkih navodil, zagotavljanje varnosti in sodelovanje s starši.

Z namenom doseganja kakovostnejše izvedbe obogatitvene dejavnosti Mali kengurujčki je bil staršem in vzgojiteljicam ponujen krajši vprašalnik o pozitivnih in negativnih vidikih gibalne dejavnosti Mali kengurujčki. Populacija je obsegala dvajset staršev in štiri vzgojiteljice. Stopnja odgovorov je bila pri starših polovična, pri vzgojiteljicah pa stodontna. Starši so v anketi izrazili pozitivno mnenje o izvajanju gibalne dejavnosti Mali kengurujčki. Starši podpirajo tako vrsto udeleževanja, saj se vodi v varnem okolju, v katerem otroci preizkušajo svoje gibalne spretnosti in sposobnosti, se spoznavajo z različnimi športnimi elementi in se učijo, da je gibanje pomembna stalnica v življenju. Trdijo, da je otrokom izvajanje določenih nalog koristilo pri lažjem in spretnejšem premagovanju ovir v naravi. Navajajo tudi, da otroci v tej dejavnosti pridobivajo pomembne izkušnje sodelovanja v skupini in pri skupni vadbi. Gibalna dejavnost nudi otrokom sproščenost, boljše spanje, prijetno zdravo utrujenost, navdušenje, boljši motorični razvoj, boljšo samopodobo, boljše psihično in fizično počutje, razgibanost, gibčnost, discipliniranost in premagovanje strahu. Gibalna dejavnost daje otrokom možnost izražanja, hkrati pa se urijo v potrpežljivosti do vrstnikov in se navajajo na poslušanje pravil in navodil. Kot pozitivno izpostavljajo tudi, da GŠA organizirajo vzgojiteljice iz vrtca, ki ga obiskujejo njihovi otroci, ne pa zunanji sodelavci, društva ali klubi. Dejavnost jim nudi druženje z vrstniki in razvijanje gibalnih sposobnosti. Pomaga jim pri krepitvi mišic, predvsem pri tistih otrocih, ki imajo znižan mišični tonus. Starši so v anketi zapisali, da otroci prihajajo domov zadovoljni, navdušeni, polni energije, veseli in razgibani. Kot pomanjkljivost navajajo le frekvenco izvajanja dejavnosti: želijo namreč, da bi bila pogostejša. Predlagali so redno tedensko izvajanje obogatitvene dejavnosti v daljšem časovnem razponu. Starši so tudi mnenja, da bi se v GŠA lahko vključilo tudi otroke drugih starostnih skupin.

Vzgojiteljice so si enotne, da je gibanje izredno pomembno za zdravje otrok, in ga uvrščajo med primarne dejavnosti za zdravo, polno življenje človeka. Zavedajo se, da nekatere družine to otrokom omogočajo, druge pa ne. Prav zato takšno dejavnost pozdravljajo, saj otrokom omogoča tisto, kar jim primanjkuje. Prav je, da spodbujamo otrokovo željo po gibanju, kajti s tem se otroci razvijajo tako gibalno kot tudi socialno, in kar je tudi najpomembnejše, pridobivajo na samozavesti. Vzgojiteljice so potrdile, da so otroci iz njihovih skupin zelo radi obiskovali Male kengurujčke in so nestrpno čakali naslednje srečanje. Za obisk dejavnosti so se odločali sami, po navadi so tja odšli z najboljšimi prijatelji. Vzgojiteljice so videle napredek v vseh vidikih: gibanje so otroci doživljali kot napor z užitkom, krepila se jim je mišična zgradba, postajali so bolj vodljivi kot tisti, ki te dejavnosti niso obiskovali. Iz tega je razvidno, da je pri Malih kengurujčkih vladal red in so tudi otroci postali strpnjeji. Opazne so bile tudi naslednje spremembe: gibalno so bili razvitejši, potrpežlivejši,

ustvarjalni, med otroki je vladala socialna interakcija in urili so se v reševanju konfliktov. Gibalne dejavnosti so potekale v športnem duhu, k čemur spada tudi sprejemanje poraza, kar pa je pri taki starosti navadno še težko. Ena izmed vzgojiteljic je mnenja, da imajo prav triletniki zelo malo organiziranih gibalnih dejavnosti, zato je taka oblika dejavnosti prav za to starost dobrodošla. Ena izmed vzgojiteljic je v anketi predlagala, da bi se dejavnost izvajala enkrat tedensko, še posebno v zimskem času, ko so otroci veliko pred televizorji in računalniki in v zaprtih prostorih.

ZAKLJUČEK

Namen prispevka je predstaviti primer dobre prakse iz Vrtca Šempas. Prikazana in opisana je obogatitvena dejavnost Mali kengurujčki, ki se izvaja v vrtcu že drugo leto. Predstavitev je podkrepljena s strokovno literaturo. V prispevku so podani in analizirani pozitivni in negativni vidiki GŠA po mnenju staršev in vzgojiteljic iz Vrtca Šempas. Njihova mnenja bodo pripomogla h kakovosti izvajanja te dejavnosti tudi v prihodnje. Rezultati ankete kažejo, da so starši in vzgojiteljice naklonjeni takšni obliki vadbe v vrtcu. Zavedajo se, da njihovi otroci preko organizirane dejavnosti pridobivajo pomembne gibalne izkušnje, ki vplivajo na nadaljnji celostni razvoj otroka, znotraj katerega se oblikujejo tudi gibalni programi, ki se trajno zapišejo v gibalni spomin otroka. Ključnega pomena je, da otroci že v predšolskem obdobju pridobivajo široko paleto gibalnih izkušenj in gibalnih dejavnosti, ki jih privedejo do zavedanja samega sebe, oblikovanje lastne identitete, samospoštovanja in razvijanje samozavesti. Najpomembneje pa je, da vse to poteka preko njim najljubše dejavnosti – igre. S člankom želim poudariti, da z ustrezno usposobljenostjo izvajalk, organiziranostjo, podporo vodstva šole/vrtca ter primernim programom dela izvajanje dejavnosti obogati primarno poslanstvo vzgoje otrok. Starost otrok pri oblikovanju programa ne sme biti ovira.

Področje gibalnih dejavnosti pri otrocih odpira številne nove teme in vprašanja, na katera bi lahko v prihodnje odgovorili. Ena takih tem, ki je potrebna kritičnega pregleda, je primernost športnih rekvizitov za izvajanje športne dejavnosti.

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PLESNE DEJAVNOSTI V POVEZAVI Z GIBALNIM RAZVOJEM PREDŠOLSKEGA OTROKA

DANCE ACTIVITIES IN RELATION TO PRESCHOOL CHILD'S MOTOR DEVELOPMENT

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POVZETEK

Gibanje je ena od otrokovih osnovnih potreb, zato jim jo moramo ponuditi v takšni meri in na takšen način, kot si jo zaslužijo. Potreba po gibanju je pri otroku neizmerna, zato mu namesto »nalepke« nemirnega otroka raje ponudimo še malo več gibanja. Če pa gibanje povežemo še s plesom, bomo pri otroku spodbujali še ustvarjalnost, ki v povezavi skupinske dejavnosti doseže trojni učinek:

- Sprostitev,
- Prosocialno vedenje in
- Socializacijo

To, da spodbujamo ustvarjalnost pa pomeni, da se nam otroci odzovejo z svojimi, neobičajnimi, nepričakovanimi odzivi – zamislimi in nam jih ponudijo kot rešitev. In ta ustvarjalnost, kreativnost in inovativnost v povezavi z gibanjem, bo najino vodilo in rdeča nit v tem prispevku, ki jih bova skušali prikazati tudi skozi dva primera dobre prakse v vrtcu.

Ključne besede: gibanje, rajalne igre, ljudske rajalne igre, celostni razvoj, predšolski otrok, primeri dobre prakse

ABSTRACT

Movement is one of child's basic needs, that's why we have to offer it to them in the measure and in the way that they deserve it. The need for movement when it comes to a child is immense so instead of labeling a child with »restless«, we should offer him some more movement. If we connect movement with dance, we will also encourage the child creativity, which when connected with a group activity, achieves a triple effect:

- Relaxation
- Prosocial behavior and
- Socialization

To encourage creativity means that children respond to us with their own, unusual, unexpected responses – ideas and offer them to us as a solution. And that creativity and innovation connected with movement will be our guide and common thread in this

contribution which we will also try to present with two examples of good practice in kindergarten.

Keywords: movement, children dance games, children folk dance games, integrated development, preschool child, examples of good practice.

POMEN GIBALNO RAJALNE IGRE V PREDŠOLSKEM OBDOBJU

V predšolskem obdobju so posamezna področja otrokovega razvoja (telesno, gibalno, spoznavno, čustveno in socialno) tesno povezana. Otrok bo svet razumel in doživljal na podlagi tega kar bo doživel sam – iz lastnih izkušenj, ki jih bo pridobil z gibalnimi dejavnostmi in gibalno ustvarjalnostjo v različnih situacijah. Ker pa prihajajo otroci iz različnih okolji, je vrtec kraj, kjer ima otrok možnost pridobiti te izkušnje. Zato smo vzgojitelji dolžni zagotavljati čim bolj raznoliko spodbudno okolje, ki bo otrokom zagotovilo možnost pridobivanja teh izkušenj.

Integracija gibanja v pouk (dejavnosti v vrtcu) koristno vpliva na učence (predšolske otroke), saj gibanje (Kovar, Combs, Campbell, Napper-Owen & Worrel, 2004):

- izboljšuje cirkulacijo krvi in kisika,
- zvišuje vsebnost kisika v možganih,
- uravnava otrokovo razpoloženje,
- zvišuje raven notranje motivacije,
- zmanjšuje negativne vplive sedenja,
- odvrta od pasivnega učenja,
- pozitivno vpliva na razmišljanje,
- povečuje zainteresiranost,
- vzdržuje ravnovesje med duševnim in telesnim stanjem.

Glede na te rezultate, ki potrjujejo pomembnost kombinacije vseh čutov pri učenju, si ljudje zapomnimo:

- 10% prebranega,
- 20% slišaneega,
- 30% vidnega,
- 50% slišaneega in izrečeneega v istem času,
- 70% slišaneega, vidnega in rečeneega,
- 90% slišaneega, vidnega, rečeneega in narejeneega (igra vlog, dramatizacija, ples, slikanje, sestavljanje).

Poznamo več načinov gibalne igre in sicer skupinska ali individualna igra z gibanjem, didaktično gibalna igra s pravili, družabna gibalna igra in rajalna igra. Vse te igre skupaj povezujemo v isto skupino, saj vse vključujejo značilnosti otroške rajalne igre, razgibavanje, psihofizično sprostitev in osnove plesnega ustvarjanja. Tako gibalne igre kot tudi sprostitev so pri plesu zelo pomembne, saj tako spodbujamo otrokovo telesno in psihofizično sprostitev. Prav tako spodbujamo gibalno podoživljanje gibanja iz okolja, jih spodbujamo, da opazujejo gibanje v okolju ter ga posnemajo, uporabljamo gibalne spodbude z vsebinsko spodbudo, spodbujamo jih k gibalnem vživljanju ob glasbi (različni zvoki – vplivi evropske, azijske, afriške in ameriške kulture). Skupaj z gibanjem, opazovanjem in posnemanjem jim tako omogočimo lastno izražanje z gibi. Kadar uporabljamo gibalne motive predvsem za razgibavanje (predvsem v starejših skupinah) opuščamo vsebinsko spodbudo (Ramovš, 1980).

Plesna vzgoja poteka v igralni gibalni dejavnosti. Vsebina plesne vzgoje je igra z gibanjem. Otrok se igra z gibanjem lastnega telesa in z gibanjem v skupini. Plesna vzgoja spodbuja razvoj ustvarjalnosti kot osebne lastnosti. Bogato predstavno mišljenje, domišljija in kreativno mišljenje so sestavine ustvarjalnega procesa. Plesna vzgoja omogoča in spodbuja sodelovanje in uveljavljanje posameznika v skupini. Otrok lahko sodeluje v skupini na več načinov – se vključi v enotno gibanje skupine (npr. v rajalni igri), ali pa povzame določeno dolžnost v skupini.

Plesna vzgoja kot gibalno-igralna aktivnost omogoča otroku sprostitev notranjih napetosti kakršnega koli izvora. S sprostitevjo ter z možnostjo uveljavljanja in ustvarjanja omogoča ponovno vzpostavitev ravnovesja v otrokovi osebnosti (Kroflič in Gobec, 1992). Pri načrtovanju glasbeno-plesnih dejavnosti mora vzgojitelj upoštevati interese in razvojne zmožnosti otrok. Najprej otroke posluša in opazuje, nato pa tudi sam pevsko in gibalno ustvarja. Vzgojitelj mora sprejeti različne spontane gibalne reakcije otrok. Otrok naj bo v vlogi poslušalca, plesalca, opazovalca in predvsem ustvarjalca (Denac in Ilić, 1993).

PRIMERI DOBRE PRAKSE

Oris skupine

- Otroci so stari od 5 – 6 let,
- Skupino sestavlja 24 otrok, od tega 13 deklic in 11 dečkov.
- V jesenskem času so preko spoznavanja novih vrstnikov oblikovali priljubljene pare, skupine..., veliko jih je utečenih že iz preteklega šolskega leta.
- Med njimi je zaznati sodelovanje, nudijo pomoč drug drugemu, izražajo svoje želje, domislice, ideje...

- Konflikte že dokaj uspešno rešujejo sami, nekaj posameznikov pa še potrebuje pomoč odraslega.
- Delijo svoja mnenja z drugimi, z odraslimi osebami v skupini, razlagajo svoje teorije, predstave, izražajo svoje potrebe..., saj vedo, da bodo upoštevani in slišani.
- S sodelavko slediva njihovem napredku, razvoju, jih intervjuvava, opazujeva, dokumentirava njihove dejavnosti, ideje, izjave, izdelke.... in jih participirava v načrtovanje dejavnosti, rutine, proste igre in evalvacije – refleksije ter pri načrtovanju izhajava iz njihovih pobud.
- Večina otrok je sposobna kooperativne igre in med njimi poteka bogata interakcija.
- Njihovo vedoželjnost in potrebo po raziskovanju s sodelavko spodbujava z omogočanjem spodbudnega in razgibanega okolja in možnosti uporabe raznovrstnega didaktičnega in nestrukturiranega materiala, ki jim je vedno na voljo in na doseg.
- Večina otrok izraža veliko mero samostojnosti na vseh področjih.
- Najina prioriteta naloga v letošnjem šolskem letu pa je spodbujati sodelovalno učenje med otroki in na ta način dvigovati raven soustvarjanja življenja v vrtcu ter vzpostavljati zdrave, pozitivne človeške odnose.

LJUDSKI PLES

V preteklem šolskem letu, smo se v naši skupini 5-6 let starih otrok iz Vrtca Velenje, posvetili raziskovanju preteklosti iz življenja naših prednikov – babic, prababic... in tako pod naslovom Življenje nekoč, ustvarjali, spoznavali in odkrivali zgodovino našega kraja.

Primeri dejavnosti na temo Življenje nekoč – medpodročne povezave s področij dejavnosti:

- igre lovljenja in skrivanja (Slepa miš)
- sodelovanje v rajalnih in gibalnih igrah iz ljudskega izročila na prostem in v igralnici (Kolovrat, En`ga konjiča smo `zgubili, Mat potico pečejo, Mati, ali je kruh že pečen, Ali je kaj trden most, Gnilo jajce, Ristanc...)
- prstne igre z vrvico in brez – potoček, zibka in Ena žaba je umrla
- poslušanje različnih pravljic z zgodovinsko tematiko, ki opisuje način življenja (npr. Kekec...)
- nove besede predmetov, ki jih zbiramo za razstavo (oljenka, skleda, mlinček, frajtonarica...)
- poslušanje zgodbe o punčki iz celuloide – obisk babice
- pogovor: Zakaj so se uporabljali določeni predmeti?
- poslušanje izštevank, zbadljivk, rim iz knjig Enci benci na kamenci 1,2,3
- ura pravljic v šolski knjižnici – Ivan Cankar, Pehar suhih hrušk

- tihožitje (otrok si izbere predmet iz razstave in ga poustvari s slikanjem, risanjem ali kiparjenjem)
- sodelovanje v skupni dejavnosti Dan za pesmico: Ljudske pesmi – Mi se imamo radi, Marko skače, Majhna sem bila...
- poslušanje igranja na staro diatonično harmoniko - frajtonarico
- zbiranje starih predmetov in postavljanje razstave
- spoznavanje namena oz. funkcionalnosti predmetov
- izdelovanje plakata Nekoč – danes (primerjava)
- slovenski tradicionalni zajtrk v petek, 16.11.2012
- spoznavanje različnih materialov, iz katerih so bili izdelani stari predmeti (glina, les, železo, blago, celuloid...)
- pogovor o tem, kako so se ljudje v starih časih prehranjevali: na kakšen način, kaj so jedli, kje so dobili hrano, s čim so si pomagali...
- zamesimo testo za kruh; kaj potrebujemo: sestavine (snovi)-moka, voda, sol, kvas, lahko dodamo semena..., peka kruha v šolski kuhinji
- pisanje oz. risanje recepta za kruh, seznanjanje s količinami
- opazovanje in zapisovanje zaporedja dogodkov pri mešanju testa (najprej, potem, zatem...)
- razporejanje predmetov glede na različne lastnosti (material, namembnost)

LJUDSKI PLES: »Enga konjička smo izgubili«

Igro smo se igrali v naši igralnici, v šolski avli in na dvorišču. Ta igra izhaja prav iz zgodovine našega kraja Velenja in je zato v drugih predeli Slovenije nepoznana. To je tipično otroška rajalna kolo igra. Na začetku sta postavljena dva kroga. V prvem stojita dva otroka, ki igro začneta s pesmijo: »Enga konjička smo zgubili, zgubili, oja«. V drugem krogu stojijo preostali otroci, ki odgovarjajo na vprašanja prve skupine otrok. Igra poteka po principu z izbiranjem in odgovori. Vsakič se po značilnostih – barva las, oblačil... izbere enega ali več otrok, ki se pridružijo prvemu krogu. Ples je preprost – vrtenje v smeri urinega kazalca v kolu. Na koncu ostaneta v drugem krogu dva otroka, ki ponovno začneta igro:

☒: »Enga konjička smo zgubili, zgubili, oja.«

☉: »Mi ga nismo našli, našli, oja.«

☒: »Glih vi ste ga pa našli, našli, oja.«

☉: »Kake farbe je pa bil, je pa bil?«

☒: »Imel je rdečo kapo (pisan firtuh, lepe kitke...), kapo, oja.«

☉: »Tu ga/jih zdaj imate, imate, oja.«

EVALVACIJA

Otroci so se v to rajalno igro vedno vključili z navdušenjem in željo po ponovni igri. Igrali so se tudi pri simbolni igri in v spontani igri na prostem in v igralnici. Med njimi je potekala neka »skrivna« interakcija – katere konjičke bodo izbrali. Hkrati igra zahteva sledenje in prepoznavanje nekih lastnosti iz kratkih opisov od vsakega posameznika, ki se to igro igra. Uživali so tudi v narečju, v katerem je ta rajalna igra (firtoh, farba...). Pomembno je to, da je vnašanje otroškega ljudskega izročila v delo vrtcev izjemno pomembno tako za ohranjanje naše narodne kulture in identitete, kot tudi iz vidika spodbujanja veselja za gib in ples ter želje po poustvarjanju. Predšolski otroci živijo v svojem svetu, kjer prevladuje otroško doživljanje in domišljija in zato je dobro izkoristiti ta čas in jim na zanimiv način približati vrednote ljudskega izročila. To lahko naredimo s pomočjo zanimive zgodbe (babica s punčko in zgodba iz njene mladosti), pesmi (Marko skače, Zibnšrit...), plesa (Kolovrat, Enga konjička smo zgubili, Lepa bela lilija...), igre (Ena žaba je umrla, Reci ena ena ena...), starega predmeta (Zajček, peglezn, rifl, frajtonarca...), instrumenta (frajtonarca, nunalca, bumbajs...), knjige (Enci benci 1,2,3) ali običaja (koline, peka kruha...). Pomembno je, da otrok to sprejme kot igro in da vsak po svoje to tudi doživlja, interpretira in poustvarja, dodaja kaj svojega, saj je ljudska pesem, ples in igra nedokončan proces.

RAJALNA IGRA

V mesecu oktobru in novembru 2012, smo v naši skupini preko dejavnosti NTC učenja, ki so stalnica v našem vrtcu, zaradi interesa otrok prešli na dejavnosti tematskega sklopa Življenje na gradu. Zopet sva dejavnosti načrtovali na pobudo, odziv in interes otrok in jima ponudili naslednje dejavnosti:

- izvajanje naravnih gibanja v naravi (pohod na Velenjski grad), pred vrtcem Vrtiljak in v prostoru
- gibalna igra: Kralj, koliko je do vašega gradu
- VU s črvi (sabljanje, jezdenje...)
- sodelovanje pri ustvarjanju rajalne igre na pesem Kraljična na zrnu graha - poslušanje različnih pravljic s tematiko grajskega življenja (Kraljevo jabolko, O kralju, ki ni pospravljaj, Kraljična na zrnu graha...)
- razširjamo si dosedanja vedenja z novimi besedami (kelih, služabnik, grajska sobana, kraljeva moč...)
- intervju z otroki (kaj je »kraljeva moč«...)
- Ura pravljic v šolski knjižnici (Kraljična na zrnu graha, Kraljevo jabolko)
- likovno ustvarjanje v različnih tehnikah po izbiri otrok na temo vsebin pravljic, pogovora, doživetja na gradu...

- nova pesem kot spodbuda za rajalno igro: Kraljična na zrnu graha
- poslušanje klasične glasbe različnih izvajalcev
- grajski ples ob klasični glasbi v parih
- seznanjanje z zgodovinskim obdobjem (obisk gradov –Velenjski, Šaleški)
- otrok spozna domači kraj in se seznanja s tem, kako so ljudje tod živeli in delovali v prejšnjih časih
- izdelovanje plakata o Velenjskem gradu
- sodelovanje pri oblikovanju in urejanju prostora (kotiček za zdravje, grajski k., pravljичni k...)
- pohod na Velenjski grad
- sestavljanje gradov iz različnih konstruktorjev
- risanje načrtov gradov
- prirejanje 1vitez – 1 meč – 1 ščit
- risanje simbolov (grbov-heraldike)

RAJALNA IGRA: »Kraljična na zrnu graha«

To rajalno igro sva uvedli v sklopu vadbene ure:

VADBENA URA S ČRVI

ŠPORTNI PRIPOMOČEK: črvi (plavalne tube)

CILJI:

- krepitev mišic nog
- krepitev mišic rok
- razvijanje koordinacije gibanja celega telesa
- medpodročno povezovanje

UVOD: Tekalna igra: lovljenje

- z izštevanko Na hribčku grad stoji določimo tistega, ki lovi. Kdor je ulovljen, počepne, rešen je lahko z dotikom prijatelja
- kdor je ulovljen, stopi v razkorak, rešen je tako, da se mu prijatelj splazi med nogami.
- lovljenje v parih: par, ki je ulovljen, je izločen (počiva).(vmes menjujemo lovilce, na znak z zvončkom, ali na izklic STOP)

GLAVNI DEL: Vaje s črvi

- črvi so razmetani po prostoru (to so speči zmaji), otroci (vitezi) se gibljejo na način, ki ga sami izberejo; hodijo, tečejo, skačejo, plazijo...(potujejo do gradu, po kraljično). Med gibanjem se ne smejo dotakniti oz. pohoditi črvov (da ne zbudijo zmajev) in

prijateljev (vitezov, saj so lahko tudi ti nevarni). Na znak se ustavijo (zmaji so premagani).

- Vsak otrok vzame svojega črva in si ga da med noge (zajahajte konje, pot do gradu je še dolga) in se giblje z njim po navodilih; hitro, počasi, v galop, čez ovire (vitez jezdi skozi gozd, kjer ga čaka marsikaj...).
- Na izklic POŠAST: s črvom udariš ob tla (da preženeš pošast) petkrat!
 - LETEČI ZMAJ: se uležeš na črva in se njim kotališ (da zmedeš zmaja)
 - GOZDNI POŽAR: s črvom (cevjo) »gasiš ogenj kot gasilci«
- (ko prispejo do gradu, se morajo spopasti s kraljevo stražo-bojevanje z meči) črve uporabijo za meč. Bojujejo se stoje, čepe, kleče, na eni nogi... (uspelo vam je premagati stražo in priti do gradu, zato lahko pripravite meče) črve prinesejo na kup, (in ugotovite, če je kraljična prava)

ZAKLJUČEK: Z izštevanko določimo kraljično in viteza in zaplešemo rajalno igro Kraljična na zrnju graha.

POTEK RAJALNE IGRE:

Rajalna igra Kraljična na zrnju graha je rajalna igra z vlogami, kjer imata dva izmed njih posebno vlogo in se gibljeta drugače kot ostali – kraljična »spi« v sredini kroga, princ pa »jezdi« okoli kroga v nasprotno smer. Pri vsaki kitici, smo si izmislili tudi določeno obliko gibanja. V prvi, se otroci držijo za roke in hodijo v krogu okoli kraljične in pojejo. V drugi kitici, se krog ustavi in v ritmu stopajo en korak naprej in en korak nazaj. V tretji pa se z rokami ob bok vrtijo okoli svoje osi in na koncu z gesto roke pokažejo na kraljično. Da pa sta lahko kraljična in princ tudi zaplesala, smo dodali še eno kitico, ker sta se vrtela tako zunanji, kot notranji krog in peli na »la, la, la...«.

KRALJIČNA NA ZRNJU GRAHA

KRA - LJ I Č - NA NA ZR - NU GRA - HA , KRA -
PA VSE JO ZBADA PA VSE JO , PI KA , PA VSE
TO RES PRA VA JE KRA LJ I Č NA , TO

LJ I Č - NA NA ZR - NU GRA - HA , KRA - LJ I Č - NA NA ZR - NU
JO ZBADA PA VSE JO PI - KA PA VSE JO ZBADA PA VSE
RES PRA VA JE KRA - LJ I Č - NA TO RES PRA VA JE KRA

GRA - HA , NA ZRNJU GRA - HA LE - ŽI .
JO PI - KA IN VSE JO BO - LI .
LJ I Č NA NAJ PRINCSE Z KUJO PO - DO - ČI .

Slika 1: Pesem za rajalno igro se poje na melodijo »We wish you a merry Christmas«

Besedilo je izmišljeno na temo pravljice Kraljična na zrnju graha.

EVALVACIJA

Ta rajalna igra je pri otrocih naletela na močan odziv. Vedno so se je želeli igrati tako dolgo, da so vse deklice prišle »na vrsto« za kraljično in vsi dečki za princa. Mnogokrat so se igrali tudi sami – brez najine pobude. Ob tem so si vedno razdelili vloge tako, da so določilo vodjo ali pa se je vodja določil kar sam in je nato »postavljaj« pravila, delil ostale vloge, popravljal otroke, njihovo gibanje, petje itd... Večkrat so se igrale deklice, vendar niso nikoli imele težav pri vključevanju »princev« v svojo poustvarjalno igro, saj so bili dečki vedno pripravljeni sodelovati, četudi so jih deklice potegnile v svojo igro od kakšne druge igre. Ravno tako, smo morali ponavljati tudi dele vadbene ure, saj je bila otrokom tako všeč, da so še večkrat izrazili željo po gibanju s črvi.

ZAKJUČEK

V današnji družbi se pojavlja vedno več individualizma, želje po uspehu posameznika in rivalstva. Otrok v predšolskem obdobju pa je upravičen do kvalitetne obravnave v vzgojnem procesu, katero mu lahko nudimo vzgojitelji z ustreznimi pristopi. Delo v majhnih skupinah, kjer obstaja pozitivna povezanost in soodvisnost med člani skupine, ko skušajo s pomočjo neposredne interakcije pri učenju doseči skupen cilj, je bila naša glavna naloga.

Pri skupinskem delu se ohrani tudi odgovornost vsakega posameznega člana skupine, na kar se lahko navajajo tudi naši najmlajši. Tako lahko ob načrtovanih ali priložnostnih dejavnostih rajalnih iger in ljudskih plesov uspešno vplivamo na celostni razvoj predšolskega otroka. Ponudimo jim čim več raznovrstnih rajalnih in ljudskih dejavnosti, ki bodo od njih zahtevale interakcijo, dogovor, sodelovanje in jih spodbujale k gibu, plesu in ustvarjanju. Ne smemo pozabiti, da bo naša kreativnost, ustvarjalnost in veselje do plesa vplivala nanje neposredno. Mi smo jim vzgled, partnerji in pomočniki pri igri in ustvarjanju.

Nedvomno smo pri svojem delu uspešnejši, če sledimo otrokom in se odzivamo na njihove pobude, želje, potrebe... Zato načrtujmo v kontekstu, bodimo domiselni in kreativni. Če bomo takšni sami, nam bodo zagotovo sledili tudi otroci.

Povzamemo lahko, da je uvajanje in izvajanje ljudskih plesov in rajalnih iger še kako pomembno v razvoju predšolskega otroka, saj so tovrstne igre ene prvih, kjer so otroci pripravljeni sodelovati, se povezati v skupino. Skozi zorenje otrokove osebnosti in njegovega psihofizičnega razvoja, pa tovrstne dejavnosti izjemno pozitivno vplivajo na zadovoljevanje potreb po sprejetosti, pripadnosti in ustvarjalnosti. Naj bodo rajalne igre in ljudski plesi naše »orodje« pri spodbujanju otrok k sodelovanju in težnji po skupinskem uspehu, h katerim jih bomo usmerjali tudi v nadaljnjem razvoju.

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IGRA NA PROSTEM

LET'S PLAY OUTSIDE

Gabrijela KUKOVEC PRIBAC

Mladinsko zdravilišče in letovišče Debeli rtič, Slovenia

POVZETEK

V prispevku je predstavljena igra na prostem kot didaktično sredstvo na področju zdraviliške dejavnosti, primerno za vso družino, ki dobi pomen, ko se vzpostavi stik in komunikacija med vsemi člani družine. Hkrati pa je izredno pomembno, da se odvija v naravnem okolju. Le to pomirja in hkrati stimulira sproščen odnos, brez agresivnih digitalnih motečih dejavnikov. Dogaja se v realnem in pomembnem socialnem kontekstu, posameznik lahko takoj preveri in preizkusi učinek, ter tako dobi potrditev od članov družine. Izkušnje, ki nastanejo pri ravnanju z osnovnimi potrebami, ob igri na prostem, so najboljši izid dela z družino.

Ključne besede: Igra, igrišča, družina, narava, otroci, razvoj.

SUMMARY

The outdoors playing is fun and suitable for all the family. The real meaning of the family playing outside starts when they become connected and the communication starts between all the members of family. At the same time, it is vital that takes place in a natural environment. Only this is soothing and stimulating for children. At the same time family get relaxed attitude, without aggressive digital distractions. The game outdoors is happening in the real and important social context, and individual can immediately verify and test the effect of all the parts of his or her family. The best outcome of the work with the family is adequately experienced that arise when dealing with basic needs, while playing outdoors,

Key words: To play, playgrounds, family, nature, children, development.

UVOD

Težave v družini se velikokrat kažejo skozi vedenje otrok, saj otroci s svojim vedenjem opozarjajo na svojo stisko. Igre na prostem so zabavne in primerne za vse družinske člane. Glavna prednost je ravno v tem, da se na drugačen način ponovno vzpostavi stik in komunikacija med vsemi člani družine, ta proces pa poteka v naravnem okolju in z nevsiljivimi sredstvi. V Mladinskem zdravilišču in letovišču Rdečega križa Slovenije Debeli

rtič (MZL) nudimo pomoč in oporo družini in njenim članom, s posebnim poudarkom na otrocih. Z našim delom pri družinah spodbujamo ustvarjalnost, skupno preživljanje prostega časa celotne družine, soustvarjamo stik s kulturno dediščino in umetnostjo in usposabljammo za kvalitetno starševstvo. To dosegamo z izredno raznolikimi igralnimi površinami na prostem. Nogometnim, košarkarskem, odbojgarskim igriščem, trim stezo, bazenom. Hkrati pa vsako leto pripravimo še drugačna, izvirna igrišča, ki so usmerjena v raziskovalno ali celo ekološko stimuliranje aktiviranja otrok in družine. To je Axle igrišče, ki je izdelano iz 400 odpadnih avtomobilskih gum in Začaran gozdček, kjer je iz naravnih materialov izdelana vasica z hišicami za škrate. Ob prisotnosti celotne družine, lahko posameznik takoj preveri in preizkusi njen učinek, ter tako dobi potrditev od ostalih članov. Dogaja se v realnem in pomembnem socialnem kontekstu. Prav zato so nove izkušnje, ki nastanejo ob igri na prostem, pri ravnanju z osnovnimi potrebami, nedvomno dober izid dela z družino in otroci.

RAZVOJ OTROKA IN OTROŠKA IGRA

Otrokov razvoj (Marjanovič Umek in Zupančič, 2005; Pišot in Jelovčan, 2006; Krevsel, 2008) v osnovi poteka na petih področjih, ki se med seboj dopolnjujejo, pogojujejo in prepletajo:

- kognitivni razvoj: razvoj občutenja in zaznavanja, razvoj govora, spoznavanje in raziskovanje okolja, reševanje problemov, razvoj domišljije in ustvarjalnosti, razvoj socialne kognicije;
- emocionalni razvoj: sproščanje in izživljanje čustev (npr. doživljanje zadovoljstva, premagovanje strahu), premagovanje težav in konfliktov, uresničevanje želja ...;
- socialni in moralni razvoj: razvoj socialne kompetentnosti (sodelovanje, razumevanje in upoštevanje drugih), razvoj samokontrole (npr. impulzivnosti, agresivnosti), osvajanje družbenih pravil in norm;
- osebni razvoj: razvoj avtonomnosti, spoznavanje sebe (oblikovanje samopodobe) in sveta (spoznavanje različnih vlog in vstopanje v svet odraslih).
- razvoj gibalnih spretnosti in sposobnosti.

Eden izmed medijev, ki pomembno pomaga pri razvijanju omenjenih področij je prav igra. Glede na vsebino bi lahko ločili dve vrsti iger: funkcijsko in simbolno igro. Funkcijska igra obsega prakticiranje določenih funkcij (zlasti občutenja in zaznavanja ter gibanja) in ni povezana z značilnostmi gradiva ali izrazno vsebina igrač. Tipične take igre so: najrazličnejše vrste gibanja (plazenje, plezanje, guganje ...), tipanje in okušanje predmetov, vlečenje in prenašanje stvari, odpiranje in zapiranje, presipanje in pretakanje snovi, gnetenje, mečkanje, trganje, čečkanje ... Za simbolno (domišljijsko) igro pa je po drugi strani značilno, da si otrok predstavlja stvari, ljudi ali dogodke, ki dejansko niso prisotni – uporablja torej

simbole. V domišljiji tako svobodno spreminja tako vloge sebe in svojih soigralcev, kot tudi pomen predmetov (npr. škatla je lahko ladja, avto, postelja, če jo obrnemo, pa postane miza itd.). Pri tem posnema osebe ali živali iz realnega življenja, a njihove vloge kombinira na svojstven način in jim dodaja tudi domišljijske elemente. Ta igra zrcali otrokova izkustva, želje, pa tudi stiske in napetosti, ki jih sprost prek igre. Obe obliki igre sta prisotni tudi pri igri na prostem, na katero smo se pri nas osredotočili v nadaljevanju.

VPLIV IGRE NA PROSTEM NA OTROKOV RAZVOJ

Igra na prostem je za otroke ena od osnovnih dejavnosti, potreba in pogoj, da se normalno psihično in fizično razvijajo (Marjanovič Umek in Zupančič, 2005). Bistveni pogoj učenja in razvoja sta čustvena ter fizična varnost in sproščenost. Otrok, ki je prestrašen, napet ali pod pritiskom, se ne more učiti, razvijati novih spretnosti, poimenovati, obvladovati in nadzirati svoja čustva ter regulirati svoje vedenje. Igra na prostem ob odraslih, ki zagotavljajo čustveno varnost, je tako ključnega pomena za celostno učenje ter razvoj socialnih spretnosti (Siegel, 2011). Prav tako igra na prostem vpliva na otrokove gibalne in kognitivne sposobnosti, emocionalno in socialno zrelost in konstanten razvoj le-teh. Ker je otrok motiviran, vpliva na hitro in stimulatивно učenje. Igra je povezana z razvojem na miselnem, jezikovnem in socialnem področju. S pomočjo igre v naravi otrok na svoj način raziskuje in preizkuša. Igra postane osnovno gibalno psihičnega razvoja in osnova za njegove primarne oblike učenja (Marjanovič Umek in Zupančič, 2005). Igra na prostem je spontana in ustvarjalna aktivnost. Na prostem se otrok nauči biti neodvisen od svojega socialnega okolja, hkrati pa ga le-to spodbudi, ga da je aktiven. Na prostem otroci postanejo aktivni udeleženci, v igri aktivno sodelujejo drug z drugim in so dejavni z različnimi predmeti na različnih terenih (Pišot in Jelovčan, 2006). Pozitivni vplivi, ki jih ima naravno igrišče (Marjanovič Umek in Zupančič, 2005; Pišot in Jelovčan, 2006; Krevsel, 2008, Tomšič Čerkez in Zupančič, 2011) so zlasti pri igri v naravnem okolju, ko otroci sami razvijajo matematično razmišljanje - brez kakršnega koli usmerjanja, poučevanja ali vodenja. Otroci tako oblikujejo, merijo, štejejo, primerjajo velikosti, ocenjujejo dolžine itd. Matematično razmišljanje postane del spontane in zabavne igre, matematične veščine pa otrok osvoji v nekaj minutah. Veliko prej kot to uspe v klasičnem izobraževalnem sistemu, kjer se dogaja relacija učitelj - razred – tabla. Najlepše pa je, da so na koncu ob rešitvi naloge nagrajeni še z lastnim uspehom. Med igro v naravnem okolju se spontano začne skupinsko delo, pogloblja se prijateljstvo in tovarštvo. V medsebojni komunikaciji se izboljšata predvsem poslušanje in sodelovanje. V šolstvu se učni programi sicer trudijo, da bi dosegli omenjene kompetence skupinskega dela in sodelovanja, vendar so v primerjavi z naravnim okoljem veliko manj uspešni. Naravna igra presenetljivo vpliva na otrokovo vedenje, ki odpre otroku željo po pridobivanju dodatnega znanja in

učenja. Otroci so v socialnem okolju bolj umirjeni, osredotočeni in prisotni. Čas koncentracije se jim podaljša. Otroci so veliko bolj aktivni, tečejo, skačejo, in se gibajo brez omejitev. Nadzor in skrb za otroka se tako pomembno zmanjšata. Otroci so ne poslužujejo agresivnih kontaktov, saj je toliko dejavnosti, da za prepire in negativna čustva, enostavno nimajo časa. Zavedanje nevarnosti in določeno tveganje je vedno prisotno. S pomočjo statistike ugotavljamo, da je glede na celotno število otrok, ki obiščejo MZL v povprečju, oskrbovanih le 0,03 % otrok, pri čemer gre za manjše zunanje poškodbe, kot so odrgnine, ureznine, zvini ipd. Vendar pa so prednosti igre na prostem tako visoke, da se ob zaupanju v otrokove sposobnosti in pravilnem opozarjanju na tveganja, otrok sam dovolj zave svoje odgovornosti, postane bolj pozoren na svoje zmožnosti, se ne poškoduje in hkrati pazi, da ne poškoduje drugih. Ne smemo pozabiti na vlogo odraslih, ki vodijo, usmerjajo in nadzorujejo otroke. Vsak odrasel se v prvem trenutku ustraši, saj je odgovornost za otroka vedno velika. Strah je pri odraslih vedno prisoten. Vendar pa je potrebno ves čas opozarjati na prednosti igre v naravi, ki jo na otroku zelo hitro opazimo. Ob večkratnem obisku in vedno bolj sproščenih igrah, tudi odrasli hitro zaznajo, da je otrok sam po naravi previden in pozoren. Pri igri na prostem, je potrebno razmišljati tudi o ustreznih oblačilih in obutvi. Kljub temu, da se otroci navadno hitro umažejo, to ni tako velika težava, saj se blato hitro posuši in ga lahko preprosto skrtačimo. Drugih umetnih ali škodljivih snovi pa v naravi ni. Otroci se po igri na prostem počutijo prijetno utrujeni, polni doživetij, umirjeni in sproščeni. Počutijo se pomembne, svobodne, pogumne in pametne. Za odrasle je poseben užitek opazovati nasmejane otroke, ki z žarečimi lici in z velikim apetitom, zvečer od utrujenosti zelo hitro zaspijo. To lahko naredi le igra na prostem.

DEJAVNIKI, KI VPLIVAJO NA IGRO NA PROSTEM

Otroci se med seboj razlikujejo glede na vsebino in način igre, vrsto iger in igral, čas, ki si ga želijo preživeti na različnih igralih in v različnih igrah, itd. (Tomšič Čerkez in Zupančič, 2011). To je potrebno opazovati in upoštevati. Med samo igro smo pozorni na naslednje dejavnike (Pišot in Jelovčan, 2006; Marjanovič Umek in Zupančič, 2011):

- otrokove osebne značilnosti: živahnost, družabnost, vztrajnost, samozaupanje ipd.;
- spol otroka: otroci kažejo različne preference v zvezi z izbiro iger in igral, ki so/niso skladne s stereotipno vlogo moškega in ženske v družini in družbi;
- trenutno fizično in emocionalno stanje otroka: utrujenost, bolezen, razigranost, jeza, domotožje, žalost itd.;
- trenutna situacija: letni čas, količina prostega časa ipd.;
- ožje okolje: spodbude odraslih, igralni materiali, tematske vsebine igrišč.

IGRA NA PROSTEM IN VLOGA ODRASLEGA

Globok čustven stik med starši in otrokom je ključnega pomena za otrokov zdrav in celosten razvoj, ter za razvoj njegovih možganov - predvsem njihovih regulativnih in formativnih funkcij (Marjanovič Umek in Zupančič, 2005). Ta stik pomeni starševsko notranjo in zunanjo naravnost na otroka ter njihovo sposobnost otroka opazovati, začititi, potolažiti, spodbuditi ter se povezati v sproščeni spontani igri. Pri tem je pomembno, da so tako otrok kot tudi starši telesno sproščeni, to pa omogoča prav stik z naravo in igra na prostem. Daniel Siegel (2004, 2011, 2013) v svojih delih opisuje pomen in vpliv starševske drže na oblikovanje in razvoj otrokovih možganov, ter poudarja, da je glavni mehanizem, s pomočjo katerega starši lahko oblikujejo otrokovo notranjost in ji nudijo pogoje za razcvet prav njihova sposobnost biti v stiku s seboj, se znati ob otroku umiriti, sprostiti svojo telesno napetost in ločiti med svojimi otroškimi spomini ter sedanostjo ob otroku. Pri tem je zelo dobrodošlo, če starši vse te mehanizme lahko spoznavajo in izkušajo v okolju, ki je kar najbolj ugodno in varno. Igra na prostem je razvojnega pomena za otroka in je enako pomembna tudi za odrasle, ki otroka spremljajo - družina ali vzgojitelji. Odrasli s pomočjo igre najlažje ustvarimo kontakt in čustveno relacijo z otrokom. Ob opazovanju otroka pri igri, imamo možnost spoznavati njegove razvojne značilnosti (sposobnosti, spretnosti) in osebne lastnosti (Pišot in Jelovčan, 2006). Odrasle ozaveščamo, da prepustijo otroku, da je njegova igra spontana in svobodna aktivnost. Igre naj se ne usmerja, ampak se prepusti otrokovi aktivnosti in sledi njegovim navodilom, ki je hkrati verbalna in gibalna. Pomembno je, da igro vodi otrok, odrasli pa so le prisotni in sodelujejo le na otrokovo željo, povabilo. V tehnološko razvitih družbah je vključevanje odraslega v otrokovo igo posebno pomembna vloga. Igra s tem pridobi na vrednosti, saj z zainteresiranostjo odraslega, otrok pridobi na svoji lastni pomembnosti kot osebnosti, s tem pa gradi pozitivno samopodobo. S pomočjo besednega in čustvenega tolmačenja si otrok razvija lastno tolmačenje sveta in svojega delovanja v njem. Odrasel v interaktivni igri z otrokom ubesedi, označuje, kategorizira in poenostavlja tako svoje okolje kot tudi čustva. Otroku tako služi kot model vedenja za posnemanje, česar še sam ne pozna ali ne zmore izvesti (Siegel, 2004).

PROJEKT »IGRAJMO SE ZUNAJ«

Pri projektu »Igrajmo se zunaj«, ki smo ga zasnovali v letu 2013 MZL Debeli rtič znotraj pedagoške službe. Gre predvsem za usmerjanje in svetovanje na pedagoškem področju. Projekt je nastal kot odziv na potrebe družin, ki iščejo spontane možnosti za igro na prostem. Aktivnosti, kot so ustvarjalne delavnice in tipične hotelske animacije za naše goste, niso zadostovale. Naša težnja je bila nuditi oporo in pomoč celotni družini, še posebej otrokom in

mladostnikom. S tem pa zmanjševati ali celo preprečevati socialno izključenost družine in njenih članov. Povezovati skupne interese otrok, staršev in celotnega družinskega sistema. Pri tem pa vključiti našo naravno okolje naš ohranjen mediteranski park, torej igro na prostem. Predvsem stremimo k izboljšavi in krepitvi:

- zmožnosti družin za zadovoljevanje njihovih potreb;
- učno uspešnost otrok;
- občutek osebne vrednosti in izboljšanju samopodobe (odraslih in otrok);
- obogateno, konkretno in ljubečo komunikacijo in odnose med odraslimi in otroci;
- kakovost družinskega življenja.

Projekt »Igrajmo se zunaj« je tako v prvi vrsti namenjen družinam, ki se srečujejo s težavami, kot so:

- nenehni konflikti, nezadovoljstvo in odtujenost v družini;
- razmišljanje parov o razvezi oz. razhoda;
- težave pri vzgoji;
- doživljanje stalne kritike, obtožb in poniževanj;
- čustveno, fizično ali spolno nasilje;
- osamljenost in občutek tesnobe;
- prezaposlenost in delovna izgorelost.

Temeljni cilj projekta je dvig kvalitete življenja družin:

- zamenjava starih, obremenjujočih in nekoristnih vzorcev vedenja s koristnejšimi in ustrežnejšimi;
- ozavestiti in preoblikovati nezavedne, toge, privzgojene vzorce odnosov. pretekle izkušnje, ki izhajajo iz zastarelih prepričanj, čutenj in ravnanj več generacij;
- uvid v delovanje družinskega sistema in možnost za spremembo »lahko vplivam na svoje življenje«;
- večja senzitivnost za prepoznavanje in ustrezno izražanje čutenj oz. ustrežnejša regulacija spontanih reakcij;
- opazovanje in zavedanje svojega telesa;
- ozaveščanje možnosti samonadzora in odgovornosti za svoje življenje;
- splošno izboljšanje samopodobe in dvig samozavesti.

Konvencija o otrokovih pravicah OZN (2014) velja pri nas od 2. septembra 1990 v skladu z 49. členom. Njen 31. člen govori: »Države pogodbenice priznavajo otrokovo pravico do

počitka in prostega časa, do igre in razvedrila, primerne otrokovi starosti, in do prostega udeleževanja kulturnega življenja in umetnosti. Države pogodbenice spoštujejo in podpirajo otrokovo pravico polno se udeleževati kulturnega in umetniškega življenja in spodbujajo zagotavljanje ustreznih in enakih možnosti kulturnega, umetniškega, razvedrilnega in pristočasnega udejstvovanja.« V skladu z 31. členom, iz »Konvencije o otrokovih pravicah« (OZN), opažanjem potreb otrok in zahtevam staršem, pomanjkanju motivacije, časovne stiske, tehnološkemu in digitalnemu razvoju smo se v MZL, pred dvema letoma začeli strokovno in usmerjeno pripravljati raznolika igrišča, igrala, steze in poti z namenom ponuditi otroku in staršem največ kar lahko igra v povezavi z naravnim okoljem nudi otroku. Narava je pomembna za vsa področja otrokovega življenja - pomaga jim razviti socialne veščine, razvoj možganski celic in kreativnost, podpira čustvene reakcije, telesne sposobnosti, samopodobo in učenje (Krevsel, 2008). Hkrati pa vsakodnevno bivalno okolje in ritem dnevnega urnika ne omogoča otroku in njegovi družini prav to aktivno gibanje na prostem. Če pa si družina le najde kratek čas, pa je oddaljenost in priprava na »izlet« prezahtevna. Namesto standardiziranih igral smo v MZL izkoristili možnosti, ki nam jih ponuja naravno okolje. Mediteranski park MZL omogoča spontano, sproščeno, naravno in svobodno kreativno igro. To je okolje, ki ustvarja široko paleto vadbe za kreativnost, domišljijo in aktivno gibanje. Nekaj struktur je za igro že ponujenih v naravi sami - hribi, drevesa, grmovje za skrivanje, jase za lovljenje ... Še dodatno izkoriščamo materiale, ki jih vsakodnevno srečujemo v naravi, le da jih predstavimo in zberemo na enem mestu (Čutna pot) in jim podamo domišljjsko vsebino. Igre na prostem pa niso zgolj igrala in materiali, ampak je tudi miselnost učiteljev, vzgojiteljev in staršev (Tomšič Čerkez in Zupančič. 2011). Pomembno je, da ozavestijo otrokove potrebe, kar pomeni:

- da jim dovolimo da se umažejo;
- da se samo odločajo o tveganju (na primer ali lahko skočijo iz določene višine);
- da se lahko skrijejo za dalj časa;
- da zakričijo, kričijo ali cvilijo;
- da so popolnoma sproščeni;
- brez zavore in pritiska vsakodnevnega socialnega okolja, ki jih ves čas umirja, zavira v »pridne« in mirne otroke.

NAMESTO ZAKLJUČKA: IGRA NA PROSTEM JE ALI NI TERAPIJA?

Ob projektu »Igra na prostem« se ves čas prepletajo vprašanja ali to je gibalno športna aktivnost, ki jo izvajamo v projektu? Ali pa je to psihosocialna terapija za starše? Kakšni so rezultati, kako ugotavljamo ali je projekt uspešen? Izhajam iz socialne stroke, sodelavci so iz športnih voda, ustanova pa ima humanitarni pridih, vse to je bilo potrebno združiti. Otrok sam

po sebi potrebuje vse aspekte, ne glede na to v kakšnem okolju odraščča. Gibanje, pogovor in igra so življenjskega pomena za odraščanje. To kar izvajamo v projektu »Igra na prostem« so trenutki, ko lahko rečemo; minute srečnega otroštva. Zato tudi omenjam konvencijo o otrokovih pravicah. Igro na prostem mora družba zagotoviti vsem otrokom. Družine potrebujejo diskretno spodbudo, da se sprostijo. Potrebuje prostor brez potrošniških vzgibov, prostor ki ni tipična tržna niša za doseg materialnega izkupička. Hkrati pa se tako pomembnega cilja ne smemo lotiti neodgovorno brez kvalitetne strokovne podlage, ki bo primerno komunicirala z ljudmi in bo pozitivno naravnana za izboljšanje medosebnih odnosov, v družini in v celotni družbi. Spodbujati sproščeno, spodbudno, nasmejeno in zabavno komunikacijo. Spodbujati primarne želje vsakega in jih vpeljati v zahtevno vsakodnevno življenjsko okolje, zato je naš dolgoročen cilj, spodbuditi ključne deležnike, da vključijo v svojo rutino tudi sproščeno igro na prostem.

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ŠPORTNA OPREMA UČITELJEV RAZREDNEGA POUKA PRI URAH ŠPORTA

PHYSICAL EDUCATION EQUIPMENT OF CLASS TEACHERS AT PHYSICAL EDUCATION CLASSES

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POVZETEK

Raziskava posega v majhen, a ne nepomemben, segment poučevanja športa na razredni stopnji - zanimalo nas je ali učitelji razrednega pouka pri izvajanju ur športa nosijo primerno športno opremo. Svoje mnenje oz. opažanja so v anketnih vprašalnikih podali učitelji, učenci ter ravnatelji, v krajšem intervjuju pa smo pridobili tudi mnenja didaktikov s tega področja.

Ugotavljamo, da:

- so učitelji, ki poučujejo šport na razredni stopnji, v procesu dodiplomskega izobraževanja, po mnenju didaktikov, pridobili ustrezna znanja in navodila za kakovostno izvajanje pouka športa,
- se učitelji zavedajo potrebe po nošenju športne opreme in se v večini opredeljujejo, da jo pri urah športa tudi nosijo,
- ravnatelji učitelje redko nadzorujejo in redko poskrbijo za njihovo opremo,
- učenci učitelje zelo redko vidijo v športni opremi.

Menimo, da bi bilo za večjo kakovost ur športa tudi temu segmentu nujno potrebno dvigniti raven, k temu pa bi najbolj lahko prispevali ravnatelji.

Ključne besede: šport/športna vzgoja, razredna stopnja, športna oprema učiteljev

ABSTRACT

The research focuses on a small, but by no means unimportant segment of teaching physical education (PE) in the first five years of primary education – we were interested in whether teacher in the first five years of primary education wear suitable sports outfit for PE lessons. Opinion and remarks were given on a questionnaire by teachers, pupils and headteachers; we also had short interviews with didacts from this field to get their opinions.

We established that:

- teachers teaching PE lessons in the first five years of primary education, have obtained, according to didacts' opinion, suitable knowledge and instructions for a quality teaching of PE,

- teachers are aware that sports outfit is necessary, and declare in most cases that they wear it during PE lessons,
- headteachers rarely check on the teachers and rarely provide for their outfit,
- pupils rarely see their teachers in sports outfit.

We believe that to ensure higher quality of PE lessons, this segment should be paid more attention, and headteachers are the ones who could contribute most to making this happen.

Keywords: Physical education, first five years of primary education, sports outfit of teachers

UVOD

Gibanje je ena od potreb človeka, ki je zapisana že v genih posameznika, in ga spremlja od spočetja pa skoraj do smrti, saj človeško telo ni ustvarjeno za počitek. Preko gibanja človek spoznava okolje, zakone narave, se uči spretnosti, razvija telesne, kognitivne, čustvene in socialne sposobnosti, utrjuje zdravje, ohranja stik z naravo, obnavlja delovno energijo ... To potrjujejo tudi številni avtorji (Freud, Erickson, Gessel, Havighurst v Pišot in Planinšec, 2005), ki izpostavljajo vpliv gibalne dejavnosti na razvoj posameznika, še posebej v otroštvu, Piaget pa v svoji teoriji kognitivnega razvoja poudarja njen izjemen pomen za razvoj kognitivnih procesov (Pišot in Planinšec, 2005).

Pomena visoko razvitih gibalnih sposobnosti so se zavedali že v preteklosti, ko so bile tudi pogoj za obstoj in preživetje. V stari Grčiji so filozofi gibanju priznali neprecenljiv pomen z vključitvijo športa v predmetnik, saj po njihovem mnenju ne pomaga ohranjati le fizično, ampak tudi psihično ravnovesje človeka. Kasneje je imel pri uvedbi športne vzgoje (telovadbe, športa) v šole velike zasluge tudi Jan Amos Komensky, ki je menil, da sta za otrokov intelektualni razvoj pomembna krepitev zdravja in razvijanje telesnih moči (Majhen, 2008).

Danes je športna vzgoja, po novem imenovana šport (v nadaljevanju bomo zaradi lažjega razumevanja uporabljali namesto šport (učni predmet) termin športna vzgoja), del rednega vzgojno-izobraževalnega procesa na vseh ravneh izobraževanja. Poleg izobraževalne note – otroka naučiti osnov različnih športov, raznovrstnih gibalnih spretnosti – ima velik pomen tudi na vzgojnem področju: privzganju delovnih navad, samospoštovanju, samozaupanju, redu, disciplini, vztrajnosti, samokontroli, odgovornosti, občutku za skupinsko delo, samospoštovanju in spoštovanju drugih ter premagovanju individualnih lastnosti. To so življenjske spretnosti, ki jih posameznik (lahko) prenese s športnega področja tudi na druga področja življenja. Ne nazadnje se pri športni vzgoji odvija tudi za proces motivacije otrok za gibanje, kar je dobra popotnica za zdravo življenje v vseh nadaljnjih življenjskih obdobjih (Majhen, 2008). Navedeno lahko podkrepimo tudi z besedami Kovačeve in Štihca (1993), ki

menita, da je dolžnost vsake šole, da svojim učencem ponudi takšno športno vzgojo, ki bo v skladu s potrebami in željami posameznika, in s tem prispeva k osvajanju trajnih navad za zdrav način življenja. Poleg tega pa ima športna aktivnost tudi svoj zdravstveno preventivni pomen, vendar le tedaj, ko se izvaja redno in to skozi vse življenje (Pišot in Završnik, 2001).

Na razredni stopnji športno vzgojo v večini poučujejo učitelji razrednega pouka, redkeje športni pedagogi. Kot zelo dobra pa se v praksi kaže kombinacija skupnega poučevanja obeh omenjenih, tako z vidika strokovnosti (športni pedagog večji specialist za področje športa, razredni učitelj pa boljši didaktik za otroke tega starostnega obdobja), zagotavljanja varnosti (normativ na razredni stopnji je 28 otrok na skupino) ter možnosti večje aktivnosti posameznika v okviru šolske ure. Kjer se poslužujejo takšnega načina izvajanja športne vzgoje, šole pridobijo sredstva od občine ali s prispevki staršev, v večini pa se tega, zaradi dane finančne situacije, ne izvaja.

Učitelj razrednega pouka do zaključka študija pridobi strokovna znanja s številnih področij in je težko od njega pričakovati, da je najboljši na vseh: pri matematiki, slovenščini, glasbeni umetnosti ... športu, čeprav prvi koraki, na prav vseh področjih, zahtevajo zelo dobrega strokovnjaka veščega stroke, razvojne in pedagoške psihologije, didaktike, dobrega v komunikaciji, prilagodljivega ter psihično in fizično stabilnega (Pestar, 2001). Pomembno je tudi njegovo zavedanje poučevanja z zgledom, pomena gibanja za razvoj otroka ter dejstva, da zamujenega v kasnejših obdobjih ni mogoče več nadoknaditi (Petkovšek in Strel, 1985; Kovač in Štihec, 1993; Štemberger, 2005). Zato bi morala biti športna vzgoja, ki je v okviru šolskega dela za učenca razbremenitev po pretežno sedečih dejavnostih, organizirana in vodena tako, da bi učenci z veseljem prihajali k uri ter da bi po uri čutili zadovoljstvo, kar ima dolgoročen vpliv na osveščenost o pozitivnih učinkih športa ter razvoj interesov (tudi izven šole) in trajnih navad, povezanih s športom.

Odnos učencev do športne vzgoje je (Pestar, 2001) v veliki meri odvisen od rednega izvajanja športne vzgoje ter pravilnega in strokovnega pedagoškega pristopa učitelja (vsebine in metode dela) (Pišot, 2000). Učenci so zelo kritični in od učitelja zahtevajo kar največ. Hitro pa tudi ugotovijo, kakšen je učitelj kot osebnost in kako zavzeto opravlja svoje delo, od tega pa je odvisna njihovo sodelovanje pri urah in vse, kar je posledica tega (kar smo omenili že predhodno).

Dobri odnosi med učiteljem in učenci so pogoj za učno ustvarjalnost učencev. V takih odnosih je delovno ozračje sproščeno: učenci aktivno sodelujejo, učitelj, kot tudi učenci so drug drugemu dostopni, odprti, si zaupajo; v učencih je mogoče zbuditi veselja in zanimanje za učenje (Kroflič, 1990). Zaradi same narave dela so ti odnosi med učiteljem in učenci posebej dinamični pri športni vzgoji. Učenci se na igrišču razživijo v večji meri kot v razredu, kažejo svoja čustva, interese, svoje lastnosti in latentne sposobnosti, ki se zelo redko

manifestirajo v vsakdanjem življenju. Tako učitelj učenca lažje in hitreje spozna kot celotno osebnost in tudi lažje vzpostavi stik z njim (Štihec idr., 1990).

K dobrim odnosom in motivaciji učencev za gibanje zagotovo pripomore učiteljeva pripravljenost za delo, ki jo kaže navzven – primerna športna oprema, demonstracija aktivnosti, sodelovanje pri njih ter zmožnost spodbujanja in izrekanja pohvale učencem pri njihovem napredku in doseženih uspehih.

Sam učni načrt za športno vzgojo (Kovač in Novak, 2011) ne vsebuje navodil in pravil, kako naj bo učitelj, ki poučuje športno vzgojo, med samo vadbo oblečen, lahko pa med vrsticami iz vsega zapisanega (predvsem pa iz prakse same) ugotovimo, da je nemogoče realizirati ciljev (izobraževalnih, vzgojnih, zdravstvenih), demonstrirati vsebin, asistirati, poskrbeti za varnost otrok in jim hkrati dajati zgled, če oprema ni primerna. Pri tem pa tudi ni zanemarljivo dejstvo, da neprimerna obutev poškoduje tla v telovadnici (Štemberger, 2005).

Problematika nošenja športne opreme učiteljev razrednega pouka pri urah športne vzgoje je bila že zajeta v nekatere raziskave v okviru diplomskih in doktorskih del (Pestar, 2001; Štemberger, 2003; Mandelc, 2005; Krnc, 2010) ter člankov (Štemberger, 2005). Rezultati se razlikujejo glede na to ali so bili učitelji opazovani ali so sami podali mnenje glede nošenja športne opreme pri urah športne vzgoje. Podrobneje jih bomo predstavili in primerjali z rezultati naše raziskave v poglavju Rezultati in razprava.

METODA

Cilj raziskave je bil ugotoviti stanje na področju uporabe športne opreme učiteljev razrednega pouka pri urah športne vzgoje.

Uporabili smo deskriptivno in kavzalno–neeksperimentalno metodo empiričnega pedagoškega raziskovanja. Raziskovalni vzorec je neslučajnostni, namenski. Podatke smo zbrali s pomočjo kratkih, anonimnih vprašalnikov, izdelanih za ta namen in različnih za posamezne skupine, ter kratkega intervjuja. Zbiranje podatkov je potekalo preko spletnega portala www.1ka.si.

Da bi bili dobljeni rezultati anketiranja bolj verodostojni in da bi dobili širši vpogled v problematiko, smo se odločili izvesti anketo med učitelji razrednega pouka, ki poučujejo športno vzgojo na razredni stopnji (109), učenci razredne stopnje (85) ter ravnatelji osnovnih šol (9). S kratkimi intervjuji pa smo pridobili tudi mnenja didaktikov s tega področja (2) na pedagoških fakultetah v Sloveniji.

Večina vprašanih učiteljev je ženskega spola (99 %), so iz osrednjeslovenske (32 %) oz. savinjske (22 %) regije in imajo naziv svetnika (2 %), svetovalca (28 %), mentorja (34 %) oz. so brez naziva (36 %). Večina vprašanih učencev obiskuje drugi (32 %) in prvi razred (25 %)

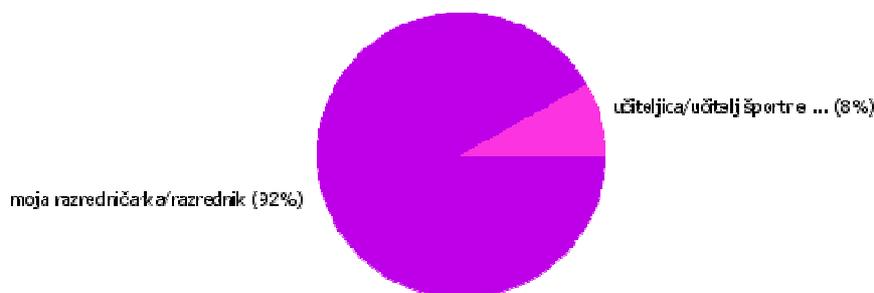
in so iz savinjske (47 %) oz. osrednjeslovenske (38 %) regije. Anketni vprašalnik za ravnatelje ni vseboval standardnih demografskih vprašanj.

Podatki, zbrani z vprašanji zaprtega tipa so obdelani s preprostimi statističnimi metodami ter grafično prikazani z navedbo odstotnih (f%) frekvenc. Obdelava vprašanj odprtega tipa temelji na kategorizaciji in signiranju – vsebinsko sorodni odgovori so združeni v kategorije.

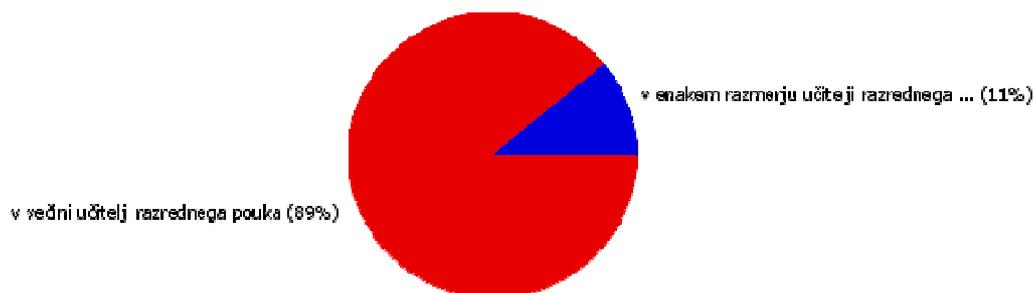
REZULTATI IN RAZPRAVA

1. Kader, ki poučuje športno vzgojo na razredni stopnji.

Anketirane učence in ravnatelje smo povprašali, kdo poučuje športno vzgojo na razredni stopnji.



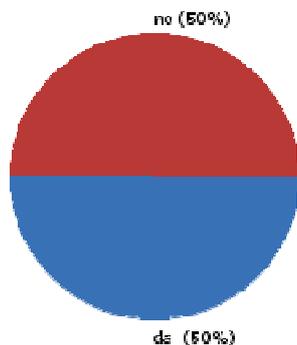
Graf 1: Strukturni odstotki (f %) anketiranih učencev o poučevanju športne vzgoje.



Graf 2: Strukturni odstotki (f %) anketiranih ravnateljev o poučevanju športne vzgoje na razredni stopnji na njihovi šoli.

Odgovori učencev in ravnateljev kažejo, da v veliki večini športno vzgojo na razredni stopnji poučujejo učitelji razrednega pouka. V redkih primerih tudi učitelj športne vzgoje. Do podobnih ugotovitev prihajajo v svojih raziskavah tudi Krnc (2010), Pestar (2001), Kovač in Štihec (1993).

Ravnatelje smo povprašali tudi, kaj menijo o kompetentnosti učiteljev razrednega pouka za poučevanje športne vzgoje. Spodnji graf nakazuje njihovo mnenje.

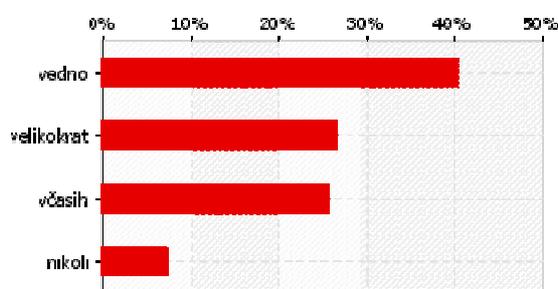


Graf 3: Strukturni odstotki (f %) anketiranih ravnateljev o kompetentnosti učiteljev razrednega pouka za poučevanje športne vzgoje.

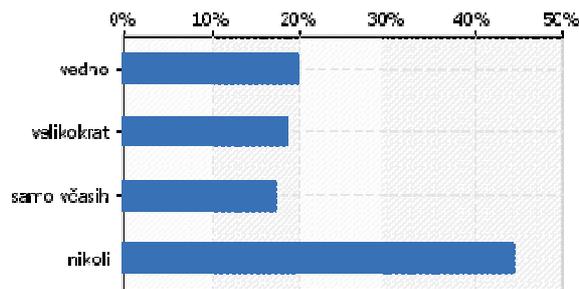
Polovica vprašanih ravnateljev je mnenja, da niso kompetentni, prav toliko pa, da so. V pogovoru z didaktiki športne vzgoje na pedagoških fakultetah v Sloveniji smo izvedeli, da študenti razrednega pouka v procesu izobraževanja dobijo dovolj znanj s tega področja, da lahko samostojno in uspešno poučujejo športno vzgojo (tako kot vse ostale predmete). Vsebine so podane tako teoretično kot praktično (v telovadnici in na terenu). Strinjamo pa se z mnenjem Pestarjeve (2001), ki zaključkih svoje raziskave navaja, da so učitelji razrednega pouka na zahtevnem položaju, ker se od njih pričakuje, da maksimalno obvladajo in »obožujejo« vse predmete, ki jih poučujejo, kar enostavno ni mogoče.

2. Izvajanje športne vzgoje v primerni športni opremi (športni copati in športna oblačila).

Osrednje vprašanje naše raziskave je bilo ali učitelji razrednega pouka pri izvajanju ur športne vzgoje nosijo primerna oblačila. O tem smo povprašali učitelje in učence, pri ravnateljih pa nam je vprašanje zaradi tehničnih težav izpadlo iz beleženja rezultatov.



Graf 4: Strukturni odstotki (f %) anketiranih učiteljev razrednega pouka o nošenju športne opreme pri urah športne vzgoje.



Graf 5: Strukturni odstotki (f %) anketiranih učencev o nošenju športne opreme njihovih učiteljev pri urah športne vzgoje

Pričakovali smo, da se bodo rezultati učiteljev in učencev razlikovali. Učitelji se zavedajo, kako bi moralo biti, učenci pa v večini na takšna vprašanja odgovarjajo pošteno. Navesti je potrebno tudi dejstvo, da je vzorec naključen, kar pomeni, da o vsebini nismo povpraševali učitelja in učenca, ki ga ta isti učitelj poučuje športno vzgojo.

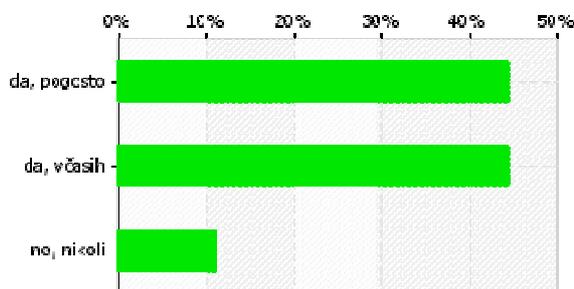
Graf 4 kaže, da večina učiteljev (40 %) vedno poučuje športno vzgojo v športni opremi. Takšnih, ki nikoli, je manj kot 10 %. Glede na videno v praksi moramo priznati, da se pridružujemo mnenju učencev, ki menijo, da 44 % učiteljev pri urah športne vzgoje nikoli ne nosi športne opreme, vedno in velikokrat pa 19 % oz. 18 % učiteljev, kar lahko razberemo tudi iz grafa 5.

Podobne rezultate, kot smo jih mi pridobili od učencev, kaže raziskava Mandelčeve (2005), ki je temeljila na opazovanju izvajanja ur športne vzgoje. Kar 55 % učiteljev pri urah športne vzgoje sploh ni imelo športne opreme, 18 % jih je bilo v nepopolni športni opremi (samo športna obutev ali samo športna oblačila) in le 27 % jih je imelo popolno športno opremo. Glede na dejstvo, da so bili učitelji zagotovo seznanjeni z izvajanjem raziskave, lahko predvidevamo, da bi bil delež tistih, ki poučujejo brez športne opreme, v »realnih« okoljih še višji. Kljub temu pa avtorica omenja, da je v času raziskave bilo možno videti demonstracijo v neprimernih oblačilih in obutvi. Tudi Krnčeva (2010) v svoji raziskavi ugotavlja, da se le 29 % učiteljev preobleči v športno opremo, 29 % v večini primerov in kar 39 % učiteljev nikoli.

Primerljive rezultate s tistimi, ki smo jih pridobili pri učiteljih, je dobila tudi Štembergerjeva (2003). 44,4 % učiteljev športno vzgojo vedno vodi v športni opremi, 16,5 % pa le redko ali nikoli. Tudi ona navaja, da so verjetno ti rezultati manj realni, saj so učitelji sami odgovarjali na zastavljena vprašanja (niso bili opazovani).

Didaktika navajata, da so študenti na predavanjih, pred nastopi v šoli, še posebej pa na vajah v telovadnici seznanjeni s tem, kaj pomeni primerna športna oprema in zakaj je potrebna. Pri samih vajah študenti z neprimerno športno opremo v procesu ne morejo sodelovati.

Zanimalo nas je tudi ali ravnatelji kdaj preverijo, kako so učitelji razrednega pouka oblečeni pri urah športne vzgoje.



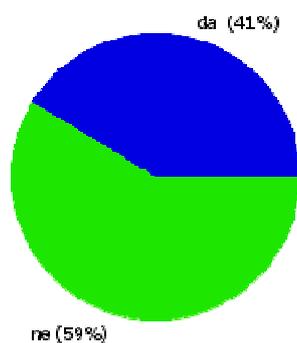
Graf 6: Strukturni odstotki (f %) anketiranih ravnateljev o preverjanju učiteljev razrednega pouka glede nošenja športne opreme pri urah športne vzgoje.

Večina ravnateljev je navedla, da preverjajo, kako so učitelji oblečeni pri športni vzgoji (44 % pogosto, 44 % včasih). Nikoli tega ne preverja le 11 % vprašanih.

Štembergerjeva (2005) meni, da bi izboljšanje kakovosti športno-vzgojnega procesa nedvomno lahko dosegli s tem, da bi se razredne učitelje večkrat preverilo med samo uro športne vzgoje saj se drugi ukrepi pri tistih, ki se v športno opremo ne preoblačijo, niso dobro obnesli, s čimer se strinjamo tudi sami.

3. Zagotavljanje primerne športne opreme s strani šole.

Športna oprema je stvar, ki jo učitelj potrebuje pri svojem delu. Zanimalo nas je, kdo poskrbi zanjo – šola ali učitelj sam?



Graf 6: Strukturni odstotki (f %) anketiranih učiteljev o zagotavljanju športne opreme s strani šole.

41 % vprašanih navaja, da športno opremo dobi v šoli, nismo pa jih povprašali, na koliko časa in v kakšnem obsegu (oblačila in obutev, samo oblačila, samo obutev). Večina učiteljev si torej opremo priskrbi sama, kar ugotavlja tudi Krnčeva (2010). Po njeni raziskavi si več kot

polovica vprašani športno opremo v celoti priskrbi sama, v 37 % jo delno priskrbi šola, v celoti pa jo šola priskrbi le v 6 % in sicer vsako drugo oz. tretje leto.

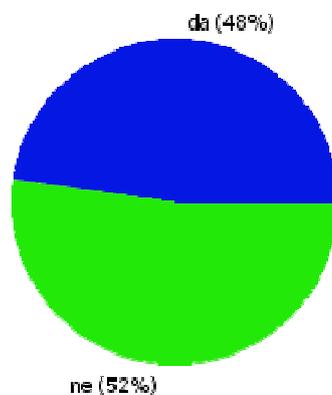
Ravnatelji so v anketi izrazili, da športne opreme učiteljem ne zagotavljajo (44 %), ker za to nimajo potrebnih sredstev, ostali na 3, 5, 8 let oz. po potrebi. Od teh eni poskrbijo samo za obuvala, drugi samo za oblačila, tretji popolno športno opremo. Vsi pa se strinjajo, da primerna športna oprema prispeva h kvalitetnejši izvedbi ur športne vzgoje, kar utemeljujejo z naslednjim:

- omogoča primerno demonstracijo,
- večja je varnost otrok,
- lažje se giba – sodeluje pri aktivnostih in ne zgolj usmerja vadeče, posledično je sodelovanje učencev večje,
- daje zgled učencem: kultura športnega oblačenja za športne dejavnosti, higienski vidik;

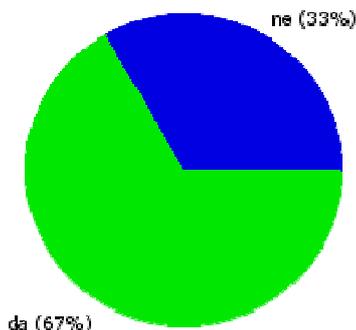
Tudi Štembergerjeva (2005) je kritična do tega vprašanja in navaja, » ...da je športna oprema (trenirka, športni copati) osnovna delovna oprema učitelja, ki bi jo moral dobiti v šoli. Glede na število ur, ki jo izvajajo razredni učitelji v primerjavi s športnimi pedagogi seveda ni smiselno, da bi opremo razredni učitelji dobili vsako leto, prav tako sploh ni nujno, da je to najdražja oprema. Pomembno pa je, da tudi razredni učitelj športno opremo dobi v šoli, saj se sicer lahko popolnoma upravičeno vpraša, zakaj bi moral za obvezno delovno opremo sam nositi stroške.«

4. Prostor za preoblačenje.

Učitelji športne vzgoje imajo navadno svoje kabinete ob telovadnicah, kjer imajo možnost preoblačenja in umivanja. Kako je to urejeno za učitelje razrednega pouka smo vprašali učitelje in ravnatelje, rezultate pa kažeta naslednja grafa.



Graf 7: Strukturni odstotki (f %) anketiranih učiteljevo primernem prostoru za preoblačenje v športno opremo.



Graf 8: Strukturni odstotki (f %) anketiranih ravnateljev o primernem prostoru za preoblačenje učiteljev v športno opremo.

Več kot polovica učiteljev (52 %) navaja, da za preoblačenje v športno opremo nimajo primernih prostorov, ravnatelji pa so drugačnega mnenja – 67 % jih trdi, da imajo učitelji na voljo primerne prostore za preoblačenje v športno opremo. Najbrž bi z bolj natančnim vprašanjem od enih in drugih izvedeli več, saj nismo natančno navedli, kaj pomeni »primeren prostor«. Krnčeva (2010) ugotavlja, da se učitelji preoblačijo v večini v svojem kabinetu oz. v kabinetu športnih pedagogov. 11 % se jih preoblači v zbornici, nekateri v razredu oz. v garderobi skupaj z učenci. Slednji prostori niso ravno namenjeni pripravi na športno vzgojo. Štembergerjeva (2003) ugotavlja, da so učiteljice s prostorskimi pogoji v večini zadovoljne in da se jih nekaj več kot polovica preoblači v kabinetu.

5. Druga mnenja ravnateljev o športni vzgoji.

Vprašani ravnatelji so enotnega mnenja, da je športna vzgoja za učence razredne stopnje zelo pomembna. H kvalitetni športni vzgoji po njihovem mnenju prispevajo kvalitetni kadri – večina navaja skupno poučevanje športnega pedagoga in razrednega učitelja, 22 % jih celo meni, da naj poučevanje športne vzgoje prevzamejo športni pedagogi. Izpostavljajo primerne prostore za izvajanje športne vzgoje (zunanji in notranji, primerna kvadratura) in primerne ter kvalitetne športne pripomočke in orodja. Predlagajo tudi povečanje števila ur športne vzgoje ter zmanjšanje normativa na razredni stopnji oz. kot smo že omenili, hkratno poučevanje dveh učiteljev.

SKLEP

Menimo, da je raba športne opreme učiteljev razredne stopnje pri izvajanju ur športne vzgoje pereče vprašanje, z rešitvijo katerega bi se zagotovo dvignila tudi kvaliteta ur športne vzgoje. Zadeva je nepojmljiva za tiste, ki so imeli v času šolanja to »srečo«, da so bili deležni ur

športne vzgoje pri učiteljih, za katere so bila športna oblačila in obutev vsakdanjik in so se na predavanjih iz didaktike športne vzgoje lahko le čudili profesorju, ki je rotil študente, naj v telovadnico le ne hodijo v visokih petah in bili prepričani, da se šali. Verjeli so lahko šele, ko so v praksi, na lastne oči videli tudi to in še kaj več (npr. asistiranje skoka čez kozo v visokih petah, dolgem krilu in srajci) ter šele potem dobro razumeli, kaj jim je hotel povedati. Tako so se zavedli, kakšno popotnico so dobili skozi izobraževalni proces, za kar so lahko le neizmerno hvaležni »svojim športnikom«. In ti si v praksi nikoli niso postavljali vprašanja glede nošenja športne opreme pri urah športne vzgoje, za kar so jim (najbrž) njihovi učenci hvaležni, saj so ure pri takšnih učiteljih zanimive, športna vzgoja nikoli ne odpade in ure so ravno toliko dolge, kot ure matematike (ali pa kvečjemu daljše).

Z raziskavo smo potrdili, kar smo že predhodno ugotovili oz. videli v praksi. Ugotovili smo, da v večini na razredni stopnji športno vzgojo poučujejo učitelji razrednega pouka, ki pa se za ure športne vzgoje v večini ne preoblačijo. Vzroke lahko iščemo v neustreznih prostorih za preoblačenje, pomanjkanju časa (kratki odmori) ter dejstvu, da v morajo večini učitelji sami poskrbeti za športno opremo, čeprav je to delovna oprema. Nezanemarljivo je tudi dejstvo, da vsi učitelji niso enako usposobljeni za poučevanje široke palete predmetov, ki jim jih omogoča pridobljena diploma. Primerna športna oprema učitelja posledično pomeni kvalitetnejši proces, saj le tako učitelj lahko demonstrira, asistira, varuje, se udelejuje pri aktivnostih, hkrati pa je s svojim izgledom tudi zgled učencem.

Menimo, da igrajo pri rešitvi tega vprašanja veliko vlogo ravnatelj, ki se, glede na rezultate raziskave, zavedajo pomena kvalitetne gibalne/športne dejavnosti za otroke. S poostrenim nadzorom nad izvajanjem športne vzgoje, zagotavljanjem športne opreme učiteljem in zagotovitvijo primernih prostorov za preoblačenje ter osnovno higieno učiteljev (česar v našo raziskavo nismo zajeli) bi lahko precej dvignili kvaliteto pouka športne vzgoje in na dolgi rok otrokom omogočili osvajanje trajnih navad za zdrav način življenja.

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KAR UČINKUJE PRI ŠPORTNI VZGOJI/ŠPORTU, JE UPORABNO TUDI PRI DRUGIH PREDMETIH

WHAT WORKS IN PHYSICAL EDUCATION IS USEFUL ALSO IN OTHER SUBJECTS

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POVZETEK

V prispevku želimo opozoriti na radovednost in ustvarjalnost otrok pri učenju ter pri tem poudariti pomen gibanja za uspešno učenje. Sodobne raziskave namreč potrjujejo, da telesna dejavnost dobro pripravi možgane na učenje in jih pomaga organizirati. Pri telesni dejavnosti se poveča prekrvavitev možganov, kar izboljša njihovo oskrbo s kisikom in hranljivimi snovmi, omogoča povezovanje posameznih delov možganov in spodbuja povezovanje med živčnimi celicami oz. ustvarjanje sinaps. Poseben izziv strokovnjakom, ki proučujejo procese poučevanja, predstavlja vprašanje, kako poučevati, da bodo učenci pri tem miselno dejavni, da bo način poučevanja prilagojen njihovem načinu razmišljanja, da bo namesto reproduktivnega znanja v ospredju aktivno in kreativno razmišljanje. Telesna dejavnost pozitivno vpliva na boljšo koncentracijo, spomin, predelavo informacij, sposobnost za reševanje problemov. Če ob vsem tem učitelj izkoristi še radovednost otrok in upošteva njihovo naravno potrebo po gibanju, lahko ustvari učinkovito učno okolje, v katerem so učeči telesno dejavni in ustvarjalni. V prispevku je predstavljenih nekaj primerov kako lahko izkušnje iz dejavnosti ali organizacijske rešitve na področju športne vzgoje/športa uporabimo pri razumevanju oz. utrjevanju znanja drugih predmetov.

Ključne besede: gibanje, učna uspešnost, radovednost, ustvarjalnost, učno okolje

ABSTRACT

This article is about the curiosity and creativity of children by learning and awareness of the importance of movement for effective learning outcomes. Latest researches confirm that physical activity encourages the brain to learn. Physical activity increases blood flow to the brain, improves their supply of oxygen and nutrients, allows the connection between different parts of the brain and promotes networking between nerve cells or creating synapses. A special challenge to teachers presents the question about how to teach students to become active thinkers, how to adapt teaching process to encourage creative thinking instead of reproductive knowledge. Physical activity has a positive impact to concentration, memory,

data processing, the ability of solving problems. With awareness about curiosity of children and respecting their natural need for physical activity, we create an effective learning environment in which learners are physically active and creative. This paper presents some examples how to use experiences and solutions in the field of the physical education understanding or consolidating the knowledge of other subjects.

Keywords: physical activity, learning outcomes, curiosity, creativity, effective learning environment

UVOD IN TEORETSKA IZHODIŠČA

Že iz antike je znano, da so telesna dejavnost in ustvarjalno razmišljanje ter učenje v tesni povezavi. Grški filozofi so npr. meditirali in premišljevali med sprehajanjem. Povezavo med ustvarjalnostjo in telesno dejavnostjo potrjujejo tudi številne sodobne raziskave. Center za raziskave in inovacije v izobraževanju (CERI, 2007), ki deluje v okviru OECD, je leta 1999 začel s projektom »Znanost o učenju in raziskovanje možganov«. Moči so združili znanstveniki in institucije različnih držav (CERI, 2007). Med drugim jih je zanimalo, kakšen vpliv imajo različni dejavniki na učni proces in eden od njih je nedvomno tudi telesna aktivnost. Dokazano je, da aerobne vaje pomembno vplivajo na kardiovaskularne markerje, ki izboljšujejo delovanje možganov in povečajo kognitivne kapacitete ter sposobnost učenja. Na področju izobraževanja odraslih je telesna aktivnost razumljivo predpogoj. Dokazano je, da že vsakodnevni sprehodi v obdobju 3 mesecev za 11% izboljšajo rezultate na mentalnih testih pri starejših od 55 let (CERI, 2007). To velja pri izobraževanju od vrtca dalje, kjer športne aktivnosti vodijo k izboljšanju motoričnih spretnosti in kontrole telesa (ravnotežja, motorične koordinacije, specifičnih motoričnih spretnosti in telesnega zavedanja). Zato mnogi resno razmišljajo kako povečati telesne dejavnosti v času pouka tudi izven ur športne vzgoje in to je naš razmislek tudi v nadaljevanju prispevka. Fizična izkušnja postaja za otroke vedno bolj pomembna tudi zaradi časa, prebitega v virtualnem svetu, zaradi katerega njihove predstave o svetu in življenju niso vedno realne.

Motiviranost, radovednost in spodbudno učno okolje

Poseben izziv učiteljem predstavlja iskanje poti poučevanja, da bi učeče, poleg poznavanja podatkov in reproduktivnega znanja, navajali na aktivno razmišljanje. Rajović (2013) uporablja različne asociacije, uganke, iskanje besed v besedah, povezovanje, primerjanje, poudarja pomen delanja napak, kot sestavni del in nujen korak v procesu učenja. Postavljanje visokih ciljev ni težavno, če sta zagotovljena dva pogoja: spodbudno učno okolje in motiviranost.

Če ob tem upoštevamo še prirojeno lastnost vseh - radovednost, ki jo spodbudimo skozi učinkovito učno okolje, bo *želja vedeti* pričakovana sama po sebi kot pogoj za učenje (Mayer, 1996).

Pojem radovednost SSKJ opredeljuje kot »*željo vedeti, izvedeti stvari, ki jih ni nujno potrebno vedeti*« in ravno »ni nujno vedeti« kaže na to, da je radovednost gonilo napredka in da bi šola morala to danost v večji meri izkoriščati ter jo čim dlje ohranjati. Harlen (po Eurydice, 2012, str. 68) definira naravoslovno pismenost kot »sproščenost in kompetentnost« v odnosu do širokih naravoslovnih tem, narave naravoslovne znanosti in njenih omejitev ter naravoslovno-znanstvenih postopkov, kot sposobnost naravoznanstvenih načel in zmožnost odločanja v vlogi izobraženega in odgovornega državljana. Pri tem je ena od smernic in trendov pouka v luči izobraževanja 21. stoletja tudi ta, da načrtno preko radovednosti pridemo do znanja in spretnosti.

V učnem okolju, kjer so učenci telesno dejavni in ustvarjalni v procesu pridobivanja znanja, lahko pričakujemo, da bo pridobljeno znanje trajnejše in uporabnejše. Učno okolje namreč pomeni mnogo več kot učilnico z učni pripomočki. Zajema učence, učitelje in druge strokovnjake, učno vsebino ter opremo – tehnologijo, k temu pa spadajo še učni prijemi in učne dejavnosti, kaj je precej več kot le fizično učno okolje (de Corte, 2013). Učinkovito učno okolje isti avtor opredeljuje s štirimi ključnimi elementi učenja:

- konstruktivnost, ki pomeni načrtno vpletenost učencev v proces oblikovanja znanja
- samoregulacija, ki pomeni osredotočenost na proces bolj kot na rezultat
- umeščenost, ki pomeni interakcijo s socialnim, družbenim in kulturnim okoljem in
- sodelovalnost, ki pomeni, da je učenje ni samo tuhtanje, ampak organizirana družbena dejavnost .

Telesna dejavnost in kakovost učenja

Finsko nacionalno združenje za izobraževanje (Finish National Board of Education) je 2012 objavilo poročilo primerjave različnih raziskav, vezanih na povezavo med učenjem in telesno dejavnostjo. V poročilu opozarjajo, da telesna dejavnost sicer sama po sebi ne vpliva na učne dosežke, vendar pa se vpliv kaže skozi druge faktorje. Motorične in kognitivne sposobnosti so namreč po tem viru pod nadzorom istega mehanizma centralnega živčnega sistema. Telesna dejavnost nudi tudi možnosti za povezovanje in reševanje izzivov v življenjskem okolju, kar vpliva na kognitivni in socialni vidik učenja. Socialne dejavnosti skozi npr. sodelovalno učenje imajo pozitiven vpliv na samokontrolo in samozavedanje učečih. Raziskava omenja tudi pozitiven učinek redne telesne dejavnosti na vedenjske vzorce in disciplino otrok. Šolski otroci potrebujejo vsaj dve uri telesne dejavnosti dnevno (prav tam, 2012).

Intenzivni miselni dejavnosti naj sledi počitek

Timothy Burns (2011) trdi, da »gibanje pripravi možgane na učenje in jih pomaga organizirati, omogoča višjo stopnjo in daljše trajanje koncentracije...«. Velja pa tudi, da bolj, ko je gibanje koordinirano in bolj, ko obvladujemo ravnotežje svojega telesa, bolje delujejo možgani.

Vendar: »po 90 -120 minutah budnosti in koncentracije, se možgani preklopijo v stanje počitka« (prav tam, 2011). Potrebujejo namreč čas, da se »sprejete informacije predelajo in med seboj povežejo. Zato je pomembno obdobja 'odklopa' izkoristiti za pravi namen (prav tam, 2011): za pogovor o obravnavani vsebini, pisanje o njej, risanje ali pa za različne gibalne dejavnosti. Pri telesni dejavnosti se namreč izboljša preskrbljenost možganov s kisikom in hranljivimi snovmi, kar omogoča povezovanje posameznih delov možganov in s tem kreiranje večjega števila povezav (sinaps) med živčnimi celicami«. »Živčne celice morajo misliti in biti dejavne, da bi preživele« (Bregant, 2010). Možgani namreč delujejo po principu »*use it or lose it*, kar ima za procese učenja in psihosocialnega oblikovanja trdno biološko osnovo« (Pirtovšek, 2013).

Gibalna igra kot način učenja

»Otroška igra je kompleksna dejavnost, katere osnovne značilnosti so: namernost, usmerjenost na predmete, odsotnost posledic, notranja motivacija in alternative stvarnosti« (Marjanovič in Zupančič 2001). »Igra predstavlja najstarejši način vzgoje otrok in njihove priprave na življenje« (Pistotnik, 1995). Otroci si skozi igro mimogrede zapomnijo dejstva, ki bi si jih s suhoparnim ponavljanjem precej težje vtisnili v spomin. Že Komensky (1995) poudarja pomen igre pri vzgoji otrok, saj je igra zanje privlačna in vir veselja, zato pravi, da jo je »treba vplesti v pouk«. Kadar je igra uporabljena pri pouku, govorimo o didaktični igri, katere značilnost je, da z njo dosegamo vzgojno-izobraževalne cilje (Marjanovič Umek, 2001). Vsaka igra ima pravila, ki jih je treba poznati in upoštevati; skozi igro zato dosegamo tudi vzgojni cilj - upoštevanje dogovorov. Elementarne igre so zanimive in bolj uporabne tudi zato, ker za razliko od športnih iger, njihova pravila lahko spreminjamo, dopolnjujemo, prilagajamo ciljem, ki jih želimo doseči ter predznanju in sposobnostim sodelujočih. Spremenimo lahko npr. način gibanja, podlago po kateri se gibljemo, igro izvajamo samostojno, v parih ali različno velikih skupinah. Ni nujno vedno vsega vnaprej predvideti in natančno določiti pravil ampak je priporočljivo prepustiti udeležencem možnost, da sami poiščejo svojo rešitev naloge.

Nekaj idej gibalnih dejavnosti, ki jih lahko uporabimo tudi v učilnici

Didaktična priporočila učnih načrtov in sodobni pedagoški viri pogosto izpostavljajo aktivne oblike učenja. Nihče torej ne dvomi o tem, da je potrebno tudi pri matematiki, slovenščini,

naravoslovnih predmetih in še kje od časa do časa postaviti otroke na noge. Še več, ni dvoma, da bodo tako tudi učni rezultati boljši. V nadaljevanju predstavljamo nekaj idej, ki jih sicer uporabljamo kot organizacijsko obliko pri športnih dejavnostih. Z malce domišljije smo jih prilagodili tako, da so uporabne pri različnih učnih vsebinah tudi v učilnici. Predvsem so primerne takrat, ko zaradi velike količine informacij ali dolgotrajnega mirovanja koncentracija učečih pade in želimo ohraniti njihovo pozornost oz. koristno izrabiti čas 'odklopa' možganov.

1. Štafetna igra v učilnici – štafetno razvrščanje (prirejeno po Novak, Markun Puhan, 2012):

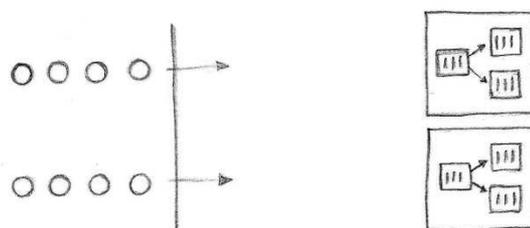
Štafetne igre so pogosta organizacijska oblika pri športni vzgoji, kadar želimo neko dejavnost ponoviti, jo izpeljati v večji hitrosti; z njo na preprost način dosežemo vznemirljivost tekmovalnega vzdušja. To organizacijsko obliko lahko z manjšimi prilagoditvami uporabimo tudi v učilnici, saj ne potrebujemo veliko prostora za izpeljavo. Če je učilnica premajhna, je primeren tudi šolski hodnik ali dvorišče.

Cilj predstavljene štafetne naloge je preverjanje znanja, ponavljanje ter primerjanje in razvrščanje znane vsebine na primeru razlikovanja npr. iglavcev in listavcev.

Priprava in pripomočki: učence razdelimo v enakovredne skupine. Označimo startno črto. Pripravimo še prostor za razvrščanje lističev z zapisanimi pojmi na drugi strani prostora: najbolj priročna je šolska klop.

Potek dejavnosti: prvi učenec v koloni na znak steče do prostora za nalogo, izbere listič z zapisanim pojmom in ga razvrsti na ustrezno mesto. Dovolimo mu, da se v primeru dvoma posvetuje s člani svoje skupine. Ko razvrsti izbran listič, steče v svojo kolono in z dotikom naslednjemu učencu omogoči njegov start.

Ko so vsi lističi razvrščeni, skupine druga drugi preverijo, če so pravilno razvrstili vse lističe. V primeru, da se pojavi dvom o neki razvrstitvi, z utemeljevanjem poiščejo pravi odgovor.



Slika 1 (Naja Puhan)

2. Zadeni koš in sestavi besedo (povzeto po Novak, Markun Puhan, 2012):

Cilj igre je urjenje besedišča – naloga skupine je oblikovati čim daljšo besedo iz črk, ki so ekipi na voljo.

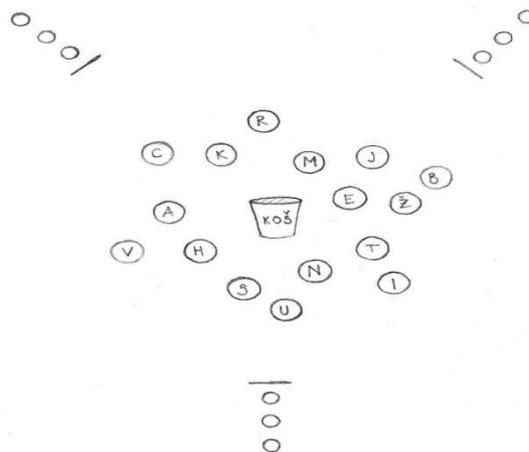
Potrebujemo: vsaj 6x toliko s črkami označenih papirnatih krožnikov kot je število ekip, 1 večje vedro, z rižem napolnjene blazinice za vsako ekipo, stožce ali talne oznake za označevanje startnega mesta. Igra lahko več ekip, vendar najmanj dve. Na sredini prostora, približno enako oddaljeno od vseh startnih mest, postavimo vedro (pribl. 6 m). Okrog vedra razporedimo papirnate krožnike tako kot kaže Slika 2.

Potek dejavnosti: Prvi v vsaki ekipi na startni znak steče in stopi na kateri koli krožnik in od tam vrže blazinico v vedro. Če zadane, vzame krožnik in ga odnese v svojo ekipo. Če ne zadane, se vrne samo z blazinico, ki jo poda naslednjemu učencu. Igra se ne konča, ko zmanjka krožnikov. Ko so vsi krožniki porabljeni, vsaka ekipa skuša iz zbranih črk sestaviti čim daljšo besedo ali več besed.

Učenci, ki poznajo cilj igre, so že med izvajanjem pozorni na to, katere črke bodo izbrali, da bodo primerne za njihovo izbrano besedo.

Možnosti:

- opredelimo način gibanja do krožnikov (poskoki, tek zadenjsko, gibanje čepe...)
- spremenimo pravila igre tako, da zbiramo npr. zveneče ali nezveneče glasove
- vsaka ekipa izbere vsaj 3 samoglasnike
- na krožnikih so namesto črk zapisane besede. Učenci morajo že v času igre izbrati osebek, povedek, predmet, ki jih povežejo v smiselno poved
- črke ali besede učenci v skupini razvrstijo po kriteriju, ki si ga sami izberejo



Slika 2 (Naja Puhan)

3. Ali lahko ...

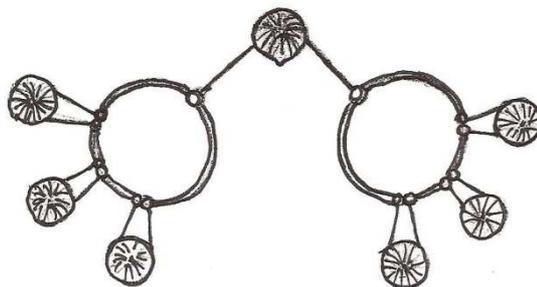
Cilji igre so pozorno poslušanje, prepoznavanje pomena 'nove besede', hitro reagiranje, urjenje besedišča, ponavljanje.

Potrebujemo: Za to igro potrebujemo več prostora. Primeren je npr. šolski hodnik ali igrišče...in pri večjem številu igralcev priporočamo še dva telovadna obroča.

Potek igre: En igralec ima odročeni roki in razpre prste na rokah. Ostali igralci se razporedijo okrog njega tako, da se dotikajo srednjega za en prst ali hrbtišče dlani. Če je igralcev več, srednji igralec prime v vsako roko obroč, ostali pa se razvrstijo kot kaže skica. Srednji igralec postavlja vprašanja:

- Ali lahko okušamo... (vodo, sok, limonado, bencin, nafto, odpadno vodo, škropiva, čistila, šampon, barve za beljenje...)
- Ali je zdravo vonjati...(potico, rože, dišave, izpušne pline, cigaretni dim, ...)
- Ali lahko jemo... (borovnice, brusnice, maline, volčje jagode, mušnice, stiropor, polivinil, pralni prašek, tekoče milo, zobno pasto, veliko zdravil naenkrat...)
- Ali lahko tipamo... (led, vodo, krop, kislino, ogenj, čistila za wc ...)
- Ali lahko dolgo gledamo... (morje, gozd, rumeno, zeleno, sonce, močno svetlobo, bliskanje, varilca pri delu)
- Ali lahko poslušamo od blizu...(žvižg, pisk lokomotive, pesem, bobne, udarjanje kladiva, zvok letalskega motorja od blizu, glasbo na koncertu v bližini zvočnika ...)

Ostali udeleženci igre odgovarjajo z DA ali NE. Če je odgovor DA, srednji igralec nadaljuje s spraševanjem. Ko pa je pravi odgovor NE, oz. srednji igralec imenuje snov, ki je ne moremo okušati, vonjati, tipati..., ker so njene lastnosti zdravju škodljive, vsi zbežijo proti dogovorjenemu zapiku, srednji igralec pa jih skuša ujeti. Ko nekoga ujame, le-ta prevzame vlogo srednjega igralca. Pri mlajših starostnih skupinah lahko vlogo spraševalca prevzame učitelj.



Slika 3 (Naja Puhan)

4. Kje podpreti, da bo vzpostavljeno ravnovesje (kje dodati in kje odvzeti)

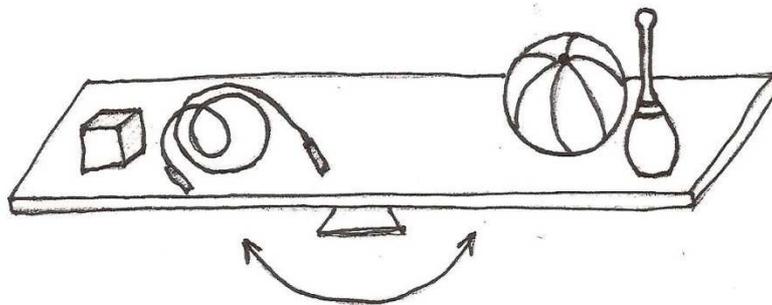
Cilj: preveriti razumevanje ravnovesja in vzpostaviti ravnovesni položaj na različne načine-z dodajanjem in odzemanjem ali s spremembo podporne točke na tehtnici. Sodelujoči so razdeljeni v skupine po štiri ali pet.

Pripomočki: za vsako skupino potrebujemo desko širine švedske klopi, širšo letev in raznovrstno drobno orodje. Desko in letev namestimo tako, kot kaže Slika 4.

Potek dejavnosti: Na vsako stran deske postavimo nekaj drobnega orodja, tako da strani nista v ravnovesju. Učenci dodajajo ali odzemajo različno težke predmete (žoge) in jih premikajo po deski tako, da bo 'tehtnica' v ravnovesju.

Možnost:

- sodelujoči naj ugotovijo kje je potrebno tehtnico podpreti, da bo v ravnovesju ne da bi prestavljali razporejeno drobno orodje.



Slika 4 (Naja Puhan)

5. Kocka, ki pomaga sestaviti koreografijo

Metodo naključja radi uporabljajo plesalci sodobnega plesa. Zanje namreč velja, da večine koreografij ne pripravi koreograf vnaprej, ampak gibalni material nastaja skupaj s plesalci skozi postavljanje idej in iztočnic in s postavljanjem dobrih vprašanj oz. navodil. Vsi plesalci v predstavi ne plešejo enakih korakov, ampak lahko zaporedje korakov in vrsto gibov določijo naključno, z metanjem kocke. Predstavljamo primer za skupino petih plesalcev:

Na izbrano temo vsak član skupine sam ustvari kratko koreografijo (npr. osem taktov). Vsi člani skupine se naučijo korake ostalih štirih. Način in zaporedje korakov se določi z metanjem kocke, pri čemer velja dogovor, da kdor vrže 1 ali 2, ponovi korake tistega, ki prvi vrže kocko (kopira). Če vrže 3 ali 4, zapleše svoje korake (svoj), če vrže 5 ali 6, pomeni, da stoji na mestu (stop). Isti postopek ponovijo vsi tudi za drugega, tretjega, četrtega in petega plesalca.

	1. met	2. met	3. met	4. met	5. met
1.	XXXXXX	svoj	stop	svoj	Stop

2.	kopira 1	XXXXXX	stop	kopira 4	Svoj
3.	kopira 1	stop	xxxxxx	kopira 4	Svoj
4.	Stop	kopira 2	svoj	xxxxxx	kopira 5
5.	svoj	kopira 2	svoj	kopira 4	XXXXX

Tabela 1: Primer razpredelnice zapisa koreografije po prvem metanju kocke

	1. met	2. met	3. met	4. met	5. met
1.	xxxxxx	kopira 2	stop	svoj	kopira 5
2.	kopira 1	xxxxxx	stop	stop	Svoj
3.	kopira 1	stop	xxxxxxx	kopira 4	kopira 5
4.	stop	kopira 2	svoj	xxxxxx	Svoj
5.	svoj	stop	kopira 3	svoj	Xxxxxx

Tabela 2: Novo metanje kocke prinese novo koreografijo iz znanih korakov

ZAKLJUČEK

Telesna dejavnost je eden od dejavnikov, ki spodbujajo ustvarjalnost in s tem tudi inovativnost učečih. S telesno dejavnostjo se izboljša kakovost učenja, spomin, razpoloženje, vedenje. »Učenci, ki so telesno dejavni, oz. se redno gibljejo, dosegajo boljše učne uspehe« (Ratey, 2010). Učenje namreč ni le uresničevanje (kljukanje) ozkih ciljev, ampak proces celostnega pristopa do učečih, poučevanje pa usmerjeno v razvijanje kompetenc (znanje, spretnosti in veščine) za življenje, ki bodo mladim pomagale preživeti v svetu, v katerem predstavljajo razmišljanje, ustvarjalnost in izražanje ter zagovarjanje lastnega mnenja, kakovost in dodano vrednost. Spodbudno učno okolje in dobro izhodiščno vprašanje ter ustrezno predznanje spodbudi raziskovalnega duha v učencih, da postanejo inovatorji in raziskovalci; kot pravi A. Einstein: »Nimam nobenih posebnih sposobnosti. Sem le strastno radoveden.«

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RAZLIKE V TELESNI SAMOPODOBI RAZLIČNO ŠPORTNO DEJAVNIH ŠTUDENTK

DIFFERENCES IN PHYSIAL SELF-CONCEPT BETWEEN DIFFERENTLLY PHYSICALLY ACTIVE FEMALE STUDENTS

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POVZETEK

Namen raziskave je bil ugotoviti, ali obstajajo razlike v telesni samopodobi med skupinami različno športno dejavnih študentk. V raziskavi je sodelovalo 213 študentk Pedagoške Fakultete Univerze v Mariboru, starih 19 in 20 let. Za meritve športne dejavnosti je bil uporabljen vprašalnik »Gibalna dejavnost mladih«. Glede na trajanje športne dejavnosti so bile študentke razdeljene v tri skupine: nizko dejavne, srednje dejavne in zelo dejavne. Podatki o telesni samopodobi pa so bili pridobljeni s pomočjo poslovenjene različice francoske verzije vprašalnika za ugotavljanje telesne samopodobe mladostnikov The Physical Self-Inventory – short form. Za ugotavljanje razlik v telesni samopodobi med različno športno dejavnimi študentkami je bila uporabljena analiza variance (ANOVA), za natančnejšo opredelitev razlik je bil uporabljen Post-Hoc Scheffe preizkus. Statistično značilnost smo ugotavljali na ravni tveganja $p \leq 0,05$. Rezultati raziskav kažejo, da športno zelo dejavne študentke statistično značilno višje vrednotijo lastno moč in vzdržljivost kot skupini nizko in srednje športno dejavnih študentk. Pri vseh drugih spremenljivkah telesne samopodobe (splošna samopodoba, telesna samopodoba, športne kompetence, telesni videz in telesna samopodoba skupaj) ni statistično značilnih razlik med skupinami nizko, srednje in zelo športno dejavnih študentk. Ugotovitve kažejo, da športno zelo dejavne merjenke na podlagi vsakodnevnih izkušenj zaznajo izboljšanje gibalnih sposobnosti ter jih zato tudi vrednotijo višje.

Ključne besede: telesna samopodoba, mladi odrasli, samospoštovanje, športna aktivnost

ABSTRACT

The main aim of the research was to determine how the physical self-concept of female students is related to physical activity. The research was carried out on a sample of 213 female students, aged nineteen and twenty. To assess physical activity "Youth Physical activity questionnaire" was used. Based on the duration of physical activities, students were divided into three categories: low active, midium active and highly active. Physical self-concept data were acquired through the French version of The Physical Self-Inventory –

short form questionnaire for determining the physical self-concept of adolescents, adapted to Slovenia. For establishing the differences in physical self-concept regarding physical activity level, an analysis of variance (ANOVA) was used. For the detailed definition of the differences the Post-Hoch Scheffe test was used. The statistical significance was set at an α level 0, 05. The research results show that highly physically active students value their own strength and endurance significantly higher as their not so physically active peers. For all other variables of physical self-concept (general self-concept, body image, athletic competence, physical appearance), the differences are not statistically significant. The findings suggest that a highly active student, based on everyday experience, perceived improvement in physical fitness and therefore value it higher.

Keywords: physical self-image, young adults, self-respect, physical activity

UVOD

Zdravje odrasle populacije je tesno povezano z zdravjem v otroštvu, telesno zdravje otrok je odvisno od njihove telesne dejavnosti, gibalnih sposobnosti in gibalnih spretnosti, duševno zdravje pa tudi od telesne in gibalne samopodobe (Blair, Clark, Cureton & Powell, 1989; Jürimäe & Jürimäe, 2001; Eisenmann, Wickel, Welk & Blair, 2005; Janssen & LeBlanc, 2010). Zmerna in redna športna dejavnost pri odraslih vsekakor pozitivno vpliva na njihovo zdravje in je pomemben dejavnik pri preprečevanju koronarnih obolenj, nekaterih oblik raka in upočasnitvi zmanjšanja delovne sposobnosti kot posledice staranja (Mišigoj-Durakovič, 2003). Zmanjšuje tveganje nastanka bolezenskih stanj in umrljivosti kot posledice različnih kroničnih obolenj (bolezni srca in ožilja, diabetes in osteoporoza) (Archer & Blair, 2011). Številni raziskovalci ugotavljajo, da sodi redna športna dejavnost med najpomembnejša sredstva za preprečevanje debelosti, zmanjšanje količine podkožnega maščevja, spodbujanje razvoja mišic in skeleta ter preprečevanje nastanka poškodb pri otrocih (Jürimäe & Jürimäe, 2001). Redna in raznovrstna športna dejavnost vpliva na razvoj in raven gibalnih sposobnosti v otroštvu, obdobju adolescence in obdobju odraslosti (Christodoulos, Flouris & Tokmakidis, 2006).

Telesna samopodoba predstavlja mentalno sliko lastnega telesa, ki jo oblikujemo v svojih mislih (Schilder, 1999) in ni nujo povezana z dejanskim zunanjim izgledom posameznika (Cash, 1997). Čeprav je bila v preteklosti mnogokrat zapostavljena, jo danes pojmujejo kot pomembno sestavino globalne samopodobe in je pogosto predmet proučevanja (Planinšec in Čagran, 2003). Na telesno samopodobo, ki predstavlja človekove zaznave, mišljenja ali občutja o lastnem telesu v veliki meri vplivajo prav morfološke značilnosti posameznikovega telesa, saj se le-teh nenehno zavedamo. Do njih razvije posameznik tak ali drugačen odnos, ki vpliva na njegovo vrednostno oceno sebe v celoti (Grogan, 1999). Zaznavanje se nanaša

na oceno morfoloških značilnosti, mišljenje na vrednotenje telesne privlačnosti, občutja pa na čustva povezana z obliko in velikostjo telesa. Na modelu samopodobe Shavelsona, Hubnerja in Stantona (1976), kjer telesno samopodobo kot eno izmed področij neakadske samopodobe sestavljajo telesne dejavnosti in telesni videz, sta Fox in Corbin (1989) razvila multidimenzionalni hierarhični koncept telesne podobe o sebi. Njun model se od prvotnega iz leta 1976 razlikuje le v tem, da telesno samopodobo namesto dveh tokrat tvorijo štiri podpodročja in sicer: videz, moč, vzdržljivost in športne kompetence. Od vseh področij samopojmovanja se zdi prav telesna samopodoba najbolj elementarna, saj se začne oblikovati v najzgodnejšem otroštvu posameznikovega življenja in je ključna za oblikovanje tudi drugih sestavin samopodobe, ki se razvijejo kasneje (Dolenc, 2007) ter tako zaseda posebno mesto v strukturi samopodobe, saj je telo skozi svoj videz, sposobnosti in lastnosti posrednik med posameznikom in zunanjim svetom (Fox, 1997). Z odraščanjem postaja samopodoba otrok vse bolj strukturirana in kompleksna (Marsh, Craven in Debus, 1998).

Seveda pa športna dejavnost pozitivno vpliva tudi na duševno zdravje ljudi, saj preprečuje pojav depresije in anksioznosti ter nevtralizira posledice stresa, hkrati pa dviguje samospoštovanje in oblikuje samopodobo (Jürimäe & Jürimäe, 2001). Da lahko govorimo o pozitivnih učinkih športne dejavnosti na človekov organizem, mora imeti ta dejavnost posamezniku prilagojeno vsebino in obliko, primerno intenzivnost, pogostost in trajanje (Pate et al., 1995). Primerno intenzivna in dovolj pogosta je tista športna dejavnost, ki spodbuja splošno aerobno vzdržljivost, pri kateri je aktivna najmanj šestina skeletnega mišičevja in pri kateri se poveča frekvenca srca na najmanj 50 do 85 % individualne rezerve frekvence srca ter traja vsaj 30 minut, trikrat na teden (Mišigoj-Duraković, 2003) vendar pa novejša smernice (IOM, 2002) kažejo, da bi morala zmerna športna dejavnost za izboljšanje zdravja in telesne kondicije trajati vsaj eno uro na dan. ACSM (*The American College of Sport Medicine*) (1998) priporoča neprekinjeno ali ponavljajočo se aerobno dejavnost 3-4 krat na teden, pri kateri doseže srčni utrip vrednosti od 55 oziroma 65% pa do 90% maksimalnega srčnega utripa in traja od 20 do 60 minut. V dosedanjih raziskavah je bilo mnogo pozornosti namenjene ugotavljanju vpliva športne dejavnosti in gibalnih sposobnosti na telesno samopodobo (Fridlund Dutton, Schneider, Graham and Cooper, 2006) ter ugotavljanju vpliva športne dejavnosti, morfoloških značilnosti in sestave telesa na telesno samopodobo (Anderson, Murphy, Murtagh, & Nevill, 2006). Pri populaciji odraslih žensk imajo spremembe v morfoloških značilnostih, kot posledice športne dejavnosti, omejen vpliv na spremembe telesne samopodobe, saj je vzrok za dvig telesne samopodobe bolj verjetno mogoče iskati v posameznikovem pričakovanju telesnega napredka (Anderson, Murphy, Murtagh, & Nevill, 2006). Fox (2000) ugotavlja, da je za izboljšanje telesne samopodobe dovolj že občutek posameznika, da z vadbo vpliva na izboljšanje morfoloških značilnosti, sestave telesa in gibalnih sposobnosti. Ugotovitve avtorjev o povezanosti športne dejavnosti in telesne

samopodobe so si mnogokrat nasprotujoče, prav tako pa do sedaj v Sloveniji nismo zasledili raziskav, ki bi obravnavale omenjeno problematiko v obdobju zgodnje odraslosti. Zato se zdi smiselno raziskati odnos športne dejavnosti in telesne samopodobe v obdobju zgodnje odraslosti. Namen raziskave je ugotoviti ali obstajajo razlike v telesni samopodobi med zelo športno dejavnimi študentkami, srednje športno dejavnimi študentkami in manj športno dejavnimi študentkami

METODE

Vzorec

V raziskavo je bilo vključenih 213 študentk, starih devetnajst in dvajset let ($AS=19.53$, $SO=.325$): 71 študentk je bilo razporejenih v skupino nizko športno dejavnih, 82 v skupino srednje športno dejavnih in 60 v skupino zelo športno dejavnih. Meritve so potekale na posameznih osnovnih šolah severovzhodne Slovenije. Podatki so bili pridobljeni v okviru raziskave o vplivu nekaterih okoljskih dejavnikov na rast in razvoj otrok in mladine, ki poteka v okviru Pedagoške fakultete Univerze v Mariboru. V času meritev so bile vse sodelujoče merjenke zdrave. Seznanjene so bile z namenom raziskave in potekom meritev ter so soglašale z vključitvijo v raziskavo. Anonimnost merjenk je bila zagotovljena.

Merski postopki

Za meritve športne dejavnosti pri posameznih študentkah je bil uporabljen vprašalnik »Gibalna dejavnost mladih«, bil uporabljen v številnih slovenskih študijah (Matejek, Planinšec in Pišot, 2005). Na osnovi časa, ki ga študentke namenjajo športni dejavnosti so bile razdeljene v tri skupine: nizko športno dejavne (manj kot 30 min/dan), srednje športno dejavne (med 30 in 59 min/dan) in zelo športno dejavne (60 min/dan in več). Podatki o telesni samopodobi pa so bili pridobljeni s poslovenjeno različico francoske verzije vprašalnika za ugotavljanje telesne samopodobe mladostnikov The Physical Self-Inventory – short form (Maiano, Morin, Ninot, Monthuy-Blanc, Stephan, Florent e tal., 2008). Anketni vprašalnik za ugotavljanje telesne samopodobe študentk je bil del širšega vprašalnika, ki je obsegal 18 vprašanj, vsako področje je zavzemalo 3 vprašanja pri katerih so lahko študentke na 6-stopenjski lestvici izrazile svoje strinjanje oziroma nestrinjanje z napisanimi trditvami, ki so se nanašale na posamezna področja telesne samopodobe (splošna samopodoba, telesna samopodoba, vzdržljivost, športne kompetence, telesni videz, moč in telesna samopodoba skupaj). Popolno strinjanje je bilo ovrednoteno s 6, popolno nestrinjanje pa z 1. Le pri 3., 5. in 14. trditvi je bilo vrednotenje obratno in je popolno strinjanje bilo ovrednoteno z 1, popolno nestrinjanje pa z 6.

Organizacija meritev

Meritve so bile izvedene v maju 2012, v dopoldanskem času, v posebej pripravljenem prostoru. Vsaka merjenka je opravila celoten testni postopek v eni uri. Meritve so izvajali posebej usposobljeni merilci. Vsaka merjenka, ki je sodelovala v raziskavi, je dobil svojo identifikacijsko številko. Najprej so merjenke izpolnile vprašalnik o telesni samopodobi, nato še vprašalnik o športnem udejstvovanju. Nato so bile izvedene morfološke meritve in meritve gibalnih sposobnosti

Metode obdelave podatkov

Za ugotavljanje razlik v telesni samopodobi med skupinami različno športno dejavnih študentk je bila uporabljena analiza variance (ANOVA). Statistično značilne razlike so bile ugotovljene na ravni tveganja $p \leq 0,05$. Narejen je bil tudi Post-Hoc Scheffe preizkus, s pomočjo katerega so bile natančneje opredeljene predhodno ugotovljene statistično značilne razlike v telesni samopodobi med skupinami različno športno dejavnih študentk.

REZULTATI IN RAZPRAVA

V preglednici 1 so predstavljene razlike v telesni samopodobi med različno športno dejavnimi študentkami. Rezultati kažejo, da obstajajo med skupinami nizko športno dejavnih (NŠD), srednje športno dejavnih (SŠD) in zelo športno dejavnih (ZŠD) študentk statistično značilne razlike v dojetju lastne vzdržljivosti ($p = 0,003$) in moči ($p=0,013$).

Parametri telesne samopodobe	NŠA	SŠA	ZŠD	ANOVA	
	(N =71)	(N = 82)	(N =60)	F	p
	AS ± SO	AS ± SO	AS ± SO		
<i>Splošna samopodoba</i>	11,92 ± 3,15	11,08 ± 3,03	11,57 ± 3,20	1,152	0,319
<i>Telesna samopodoba</i>	8,90 ± 2,86	8,88 ± 2,62	9,67 ± 2,75	1,215	0,299
<i>Vzdržljivost</i>	6,82 ± 2,67	6,96 ± 2,71	9,35 ± 2,66	5,210	0,003
<i>Športne kompetence</i>	8,06 ± 2,52	8,51 ± 2,91	8,84 ± 3,05	1,005	0,368
<i>Telesni videz</i>	12,37 ± 2,30	11,91 ± 2,74	11,62 ± 2,99	1,063	0,348
<i>Moč</i>	7,93 ± 2,70	7,98 ± 2,23	9,27 ± 2,25	4,439	0,013
<i>Telesna samopodoba skupaj</i>	55,90 ± 11,63	55,12 ± 11,18	58,87 ± 12,06	1,312	0,272

AS= aritmetična sredina; SO=standardni odklon; N=število merjencev

Preglednica 1: razlike v telesni samopodobi med skupinami nizko športno dejavnih (NŠD), srednje športno dejavnih (SŠD) in zelo športno dejavnih (ZŠD) študentk

Rezultati Post-hoc Scheffe preizkusa kažejo, da športno zelo dejavne študentke statistično značilno višje vrednotijo lastno vzdržljivost, kot skupini nizko dejavnih ($P=0,013$) in srednje dejavnih ($P=0,019$). Prav tako pa statistično značilno višje vrednotijo lastno moč kot skupini nizko dejavnih ($P=0,023$) in srednje dejavnih ($P=0,034$) študentk.

Naše ugotovitve, pritrjujejo ugotovitvam drugih avtorjev (Dolenc, 2008), da mladi predstavo o svojem telesu oblikujejo tudi na podlagi izkušenj povezanih z njim. Število izkušenj povezanih s telesom z leti narašča, kar se gotovo odraža tudi v vse večji povezanosti omenjenih spremenljivk (Riddoch, Andersen, Weddekorpp, Harro, Klasson-Heggebø, Sardinha et. al., 2004). Nekateri raziskave kažejo jasno povezavo med količino športne vadbe in telesno samopodobo pri otrocih (Planinšec in Fošnarič, 2005), vendar pa ugotovitve naše raziskave na vzorcu mlajših odraslih ne potrjujejo te povezanosti. Moreno in Carvelo (2005) ugotavljata, da tisti študentje, ki se ukvarjajo s športno dejavnostjo več kot trikrat na teden vrednotijo lastne športne kompetence višje kot tisti študentje, ki so manj športno dejavni. Ugotovitve naše raziskave kažejo, da je trajanje športne dejavnosti povezano predvsem z vrednotenjem gibalnih sposobnosti, Fridlund Dunton et al. (2006) pa ugotavljajo povezanost med intenzivnostjo športne dejavnosti in skoraj vsemi parametri telesne samopodobe in ne le z vrednotenjem gibalnih sposobnosti, ki predstavlja le en parameter telesne samopodobe. Sklepati je mogoče, da samo povečevanje časa, ki ga posameznik nameni športni dejavnosti še ne pomeni tudi pozitivnih sprememb pri dožemanju telesne samopodobe. Izrednega pomena je tudi primerna intenzivnost športne dejavnosti kot tudi vsebinsko prilagojena vadba, ki jo nadzira in vodi za to usposobljen strokovnjak. Matejek in Planinšec (2014) ugotavljata, da le organizirano športno udejstvovanje v klubih pojasnjuje razlike v telesni samopodobi. Ugotovitve številnih raziskav potrjujejo, da sta tako gibalna učinkovitost kot gibalna dejavnost tesno povezani s subjektivnim vrednotenjem telesne samopodobe (Fridlund Dunton et. al, 2006). Gibalna dejavnost prispeva k pozitivni splošni telesni samopodobi, vendar le če prispeva tudi k izboljšanju gibalne učinkovitosti (Schneider, Fridlund Dunton & Cooper, 2008). Naše ugotovitve se ujemajo z ugotovitvami nekaterih raziskav (Kriemler, 2010; Starc in Strel, 2012), ki so pokazale, da ima pozitivne učinke na posameznikovo zdravje le vadba, ki je prilagojena posamezniku in jo izvajajo ustrezno usposobljeni strokovnjaki.

ZAKLJUČEK

Pričujoča raziskava ugotavlja, da je čas, ki ga študentke namenijo športni dejavnosti povezan z vrednotenjem lastnih gibalnih sposobnosti, ki predstavljajo enega od segmentov telesne samopodobe. Samo povečevanje časa, ki ga posameznik nameni športni dejavnosti še ne pomeni tudi pozitivnih sprememb pri dožemanju telesne samopodobe. Izrednega pomena je tudi primerna intenzivnost športne dejavnosti kot tudi vsebinsko prilagojena vadba, ki jo

nadzira in vodi za to usposobljen strokovnjak. Mlade je potrebno usmerjati v organizirano in ustrezno načrtovano športno vadbo, s posamezniku prilagojeno vsebino in obliko, primerne intenzivnosti, pogostosti in trajanjem. Prav tako je potrebno upoštevati posameznikove zmožnosti, želje in potrebe, saj lahko le tako govorimo o pozitivnih učinkih športne dejavnosti na človekov organizem.

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VPLIV BLIŽINE KOPALIŠČA NA USVAJANJE NEKATERIH OSNOVNIH ELEMENTOV PLAVANJA

IMPACT THE PROXIMITY OF THE SWIMMING POOL TO THE ACQUISITION ON SOME BASIC ELEMENTS OF SWIMMING

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POVZETEK

V prispevku je predstavljena primerjalna raziskava o vplivu bližine kopališč kraju bivanja otrok na predznanje in prilagojenost otrok na vodo. Uporabili smo neslučajnostni vzorec iz konkretne populacije otrok, ki bivajo v bližini kopališča, in otrok, ki v bližini kraja bivanja kopališča nimajo. Podatke smo pridobili s kvantitativno metodo/ocenjevalno lestvico na 10-urnem plavalnem tečaju predšolskih otrok. Za obdelavo podatkov smo uporabili kvantitativno metodo. Osnovna ugotovitev primerjalne raziskave je pokazala, da bližina kopališč kraju bivanja pozitivno vpliva na boljše usvajanje nekaterih osnovnih elementov plavanja otrok na plavalnem tečaju.

Ključne besede: otrok, plavanje, kopališče

ABSTRACT

This paper presents a comparative study on the impact of proximity swimming pool of residence of the child on prior knowledge and adaptation of children in the water. We used unrandom pattern of specific populations of children who reside near swimming pool and children in the vicinity of the place of residence do not have the swimming pool. Data were collected using quantitative methods / grading scale at the 10-hour swimming course for pre-school children. For data processing, we used a quantitative method. The basic findings of comparative research has shown that proximity swimming pool of residence has a positive impact on improving the acquisition of some of the basic elements of child swimming in swimming course.

Keywords: children, swimming, swimming pool

UVOD

V današnjem času plavanje predstavlja mnogo več kot golo preživetje ali status. Kljub temu je varnost pred utopitvijo še vedno eden od osnovnih namenov učenja plavanja. Najboljši

preventivni ukrep pred utopitvijo je znanje plavanja. V primeru elementarnih nesreč in drugih katastrof, povezanih z vodo, zagotavlja znanje plavanja ohranjanje življenja in možnost reševanja drugih življenj (Jurak in Kovač, 2002a).

Zaradi gibanja v vodi v ležečem položaju je plavanje ena najprimernejših aerobnih dejavnosti. Ležeči položaj plavalca zelo ugodno vpliva na delovanje srca. Zaradi ponavljajočega premagovanja odpora vode se pospeši delovanje srca in pretoka krvi po ožilju. To ohranja prožnost ožilja in s tem zmanjšuje možnost za nastanek okvar krvožilnega sistema. Zaradi premagovanja odpora vode je dihanje v vodi oteženo. Zato s plavanjem krepimo dihalne mišice. Plavalec vdihava zrak tik nad vodno površino, kar ugodno vpliva na sluznico dihalnih poti. Ležeči položaj pri plavanju in navidezno zmanjšanje telesne teže ugodno vplivata na hrbtenico. Veliki plavalni gibi ohranjajo gibljivost glavnih sklepov. Ker pri gibanju sodelujejo vse večje mišične skupine, plavanje oblikuje skladno razvito telo. Plavalni gibi se izvajajo nadzorovano, zato pri plavanju ni nevarnosti poškodb in se z njim lahko varno ukvarjamo vsi od zgodnjega otroštva do pozne starosti (Jurak in Kovač, 2002a).

S psihološkega vidika plavanje ugodno vpliva na miselne sposobnosti in osebnostne lastnosti. Plavanje z nizko in zmerno intenzivnostjo zmanjšuje anksioznost in depresivnost, izboljšuje razpoloženje, samopodobo ter ugodno vpliva na spanje. Samopodoba se pod vplivom plavanja izboljšuje tudi pri osebah s posebnimi potrebami. Spoznanja kažejo, da redno plavanje lahko povzroča enake učinke kot različne oblike psihoterapije. S sociološkega vidika pa predstavlja učenje plavanja v skupini možnost trajnejšega navezovanja stikov v smislu druženja, prijateljstva ali tovarištva (Kapus idr., 2011).

Ritem današnjega časa je ljudem približal vodne površine. Ljudje ugotavljajo, da voda s svojimi značilnostmi predstavlja primerno okolje za sprostitev, zabavo, regeneracijo, rekreacijo, druženje in igro. Prav tako so zelo popularni športi na vodi (jadranje, veslanje, kajak-kanu, jadrnanje na deski idr.). Osnova vsem dejavnostim v vodi, na njej in ob njej je znanje plavanja. (Jurak in Kovač, 2002a).

Otrok skozi različne gibalne dejavnosti usvaja osnovne oblike gibanja, razvija gibalne in funkcionalne sposobnosti ter se postopno uči osnovnih prvin različnih športnih zvrsti. Gibalno učenje pomeni proces oblikovanja gibalnega vzorca, ki vsebuje tekoče izvajanje določene gibalne naloge. Plavanje sodi med dejavnosti, ki se jih ni mogoče naučiti z drugimi vsakodnevnimi dejavnostmi, kot so hoja, tek, poskoki, saj se izvaja v posebnem okolju – vodi. Premikanja v vodi se otrok nauči sorazmerno hitro, proces učenja plavanja traja dlje. Za osvojitve določenega sklopa gibov je potrebno veliko število ponovitev. Osvojeni gibalni programi ostanejo trajno zapisani v gibalnem spominu. (Kapus idr., 2011).

Vodni pritisk na prsni koš skrbi za močnejši izdih. Otrok je prisiljen proti temu pritisku močneje vdihniti. S tem se krepi dihalno mišičje (Šajber, 2006).

Vodni pritisk pozitivno vpliva na srčno-žilni sistem. Pritisk deluje na dele telesa, ki so potopljani v vodo in prek kože na vene. Pod vplivom pritiska priteka približno 20 % več krvi v desni del srca in prek pljuč v levi del srca. S tem se poveča in krepi srčno mišičje (Šajber, 2006).

Plavanje je gibalna dejavnost, ki celovito, harmonično oblikuje rast in razvoj telesa. V primerjavi z drugimi gibalnimi dejavnostmi na kopnem povzroča najmanjše število nasprotujočih si posledic. Zaradi vodoravnega položaja telesa v vodi in zaradi zakonitosti, ki delujejo na telo, celotni skelet ni pod vplivom velikih obremenitev (Kapus idr., 2011).

Zgodnji začetek plavanja ima pozitivne učinke na celostni razvoj otroka. Gibalna dejavnost izboljšuje tako gibalni, telesni, kognitivni, čustveni kot tudi socialni razvoj otroka. Če izpostavimo telesni razvoj, vodno okolje v največji meri izboljšuje dihanje, srčno-žilni sistem, okostje, mišičje in termoregulacijo (Šajber, 2006).

Med plavalno vadbo in miselnimi sposobnostmi obstaja visoka povezava. Zgodaj usmerjeni gibalni razvoj pospešuje tudi spoznavnega. Otrok, ki se gibalno hitreje razvija, ima večje možnosti za komuniciranje z okoljem in obratno, komuniciranje z okoljem povzroča hitrejši gibalni razvoj.

Razlika med telesno temperaturo in temperaturo vode (med 32 – 37 stopinj C) je zadosten dražljaj za izboljšanje termoregulacije (sposobnost uravnavanja telesne toplote) in odpornosti telesa, na da bi otroku to škodovalo. Ob redni vadbi se izboljša reakcija otrokove kože na hladno, sposobnost termoregulacije. S tem se okrepi imunski sistem.

Zgodnji začetek plavanja je pomemben za telesni in psihični razvoj, zlasti za razvoj mišljenja ter socialni in čustveni razvoj. Otrok, ki plava, se bolje in hitreje razvija, si krepi mišičevje in srčno-žilni sistem. Ima boljši tek in bolj mirno spi. V vodi, v družbi drugih otrok in staršev ali učiteljev si pridobiva socialne izkušnje, se sprosti, postane bolj samostojen in neboječ (Kapus idr., 2011).

Prvi stik z bazenom, kopališčem oziroma plavanje samo je za popolnega začetnika težaven in prav zato zelo pomemben tudi s psihološkega vidika posameznika. Nepravilni posegi v prvih kontaktih z vodo lahko namreč močno podaljšajo sam proces učenja plavanja ob tem pa povzročijo negativne izkušnje, ki jih lahko človek občuti še dolgo v življenju. Cilj učitelja je, da se otrok prilagodi na vodo, nauči plavati oziroma izpopolni znanje plavanja. Primarni cilj otroka pa je, da se bo imel lepo, da ga ne bo strah, da bo užival s prijatelji, da se bo igral in šele v drugi vrsti je otrokov cilj, da se bo naučil plavati (Štemberger, 2005).

Psihološko in fiziološko gledano se učenje plavanja ne razlikuje od drugih oblik gibalnega učenja. Največjo vlogo igra centralni živčni sistem. Učenje gibalnega znanja namreč predstavlja miselno nalogo, ki je v veliki meri odvisna od psiholoških procesov pozornosti, pomnjenja, pretoka informacij in reševanja problemov, ki so odvisni od vrste procesov obdelave podatkov v centralnem živčnem sistemu. Učenje plavanja tako poteka od

zaznavanja, ustvarjanja predstav o gibanju, pomnjenja, ponavljanja, utrjevanja, do preverjanja osvojenega znanja v različnih pogojih.

Da se človek nauči plavati, mora v centralnem živčnem sistemu izdelati gibalni program za plavanje. Gradnja in delovanje programa se oblikujeta z gibalnim učenjem. Zaradi omenjenih značilnosti gibalnega učenja mora pravilno učenje plavanja potekati razvojno pravočasno (od tretjega leta dalje), metodično pravilno, v ustreznih pogojih in s podporo ustrezne motivacije (Kapus idr., 2011).

Eden od pogojev za ukvarjanje ljudi s plavanjem in posledično njihovim dobrim znanjem plavanja je zadostno število primernih bazenov in njihova krajevna porazdeljenost. Za učenje plavanja so najmanj primerna naravna kopališča, še posebej v tekočih vodah in jezerih. Za učenje plavanja so najprimernejša zimska kopališča. Stalne temperature vode in zraka v zimskih kopališčih zagotavljajo nemoten učni proces. V Sloveniji imamo premalo število bazenov, zlasti pokritih, saj v nekaterih okoljih šole ne morejo izpeljati preverjanja znanja plavanja, kaj šele plavalne tečaje za neplavalce. Letna kopališča so zaradi nizkih temperatur vode in ozračja v letni sezoni pogostokrat neprimerna, termalna kopališča imajo prevročo vodo, hotelski bazeni pa so v večini namenjeni samo hotelskim gostom. Poleg tega je zgoščenost bazenov takšna, da imajo nekateri kraji po več bazenov, medtem ko so nekateri kraji Slovenije oddaljeni od najbližjega bazena 50 kilometrov in več. Marsikje se zaradi neugodnih klimatskih razmer poletna plavalna sezona lahko začne šele po končanem pouku in se konča pred začetkom novega šolskega leta (Jurak, Kovač in Strel, 2002).

Leta 1999 je bilo v Sloveniji 76.930 kvadratnih metrov vodnih površin v obliki bazenskih kopališč. Od tega je bilo 6.940 kvadratnih metrov ali 9,1 % površin primernih za učenje plavanja. To pomeni, da je bilo v Sloveniji v povprečju za 26 prebivalcev namenjen en kvadratni meter bazenske vodne površine. En kvadratni meter bazenske vodne površine, primerne za učenje plavanja, pa je namenjen 286 prebivalcem oziroma 30 osnovnošolcem (Jurak, Kovač in Strel, 1999; v Kapus idr., 2011).

Jurak in Kovač (2002b) ugotavljata, da ima pomembno vlogo pri znanju plavanja tudi razpršenost vodnih površin. Analize utopitev v Sloveniji potrjujejo varnostni vidik plavanja. Po letu 1969 se je utopilo več kot 1600 ljudi. Vse več je dejavnosti v vodi in ob njej, ki so privlačne, hkrati pa predstavljajo nevarnost za utopitev. Število utopitev na kopališčih upada, znatno po letu 1987, ko je bil sprejet Zakon o varnosti na javnih kopališčih. Žal pa narašča število utopitev v neurejenih vodah. Povprečje utopitev zadnjih deset let je okoli 30, kar je še vedno zelo zaskrbljujoče (Kapus idr., 2011, str. 53).

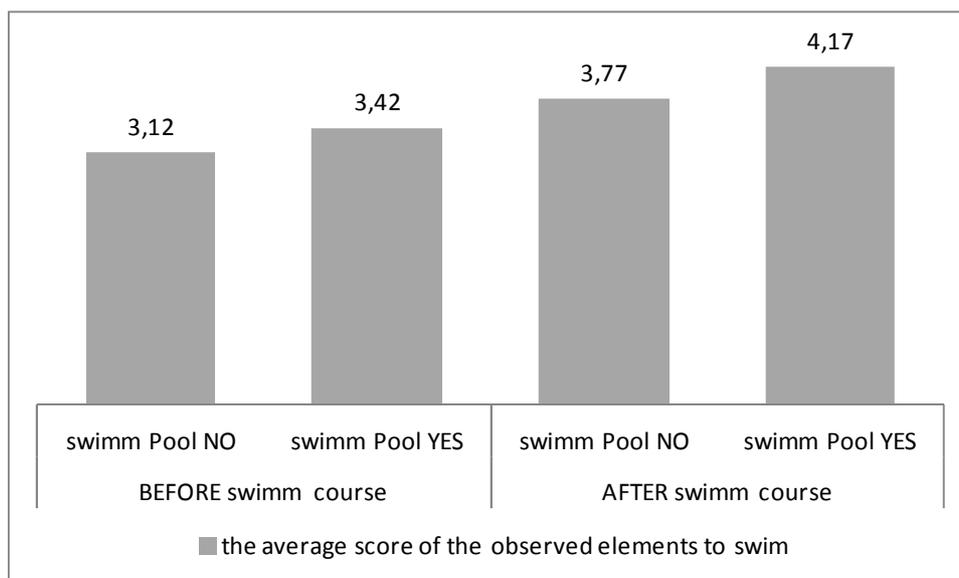
METODOLOGIJA

Namen raziskave je proučiti prvo stopnjo sistematičnega procesa učenja plavanja, kjer bi se naj otroci naučil osnovnih elementov plavanja. Cilj raziskave je ugotoviti, koliko bližina

kopališča kraju bivanja otrok vpliva na usvajanje plavalnih znanj otrok. V raziskavi je uporabljena kavzalno-neeksperimentalna metoda empiričnega raziskovanja. V raziskavi smo uporabili neslučajnostni vzorec iz konkretne populacije. V plavalni tečaj je bilo vključenih 33 otrok, ki imajo v svoji neposredni okolici kopališče in 49 otrok, ki v svoji bližini kopališča nimajo. V času plavalnega tečaja smo pri otrocih opazovali strah pred vodo in prilaganje na vodo (potop glave, gledanje pod vodo, dihanje, plavnost, drsenje). Opazovane elemente smo ocenjevali na podlagi kvantitativne ocenjevalne lestvice (Marc, 2011) pred začetkom plavalnega tečaja in po izvedenem tečaju plavanja.

Za obdelavo podatkov smo uporabili kvantitativno metodo in sicer deskriptivno statistiko za izračun povprečne ocene posameznih elementov plavanja in t-test za primerjavo ocen med otroci, ki bivajo v bližini kopališča (bazen DA) in otroci, ki nimajo kopališča blizu kraja bivanja (bazen NE).

REZULTATI IN RAZPRAVA



Graf 1: Povprečna ocena vseh elementov plavanja pred in po plavalnem tečaju

Iz grafa 1 je razvidno, da je skupna povprečna ocena vseh opazovanih elementov plavanja pri obeh skupinah otrok višja po izvedenem plavalnem tečaju kot pred začetkom tečaja. Na osnovi t-testa pred začetkom plavalnega tečaja ugotavljamo, da med otroci, ki bivajo v bližini kopališča in otroci, ki nimajo kopališča blizu kraja bivanja, ne obstaja statistično pomembna razlika v predznanju plavanja in prilagojenosti na vodo ($p=0,138$).

Na osnovi t-testa po izvedenem tečaju plavanja pa ugotavljamo, da med otroci, ki bivajo v bližini kopališča in otroci, ki nimajo kopališča blizu kraja bivanja, obstaja statistično pomembna razlika v usvajanju plavalnih znanj otrok ($p=0,032$) v korist otrok, ki bivajo v bližini kopališča

ZAKLJUČEK

V raziskavi ugotavljamo, da bližina kopališča kraju bivanja vpliva na usvajanje plavalnih znanj otrok. Ugotovitve, do katerih smo prišli v naši raziskavi, veljajo za naš vzorec in jih zaradi majhnosti vzorca ne moremo posploševati na celotno populacijo. Vseeno pa na njihovi osnovi lahko oblikujemo nekatera spoznanja. Vsi, ki delamo z otroci, se moramo zavedati pomena plavalnih tečajev predšolskih otrok, saj je za mnoge otroke je plavalni tečaj v vrtcu prvi pomembnejši stik z vodo.

Pri načrtovanju gibalnih/športnih dejavnosti v vrtcih in šolah moramo skrbno načrtovati tudi plavalno opismenjevanje otrok, saj s tem postavljamo temelje za nadaljnje učenje plavanja, skrbimo za ohranjanje zdravja in se tudi glede znanja plavanja približujemo idealu športnega naroda. Menimo, da je plavalni tečaj pet dni po eno uro in pol na dan premalo, da bi se otroci naučili dobro plavati. Opazili smo, da se prve dva do tri dni otroci privajajo na okolje in prilagajajo na vodo, ostali dnevi pa ne zadoščajo, da bi otroci trajno usvojili pomembne elemente plavanja. Predlagamo več kot en plavalni tečaj v predšolskem obdobju in plavalni tečaj vsako leto v prvi triadi osnovne šole. Na ta način bi otroci še boljše utrjevali in nadgrajevali že osvojena znanja, pridobivali trajne športne navade in izkušnjo aktivnega preživljanja prostega časa.

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IZVAJANJE GIBALNIH/ŠPORTNIH DEJAVNOSTI V VRTCU NA PROSTEM V VSEH LETNIH ČASIH

OUTDOOR SPORTS ACTIVITY IN KINDERGARTEN DURING ALL SEASONS OF THE YEAR

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IZVLEČEK

V prispevku predstavljamo vpliv klimatskih razmer na zdravje otroka, kako gibanje na prostem vpliva na zdravje in gibalni razvoj otroka in vremensko pogojene omejitve izvajanja gibalnih dejavnosti na prostem v vseh letnih časih. S pomočjo dostopne literature na teoretičnem nivoju ugotavljamo, da ob rednem izvajanju gibalnih dejavnosti na prostem nizke temperature, veter, megla in padavine ne vplivajo na zdravje otrok; da gibanje na prostem v vseh letnih časih ohranja in izboljšuje zdravje otroka; da so gibalne dejavnosti na prostem ob slabših vremenskih pogojih (visoke oziroma nizke temperature, mraz, padavine, megla) primerne, vendar časovno omejene; da gibanje na prostem pripomore k boljšemu gibalnemu razvoju otroka.

Ključne besede: otrok, gibanje, letni časi, zdravje

ABSTRACT

The paper presents the influence of climatic conditions on the health of the child, the outdoor sports activity affects on the health and motor development of the child and weather-related restrictions of the outdoor sport activities in all seasons. With the help of available literature on the theoretical level, we find that the regular implementation of outdoor sports activity cold temperatures, wind, fog and rain do not affect on the health of children; that outdoor sports activity in all seasons to maintain and improve the health of the child; that the outdoor sports activity at the deteriorating weather conditions (high or low temperatures, frost, rain, fog) adequate but limited in time; that outdoor sports activity helps to improve children's motor development.

Keywords: child, sports activity, seasons, health

UVOD

V vseh letnih časih, še posebej v hladnejših, je pomembno, da imajo otroci močan imunski sistem, ki jih ščiti pred številnimi boleznimi, ki krožijo med njegovimi vrstniki in odraslimi. Ker je preprečevanje boljše kot zdravljenje, je dobro vedeti, kako lahko otroku pomagamo krepiti odpornost. Igra na svežem zraku, tudi ko dežuje, bo namreč dobro dela počutju otroka ter okrepila njegovo odpornost. Poleg tega sončni žarki spodbujajo nastanek vitamina D, ki je prav tako pomemben za delovanje imunskega sistema.

Izvajanje gibalnih dejavnosti v naravi v vseh letnih časih daje otrokom občutek zadovoljstva, razigranosti, sproščenosti in razgibanosti. Otrokova lastna aktivnost in iskanje različnih načinov za razgibanje nudi otrokom ugodje in pozitivno samopodobo. Prav tako si otroci z gibanjem v naravi razvijajo intelektualne sposobnosti. Zato je prav, da v tem obdobju otrokom postrežemo s pestro ponudbo gibalne aktivnosti na prostem. Razvijamo pa tudi njihov imunski sistem in s tem možnost, da bodo zdravi. Če pa želimo razvijati imunski sistem, je potrebno otroku ponuditi možnost za gibanje na prostem v vseh letnih časih in v različnih vremenskih pogojih (Videmšek in Visinski, 2001).

Videmšek, Hosta, Bučar in Čuk (2007) navajajo, da postaja igra otrok vedno bolj statična in s tem naraščanje bolezni današnjega časa. Glede na to, da sta potreba po gibanju in igri osnovni otrokovi potrebi, jim je potrebno ponuditi aktivno in zdravo preživljanje prostega časa v vseh letnih časih. Ena takih možnosti je tudi igra na otroškem igrišču, ki pa mora biti strokovno zasnovana z vidika varnosti, uporabnosti in udobnosti. Otroško igrišče, ki je kakovostno, mora vsebovati igrala, ki ustrezajo standardom, so vzdrževana in otrokom vabljiva. Dobra igrišča lahko imajo pomembno vlogo pri otrokovem telesnem, gibalnem, spoznavnem, čustvenem in socialnem razvoju.

Uporabili smo deskriptivno (preučevanje na nivoju opisovanja dejstev, odnosov, procesov brez vzročnega razlaganja) in komparativno (proučevanje na nivoju primerjanja dejstev, odnosov, procesov z namenom odkrivanja podobnosti in razlik) metodo raziskovanja.

PREDMET IN PROBLEM

Podnebna raznolikost Slovenije se kaže v razlikah med vrednostmi podnebnih spremenljivk ter v njihovi dnevni, sezonski in večletni spremenljivosti (Mašera, 2012). Podnebje v Sloveniji določajo številni dejavniki, najpomembnejši so njena geografska lega, razgiban relief, usmerjenost gorskih grebenov in bližina morja. Posledica prepleta številnih dejavnikov je zelo raznoliko podnebje. Tako imamo tri prevladujoče tipe podnebja, na posameznih območjih pa se njihovi vplivi prepletajo: v vzhodni Sloveniji imamo zmerno celinsko podnebje, v osrednji subalpsko (v gorskem svetu alpsko), zahodno od Dinarsko-Alpske pregrade pa submediteransko podnebje, ki je omejeno na jugozahodno Slovenijo, in sicer od obale do visokih Dinarskih kraških planot. Je najbolj toplo in milo podnebje v Sloveniji, saj vplivi morja

blažijo zimski mraz in poletno vročino. Značilne so mile zime in največ sončnih dni v državi. Od pravega sredozemskega podnebja se loči po večji količini padavin in z nižjimi temperaturami (Geografija Slovenije, b.d.).

Temperaturne razmere so močno pogojene s tipom podnebja na določenem območju. Najbolj očitna je odvisnost temperaturnih razmer od nadmorske višine. Z nadmorsko višino temperatura običajno pada. Povprečna letna temperatura se na vsakih 1000 m spusti za 5.3 °C. Ne le nadmorska višina, tudi izpostavljenost (nagib in orientacija terena) ima velik vpliv na temperaturne razmere. V zaprtih dolinah in kotlinah se v hladni polovici pogosto pojavljajo jezera hladnega zraka s temperaturnim obratom in takrat se prostorska porazdelitev temperature precej razlikuje od povprečnih. Prostorska porazdelitev povprečne letne temperature sledi reliefu Slovenije. Najtopleje je na Obali, v Vipavski dolini in v Brdih, kjer povprečna letna temperatura preseže 12 °C. Topleje (od 10 do 12 °C) je tudi v ostali Primorski regiji in v nižinah vzhodne Slovenije, medtem ko je v nižjih predelih osrednje Slovenije povprečna letna temperatura med 8 in 10 °C. Najhladneje je v gorah, kjer na najvišjih vrhovih povprečna letna temperatura ne preseže 0 °C.

Za temperaturo v Sloveniji je značilen dnevni in sezonski potek. Najvišje dnevne temperature so običajno zabeležene okoli 14. ure, najnižje tik pred sončnim vzhodom. Najtoplejši mesec je običajno julij, v gorah avgust. Najhladnejši mesec je januar, v gorah pa običajno februar. Največje amplitude dnevnega (razlike med minimalno in maksimalno dnevno temperaturo) in sezonskega nihanja temperature so značilne za kraje s celinskim podnebjem, torej za vzhodno Slovenijo. Najmanjša temperaturna nihanja pa imamo na Primorskem, in sicer zaradi vpliva morja.

Največji porast povprečne temperature je opaziti v Ljubljani, kjer je segrevanje poleg globalnih podnebnih sprememb posledica širjenja in rasti mesta. Najmanj je dvig povprečne temperature opazen na Primorskem (v Biljah se je povprečna letna temperatura dvignila za 1.0 °C), kjer spremembe blaži bližina morja. Drugje po Sloveniji so spremembe približno enake, okoli 1.5 °C v čas 30 let. Zanimivo je, da k porastu temperature najbolj prispeva dvig povprečne temperature poleti, medtem ko v nižinah pozimi ni opaziti značilnih temperaturnih sprememb, v visokogorju pa ni značilnega porasta temperature v jesenskem času.

Dvig temperature vpliva tudi na pogostost toplih in vročih dni. Tako je v vseh regijah, razen na Primorskem, v 90-ih letih opaziti porast tako toplih kot vročih dni. Nekoliko drugačna situacija je s pogostostjo hladnih, kjer je minimalna temperatura pod 0 °C, in ledenih dni, kjer je maksimalna temperatura pod 0 °C dni. Njihova pogostost se je v zadnjih 10-letih obravnavanega obdobja občutno zmanjšala povsod po Sloveniji, tudi na Primorskem (Podnebne razmere v Sloveniji, 2006).

Z izrazom **vlaga v zraku** mislimo predvsem na vodo, ki je v plinastem stanju. Zrak lahko sprejme le določeno količino vlage. Če je vlage v zraku preveč, se začne kondenzirati. Koliko

vlage lahko sprejme zrak, je odvisno predvsem od njegove temperature (večja kot je temperatura, več vlage lahko zrak sprejme). Absolutna vlaga je količina vodne pare, izražene v g/m³. Maksimalna vlaga je največja količina vodne pare, ki jo zrak lahko sprejme pri določeni temperaturi. Relativna vlaga je stopnja nasičenosti zraka z vodno paro ali razmerje med dejansko množino in možno količino vodne pare, ki je lahko v zraku pri določeni temperaturi. Povprečna relativna vlažnost je najvišja na Kredarici (83 %), najnižja pa v Mariboru, Biljah in Portorožu (na vsaki 72 %) (Neukamp, 2000).

Prostorska porazdelitev **padavin** v Sloveniji je močno povezana z njenim razgibanim reliefom. Zaradi orografskega učinka se količina padavin povečuje, ko gremo od morja proti notranjosti Slovenije, in doseže maksimum na Dinarsko-Alpski pregradi. Nekoliko manjši, vendar kljub temu opazen maksimum padavin, se prav tako zaradi učinka dviganja zračnih mas pojavlja v Kamniško-Savinjskih Alpah. Za Dinarsko pregrado proti severovzhodu se z oddaljenostjo od morja in orografske pregrade količina padavin zelo hitro zmanjšuje. Na skrajnem severovzhodu države, kjer se že čuti močan vpliv celinskega podnebja, letna količina padavin ne preseže 900 mm. Ob obali se letna količina padavin giblje med 1100 in 1200 mm. V Sloveniji pade največ padavin ob vremenskih situacijah, ko se vlažne in relativno tople zračne mase preko države pomikajo z jugozahodnim vetrom. Smer premikanja zračnih mas je pravokotna na orografske pregrade, zato se ob njih zračne mase dvigajo, zrak se ohlaja in tedaj se iz njega izločajo padavine. To je vzrok, da leži maksimum letnih padavin v Julijcih, kjer pade letno nad 3200 mm padavin. To območje spada tudi med najbolj namočene v Alpah in v Evropi (Podnebne razmere v Sloveniji, 2006).

Moč sončnega obsevanja je odvisna od več dejavnikov, kot so: oblačnost, vlaga in nadmorska višina. Slovenija leži v zmernem zemljepisnem in klimatskem pasu, kjer sta količina in moč UV žarkov najmočnejši v spomladanskem in poletnem času - maj, junij, julij in avgust. Pozimi je UV sevanje v povprečju desetkrat šibkejše kot poleti. Moč sončnega obsevanja se čez dan spreminja. V poletnih mesecih je najmočnejša med 10. in 16. uro, v pomladnih pa med 11. in 14. uro (Dan zaščite pred soncem, b.d.).

Cegnar, Dolinar, Ovsenič - Jeglič, Bertalanič, Marolt, Nadbath idr. (2003) navajajo, da je sonca največ ur ob obali (2448 ur) in da je sončno obsevanje preseglo povprečje v Celjski kotlini kar za petino. Najmanjše presežke ugotavljajo na Notranjskem, le 15 %, in ob obali, kjer je bilo sončnega vremena le za 7 % več kot v dolgoletnem povprečju. Na Kredarici pa so zabeležili 1835 ur sončnega obsevanja, kar je za 8 % več od dolgoletnega povprečja.

Kakovost zraka je povsod, posebno še v notranjosti Slovenije, slabša pozimi, ko se zaradi dolgih noči in šibkega sončnega obsevanja pogosto pojavljajo dolgotrajne temperaturne inverzije. Koncentracije onesnaževal, katerih glavni izvor je promet, imajo značilen dnevni hod z maksimumom zjutraj in zvečer (popoldanska prometna konica se na onesnaženosti zraka izrazi pozneje, ko se hitrosti vetra zmanjšuje). Koncentracije so opazno višje ob

delavnikov, ko je promet gostejši, kot ob koncu tedna. V zadnjih nekaj letih je bila onesnaženost zraka z delci PM10 (so trdi delci v zraku s premerom 10 in so za zdravje najbolj škodljivi) nad mejno vrednostjo skoraj povsod v mestih, kjer je glavni izvor količina prometa, predvsem v Zasavju pa tudi industrija in v zimskem času individualna kurišča. Koncentracije so presegle mejno vrednost tudi na podeželskem merilnem mestu Murska Sobota. Najvišje koncentracije so bile izmerjene v Zagorju, Trbovljah in na merilnem mestu Ljubljana-Figovec. Slabša kakovost zraka v Zasavju je tudi posledica zelo neugodnih reliefnih značilnosti, saj ležijo mesta v ozkih, nevetrnih dolinah.

Kot kažejo meritve ozona v zunanjem zraku v zadnjih letih, so po višini koncentracij za krajše časovne intervale na prvem mestu višji predeli Primorske, sledijo pa nižji deli Primorske in Obala (Nova Gorica, Koper). Koncentracije žveplovega dioksida so bile nekoliko nižje kot v prejšnjih letih, tako da so ostale povsod pod spodnjim ocenjevalnim pragom za zaščito zdravja. Koncentracije dušikovega dioksida so bile povsod pod mejnimi vrednostmi. Višje so bile na mestnih merilnih mestih, ki so pod vplivom emisij iz prometa – najvišja povprečna letna koncentracija je bila izmerjena v Mariboru, kjer je prekoračila zgornji ocenjevalni prag. Pod spodnjim ocenjevalnim pragom so se gibale koncentracije skupnih dušikovih oksidov na merilnih mestih, ki so reprezentativna za naravno okolje, ter koncentracije ogljikovega monoksida. Koncentracije benzena, ki se merijo na merilnih mestih Ljubljana in Maribor, so v Ljubljani prekoračile spodnji ocenjevalni prag, v Mariboru pa zgornji ocenjevalni prag (Šegula, Murovec, Koleša, Brinc, Cegnar, Muri, 2009).

Gibalna dejavnost ima pozitiven pomen za telesni razvoj otroka, saj imajo otroci, ki so gibalno dejavnejši, v povprečju večji delež mišičevja in manjši delež telesnih maščob. Primerna gibalna dejavnost ima tudi vpliv na mineralizacijo kosti, saj postanejo trdnejša, nasprotno pa lahko daljša gibalna dejavnost škodljivo vpliva na rast kosti in zaostajanje v celotni rasti (Pišot in Planinšec, 2005).

Videmšek, Berdajs in Karpljuk (2003) trdijo, da je predšolsko obdobje temelj gibalnega razvoja, saj je otrokov organizem najbolj izpostavljen vplivom okolja prav v tem obdobju. Ustrezne gibalne dejavnosti so predvsem v predšolskem obdobju ključnega pomena za otrokov gibalni in funkcionalni razvoj, poleg tega pa vplivajo tudi na otrokove spoznavne, socialne in čustvene sposobnosti in lastnosti.

Završnik in Pišot (2007) menita, da za pozitivne učinke na zdravje ni potrebna zelo intenzivna telesna dejavnost, ampak zadostuje že zmerna dejavnost, in navajata najnovejša priporočila za vadbo (poudarek na hoji ali katerakoli gibalni aktivnosti, ki jo je mogoče izvajati vsakodnevno z intenziteto, ki jo občutimo ob hitri hoji; vadba naj bo sestavljena iz 50 % aerobnih aktivnosti in 50 % aktivnosti za razvoj osnovnih motoričnih sposobnosti; trajanje vadbe naj bi bilo od 20 do 60 minut; trajanje posameznega dela vadbe naj ne bi bil krajši od 10 do 15 minut).

Videmšek in Pišot (2007) menita, da je za izvajanje gibalnih dejavnosti v naravi (v različnih vremenskih razmerah) potrebno, da ima otrok ustrezno opremo. Pomembno je, da ob telesnem naporu ne prihaja do prekomernega znojenja ali podhladitve otroka, zato naj po potrebi (glede na temperaturo in vlažnost ozračja) slači ali oblači posamezna oblačila.

Avtorja tudi navajata, da je za kakovostno izvajanje športnih dejavnosti v vrtcu potrebno preseči minimalni standard, ki ga predpisuje *Pravilnik o normativih in minimalnih tehničnih pogojih za prostor in opremo vrtca* (2000) glede velikosti športne igralnice ter športnih pripomočkov in igral, saj bodo le tako otroci optimalno razvijali gibalne sposobnosti in usvajali različna znanja, ki v predšolskem obdobju predstavljajo temelj za usvajanje kasnejših športnih zvrsti. Vsak vrtec nedvomno potrebuje prostorno in z ustreznimi športnimi pripomočki bogato športno igralnico, v kateri bodo lahko otroci izvajali raznovrstne gibalne dejavnosti. Avtorja menita, da je igrišče največji prostor, ki je funkcionalno opremljen za igro. Karba, Meško, Pušenjak, Širec, Tabor, Zupančič in Žgur (2010) ugotavljajo, da otroško igrišče, ki je ob vrtcu, ponuja veliko možnosti za učenje otrok. Tam se lahko otroci gibajo prosto ali po pravilih, ki jih oblikujejo skupaj z vzgojiteljem. Gibanje jim omogoča tudi druge dejavnosti, pri katerih so miselno aktivni. Tako lahko po igrišču tekajo, skačejo, plezajo, se igrajo igre z žogo, kolesarijo, se igrajo igre vlog, plešejo, pojejo, se igrajo in ustvarjajo s peskom, premagujejo ovire in se igrajo na različnih igralih.

Po zimskem obdobju, ko so otroci še vedno preveč zaprti v ogrevane in prašne prostore, ki predstavljajo žarišče mnogih obolenj dihalnih organov, prehajamo v čas, ko lahko zopet »zadihamo«. Izvajanje gibalnih dejavnosti v naravi daje otrokom občutek zadovoljstva, razigranosti, sproščenosti in razgibanosti. Otrokova lastna aktivnost in iskanje različnih načinov za razgibanje nudi otrokom ugodje in pozitivno samopodobo. Prav tako si otroci z gibanjem razvijajo intelektualne sposobnosti. Zato je prav, da v tem obdobju otrokom postrežemo s pestro ponudbo gibalne aktivnosti na prostem, ki jim bo omogočila, da nadoknadijo v zimskem času zamujene trenutke in bodo lahko zopet razvijali svoje funkcionalne kapacitete. Te omejujeta predvsem dihalni in srčno-žilni sistem, ki ju primerno angažiramo skozi zmerne časovno dlje trajajoče obremenitve na svežem zraku. Med temi obremenitvami in gibalnimi aktivnostmi, s katerimi se otroci najpogosteje srečujejo oziroma jim jih odrasli nudimo, so hoja in teki v naravi, športne igre v naravi, rolanje in kolesarjenje (Pišot in Jelovčan, 2006).

Trček (2010) navaja, da spomladi temperature zelo nihajo. Jutra in večeri so lahko nadvse hladni, medtem ko se ozračje čez dan pogosto toliko segreje, da zunaj posedamo brez debelih, dolgih oblačil. Vse pogosteje se dogaja tudi, da so nihanja velika iz dneva v dan. Deževnim in mrzlim dnevom velikokrat sledijo celo za petnajst stopinj toplejši in sončni dnevi. Takšno nihanje zunanjih temperatur ima seveda vpliv tudi na naše telo. Dvig temperatur namreč povzroči, da se telo začne ohlajati. Žile se razširijo, zato krvni tlak pade. Takšen

nenaden padec tlaka pa se kaže kot utrujenost, celo kot omotica in slabost. To utrujenost bomo pregnali s telesno aktivnostjo, kot so kolesarjenje, rolanje, tek ter dolgi sprehodi na svežem zraku.

Že pri temperaturah nad 0 °C lahko ob močnem vetru ob neprimernih oblačilih (mokra, za gibanje in šport neprimerna oblačila) nastanejo podhladitev in ozeblina. Jesen pa je pravi letni čas prav za te razmere. Najpogosteje pride do podhladitve pri nizkih okoljskih temperaturah, lahko pa tudi pri temperaturah nad 4°C, če je oseba mokra, prepotena ali v mrzli vodi. Zato so prilagoditev gibanja, primerna oblačila in spremljanje počutja ključni v preprečevanju težav zaradi mraza. Z naraščanjem hitrosti vetra se pospeši tudi odvzemanje toplote našemu telesu. Ob vetrovnem vremenu se možnosti za zdravstvene težave, povezane z vremenom, močno zvišajo tudi v primeru, ko temperature niso ravno nizke (Pirnat, b.d.).

Fekonja (2009) priporoča, da otroci s starši oz. vzgojitelji aktivnost na prostem izvedejo letnemu času primerno. Pozimi se lahko kepajo, sankajo, tečejo in skačejo po snegu ali pa naredijo sneženega moža. Pomlad je pravi čas za sprehode, odhod v park ali na igrišče, kjer lahko odrasli otrokom pomagajo pri plezanju in premagovanju različnih ovir. Če zmanjkuje časa, lahko združijo tudi prijetno s koristnim. Pri tem aktivnost združijo z drugimi področji in otrok se mimogrede pouči še o gozdnih živalih ali jesenskih sadežih. Jeseni lahko tako skupaj odidejo v gozd in nabirajo kostanj, pred hišo ali vrtcem poberejo odpadlo listje ali pa v sadovnjaku pobirajo sadje. Poleti je možnosti neskončno. Otroci se lahko žogajo, lovijo, igrajo s kolenico, elastiko, čofotajo v vodi, prelivajo itd.

Videmšek in Visinski (2001) menita, da lahko v vseh letnih časih izvajamo elementarne igre, sprehode, tek in hojo v naravi, skoke, plezanje, metanje žoge itn. Pozimi pa sneg omogoča dejavnosti, ki jih v nobenem drugem letnem času ne moremo izvajati (smučanje, sankanje, lopatkanje, radosti na snegu). Prav tako je poseben letni čas poletje. Takrat so temperature višje in ni lepšega kot otrokov vesel obraz ob skoku v vodo, čofotanju, prelivanju in polivanju. Tudi te dejavnosti ne moremo izvajati v nobenem drugem letnem času.

Priporočil za temperaturo, pri kateri bi bilo treba omejiti gibanje na prostem, ni. Gibanje na prostem in športna aktivnost sta vedno zelo pomembni, saj sta osnovi zdravega in kakovostnega življenja. Ob nižjih zunanjih temperaturah je treba prilagoditi obnašanje in najbolj izpostavljene dele telesa posebej zaščititi. Zrak, ki je imel zunaj temperaturo ≈ 10 °C, se po petih centimetrih poti skozi nos segreje na okrog 15 °C. Ko je v grlu, je temperatura že 21 °C, pri vstopu v pljuča pa že 30 °C. (Pirnat, b. d.).

Marjanovič Umek (2001) navaja, da otrok z različnimi dejavnostmi na prostem razvija gibalne sposobnosti, usvaja nekatere gibalne koncepte ter postopno spoznava in usvaja osnovne prvine različnih športnih zvrsti. Mnoge gibalne dejavnosti od otroka zahtevajo, da se zaveda sodelovanja otrok in odraslih, da z njimi deli prostor in pripomočke.

Gibanje, gibalna igra (lovljenje, skrivanje, sankanje, smučanje ...) na prostem pozitivno vplivata na razvoj mišic, okostja, živčnega sistema in krvnega obtoka otroka, kar je zelo pomembno za otrokov normalen razvoj (Štemberger, 2004).

Hohmann (2005) trdi, da je igra na prostem pomembna, saj otroci dihajo svež zrak, srkajo sončno energijo, krepijo srce, pljuča in mišice ter imajo širši razgled. Prek dihanja se hranimo s kisikom, ki je hrana in zdravilo za delovanje fizičnega telesa in človekove psihe. Z gibanjem na svežem zraku pa vplivamo na še več in še bolje izkoriščen kisik v našem telesu. Gibanje je vsestranska aktivnost, ki krepi mišice in organe, živčni sistem, krvni obtok in celo odlično vpliva tudi na človekovo duševno stanje. Vsako gibanje na svežem zraku (tek, kolesarjenje, plavanje in vaje za krepitev telesa) nam omogoča vnos večje količine kisika v organizem. Zato ni čudno, da nas vadba v naravi osveži, sprošča, pomlaja in krepi. Potrebna je, kar se da redna, torej skoraj vsakodnevna vadba ali vsaj sprehod v naravi. Majetič (2012) navaja, da sta letovanje in zimovanje posebna načina življenja otrok v naravi, kjer poleg krepitev zdravja in razvijanja gibalnih in funkcionalnih sposobnosti razvijajo tudi spoznavne, socialne in emocionalne sposobnosti in lastnosti.

SKLEP

Pomembno je, da otroku že v prvih letih življenja nudimo dovolj gibanja v naravi, na svežem zraku. Starši in vzgojitelji so tisti, ki nudijo otroku dejavnosti, v katerih bo občutil ugodje in veselje. V vseh letnih časih lahko izvajamo elementarne igre, sprehode, tek v naravi, skoke, plezanje, metanje žoge ali kepe pozimi. Sneg je posebnost zime, ki omogoča dejavnosti, katerih v nobenem drugem letnem času ne moremo izvajati. Tako z gibanjem na prostem otrok tudi spoznava in usvaja prvine športne zvrsti. Večkrat se slabi vremenski pogoji (visoke oziroma nizke temperature, padavine, veter in megla) pojavijo kot dejavniki, ki naj bi omejevali gibanje na prostem. Vendar če vzgojitelji dobro načrtujejo in redno izvajajo gibalne dejavnosti na prostem ter upoštevajo priporočila oblačenja in ravnanja v vseh vremenskih pogojih, omejitev ni. Ugotavljamo, da imajo vrtci svoje pravilnike o varnosti otrok na prostem. Ti pravilniki (Jerman Slabe, 2010; Velikonja, 2011) so med sabo podobni, le da nekateri omenjajo konkretne temperature in določajo meje, ki pa niso nikjer zapisane, ampak je to lastna odločitev, ki jo lahko ravnatelj vrtca sprejme. S temi pravilniki se določa postopke, ukrepe in načine ravnanj ter aktivnosti, s katerimi se zagotavlja varnost otrok, varnost njihovega zdravja in življenja ter njihovo počutje v času bivanja v vrtcu in na prostem.

Nismo ugotovili, da bi nizke temperature preprečevale gibanje na prostem tudi, ko je zunaj minus 10°C. Tudi v pravilniku, ki ga sprejme vrtec oziroma ravnatelj vrtca, ni omenjenih nizkih temperatur. Menimo, da bi Pravilnike o varnosti otrok v vrtcu, ki ga ravnatelj vrtca sprejmejo, potrdijo pa ga svet zavoda in vzgojiteljski zbor, lahko vsebovali konkretna priporočila o vsakodnevem gibanju na prostem, pri čemer bi dodali, da nizke temperature

ne preprečujejo gibanja na prostem pod pogojem, da so otroci vsakodnevno na prostem v vseh vremenskih pogojih in letnih časih in da se upoštevajo priporočila primerne oblačitve pri nizkih temperaturah (oblačitve po plasteh, zaščita ust s šalom, suha obutev ter rokavice in kapa). Na osnovi vseh teoretičnih spoznanj ugotavljamo, da sta gibanje in igra na svežem zraku tudi v vseh vremenskih pogojih otrokovi osnovni potrebi. Z gibanjem na prostem v vseh vremenskih pogojih krepimo otrokov imunski sistem in posledično tudi otrokovo zdravje. Obenem pa z dobro načrtovano in redno izvajano gibalno dejavnostjo skozi celo leto pozitivno vplivamo na otrokov gibalno razvoj.

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ŠPORT KOT DEJAVNIK VRAČANJA V DOMAČE OKOLJE ZA UČENCE IZ TUJINE

SPORT AS A FACTOR OF RETURNING IN HOME ENVIROMENT FOR IMMIGRANT STUDENTS

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POVZETEK

V prispevku predstavljamo aktivnosti Zlatibor2014, ki smo se jih z učenci iz OŠ Bičevje Ljubljana udeležili v sklopu projekta »Razvijamo medkulturnost kot novo obliko sobivanja. Izboljšanje usposobljenosti strokovnih delavcev za uspešnejše vključevanje učencev in dijakov priseljencev v vzgojo in izobraževanje«. Projekt predstavlja uspešno vključevanje otrok priseljencev, vključuje neposredne vzgojno-izobraževalne aktivnosti z otroki priseljenci, ki se na novo vključujejo ali so že vključeni v slovenski vzgojno-izobraževalni sistem. Učenci, ki so v šoli lahko zelo vzgojno zahtevni in posebni – so v nepoznanem, a hkrati domačem okolju zelo poslušni, delovni in v pomoč ostalim v skupini. Pokaže se med-vrstniška in solidarnostna pomoč. Pomembna je tudi zavest spremljevalcev, kako pomembno je spoštovanje korenin učencev priseljencev.

Ključne besede: športna vzgoja, inkluzija, priseljenci

ABSTRACT

The paper presents the activities Zlatibor2014, in which students immigrants from our school participated. The activities were performed in the framework of the project "Developing interculturalism as a new form of coexistence. Improving the skills of professionals for the successful integration of immigrant pupils in education". The project represents the successful integration of immigrant children, it includes direct educational activities with children, immigrants, which are new or already included in the Slovenian education system. Students who can be very demanding and special school environment - are in unfamiliar, but at the same time the domestic environment very obedient and in a great help to help others in the group, also peer assistance and solidarity appears. Very important is the awareness of teachers, how important is the respect of the roots of immigrant pupils.

Keywords: physical education, social inclusion, immigrant

UVOD

Osnovna šola Bičevje, Ljubljana je zelo dejavna pri humanitarnosti in solidarnosti. Aktivna je šolska zadruga, v katero se vključujejo najrazličnejši otroci, ki s pomočjo mentoric izdelujejo, oblikujejo izdelke iz različnih materialov in jih ob različnih prazničnih priložnostih ponujajo. Zaslužen denar je namenjen izključno v humanitarne namene, in sicer socialno šibkim učencem naše šole, ki se jim na ta način omogoči udeležbo na taboru ali različnih dnevnih dejavnostih. Humanitarnost je med pomembnejšimi cilji naše šolske skupnosti. Z zbiralnimi akcijami, ki jih pripravljajo humanitarne organizacije že mnogo let uspešno sodeluje pri pomoči različnim socialno ogroženim skupinam ali ob naravnih nesrečah predvsem otrokom. Da je šola resnično dejavna na tem področju in prepoznavna v širšem merilu se je potrdilo že leta 2004 ob obisku švedskega kraljevskega para v Sloveniji. Slovenski predstavniki UNICEFa so ob tej priložnosti za obisk švedske kraljice izbrali ravno našo šolo in našim učencem tako omogočili razpravo s pomembno gostjo o socialni vključenosti oz. izključenosti.

Naša šola sodeluje v več humanitarnih projektih in akcijah, med drugim tudi:

- v mednarodnem projektu Slovenija - Madžarska *»Prijateljstvo ne pozna meja«*. V okviru projekta prihaja do mednarodne izmenjave učencev in učiteljev.
- v mednarodnem projektu *»Art in all of us«*, kjer spodbujamo komunikacijo preko ustvarjalnosti med otroki različnih kontinentov.
- v projektu *»Razvijamo medkulturnost kot novo obliko sobivanja. Izboljšanje usposobljenosti strokovnih delavcev za uspešnejše vključevanje učencev in dijakov priseljencev v vzgojo in izobraževanje«*. Projekt predstavlja uspešno vključevanje otrok priseljencev, vključuje neposredne vzgojno-izobraževalne aktivnosti z otroki priseljenci, ki se na novo vključujejo ali so že vključeni v slovenski vzgojno-izobraževalni sistem.

NAMEN IZMENJAVE AKTIVNOSTI ZLATIBOR 2014

Aktivnosti zimovanja v Zlatiboru (Srbija) so bile ponujene s strani Mestne občine Ljubljana v sklopu projekta *»Razvijamo medkulturnost kot novo obliko sobivanja. Izboljšanje usposobljenosti strokovnih delavcev za uspešnejše vključevanje učencev in dijakov priseljencev v vzgojo in izobraževanje«*. Izvedbo projekta je delno financirala Evropska unija iz Evropskega socialnega sklada ter Ministrstvo za izobraževanje, znanost in šport v okviru Operativnega programa razvoja človeških virov za obdobje 2007-2013, razvojne prioritete: *»Razvoj človeških virov in vseživljenjskega učenja«*; prednostne usmeritve *»Izboljšanje kakovosti in učinkovitosti sistemov izobraževanja in usposabljanja«* ter javnega razpisa za izbor operacij Ministrstva za izobraževanje, znanost in šport *»Izboljšanje usposobljenosti strokovnih delavcev za uspešnejše vključevanje učencev in dijakov priseljencev v vzgojo in*

izobraževanje«. Ponudba je zajemala kritje stroškov bivanja, prevoza, delne prehrane in programa MOL, s prispevkom šolske skupnosti in minimalnim prispevkom staršev.

Osnovni cilj projekta je prispevati h krepitvi podpornih okolij v vzgojno-izobraževalnih zavodih za razvijanje vrednot medkulturnosti in zagotoviti ustrezno informiranost in usposobljenost strokovnih delavcev za uspešno vključevanje otrok priseljencev iz drugih jezikovnih in kulturnih okolij v slovenski vzgojno-izobraževalni sistem. Cilj projekta je tako zagotoviti ustrezno izobraževanje strokovnih delavcev, ki so v stiku z otroki priseljenci, ter usposabljanje strokovnih delavcev – multiplikatorjev za delo s strokovnimi delavci vzgojno-izobraževalnih zavodov, v katere so vključeni otroci priseljenci.



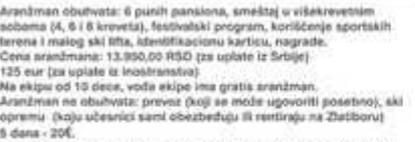
Aerobik na snegu, odbojke sa pilates lopatama, nadvlačenje konopca, frizbi i badminton na snegu, fudbal na snegu, vaje figure od snega, Pešačke ture "Upoznajmo Zlatibor"

Orijentacione igre, potraga za ključem, igre bez granica

Popodnevni program (u zatvorenom prostoru): pikado, kreativne radionice, "Čoveče igraj, ne žuti se", folklorne radionice

Kontak klub za nastavnike

Večernji program (maskebal, talent show-pesni, štampač, olimpiada)



Aranžman obuhvata: 6 punih pansiona, smeštaj u višekrevetnim sobama (4, 6 i 8 kreveta), festivalni program, korišćenje sportskih terena i malog ski lifta, identifikacionu karticu, nagrade.

Cena aranžmana: 13.950,00 RSD (za uplate iz Srbije) 125 eur (za uplate iz inostranstva)

Na ekipu od 10 dece, vođa ekipe ima gratis aranžman.

Aranžman ne obuhvata: prevoz (koji se može ugovoriti posebno), ski opremu (koju učesnici sami obezbeđuju ili rentiraju na Zlatiboru) 5 dana - 20€.

Grupe mogu ugovarati i posebne turističke programe na Zlatiboru.

Priloga: Asocijacija "Sport za sve" Beograda, Deligradska 27, telefon: 011 2 643 296, 2 659 534, e-mail: sportzaso@sbb.rs, www.sportforall.org.rs

Rezervacije i uplate: 255-1011271-47 kod VoJVodenske banke sa naznakom "Zi dečji festival"

Napomena: Obavezna je rezervacija aranžmana od 3.000,00 dinara po detetu do 20.decembra, u januaru uplata od 5.000,00 , a do 10.02.2014. ostatak iznosa.

S obzirom na ograničen broj mesta, redosled prijava će određivati raspored smeštaja.



Asocijacija
"Sport za sve"
Beograd

XVI MEĐUNARODNI ZIMSKI FESTIVAL DEČJE REKREACIJE Zlatibor 2014.

15-21.02.



U saradnji sa Turističkom organizacijom Zlatibora i pokroviteljstvom Ministarstva prosvete, nauke i tehnološkog razvoja i Ministarstva omladine i sporta Republike Srbije

www.sportforall.org.rs

Dečja odmarališta "Sunčani breg" i "Golija" nalaze se u centru Zlatibora na 1035m nadmorske visine i predstavljaju lidere u oblasti dečjeg i omladinskog turizma. "Sunčani breg" raspolaže sa četvorokrevetnim i šestokrevetnim sobama sa kupatilima a "Golija" sa četvorokrevetnim, šestokrevetnim i osmokrjetnim sobama sa kupatilima. Na svakom spratu su zasebne sobe za pratilce dece.

U sastavu objekata nalaze se sportski tereni, mali ski lift koji je učesnicima Festivala na raspolaganju u skladu sa festivalskim programom i improvizovano kiznarište.

Zdravstvene usluge, 24 sata dnevno, pruža dežurni lekar.

Odmarališta raspolažu i prodavnicama slatkih i slanih proizvoda. U neposrednoj blizini nalazi se market "Mau".




Festival, čije je osnovna ideja ZDRAVLJE, ZNANJE, ZABAVA, je namenjen deci uzrasta od 10 do 14 godina koji će sa timom animatora učestvovati u nizu sportsko-rekreativnih, kulturnoloških, edukativnih, zabavnih i turističkih sadržaja.

Festival, koji organizujemo 16. godinu za redom (ranije Divljibare i Tara) je osmišljen kao ekipno sportsko-rekreativno druženje, rekreacija i takmičenje.

Ekipu jedne opštine, škole, sportskog kluba ili saveza čini 10 dece (devojčica i dečaka). Može se prijaviti i više ekipa. Pojedinačno učesće u svakom od ponuđenih programa se boduje za ekipni plasman.



Svaki učesnik Festivala prvog dana dobija identifikacionu karticu sa svojim brojem za evidentiranje učesća u programima. Na kraju, shodno broju osvojenih poena učesnicima se dodeljuju diplome ("Majstor snežnih padina", "Snežni AS", ili "Zlatiborac100%") a tri prvoplasirane ekipe dobijaju nagrade.

Festivalni program obuhvata sportsko-rekreativne sadržaje na snegu i sportskim terenima, edukativne i kreativne radionice i večernje zabavne aktivnosti.

Pozdrav suncu-žutarije razgibavanje

Alpako i nordijsko skijanje (obuka) - moguće je posebno ugovaranje prevoza i klupevina povlašćenih ski karata za ekipalište "Zornik")

Kiznarije

Kiznarije

Slika 1: Promocijski letak aktivnosti

Po odobritvi vodstva šole je bila ponudba zimovanja predstavljena otrokom in staršem. Naknadno je šolska pedagoginja opravila ožji izbor 10 otrok, ki so bili upravičeni do sofinanciranja aktivnosti. Kriteriji izbora so bili sledeči: otrok je iz socialno šibke družine, enostarševske družine ali družine z veliko otroki, da so družine otrok sorodstveno s kraji, kamor potujemo ter osnovno poznavanje jezika države gostiteljice. Staršem in otrok so bile načrtovane aktivnosti predstavljene sledeče:

- zimovanje, kjer je veliko športnih aktivnosti (seznam opreme),
- smo samostojna tekmovalna skupina iz OŠ Bičevja (kljub prostovoljnemu vključevanju v aktivnosti - če zgubi en, zgubljam vsi in se je vredno truditi skupaj),
- nastopamo zase in hkrati zastopamo OŠ Bičevje in otroke iz Slovenije, čeprav so različnih narodnosti,
- zimovanje je v Srbiji, prisotni pa bodo otroci različnih narodnosti ne samo srbske in da
- prevzemamo veliko odgovornost in potrebujemo popolno zaupanje staršev in otrok - otroci se morajo strogo držati dogovorjenih navodil učiteljev.

Skupina se je izoblikovala. Učenci in učenke so bili različne starosti, različni učnih in vedenjskih značilnosti, večinoma so se poznali iz šole pa tudi iz okolice, kjer stanujejo, le en otrok je bil izjema. Šolski okoliš OŠ Bičevje vključuje okolje, kamor so se veliko naseljevali in so naseljeni prebivalci iz bivših republik Jugoslavije, sedaj imajo tu družine in tudi že svoje razširjene družine (Cesta v Mestni log, Cesta v Gorice, Rakova Jelša, Cesta dveh cesarjev...). Vodji skupine in spremljevalki sva bili delavki šole in sicer knjižničarka, sama pa sem športni pedagog. Šli sva prostovoljno in starši so nama zaupali.

AKTIVNOSTI V DOMAČEM OKOLJU

Bili smo skupina, ki se je športno zelo zavzemala in med seboj bodrila, otroci so se vključevali prav v vse aktivnosti, socialne igre, predstavitvene dejavnosti, hkrati pa so se spontano vključevali tudi v širše skupne dejavnosti. Ker je večina otrok znala srbski jezik, pa tudi njihovo pisavo, z medsebojnim sporazumevanjem ni bilo težav. Navodila, ki so jih prejeli kot skupina oziroma tekmovalna ekipa, so razumeli in bili včasih prav ponosni. Kasneje, ko so spoznali ves program aktivnosti, so se tudi taktično bodrili. Seveda, brez motiviranja, vzpodbujanja in vodenja otrok k aktivnostim in v aktivnostih, bi verjetno otroci le sodelovali in prav tu smo vodje ekip lahko opravile zelo pomembno svoje strokovno delo.

Zimovanje oziroma tabor je bil za vse udeležence zahteven tako glede potovanja in aktivnosti, ki so se odvijale na zimovanju. Potovali smo z vlakom in avtobusom, dva dni tja in

dva dni nazaj. Delo na taboru je potekalo individualno in skupinsko. Dejavnosti so vodili animatorji. Učenci oz. tekmovalci OŠ Bičevje so oblikovali skupino Bički. Vsak učenec je dobil svojo številko in po vsaki aktivnosti tako športnih ali v drugih socialnih in predstavitvenih točkah (aktivnosti so bile točkovane in rezultat aktivnosti tudi) je udeleženec pri animatorjih vpisal določeno število točk, ki so se vodile in seštevale dnevno. Res, da je bilo sodelovanje pri igrah in dejavnostih preko celega dne prostovoljno, smo se z učenci sporazumeli v tem, da vse, kar zamudimo, nam je lahko žal. Učence sva animirali in uspelo nam je. Ob zaključku je vsak učenec prejel diplomo s številom osvojenih točk in učenci OŠ Bičevje »skupina Bički« smo v skupnem seštevku osvojili prvo mesto in praktično nagrado.

Aktivnosti, ki so se odvijale na taboru: čudovita otvoritev, krajši in daljši rekreativni in spoznavni pohodi, igre brez meja, skupinski plesi, ljudski plesi, različna testiranja gibalnih sposobnosti, športe igre, večerne dejavnosti, predstavitve, kvizi. Snega v tem času žal še ni bilo, je pa Zlatibor zelo lep kraj, ki se turistično še razvija.



Slika 2: Podpisi vseh udeležencev Zlatibor 2014 iz OŠ Bičevje

Nekaj mnenj otrok:

»Na Zlatiboru sem se imel zelo lepo, saj sem veliko časa preživel s prijatelji z naše šole in tudi z drugih šol, od organizatorjev pa sem se naučil novih dejavnosti. Še posebej zanimivi so bili večerni programi. Najbolj pa sem se razveselil naše zmage. Tudi v Beogradu nam ni bilo slabo. Ravnatelj Osnovne šole Livada Goran Popović nam je razkazal najlepše dele mesta: največji park oziroma trdnjavo Kalemegdan, Terazije, najbolj poznan beograjski trg, Trg kneza Mihajla, vladno palačo Republike Srbije in ostale znamenitosti. Ni mi pa bila všeč vožnja z avtobusom iz Beograda do Zlatibora. V vlaku je bilo že bolje, saj tam lahko vstaneš in se igraš razne igre s prijatelji. Če bi lahko ostal, bi to storil.« (Emil Ikanović, 7. a)

»Najbolj si bom zapomnila dan, ko smo šli zadnjič na pohod. Med hojo po travniku brez konca sem mirno opazovala spomladanski žafran, ki se je zibal v vetru, majhne in mirne hiše v daljavi in lepo modro nebo. Po daljši hoji smo se začeli vzpenjati, se spet spustili, se znova povzpeli, se spustili ... Zeleni travniki se še kar niso končali. Konca tej lepoti ni bilo videti. Končno smo prišli do razpotja. Naši animatorji so nam tu dali na izbiro: kdor želi, se lahko vrne v dom, ostali se bodo povzpeli še do vrha hriba. Bički smo seveda šli proti vrhu. Teren se je sedaj strmo dvigal. Na vrhu sem si končno oddahnila. Pogled na pokrajino je bil prelep, vsi pa smo občutili močno pihanje vetra. Bil je nepozaben dan.« (Liana Piltz, 6. b)

»V Srbiji sem se imel zelo, zelo lepo. Vse je bilo dobro in vafliji so bili zelo okusni.« (Viktor Oman, 5. b)

ZAKLJUČEK

Učenci, ki so v šoli lahko zelo vzgojno zahtevni in posebni – so v nepoznanem, a hkrati domačem okolju zelo poslušni, delovni in v pomoč ostalim v skupini. Pokaže se medvrstniška in solidarnostna pomoč tako pri občutjih, boleznih, prehrani, oblačenju, skrbi za red, točnost v svoji skupini. Zimovanje je bilo tudi sobivanje, ki je trajalo nekaj dni. Potrebno je bilo spoštovanje in obzirnost do vseh, ki so se ga udeležili. Z veliko mero zadovoljstva smo se vračali domov, uredili svoje vtise, obujali spomine. Ponosni smo bili na to, kar smo doživeli in dosegli. Vsak otrok si je prislužil diplomo z osvojenimi točkami, in prvo mesto ekipa Bički za skupno doseženih največ točk. Spremljevalki sva bili veseli, da smo se vrnili zdravi; spoznali sva, da otroci skrbno hranijo svoje korenine in so tudi ponosni nanje.

ZAHVALA

Da so otroci OŠ Bičevje preživeli čudovit teden se zahvaljujemo donaciji MOL, pedagoginji in ravnateljici OŠ Bičevje, ravnatelju OŠ Livada pa za sprejem in voden ogled po Beogradu.

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ŠPORTNA VZGOJA V ČASU PRENOVE ŠOLSKE TELOVADNICE

PHYSICAL EDUCATION DURING SCHOOL GYM RENOVATION

Angela PLEVNIK

OŠ Bičevje, Ljubljana, Slovenija

POVZETEK

Spodbudno okolje predstavlja pomemben prispevek k motivaciji za ukvarjanje z gibalno aktivnostjo in športom. Šolska športna telovadnica je tisti objekt, v katerem večina učencev prvič spozna osnove športa in organizirano vadbo. Učitelji športne vzgoje smo z nujnimi prenovami dotrajanih objektov postavljeni pred prijeten izziv organizacije pouka športne vzgoje, navadno v drugih prostorih šole, kot so šolsko igrišče, večji hodniki ali učilnice. Takšna organizacija od učiteljev športne vzgoje med izvajanjem pouka zahteva dobro organiziranost ter dodatno skrb za varnost. V prispevku predstavljamo delo učiteljev športne vzgoje OŠ Bičevje med obnovo šolskih telovadnic.

Ključne besede: šolska športna vzgoja, telovadnica, obnova

ABSTRACT

A stimulating environment is an important contribution to the motivation for physical activities and sport. School sport gym is the building in which the majority of students for the first time learn the basics of sports and organized practice. Physical education teachers are faced the challenge of pleasing the organization of physical education classes during gym renovation, usually organized in other areas of the school such as the school playground, larger hallways or classrooms. Such an organization of teachers of physical education during the implementation of teaching requires good organization and additional safety concerns. In this paper we present the work of teachers of physical education at Bičevje Elementary School during the renovation of school gyms.

Keywords: physical education, gym, renovation

UVOD

Šolska športna vzgoja je nenehen proces bogatenja znanja, razvijanja sposobnosti in lastnosti ter pomembno sredstvo za oblikovanje osebnosti in odnosov med posamezniki (Kovač idr. 2011). Med vsemi šolskimi predmeti je predmet šolska športna vzgoja z vidika uporabe prostorov specifičen predmet, saj pouk skladno z učnim načrtom poteka v različnih

prostorih in okoljih, najpogosteje v šolski telovadnici in na šolskem igrišču, pa tudi na atletskem štadionu, bazenu, smučišču, naravi in drugih okoljih, ki omogočajo razvijanje ciljev skladno z veljavnim učnim načrtom (UN) predmeta (Jurak idr., 2012; Jurak idr., 2014; Kolar, Jurak in Kovač, 2011). Učitelji športne vzgoje (ŠV) si želimo dobrih in uporabnih prostorov, ki omogočajo kvalitetno delo, zagotavljajo varnost in so v vzpodbudo učencem za udeleževanje z gibalnimi in športnimi aktivnostmi. Obdobje renovacije šolske telovadnice je v večini z organizacijskega vidika zahteven proces. Učitelj ŠV svoje delo in vsebine nenehno prilagaja izvedbi v določenih okoljih, še pred večjim izzivom pa se znajde, ko mora pouk športa organizirati v nenamenskih prostorih, kot so šolski hodnik in drugi šolski prostori.

V prispevku predstavljamo, kako smo učitelji ŠV, ki poučujemo na OŠ Bičevje Ljubljana, med renovacijo šolske telovadnice v šolskem letu 2012/13 izvajali pouk šolske športne vzgoje in dopolnilnih obogatitvenih aktivnosti s področja gibanja in športa.

PRENOVA ŠOLSKE TELOVADNICE

29. septembra 1966 je bila po letu in pol gradnje končana ter 700 učencem in njihovim učiteljem ter drugim pedagoškim delavcem predana v uporabo Osnovna šola Bičevje, Ljubljana. Nova šola je sosednji OŠ (Ljubljana Vič in Ljubljana Trnovo) razbremenila prevelikega števila učencev. Zgradba je bila moderna in sodobno opremljena, tako so na šoli lahko uvedli kabinetni pouk. Šola je imela 21 učilnic, knjižnico, fotolaboratorij, 9 manjših kabinetov in kuhinjo z jedilnico, zaradi pomanjkanja denarja pa ni imela telovadnice, ki sta bili dograjeni v šolskem letu 1970/71. V mali in veliki telovadnici, opremljenih po takratnih standardih, so se potem opravljala le nujna vzdrževana dela. Za potrebe telesne kulture se je skrbelo za zadostno število športnih rekvizitov in pripomočkov. Naknadno je potekala menjava tal, in sicer namesto parketa je bila položena plastična masa. Ves čas so učitelji športne vzgoje opozarjali na hrup in zvočno neustreznost športnih prostorov. V zadnjih letih se je kazala velika dotrajanost telovadnic, ki je bila vidna kot preprih in mraz zaradi slabih oken in vrat, udrti tla v delih telovadnice in možnost velikih poškodb, zvočna neustreznost, ki je oteževala delo v telovadnici, dotrajano športno orodje in pripomočki in drugo.



Slika 1: Telovadnice OŠ Bičevje pred obnovo (foto Angela Plevnik)

Sredstva za prenovo so bila s strani Ministrstva za šolstvo in šport zagotovljena v letu 2010/11, vendar se je zaradi menjave vodstva šole projekt zamaknil za dve leti v šolsko leto 2012/13.

AKTIVNOSTI ŠPORTNE VZGOJE MED PRENOVO

Učitelji ŠV smo postavljeni pred prijeten izziv, ko organiziramo pouk v vseh okoljih (telovadnica, šolsko igrišče, bazen, športni štadioni, naravna okolja – morje, smučišča...), ko smo v naravi pri vseh vremenskih pogojih in naša telovadnica nima sten in ne strehe, nebo je njen strop in sonce njene luči. Še poseben trud pa je potreben za kvalitetno delo med obnovo šolskih telovadnic.

Ta proces od učiteljev ŠV zahteva:

- njihovo ustvarjalnost, kompetence in iznajdljivost pri pripravi programa skladno z UN,
- dodatno komunikativnost z vodstvom šole (organizacija prostora, prilagoditev hišnega reda),
- komunikativnost s sodelavci, še posebej znotraj aktiva ŠV (nekoliko več hrupa, skupen načrt programa ob otvoritvi),
- sodelovanje s starši (otroci naj imajo vedno ustrezna oblačila, tudi toplejša in ustrezno obutev, kar predstavlja opozorilo in hkrati prošnjo za lažje delo),
- zagotoviti strpen odnos z delavci, ki prostore obnavljajo (pisarno imajo v enem kabinetu športne vzgoje),

- ustrezno shranjevanje športnega orodja in pripomočkov in
- posebno skrb za varnost.

Še poseben trud učiteljev ŠV je med obnovo namenjen kvalitetni izpeljavi programa ŠV skladno z učnim načrtom, ki od učiteljev zahteva zagotavljanje ustrezne učne vsebine za določeno starostno stopnjo učencev, zagotavljanje varnosti vadečih in podajanja pestrosti vsebin predmeta šport.

Pouk ŠV je med prenovo potekal na šolskem športnem igrišču in travnatih površinah okoli šole, na glavnem stopnišču šole, v velikem prostoru – hodniku med učilnicami ter v šolski avli.



Slika 2: Prostor izvajanja pouka med obnovo šolske telovadnice (šolsko igrišče, hodniki med učilnicami, glavno stopnišče, šolska avla) (foto Angela Plevnik)

Sočasno je potekal pouk vsaj v štirih skupinah, zato je organizacija dela predstavljala izjemno velik trud. V času obnove smo imeli izjemno srečo z vremenom, tako smo še v poznem jesenskem obdobju in začetku zime lahko velik del aktivnosti izvajali zunaj. Na ta način pa smo tudi razbremenili prostore šole, da so obnovitvena dela lahko potekala hitreje, zaradi manjšega hrupa pa je bilo manj moteče tudi za kvaliteto izvajanja predmetov po učilnicah.

Delo smo organizirali projektno na sledeč način:

- veliko pozornost smo namenili dobri pripravi na delo tako s podajanjem novih učnih vsebin, kot utrjevanja naučenega znanja, priprave na tekmovanje in ocenjevanje snovi športne vzgoje,
- pri posredovanju novih vsebin smo večjo pozornost namenili aktivnosti UN, ki smo jih lahko izvajali na šolskem igrišču (atletika, nogomet, rokomet, šport za zdravje...),
- projekt »*Utrjujemo zdravje – v različnih vremenskih pogojih smo aktivni zunaj*«,
- v tem obdobju smo se veliko vsebin izvedli na temo orientacije v naravi po opisani in vnaprej začrtani poti,
- poudarek vsebin je bil na spretnosti z drobnimi rekviziti: spretnostni preskoki, vrtenja individualno in različne formacije s kolebnicami in različnimi žogicami, ki smo jih lahko vadili zunaj - koristno pa smo jih porabili tudi za program ob otvoritvi,
- projekt »*Tek podnebne solidarnosti*« in različni osebni nameni teka - vsak otrok je med uro športne vzgoje prispeval svoj tek. Skupaj smo nato seštevali pretečene metre in gradili krog solidarnosti okoli planeta Zemlje (Slika 3),
- vsebine smo povezovali s programom otvoritve telovadnice (individualni plesi, plesne skupine, plesne skupine z rekviziti, spretnostne naloge s športnimi pripomočki – kolebnicami in žogami),
- projekt »*Skupno oblikovanje pravil*«, ki bodo veljala v prenovljenih prostorih (vsak učenec od 6. do 9. razreda napiše svojih 10 pravil, ki se izoblikujejo kot 10 pravil razreda in nato vseh učencev na šoli. Upoštevamo jih, ker so naša; upoštevati jih morajo tudi zunanji uporabniki športnih prostorov) in
- mladi športniki se še posebno vzorni v vedenju, na ta način pa smo osmislili tudi povečano skrb za varnost med izvajanjem aktivnosti v prilagojenih prostorih. Učencem je bilo potrebno predstaviti, da smejo določene naloge v skupnih šolskih prostorih izvajati le med uro športne vzgoje in v ustrezni obutvi, sicer pa velja šolski hišni red.



Slika 3: Zahvala za udeležbo v projektu »Tek podnebne solidarnosti«

Med prenovo je bilo pomembno, da smo učitelji znali učencem predstaviti prednosti obnovljene šolske telovadnice kot tudi, da smo pri izvedenih aktivnostih iskali njihovo motivacijo na način, da smo pripravljali program za otvoritev, kjer bodo sodelovali pomembni športniki in drugi povabljeni gostje ter omogočili njihovo pozitivno medsebojno primerjanje z npr. številom pretečenih metrov za dober namen – projekt »Tek podnebne solidarnosti« in drugimi podobnimi aktivnostmi.

ŠPORTNA VZGOJA PO PRENOVI

Otvoritev prenovljenih športnih prostorov je bila decembra 2012, na njej so s programom sodelovali učenci, pa tudi vabljeni gostje – športniki in predstavniki financerja. Program je predstavljal sožitje kulturnega in športnega programa. Dogodek otvoritve prenovljene telovadnice je predstavljal tudi priložnost, da smo širšemu okraju pokazali naše delo in naš trud.

Izsek iz pozdravnega nagovora ob otvoritvi: *»Spoštovani ljubitelji športa! Danes je za osnovno šolo Bičevje izjemen dan, praznični dan; veliko glasbe, veliko gibalnih aktivnosti: aktivnosti, ki vplivajo na naše počutje in našo notranjost. Odpiramo prenovljen hram telesne kulture, v katerem bomo lahko še naprej skrbeli za zdrav življenjski slog naših otrok, katerega sestavni deli so redna gibalna športna aktivnost, zdrava prehrana in zdravniška preventiva. Temelji zanj se postavljajo že v otroštvu. Pri njegovem oblikovanju ima poleg družine pomemben vpliv šola, vsaj v tem okolju otroci in mladostniki preživljajo velik del dneva. Tudi učenje je bolj učinkovito, če poleg vida, sluha in govora vključuje tudi gibanje. Izražanje in ustvarjanje z gibanjem poglobljata doživljanje, to pa povečuje motivacijo, olajšuje razumevanje in izboljšuje zapomnitev. Gibalna aktivnost je izjemnega pomena, ker omogoča*

vključevanje vseh področij otrokovega izražanja: motoričnega, kognitivnega, konativnega, čustvenega in socialnega. V novem prostoru, v katerem smo danes zbrani, so medgeneracijske vezi bile in bodo tudi v prihodnje ostale močne. Učenke in učenci naše šole so preko Mestne občine Ljubljana in Ministrstva za šolstvo in šport vključeni v različne športne programe: - Zlati sonček, Krpan, Šolska športna tekmovanja, Naučimo se plavati. Otroci so vključeni tudi v projekt Tečem za ozaveščanje in podnebno solidarnost, na šoli pa priznavamo status perspektivnim športnikom kot dogovor za prilagajanje učnih obveznosti. Veliko število otrok, generacij se je gibalno ozaveščalo in pridobivalo prve kompetence gibanja v tej telovadnici pred prenovo. Nekateri so vzljubili gibanje v tolikšni meri, da kot športni pedagogi prenašajo svoje znanje mladim, nekateri pa so postali vrhunski športniki in zastopali našo državo celo na Olimpijskih igrah (Maja Tvrdy). Vrhunski športniki so bili tudi plavalec Emil Tahirovič, nogometaš Petrič Denis, gimnastičar Alen Dimic. V preteklem letu smo opravili raziskavo, ker ugotavljamo, da starši naših otrok izjemno podpirajo šport in športne aktivnosti na šoli in menijo, da bi bilo potrebno povečati št. ur športne vzgoje. Velika moč učiteljev in staršev je v zgledu, ki ga s svojim življenjem dajemo otrokom. Šport pa najde pot v srca mladih le ob ustreznem, vzgojnem in visoko strokovnem delu z njimi. Delavnost, samostojnost, samodisciplina, pozitiven odnos do telesnega in psihičnega napora, osebna urejenost, želja po napredovanju, različne izkušnje in ljubezen do športa so vrline, ki jih mlad človek potrebuje za uspešen vstop v življenje in lahko mladostnika krasijo tudi celo življenje. »

Delo in pouk v novi šolski športni telovadnici je neprimerljivo s delom v telovadnici pred prenovo. Poleg vseh drugih pomanjkljivosti je v telovadnici prvič urejena tudi zvočna izolacija, kar predstavlja povsem nove možnosti, ki si jih do zdaj nismo upali predstavljati. Delo več skupin hkrati je postalo veliko enostavnejše, v takih primerih tudi ne trpi kvaliteta pouka. Zaradi občutljivosti novih tal ne uporabljamo več starega orodja, tako smo poleg obnove telovadnice dobili še novo garnituro športnega orodja in pripomočkov. Z namenom vzpostavitve hišnega reda v prenovljeni telovadnici smo opravili tudi nekaj sestankov z ravnateljico, razrednimi učitelji in aktivom učiteljev športne vzgoje, da smo se dogovorili za funkcionalno in uporabno razdelitev športnega orodja in pripomočkov v hrambi telovadnice. Pomembno je tudi opažanje, da se je zaradi novih parketnih tal (prej umetna masa) zmanjšalo tudi število poškodb učencev med poukom. Poleg vseh pozitivnih vidikov obnove telovadnice pa se je pokazala tudi manjša neprijetnost v obliki vlage po določenih stenah telovadnice, ki pa upamo, da jo bomo odpravili ob bližajoči sanaciji strehe telovadnice. Dostop do telovadnic in ustreznih prostorov je po obnovi prilagojen tudi invalidom. Tako smo v šolskem letu 2013/14 tudi že gostili vrhunske športnike invalide. V letu 2013 so v telovadnicah že potekala Šolska športna tekmovanja Mestne občine Ljubljana.



Slika 4: prenovljeni športni prostori: velika telovadnica, mala telovadnica, nov manjši večnamenski prostor, prenovljena zaščita na šolskem igrišču (foto Angela Plevnik)

ZAKLJUČEK

Delo v prenovljenih prostorih je res čudovito. Dodatni trud, ki smo ga učitelji športne vzgoje in vodstvo namenili organizaciji pouka med obnovo se je že večkrat poplačal. Z obnovljenimi in atraktivnimi prostori imamo tako učitelji športne vzgoje spet močno orodje, da učence naše šole vključimo v mnoge gibalne in športne aktivnosti. Prijetno in urejeno okolje športnih prostorov in novo športno orodje in pripomočki pa bogatijo naše delo s ciljem prikazati otrokom in učencem šport in gibanje v najlepši možni obliki in jih tako navdušiti za športno aktiven življenjski slog tudi v kasnejših obdobjih.

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RAZLIKE V GIBALNIH SPOSOBNOSTIH MED RAZLIČNO ŠPORTNO DEJAVNIMI DEKLICAMI

DIFFERENCES IN PHYSICAL FITNESS BETWEEN DIFFERENTLY PHYSICALLY ACTIVE FEMALE PUPILS

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POVZETEK

Osnovni namen te raziskave je ugotoviti ali med skupinami različno športno aktivnih deklic prihaja do razlik v gibalnih sposobnostih in kakšne so te razlike. V raziskovalni vzorec je bilo vključenih 233 deklic, starih od 9 do 11 let. S pomočjo anketnega vprašalnika smo pridobili podatke o količini športne aktivnosti in nato deklice razdelili na tri skupine (nizko, srednje in zelo športno aktivne deklice). Gibalne sposobnosti smo preverjali s sedmimi testi, in sicer smo merili koordinacijo gibanja celega telesa, agilnost, gibljivost, vzdržljivost, ravnotežje, eksplozivno in repetitivno moč. Razlike v gibalnih sposobnostih med skupinami različno športno aktivnih deklic smo izračunali z analizo variance (ANOVA), statistično značilne razlike pa smo ugotavljali na ravni tveganja $p \leq 0,05$. Še natančneje smo določili razlike s testom Post-hoc po metodi Scheffe. Rezultati meritev kažejo, da športno zelo aktivne deklice dosegajo statistično značilno boljše rezultate v testih agilnosti, eksplozivne moči nog in repetitivne moči trupa kot športno manj aktivne vrstnice. Ugotavljamo, da samo pogostost in trajanje vadbe še nista zadostna kriterija za izboljšanje gibalnih sposobnosti.

Ključne besede: gibalni razvoj deklic, športna dejavnost, gibalne sposobnosti, učenke

ABSTRACT

The main aim of the research was to determine how the physical fitness of female pupils is related to physical activity. The research was carried out on a sample of 233 female pupils, aged nine and eleven. To assess physical activity "Youth Physical activity questionnaire" was used. Based on the duration of physical activities, girls were divided into three categories: low active, medium active and highly active. In order to assess the physical fitness, seven different tests, that cover explosive power, flexibility, balance, coordination, speed, agility and endurance, have been used. ANOVA was used to assess the differences in physical fitness between low active, medium active and highly active groups. Statistical significance was set at an α level of 0.05. For the detailed definition of the differences, the Post-Hoch Scheffe test was used. Results show that there are statistically significant differences in three of the

seven tests between low, medium and highly physically active female pupils. We can conclude that highly physically active girls achieved significantly better results in tests of agility, explosive leg power and repetitive power of trunk as physically less active peers. We note that only the frequency and duration of exercise are not yet sufficient criterion for improving physical fitness.

Keywords: motor development of girls, physical activity, physical abilities, physical fitness

UVOD

Vsakodnevna, vedno bolj tehnizirana civilizacija, človeka pogosto odvrča od zdravega načina življenja, preobremenjuje ga s stresi in ob tem s pomočjo novih tehnoloških rešitev izpodriva gibanje. Zaradi tega se vedno pogosteje pojavljajo prizadevanja po fizični in psihični uravnoteženosti, ki bi omilile negativne vplive sodobnega časa (Strel, 1996) in s tem povezane telesne neaktivnosti (Bar-Or, Joreyt, Bouchard et al., 1998; Jurak et al., 2003; Strel, Kovač & Jurak, 2004; Jurak, 2006).

Zdravje odraslih oseb je odločilno povezano s zdravjem v otroških letih, kjer se opaža odločilen kvaliteten razvoj gibalnih sposobnosti in preko teh tudi spretnosti, kar pridobivajo s primerno in dovolj pogosto telesno aktivnostjo (Eisenmann, Wickel, Welk & Blair, 2005). Večji del telesnega zdravja je pri otrocih direktno povezan z njihovo telesno aktivnostjo, kar pa posredno vpliva tudi na njihov duševni in intelektualni razvoj (Blair, Clark, Cureton & Powell, 1989; Jürimäe & Jürimäe, 2001; Janssen & LeBlanc, 2010), oziroma na oblikovanje tudi njihove samopodobe (Strel & Kovač, 2004). Dejavnike, ki vplivajo na razvoj posameznika sta Musek in Pečjak (1997) razdelila na okoljske, dedne in lastno dejavnost.

Telesna dejavnost kot ključni dejavnik, izrazito pomembno vpliva na rast in razvoj otroka predvsem v predpubertetnem in pubertetnem obdobju (Horvat, 1994; Jürimäe & Jürimäe, 2001; Malina, Bouchard & Bar-Or, 2004; Brettschneider & Naul, 2007). Svetovna zdravstvena organizacija trdi, da je potrebnih za normalen razvoj in zdravje otrok vsaj 30 minut zmerno intenzivne telesne dejavnosti na dan, priporoča pa jih 60 minut (Škof, 2007). V Sloveniji se skuša zagotoviti vsaj 60 minut vadbe na dan za šoloobvezne otroke, prednjačila bi naj aerobna vadba z dvakrat tedensko krepilno in raztežno vadbo (Kovač, Jurak, Starc, Kolar & Strel, 2007).

Igra in učenje ob katerem se razvijajo gibalni potenciali, ki otrokom zagotavljajo radost in veselje ter možnosti, da se otrok sam obvladuje v gibanju, predstavlja športno aktivnost (Škof, 2007), hkrati pa tudi pomembno sredstvo pri nabiranju novih izkušenj, informacij, kar pomeni razvijanje gibalnih in funkcionalnih sposobnosti. Za deklice je značilno, da se raje igrajo v nekem prostoru, kjer ni prisotnega interesa za skupinske in tekmovalne igre. Njihove igre so bolj domišljajske narave, razvijajo sposobnost empatije in močnejšega doživljanja

sveta, ne zahtevajo veliko strategije in ne nudijo dovolj možnosti za razvijanje gibalnih sposobnosti in pridobivanje raznolikih gibalnih izkušenj (Doupona, 1996; povz. po Videmšek in Pišot, 2007).

Redna telesna dejavnost ugodno vpliva na počutje in ima pozitivne dolgoročne posledice za zdravje, nadzor teže, nižji krvni tlak in izboljšanje kardiorespiratornih funkcij (Strauss, Rodzilsky, Burack & Colin, 2001). Poznavanje vzorcev gibalnega vedenja naših otrok, stanja gibalnih sposobnosti in telesnih značilnosti, predstavlja ključni pomen pri obravnavi različnih vprašanj stroke, povezanih bodisi s športno vzgojo v vrtcih in šolah, z dodatnimi programi za spodbujanje gibalne aktivnosti v prostem času ali z ugotavljanjem morebitnih zdravstvenih posledic neaktivnosti (Šimunič, 2008).

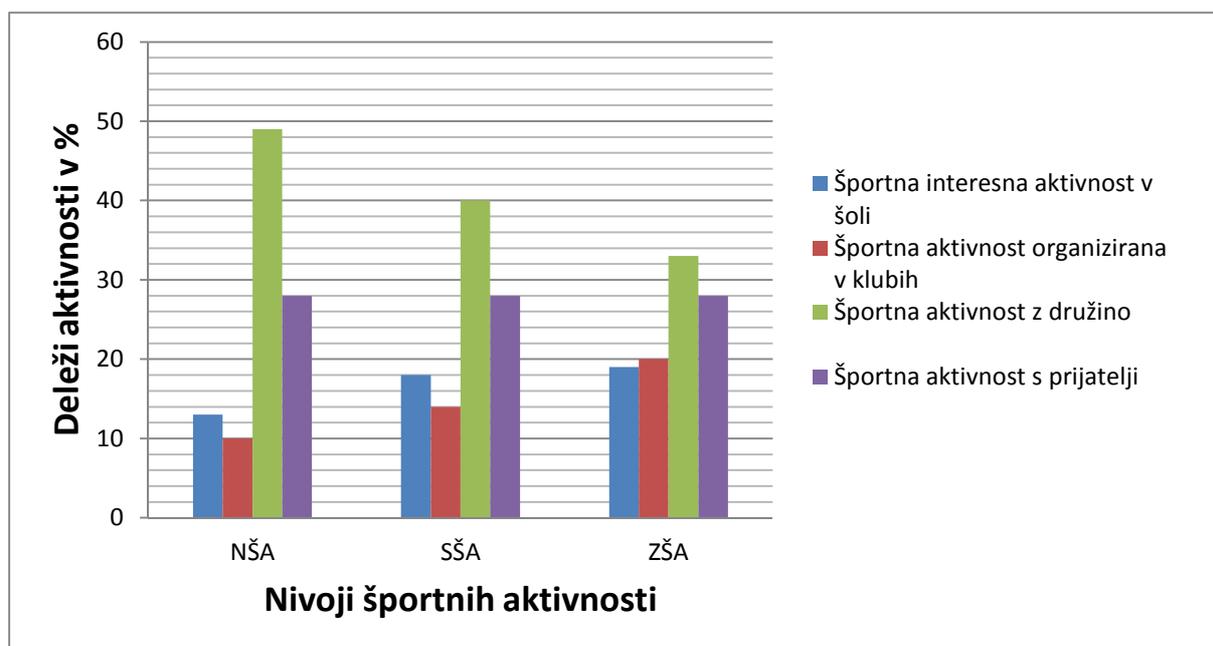
Gibanje je pomemben dejavnik razvoja otrokove osebnosti. Glede na to moramo poznati razvoj, odklone in odstopanja, saj se lahko na ta način pravilno načrtuje nadaljnji vsestranski razvoj, razvoj osnovne motorike ter specifičnih in specialnih znanj, s katerimi bi čim učinkoviteje usmerjali otroka v želeni smeri, tudi v šport (Kremžar in Petelin, 2001).

Po ugotovitvah longitudinalne študije Športno rekreativna dejavnost Slovencev iz leta 1989 se več kot 50 % družin s športno aktivnostjo sploh ne ukvarja. Za to je odločilnega pomena izobrazba staršev, ki vsebuje tudi ozaveščenost o pomenu športne vzgoje v sami družini in za to potrebna materialna sredstva. Energijski gibalni potenciali odraslih ljudi v Sloveniji so na takšnem nivoju, da so 21-letni posamezniki pod gibalno mejo 9 do 12 letnih otrok, primerjalne analize kažejo, da otroci nekje pri sedmih letih presežejo energijske zmožnosti svojih staršev in s tem tudi pride do postopnega odtujevanja otrok od družine. Starši se z otroki lahko enakovredno udeležujejo v nekaterih športnih aktivnostih nekje do 12 leta. Nizka raven gibalnih sposobnosti, hkrati tudi skromna športna znanja mladim družinam onemogočajo kvalitetno športno aktivnost v družini, saj se možni vplivi staršev zmanjšajo (Doupona Topič, 2000). Različne ugotovitve avtorjev o športno gibalnih aktivnostih in gibalnih sposobnostih so podobne, vzorca, ki smo ga vključili v raziskavo mi, pa za sedaj v Sloveniji še niso raziskovali. Namen raziskave je ugotoviti povezanost različnih deležev in nivojev športne aktivnosti z razvojem gibalnih sposobnosti deklic v obdobju poznega otroštva.

METODE

Vzorec

V raziskovalni vzorec je bilo vključenih 233 deklic iz SV Slovenije, starih od 9 do 11 let. S pomočjo anketnega vprašalnika smo pridobili podatke o količinskih deležih športne aktivnosti in nato deklice razdelili na tri skupine (nizko, srednje in zelo športno aktivne deklice). Vzorec prikazuje deleže različno športno aktivnih deklic in različne vrste športnih aktivnosti.



Grafikon 1: Deleži različnih športnih aktivnosti pri skupinah nizko (NŠA), srednje (SŠA) in zelo (ZŠA) športno aktivnih deklicah

Merski postopki

V začetku raziskave so deklice izpolnile preprost anketni vprašalnik, ki smo ga uporabili za ugotavljanje športne aktivnosti deklet. Glavno vodilo je bilo ugotoviti količino otrokove športne aktivnosti, dnevno izražene v minutah. Glede na pridobljene podatke smo deklice razdelili v tri skupine: nizko športno aktivne deklice (do 30 min dnevno), srednje športno aktivne (od 31 do 60 min dnevno) in zelo športno aktivne (60 min in več). Skozi vprašanja zaprtega tipa smo pridobili podatke s kakšnimi športnimi aktivnostmi se dekleta ukvarjajo, koliko časa trajajo in kje se jih udeležujejo. Po izpolnjevanju anketnega vprašalnika so opravile meritve gibalnih sposobnosti. Gibalne sposobnosti smo preverjali s sedmimi testi: hojo nazaj skozi obroče, dotikanje plošče z roko, predklon sede, ponavljajoči se tek na 20 m, skok v daljino z mesta, flamingo ravnotežje, dviganje trupa. Z omenjenimi testi smo merili koordinacijo gibanja celega telesa, agilnost, vzdržljivost, ravnotežje, eksplozivno moč nog in repetitivno moč trupa. Podatki so bili zbrani v okviru raziskovalnega projekta z naslovom »Otrok v sodobni družbi in družini – otrokove gibalne sposobnosti, telesne značilnosti, samopodoba in kakovost življenja«.

Organizacija meritev

Meritve smo izvedli v letu 2009 v posebej pripravljenih prostorih osnovnih šol. Vsaka merjenka je opravila celoten postopek izpolnjevanja vprašalnika in izvedbo meritev v manj kot eni uri. Merjenke so imele svoje identifikacijske številke.

Metode obdelave podatkov

Za ugotavljanje razlik med skupinami različno športno aktivnih deklic je bila uporabljena analiza variance (ANOVA). Statistično značilne razlike so bile ugotovljene na nivoju tveganja $p \leq 0,05$. Narejen je bil tudi Post-Hoc Scheffe preizkus, s pomočjo katerega so bile natančno opredeljene predhodno statistično značilne razlike v deležu gibalnih sposobnosti in različnih nivojih športnih aktivnosti deklic.

REZULTATI IN RAZPRAVA

Rezultati zbrani z raziskavo nam prikazujejo, da med skupinami različno športno aktivnih deklet nastajajo statistično pomembne razlike v agilnosti – dotikanju deske z roko ($p= 0,000$), eksplozivni moči nog – skok v daljino z mesta ($p= 0.006$) in repetitivni moči trupa – dvigovanje trupa ($0,009$). Zelo športno aktivna dekleta dosegajo v primerjavi z nizko in srednje športno aktivnimi statistično boljše rezultate. Med skupinama srednje in nizko športno aktivnimi deklicami pa te razlike niso zaznane.

Parametri gibalnih sposobnosti	NŠA	SŠA	ZŠA	ANOVA	
	(n =73)	(n = 82)	(n =78)	F	p
	AS ± SO	AS ± SO	AS ± SO		
Hoja skozi obroče nazaj	8,524 ± 2,5458	8,856 ± 2,2641	8,565 ± 2,0308	0,499	0,608
Dotikanje plošče z roko	31,42 ± 4,879	33,39 ± 5,106	35,40 ± 4,793	12,243	0,000
Predklon sede	19,36 ± 6,228	20,78 ± 6,299	21,33 ± 6,166	2,009	0,137
Ponavljajoči se tek na 20 m	26,811 ± 3,8117	26,798 ± 3,9961	28,067 ± 4,4366	2,462	0,087
Skok v daljino z mesta	139,99 ± 19,871	143,37 ± 22,618	150,86 ± 21,054	5,223	0,006
Flamingo ravnotežje	14,96 ± 6,299	14,24 ± 6,868	13,44 ± 6,340	1,032	0,358
Dvigovanje trupa	16,63 ± 3,604	17,27 ± 3,503	18,73 ± 3,372	7,259	0,009

AS= aritmetična sredina; SO= standardni odklon; n= število merjencev

Preglednica 1: Razlike v gibalnih sposobnostih med skupinami nizko športno aktivnih (NŠA), srednje športno aktivnih (SŠA) in zelo športno aktivnih deklet (ZŠA)

Iz porazdelitve vzorca lahko razberemo, da so deleži skoraj enakomerno porazdeljeni, najmanj je nizko športno aktivnih deklic – 31%, največ pa srednje športno aktivnih – 35%, ki namenijo športni aktivnosti od 31 do 60 minut dnevno.

Naše ugotovitve potrjujejo tudi Jurak et al.,(2003), da primerna športna aktivnost pozitivno vpliva na gibalni razvoj otrok. Velik pomen za telesno dejavno igro, ki je ključni pogoj telesnega in gibalnega razvoja v otroštvu poudarjajo tudi Rippe, Weissberg & Seefeldt, (1993). Redna in vsakodnevna telesna dejavnost je, kot tudi dejavniki okolja, zelo pomemben dejavnik za normalen telesni razvoj in rast otrok (Malina & Bouchard, 1991; Rowland, 1998).

ZAKLJUČEK

Z našo raziskavo ugotavljamo, da različne vrste športnih aktivnosti in čas, ki ga otroci prebijejo s primernimi športnimi aktivnostmi pozitivno vpliva na njihov gibalni razvoj. Ne smemo pa ob tem pozabiti, da bi se še učinkovitejši gibalni razvoj otrok pojavil ob upoštevanju primernih vsebin, količin in intenzivnosti v določenih športnih aktivnostih. Ob vsem, pa je potrebno upoštevati tudi posameznikove želje in zmožnosti, kar bi lahko zaokrožilo pozitivne učinke športnih aktivnosti na posameznika.

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ŠPORTNI MENEDŽMENT IN GIBALNA KOMPETENTNOST OTROK

SPORTS MANAGEMENT AND MOTOR COMPETENCIES OF CHILDREN

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POVZETEK

Namen prispevka je predstaviti uvajanje športnega menedžmenta na področju gibalnega učenja otrok s ciljem, da njegova uvedba omogoča boljše pedagoške in športne dosežke. V pedagoškem procesu gibalne/športne vzgoje in gibalnega učenja moramo namreč upoštevati številne razvojne posebnosti otroka in značilnosti okolja, v katerem odrašča. Na otrokov razvoj lahko pomembno vplivajo biološki, sociološki, demografski, psihološki, okoljski in tudi drugi dejavniki. Prav zato je za učinkovito razvijanje gibalne kompetentnosti potreben kakovosten športni menedžment, ki ga razumemo kot proces usklajevanja ključnih dejavnikov, ki omogočajo učinkovito uresničevanje ciljev načrtovanja, organiziranja, izvajanja in nadziranja procesa gibalnega učenja. Gibalna/športna aktivnost otrok lahko pozitivno vpliva na zdravje in celostni razvoj otroka (Pišot, Fras in Zaletel - Kragelj, 2005). Kljub temu beležimo v visoko razvitih družbah trend, da je vse manj otrok gibalno/športno aktivnih in da ima vedno več otrok prekomerno telesno težo. Slovenski sedemletniki so med državami Evropske unije celo med bolj ogroženimi zaradi debelosti (Gabrijelčič Blenkuš, 2012), ki je lahko posledica tudi nezadostne gibalne aktivnosti. Omenjene ugotovitve nakazujejo, da je potreben razmislek ne samo z vidika kinezioloških vsebin in oblik pedagoškega procesa, temveč tudi s stališča menedžmenta, zlasti o tem, ali je proces gibalnega učenja ustrezno podprt s športnim menedžmentom. Tovrstni pristop lahko izboljša učinkovitost pedagoškega procesa in posledično omogoča boljše biopsihosocialne učinke gibalne/športne aktivnosti.

Ključne besede: gibalna kompetentnost otrok, športni menedžment

ABSTRACT

The purpose of this paper is to present the introduction of sport management in the field of physical activity teaching of children with a view to promote, by its introduction, better educational and sporting performance. In the teaching process of exercise / physical education and motor learning a number of specific features of children's development and the characteristics of the environment in which they grow up should be taken into account. The child's development can significantly be affected by the biological, sociological, demographic, psychological, environmental and other factors. For an effective development

of physical competencies quality sports management is needed which could be understood as a process of harmonization of the key factors that enable the effective implementation of the objectives aimed at in the planning, organizing, implementing and monitoring of the process of physical exercise education. Physical exercise / sports activity of children can have a positive effect on health and holistic development of children (Pišot, Fras and Zaletel - Kragelj, 2005). Nevertheless, in highly developed societies a trend has been recorded that fewer children are physically / sports active and that more and more children are overweight. Slovenian children aged seven are among the countries of the European Union even the most endangered of obesity (Gabrijelčič Blenkuš, 2012), which may be due to the lack of physical activity. These findings suggest that serious consideration is needed not only in terms of kinesiology contents and forms of teaching process, but also from the point of view of management, in particular, whether the process of physical exercise teaching is adequately supported by sports management. This kind of approach can improve the efficiency of teaching process and consequently allows for better bio-psychosocial effects of physical / sports activity.

Keywords: motor competencies of children, sports management

UVOD

Šport je kompleksna in raznolika človekova dejavnost. Njegov ključni element je telesna dejavnost človeka. Svetovna zdravstvena organizacija (WHO, 2013) jo opredeljuje kot kakršno koli telesno gibanje, ki ga ustvarijo skeletne mišice in katerega posledica je poraba energije nad ravnjo mirovanja. Slovenski Inštitut za varovanje zdravja razlaga šport in telesno vadbo kot posebno vrsto telesne dejavnosti, pri čemer se šport nanaša na organizirano in načrtovano vadbo, vključuje pa tudi določeno obliko tekmovanja, medtem ko je telesna vadba namenjena izboljšanju telesne pripravljenosti in zdravja (Drev, 2013). Tušak (2001) ugotavlja, da sta »vloga in mesto športa v družbi odvisna od stopnje razvitosti družbenih potreb, od vrednot športne dejavnosti in sprejemljivih družbenih odnosov do teh vrednot.« Svet Evrope (Bela knjiga o športu, 2007) opredeli šport kot vse s strani športne stroke dogovorno opredeljene oblike telesne dejavnosti, ki so z neorganiziranim ali organiziranim ukvarjanjem usmerjene k izražanju ali izboljševanju telesne pripravljenosti, k duševnemu blagostanju in oblikovanju družbenih odnosov ter k doseganju rezultatov na različnih ravneh tekmovanj. Pišot (2012) utemeljuje pojem šport kot »telesno dejavnost, ki je izvedena v okviru javno določenih pravil z rekreativnim ali tekmovalnim namenom, ima pa tudi določeno strukturo gibanja, pravila tekmovanja, pomemben je dosežen rezultat in ima vpliv na širše družbeno dogajanje«. Kolar ugotavlja (2007), da ima športna dejavnost različne funkcije in cilje. Med najpogostejše cilje uvrščamo tiste, ki predstavljajo koristi za

posameznika in/ali družbo na telesnem, čustvenem, duševnem, socialnem in tudi materialnem področju. Šport je torej oblika telesne dejavnosti, ki vključuje določeno obliko tekmovanja, pojem telesna dejavnost oziroma gibalna/športna dejavnost pa predstavlja širši okvir gibanja človeka, ki se nanaša na razvoj, izboljšanje in/ali ohranjanje splošne telesne in gibalne kompetentnosti človeka ter njegovega zdravja. Tako je vsak šport vedno tudi del gibalnih dejavnosti, ne velja pa vedno obratno: ni vsaka gibalna dejavnost šport.

Opredelitev pojmov kompetence in gibalne kompetence

Kompetence lahko predstavimo kot zmožnost uporabe znanja, sposobnosti, osebnostnih lastnosti, izkušenj in motivacije, da na svojstven način učinkovito opravimo pričakovano delo ali vlogo (Retar, Plevnik in Kolar, 2013). V strokovni literaturi se opredelitve gibalnih kompetenc razlikujejo, skupen jim je le pojem gibanje. Planinšec (2002) pojmuje gibalno kompetenco kot posameznikovo zavedanje gibalne učinkovitosti, ki je odločilna za uspešno učenje in izvajanje gibalnih spretnosti. Pišot (2013) s pojmom gibalna/športa aktivnost razume vse aktivnosti človeka, usmerjene v razvoj, dvig in ohranjanje njegovih gibalnih kompetenc. Ugotavlja, da gibalne kompetence posameznik razvija predvsem v otroštvu, dviguje jih v zrelem obdobju in ohranja v starosti. Pišot še navaja vidike gibalnih kompetenc, to so razvojni, preventivni in rehabilitacijski, ki jih poveže v trajnostni gibalni kompetenčni model z obdobjem pridobivanja in uporabe motoričnih kompetenc ter obdobjem njihovega upadanja.

Za razumevanje in določanje gibalnih kompetenc, ki naj bi jih imeli, če želimo uspešno opraviti gibalno storitev, moramo razumeti osnovne sestavine kompetenc, ki v medsebojnem vplivanju in upoštevajoč družbeni kontekst tvorijo kompetentnost posameznika, pri čemer pojem kompetentnost uporabljamo skladno z opredelitvijo, navedeno v Slovarju slovenskega knjižnega jezika, ki pojasnjuje, da je »kompetenten nanašajoč se na kompetenco in da je kompetentnost lastnost, značilnost kompetentnega« (Bajec, 1994). To so najpogosteje: gibalno znanje, gibalne sposobnosti in motivacija.

Znanje je, najširše gledano po Svetliku in Pavlinu (2004), v kontekst postavljena informacija, ki je opredeljena z izkušnjami, resnico, presojo, intuicijo in vrednotami ter omogoča sprejemanje novih situacij in sprememb. Poznamo strokovno in funkcionalno znanje ter izkušnje, pridobljene s prakso. Kompetence se povezujejo z znanjem, zlasti z vidika njegove uporabe. Motivacija povzroča in usmerja naše delovanje. Po Kohontu (2005) obsega vsa gibala našega vedenja: potrebe, nagone, motive, želje, cilje, vrednote, ideale, interese in voljo. Kohont še meni, da nas nagoni in potrebe spodbujajo in potiskajo ter ženejo v vedenje, cilji, ideali in vrednote pa nam pomagajo izbrati način, kako bomo potrebe zadovoljili. V izvedbo preproste ali zelo zapletene gibalne naloge je treba vložiti veliko energije, zato je motivacija pri gibanju v ospredju.

Opredelitev gibalne sposobnosti

Sposobnosti so tiste, ki določajo razlike med tem, kar kdo more, in tem, ali tudi zmore. Lahko so umske, čutne ali pa gibalne in pomenijo zgolj potencial, da posameznik lahko uresniči neki izid, ter niso že same po sebi dosežek. Sposobnosti so tiste lastnosti, navajata Musek in Pečjak (2001), ki najbolj vplivajo na posameznikove dosežke in na njegovo uspešnost pri reševanju problemov. Avtorja še delita sposobnosti na duševne, gibalne in umske. Med umske sposobnosti spadata predvsem inteligentnost in ustvarjalnost. Sposobnosti zaznave okolja, kot na primer ostrina vida in kakovost sluha, sestavljajo duševne sposobnosti, medtem ko med gibalne sposobnosti uvrščamo moč, hitrost, gibljivost, koordinacijo, preciznost, ravnotežje in vzdržljivost.

Gibalne sposobnosti so sposobnosti, odgovorne za izvedbo človekovega gibanja. V razvoju se otrok neprestano srečuje z učenjem in izvajanjem novih, vse zahtevnejših gibalnih spretnosti, kar je zelo pogojeno z ravno gibalnih sposobnosti. Gibalne sposobnosti so torej zmožnosti, ki posamezniku omogočajo realizacijo gibalnih nalog, so merljive in na njihovi osnovi lahko ločimo razlike v uspešnosti izvedbe določene gibalne naloge med dvema subjektoma pri enakih pogojih, znanju in motivaciji (Videmšek in Pišot, 2007). Gibalne sposobnosti so, tako kot tudi druge človekove sposobnosti, v določeni meri prirojene, v določeni meri pa tudi pridobljene. Torej so človeku že z rojstvom dane osnovne zasnove, ki opredeljujejo stopnjo, do katere se bodo sposobnosti lahko razvile ob njegovi normalni rasti in razvoju (Pistotnik, 2011). So torej naravne danosti človeka, odvisne predvsem od delovanja različnih organskih sistemov, in predstavljajo zmožnost izkoristka teh potencialov pri doseganju zastavljenih gibalnih ciljev.

V nadaljevanju predstavljamo v slovenskem prostoru uveljavljene opredelitve gibalnih sposobnosti kot ključnih tvorcev gibalne kompetence. Videmšek in Pišot (2007) opredeljujeta koordinacijo gibanja kot sposobnost, ki je odgovorna za učinkovito oblikovanje in izvajanje sestavljenih gibalnih nalog z osnovnimi značilnostmi gibanja, kot so pravilnost, pravočasnost, racionalnost, izvirnost in stabilnost. Sposobnost ravnotežja avtorja označujeta kot sposobnost ohranjanja stabilnega položaja telesa in hitrega oblikovanja kompenzacijskih gibov, s katerimi ga vzpostavljamo. Ravnotežje opredeljujemo kot sposobnost človeka, da ohrani stabilen položaj, kljub sili gravitacije in drugim motečim dejavnikom. Za to gibalno sposobnost lahko rečemo, da je izredno občutljiva in sestavljena kot proces ter je relativno slabo razvita sposobnost pri predšolskih otrocih do petega ali šestega leta starosti (Pišot in Jelovčan, 2006). Za pojem moči Pistotnik (2011) ugotavlja, da predstavlja sposobnost za učinkovito izkoriščanje sile mišic pri premagovanju sil ter jo delimo na eksplozivno, repetativno in statično moč, ki je pri otrocih ne razvijamo, ter glede na dele telesa še na moč rok, trupa in nog. Videmšek in Pišot (2007) hitrost opredeljujeta kot sposobnost izvedbe gibanja v najkrajšem možnem času. Pojavlja se lahko kot hitrost reakcije, hitrost

posamičnega giba ali hitrost izmeničnih gibov in je od vseh sposobnosti najbolj odvisna od dednosti. Gibljivost je sposobnost za izvedbo gibov z maksimalno amplitudo in jo delimo na statično, ko zadržujemo gib – te vrste gibljivosti pri otrocih ne razvijamo, in na dinamično, s katero dosegamo maksimalno amplitudo. Gibljivost je dejavnik, ki lahko vpliva na kakovost življenja vsakega posameznika, zato jo opredeljujemo kot eno izmed bazičnih gibalnih sposobnosti (Pistotnik, 2011). Videmšek in Pišot (2007) opredeljujeta preciznost kot sposobnost določitve ustrezne smeri in sile za usmeritev telesa ali predmeta v želeni cilj, vzdržljivost pa kot funkcionalno sposobnost, ki je odgovorna za zmožnost dlje časa trajajočega izvajanja gibalnih/športnih nalog z enako učinkovitostjo.

Razvoj gibalnih sposobnosti

Razvitost gibalnih sposobnosti, tako prirojena kot pridobljena, odločilno prispeva k razvitosti gibalne kompetence. Razvoj gibalnih sposobnosti je posledica predvsem genetskega zorenja in vplivov okolja, pri čemer gre za proces, s pomočjo katerega otrok pridobiva gibalne kompetence in je nedvomno povezan s kronološko starostjo, ni pa od nje povsem odvisen, ter poteka skozi razvojne stopnje, za katere so značilna posamična gibalna vedenja (Gallahue in Ozmun, 2006). Od gibalnih sposobnosti, ki so v različnem deležu prirojene, najbolj hitrost, najmanj pa moč, je odvisna izvedba gibov. Faze gibalnega razvoja so refleksna, rudimentarna, fundamentalna in športna/gibalna. Gibalni razvoj poteka v smeri od znotraj navzven, to je v proksimo-distalni smeri, in od zgoraj navzdol, to je v cefalo-kavdalni smeri. Ravni uravnavanja gibanja pri človeku so zavestna, avtomatska in refleksna. Prvi otrokovi gibalni vzorci so refleksni, ki se delijo na položajski, stojno-gibalni in postavitveni refleksi. Sledijo elementarni gibalni vzorci, filogenetsko pogojena gibanja, kot na primer lazenje, plazenje, hoja, tek, skok, met, potisk, ki zasledujejo samo cilj. Nadgradnjo predstavljajo sestavljena gibanja v obliki gibalnih stereotipov, ki so ontogenetsko pogojena gibanja, to je naučena, in vsebujejo poleg cilja še oblikovanje kakovostne izvedbe, kot na primer plavanje, rolanje, nogomet.

Razumevanje pojma gibalno učenje

Strokovna opredelitev UNESCA opredeljuje učenje kot vsako spremembo v vedenju, informiranosti, znanju, razumevanju, stališčih, spretnostih ali zmožnostih, ki je trajna in je ne moremo pripisati fizični rasti ali razvoju podedovanih vedenjskih vzorcev. Navkljub proučevanju poučevanja kot celovitega procesa učenja v praksi prevladuje tradicionalno pojmovanje učenja kot kopičenja in zapomnitve spoznanj, do katerih so prišli (Marentič Požarnik, 2012). Še vedno je prepočasno uveljavljanje sodobnega pristopa k pouku v obliki aktivnega učenja, za katerega je značilno, »... da poteka s samostojnim iskanjem in razmišljanjem, s smiselnim dialogom v skupini, s postavljanjem in preizkušanjem hipotez, tj.

učenje, ki človeka miselno in čustveno aktivira, je osebno pomembno in vpeto v resnične življenjske okoliščine. Tako učenje bo verjetneje dalo trajnejše znanje in bo uporabno v novih situacijah.« (Marentič Požarnik, 2012) Za učinkovito učenje je pomembno, da vzgojitelji zagotavljamo pozitivno, varno in ustvarjalno okolje, v katerem je veliko raznolikih praktičnih vsebin (Retar, Plevnik, Hozjan in Kolar, 2014). Iz zapisanega lahko povzamemo, da se moramo sodobni vzgojitelji na področju gibalnih/športnih dejavnosti zavzemati za razumevanje učenja kot proaktivno, ustvarjalno in na praksi temelječe spreminjanje samega sebe ter pridobivanje novih gibalnih kompetenc s ciljem, da postajamo gibalno kompetentni. Gibalno učenje, zlasti predšolskih otrok, je kompleksen pojav, ki zahteva odgovorno načrtovanje, organiziranje, izvajanje in nadzorovanje primernih gibalnih/športnih aktivnosti. Je model, ki omogoča izvedbo tako spontanih kot skrbno načrtovanih gibalnih nalog s ključnim ciljem, da pomembno pripomorejo tako k uspešnemu razvoju gibalnih sposobnosti otroka kot k usvajanju elementarnih gibalnih vzorcev in gibalnih stereotipov. Po Pistotniku (2011) je gibalno učenje proces postopnega prilagajanja gibalnega ustroja na racionalno izvedbo novega gibanja. Rezultat gibalnega učenja so gibalne spretnosti oziroma gibalna znanja (realizacija motoričnih informacij), ki se pojmujejo kot z učenjem pridobljene osnove za pravilno izvedbo gibalne aktivnosti. Pistotnik še ugotavlja, da nanj vplivajo tako notranji dejavniki, ki so gibalne sposobnosti, morfološke značilnosti, kognitivne in konativne lastnosti, kot zunanji dejavniki, med katere uvršča materialne možnosti, naravne danosti in znanje o športu. Ušaj (2003) opredeljuje gibalno učenje kot proces pridobivanja, izpopolnjevanja, stabilizacije in uporabe gibalnih programov v centralnem živčnem sistemu, v nasprotnem primeru pa jih je treba z vadbo zgraditi in shraniti. Tancigova (1996) ugotavlja, da je gibalno učenje odvisno od mnogih dejavnikov in ne narašča samo s številom ponovitev, odvisno je namreč tudi od variabilnosti in pestrosti vadbe. Priporoča uporabo različnih materialov, izvajanje gibalnih nalog z različnih razdalj, z različnimi hitrostmi in velikostmi. Novak, Kovač in Čuk (2008) priporočajo pri gibalnem učenju izbiranje takih športnih aktivnosti, ki so prilagojene zmožnostim učencev ter materialnim in drugim pogojem. Gibalne naloge, tako menijo omenjeni avtorji, izvajamo po načelu postopnosti. Dejavnost mora biti izbrana in vodena tako, da v vseh učencih krepi občutke samozavesti, zaupanja vase, radosti in zadovoljstva. Varnost med dejavnostjo je osnovna skrb vzgojitelja, prikazovanje vaj ali demonstracija pa je nujen sestavni del dejavnosti. Isti avtorji še priporočajo, naj ob izvajanju določenih vaj upoštevamo, da nekatere gibalne aktivnosti zahtevajo veliko število natančnih ponovitev in da najprej popravljamo grobe nepravilnosti, s ponavljanjem in utrjevanjem pa odpravljamo tudi druge napake. Priporočilom lahko dodamo še vzpostavljanje prijaznega in pozitivnega učnega okolja, primerno komuniciranje in spodbujanje ter ustrezno nagrajevanje.

Vseživljenjsko gibalno učenje

Za razvoj gibalnih kompetenc je zelo pomembno znanje, ki ga potrebujemo za sprejem prave odločitve, ki bo omogočila učinkovito izvedbo gibalne naloge. Gibalno znanje pridobivamo z vseživljenjskim učenjem, ki ga razumemo, prilagojeno po Jelencu (2007), kot dejavnost in proces, ki zajema vse oblike učenja, bodisi formalno ali neformalno bodisi aformalno in naključno ali priložnostno s ciljem, da se izboljšajo posameznikovo znanje in spretnosti. Formalno gibalno učenje lahko razumemo kot proces pridobivanja gibalnih informacij, ki ga udeleženec lahko zaključi s končnim izidom v obliki priznane pridobljene kvalifikacije, kot na primer: pridobitev diplome za usvojeno znanje plavanja, smučanja itd. Neformalno učenje pa ni namenjeno pridobivanju formalnega izkaza, ker si udeleženec postavlja druge cilje, kot so druženje, zabava, potreba po gibanju itd. Pri naključnem in aformalnem izobraževanju pa gre za spontano, nenačrtovano in nenadzorovano učenje, ki se praviloma izvaja v neposrednem socialnem in fizičnem okolju, v katerem se nahaja otrok, na primer na dvorišču, igralih, športnem igrišču itd. Kot že ime pove, je za aformalno učenje značilno, da poteka tako brez formalnega okvira kot brez jasnega cilja in namena.

Kljub razumevanju poučevanja kot celovitega procesa učenja tudi v športni praksi še vedno lahko zasledimo pojmovanje gibalnega učenja kot discipliniranja telesa, zato prihaja do nizke motivacije, slabih rezultatov in odpora do gibalnih/športnih aktivnosti. Za vzgojitelje je pomembno, da uveljavljajo sodoben pristop pouka v obliki proaktivnega gibalnega učenja. Zanj je značilno, da poteka s samostojnim iskanjem in razmišljanjem ter reševanjem kakovostno zastavljenih motoričnih problemov, ki otroke vodijo tako do razvijanja njihovih gibalnih sposobnosti kot do pridobivanja uporabnih gibalnih izkušenj, ki lahko prispevajo k oblikovanju njihovega športnega življenjskega sloga. Kompetenten vzgojitelj bo otrokom s postavljanjem in preizkušanjem različnih, iz resničnega življenjskega okolja vzetih gibalnih problemov omogočil učenje, ki jih bo miselno, socialno in čustveno aktiviralo. Tako ponujeno učenje bo omogočilo trajnejše gibalno znanje, spodbujalo bo pozitivne vplive gibalnega transfera, uporabno bo v novih gibalnih situacijah in bo prispevalo k boljši samopodobi otrok ter njihovem razumevanju sebe in okolja, v katerega bodo znali aktivno posegati.

Vloga gibalnega transferja pri razvijanju gibalnih kompetenc

Ker ostanejo pridobljeni gibalni programi trajno zapisani v gibalnem spominu, je pomembno, da ima otrok dostop do okolja, v katerem bo pridobil čim več gibalnih informacij in možnosti kakovostnega reševanja motoričnih problemov, s katerimi bo lahko učinkovito razvijal svoje prirojene gibalne sposobnosti in na drugi strani oblikoval nove gibalne programe. Pri tem igrajo pomembno vlogo tudi spoznanja o vplivanju gibalnega transferja, ki nam omogoča, da gibalne informacije z naučene gibalne dejavnosti prenesemo na učenje in izvajanje druge gibalne informacije, kot opredeljujeta sposobnost gibalnega transfera Videmšek in Pišot (2007), ki ga še delita na vertikalnega (prenos znotraj iste gibalne naloge), lateralnega

(prenos iz ene na podobno nalogo) in bilateralnega (prenos iz noge na roke). Seveda pa vloga gibalnega transferja ni samo pozitivna, lahko je tudi negativna in zavira ali onemogoča gibalno učenje zaradi napak v usvojenih gibalnih programih. Tako je lahko motorični transfer kot prenos že znanih gibalnih informacij v proces učenja novega gibanja podpora učenju, lahko pa je kot negativni motorični transfer zavora zaradi predhodnih usvojenih gibalnih znanj v procesu učenja novega gibanja.

Menedžment ima kot pojem več pomenov

Beseda menedžment izvira iz angleškega glagola »to manage«, ki pomeni obvladovanje. Uporabljamo jo tako za označevanje vseh vrst vodenja kot za znanost, ki proučuje menedžment. V teoriji je opredelitev pojma menedžment veliko, vsem pa je skupno spoznanje, da gre za menedžment z različnimi viri, ki so vitalnega pomena za uresničevanje ciljev v vseh temeljnih funkcijah menedžmenta (Daft, 2003). Za potrebe prispevka lahko razumemo menedžment na področju razvoja gibalne kompetentnosti otrok kot proces usklajevanja ključnih dejavnikov, ki omogočajo učinkovito uresničevanje ciljev načrtovanja, organiziranja, izvajanja in nadziranja gibalnega učenja.

ZAKLJUČEK

Ključni namen uvajanja športnega menedžmenta na področju gibalnih/športnih dejavnosti je učinkovito razvijanje gibalnih sposobnosti, ki pripomorejo k učinkovitejšemu in bolj nadzorovanemu gibanju otrok ter v nadaljevanju omogočajo oblikovanje zdravega življenjskega sloga – vse do aktivnega in samostojnega staranja kot kakovostnega načina življenja. Upoštevajoč različne opredelitve lahko povzamemo, da je gibalna kompetenca zmožnost uporabiti kombinacijo rabe gibalnih sposobnosti, gibalnega znanja in motivacije za učinkovito izvedbo gibalne naloge. Pridobljene gibalne izkušnje prispevajo k večji gibalni kompetentnosti. Tako gibalne kompetence niso samo sposobnosti za opravljanje gibalnih nalog, temveč zlasti motivacija in povezovanje gibalnega znanja, spretnosti ter sposobnosti z gibalnimi izkušnjami, ki jih potrebujemo, da gibalne naloge dobro opravimo. Ni pomembno, kako smo gibalno sposobni, kaj znamo ali kaj vemo o gibalni nalogi, temveč ali smo jo sposobni opraviti in ustvariti takšno gibalno storitev, ki je skladna z našimi predstavami in pričakovanji okolja. Za učinkovito razvijanje tako razumljene gibalne kompetentnosti otrok pa je treba uvajati sodoben in kakovosten menedžment kot celovit proces odzivnega usklajevanja ključnih dejavnikov, ki omogočajo učinkovito uresničevanje ciljev načrtovanja, organiziranja, izvajanja in nadziranja procesa gibalnega učenja. Pišot (2012) ugotavlja, da je gibalna obravnava celostna obravnava posameznika s skrbno izbranimi vsebinami in sredstvi gibanja, upoštevajoč posebnosti, zmožnosti in omejitve, ki posameznika gibalno

opredeljujejo, ter vplive gibanja v interakciji z okoljem na posameznika. Prav zato je še kako pomembno znanje menedžmenta za usklajevanje številnih dejavnikov in virov, ki vplivajo na naše učinkovito pedagoško delovanje. Z uvedbo menedžerskih pristopov bomo lahko še bolj prispevali k temu, da bo gibalna/športna aktivnost pozitivno vplivala na zdravje in celostni razvoj otroka ter sooblikovala njegov zdrav življenjski slog.

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PEDOKINETIKA

PEDOKINETICS

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IZVLEČEK

Pedokinetika je koncept zgodnjega razvoja za izražanje potenciala v posamezniku s poudarkom na zgodnjem obdobju do postavitve na dve nogi. Dojenček od samega začetka prejema številne informacije, ki mu tekom razvoja predstavljajo vir konstrukcije samoaktivacije in samoregulacije. Pedokinetika preko razvojnih funkcionalnih prijemov (RFP) omogoča staršu, da lahko svojemu dojenčku nudi optimalno okolje zorenja živčno-mišičnega sistema, ki se vzpostavlja ne le zaradi anatomske rasti, ampak predvsem zaradi informacij, ki jih sprejema v različnih položajih in stikih z različno podlago preko gibanja. Negovanje otroka z RFP vodi do zaznavanja in vzpostavljanja potrebnih informacij, ki se z vse večjo in večkratno aktivacijo pričnejo organizirati, hkrati pa se vzpostavljajo senzomotorične povezave. Za določen premik v prostoru se odgovorne mišice oživčijo. Za vsak nadaljnji premik se mišici upogibalka in iztegovalka lahko organizirata optimalno. Zato je pomembno, kako dojenčku nudimo oporo in kje. Predvsem je bistveno tudi to, da ga ne rešujemo iz na videz mučnega položaja, kadar se premika sam. RFP združujejo naravne zakone (težnost, biomehaniko, fiziologijo in intimno povezavo starši-otrok). RFP ni moč izvajati mehansko in rutinsko. Potrebno je zavestno spoznavanje dotika (s katerim vodimo dojenčka v gibanje) in védenje, kako se nanj odziva dojenček in kako aktivirati kinestetični občutek in zavestno starševstvo. RFP presega mehanično obračanje otroka iz položaja v položaj (rokovanje) in v odnosu do nege in vzgoje odpira pot kvalitetnega stika z otrokom v razvoju. Predvsem se izrabi naravno danost razvoja, ki vsakemu dojenčku omogoča, da se razvija z radostjo in veseljem skozi gibanje. Taka osnova predstavlja učinkovito izhodišče za stik in odnos z okoljem, v katerega vse bolj in bolj vstopa samostojno. Tako smo aktivno odgovorno vpleteni v razvojno pot in ne le čakamo, kaj se bo kdaj zgodilo in za tem usmerjamo v gibanje, ker je gibanje pomembno!

Ključne besede: gibalni razvoj, otrok

ABSTRACT

Pedokinetika is a concept of early development for expressing the potential in individuals with the focus on the early period up to the independent stance on their feet. The baby is

from the very beginning receiving number of information that throughout the development represent a source for constructing self-activation and self-regulation. Pedokinetika through the Developmental Functional Approaches (DFA) allows parents to provide their baby an optimal environment of maturation of the neuro-muscular system, which is established not only due to anatomical growth, but mainly because of the information the baby adopts while in different positions and contacts with different types of flooring through movement. Nurturing a child with DFA leads to the perception and establishment of necessary information that are becoming organized by the means of a growing- and multiple activation, and simultaneously establish the sensorimotor connections. For a certain movement in space relevant muscles are innervated. For any further motion the extensor and flexor muscles shall systematize optimally. Therefore, it is important how we provide support to the baby and where. Above all, it is also crucial that the baby is not helped from a seemingly wearying situation, when moving independently.

DFA combine natural laws (gravity, biomechanics, physiology and intimate parent-child connection). DFA cannot be carried out mechanically and routinely. It is essential to consciously learn touch (by which the baby is led into movement) and knowing how the baby responds to it, how to activate the kinesthetic feeling and conscious parenting. DFA exceed the mechanical repositioning of the child from one position to another (handling) and in relation to childcare and education they create a path to high-quality contact with children in development. In particular, the natural way of development is used allowing each baby to develop in delight and with joy through movement. Such a basis represents an effective starting point for contact and relationship with the environment into which the baby enters more and more independently. Hence we are actively and responsibly involved in the development path and we are not only waiting for what and when it is about to happen to only afterwards direct the movement – because movement matters!

Keywords: motor development, child

UVODNI DEL

S konceptom pedokinetike širimo varno okolje v družini in ustvarjamo poligon doživetja, ki preko senzomotoričnega aktiviranja oblikuje pozitivne gibalne izkušnje in razločevanje čustev in oblikovanje izražanja preko čustev. Vse to otroka spodbuja k nadaljnjemu raziskovanju in ponovnemu poizkusu, kljub neuspehu, padcu ali neodobravanju, ter ga premakne naprej v prostoru in interakciji z njim. Z ustreznimi gibalnimi izkušnjami na varen in igriv način tako za starša kot otroka s pedokinetiko oblikujemo okolje, kjer se poraja otrokovo izvorno gibanje, ki se uspešno nadgrajuje v hoteno gibanje in v kompleksne pojavne oblike gibanja in izražanja ter udejstvovanja v okolju. Razvojno funkcionalni prijemi (RFP) predstavljajo potek

vzpostavljanja opore v otroku, proces, ko otrokovo telo na temelju osredotočenosti otrokove volje zmore tej volji slediti tudi gibalno. Z RFP refleksne gibe izrabljamo v kontinuiteto porajanja izvornih gibov, ki ob ustreznih izkušnjah prerastejo v učinkovito kontrolo za hoteno gibanje. Optimalna funkcija gibanja v vse večjem obsegu je posledica mišično usklajene aktivacije z ustreznim mišičnim tonusom in se izraža kot kontrolirana hotena aktivnost. Pri optimalnemu dviganju, nošenju in spuščanju z RFP delujemo na uravnavanje aktivacije mišic iztegovalk in upogibalk pri posameznem premiku.

Kratka predstavitev

Razvoj se ne začne po rojstvu. Spočetje je začetek razvoja. S prihodom na svet se dojenček spozna s silo težnosti, ki deluje nanj drugače kot v maternici. S tenzijo živčni sistem kaže stanje dozorelosti ob rojstvu, ki narekuje odzive z refleksi. Rojen dojenček spontano išče gib v prostoru. Išče najlažjo *smerni vektorja* za gibanje. S premikanjem vzpostavlja zapletene funkcije živčno-mišično skeletne organizacije, termoregulacije, presnove in kognitivnih procesov ter na podlagi doživetih informacij ustvarja nevronske mreže v možganih.

Izvorni gibi z nadgradnjo razvoja preko senzomotoričnih izkušenj prehajajo v hoteno gibanje in se nadgrajujejo v kompleksne oblike gibanja. Otrokov razvoj se odvija v povsem individualnem časovnem okvirju, znotraj katerega se odvijajo razvojni koraki. Nanj deluje stopnja zrelosti ŽS. Ključnega pomena za optimalno zorenje ŽS je, kako negujemo in spodbujamo otroka v razvoju. Pedokinetika temelji na fizioloških dejstvih, da je ob rojstvu dozorel vestibularni, taktilni in proprioreceptivni sistem. Zato je pedokinetika našla pot, ki vpliva na zorenje ŽS v intenzivnem obdobju sinaptogeneze. V izkustveni praksi so bila ugotovljena spoznanja, ki jih avtorica utemeljuje in vpeljuje z novimi tîrmini: izvorni gibi, porajanje gibanja, RFP – razvojni funkcionalni prijemi, aktivacija razvojne poti, varno polje. Razlikuje med tenzijo in tonusom, ravnotežjem in kontraravnotežjem, reakcijo in odzivanjem. Pedokinetika ločuje in poudarja razvojni pomen refleksov, spontanih, izvornih in hotenih gibov. Pedokinetika temelji na spoznanju, da ima lahko vsak otrok svojo pot razvoja. Otrok ne deli glede na starost ali sposobnost. Otroke predvsem opazuje, kje v razvoju so, kaj se je že aktiviralo, vzpostavilo in kaj še ne. Kakšne izkušnje otrok že ima. Na podlagi opaženega vzpostavi takšno okolje, da se še neaktivirano gibanje lahko aktivira. Ne deluje na čas, kdaj se bo kaj aktiviralo in ne deluje z vzpostavljanjem primerne okolja zato, da bi se čim več aktiviralo čim prej. Izkušnje, ki jih otrok sam najde v ustreznem okolju, kažejo na njegovo razvojno kapaciteto. Izkušnje ne moremo vsiliti ali skrajšati časa njihovega spoznanja. Tu potrebuje otrok svoj prostor, čas in mir, da sam pride do izkušenj in se zadržuje ob določenem preizkušanju nečesa tako dolgo, kolikor je le njemu zanimivo. Na to, kaj med tem doživlja, ne moremo in ne smemo vplivati.

Osrednji del

Rdeča nit koncepta pedokinetike je ustvarjanje okolja za aktivacijo izvornih gibov. Ti se preko refleksnih in spontanih (nehoteni) gibanj, s ponovnim poizkušanjem premikanja porajajo in aktivirajo ter se z nadaljnjimi doživetimi gibalnimi izkušnjami dojenčka razvijejo v hotene gibe. Porajanje izvornih gibov preko doživetih izkušnje v optimalnem okolju zagotavlja primerni mišični tonus v mišicah upogibalkah in iztegovalkah, ki sočasno delujeta v premiku telesa v prostoru. Otrok preko doživetih senzomotoričnih izkušenj posledično vzpostavlja kontroliranje ravnovesnega položaja telesa, ne glede na podporno podlago. Vzpostavljanje ravnovesja ob izgubi stabilnega položaja tako postane za človeka v razvoju igra skozi življenje, ki jo nadzira z močnim notranjim občutkom varnosti, da zmore iz sebe organizirati varen in stabilen položaj. To je podlaga za notranjo motivacijo in učinkovito samorealizacijo skozi življenjsko pot.

Gibanje v luči pedokinetike

Otrok se giba že v predporodni dobi. Ludvik Horvat in Lidija Magajna v svojem delu Razvojna psihologija navajata, da je gibalni (motorični) razvoj najbolj izrazita oblika psihofizičnega razvoja. Prične se že v predporodni dobi in se v nadaljnjem razvoju stalno izpopolnjuje. To prvo stopnjo predstavljajo refleksni gibi fetusa in novorojenčka. Skozi razvoj se stalno izpopolnjujejo in tako posameznik z zorenjem napreduje k višji stopnji delovanja. Uглаševanje nevronske povezave se začne že pred rojstvom. Prva povratna informacija za motorične nevrone je fetalno premikanje udov – krepijo se gibalni vzorci, ki imajo ugoden povratni učinek. Obstaja tudi predrojstveno uглаševanje slušnega sistema: Novorojenčki se že takoj po rojstvu bolje odzivajo na materni jezik kot na govor v drugih jezikih. Kasnejše izkušnje so nujne za normalen razvoj CŽS (Gradišnik 2008). Z rojstvom se otrok sreča s silo težnosti, ki deluje na nas. Razumevanje te sile in odnos z njo pomeni tudi smer individualnega razvoja in se kaže kot stanje zrelosti ŽS. Dozorevanje ŽS vodi na razvojni poti skozi celotno premico življenja v bolj ali manj optimalen razvoj posameznikovega potenciala. Na tej točki najdemo tudi razloge zakaj potencial še ni aktiviran in zakaj ne. Človek se razvija tako, da je v obdobju svojega prvega leta življenja samodejno izzvan, da preko raziskovanja skozi gib spozna sam sebe in se integrira v celoti v funkcionalno gibanje. Življenje ga sili v sprva nehoteno gibanje – mahanje rok in nog. Skozi vse te prve gibalne poizkuse nastajajo hotene gibalne akcije. Že samo roka v usta ali ogledovanje svojih prstov in želja, da bi nekaj prijel, kaže na razvoj življenja, ki vre v njem. Kako uspešno bo to opravil, pa je predvsem odvisno od okolja in prvega stika z njegovim negovalcem in kako mu ta prepušča doživeti nujna izkustva razvoja. Skozi občutenje težnosti odkrivamo uporabo samega sebe (Feldenkrais 1990). V obdobju zgodnjega razvoja iskanje ravnotežja pomeni izzvati učne procese. V odrasli dobi iskanje ravnotežja pomeni izzvati lastne navade.

Izzivanje ustaljenih navad vodi v diferenciacijo in nastajanje novih variacij. Le to in samo to vodi odraslega v nenehno učenje. Torej spremenjena uporaba sebe pomeni spremenjeno ravnotežje – drugačno rabo težnosti. Da otrok sledi s pogledom, obrne glavo in tako naprej, je potreben gib. Vdih in izdih, jok in sesanje – vse to je gibanje, ki se skozi rast in razvoj organizira in integrira v funkcionalno premikanje in izražanje v prostoru. Ker otrok ne pozna omejitev, mu to daje vso svobodo raziskovanja in odkrivanja. S tako imenovanimi izvornimi gibi, kot dojenčki iščemo izhodišča v možganih za izvedbo različnih gibov in različnih občutkov. Iščemo, kako se najbolje organizirati v uporabi sebe, da se premaknemo naprej in shodimo. Med iskanjem gibalne poti, je izredno pomemben način na katerega jih iščemo, da se vzpostavljajo nevrološke povezave, ki se vežejo in zatrujejo (sinaptogeneza). To so vzorci in navade, s katerimi se izražamo skozi življenje. Vse to se kaže v napredovanju porajanja novih in kompleksnejših gibanj in gibalnih oblik, ki se širijo in prepletajo na vsa področja – temu rečemo razvoj. Otrok ima željo – potrebo za nenehno preizkušanje in izboljševanje. Ta želja diktira stopnjo individualnega dozorevanja in posledično svobodo v iskanju variacij in upanju doživljati diferenciacije. V nasprotju s tem fiksiramo omejene povezave, ki ne dopuščajo novih variacij. Posledično občutenje diferenciacije posamezniku ne pomeni več izziv ampak stres (ne zmorem, ne morem, ne znam, ne smem). Nega in skrb za dojenčka od zunaj diktirata pogoje – koliko in kako se bo izražala otrokova vedoželjnost in pogum po izzivanju težnosti. Za učinkovito samorealizacijo in čutenje zadovoljstva s samim seboj potrebujemo ravnotežje občutiti od znotraj. To lahko doživimo v samem začetku, po rojstvu, ko se porajajo izvorni gibi. Da doživljamo občutenje težnosti in ustvarimo kontrolo ravnotežja od znotraj, potrebujemo iskanje različnih poti do optimalnega položaja celega skeleta, da se zgodi gibalni razvojni premik in posledično z njim vse ostalo. V kolikor dojenčka obravnavamo v nasprotju z njegovim potencialom za razvoj, ga seveda nehote porivamo v izkustvo težnosti, ki z rastjo postaja problem in indikator za stres ter ne zgolj radosten izziv življenja v smeri optimalnega izkoriščanja lastnega potenciala. Zato imamo kot odrasli v možganih (mislih) omejitve in te nam povzročajo težave, npr. da se ne znamo premakniti naprej v drugi smeri. Te omejitve lahko seveda porušimo tudi v odrasli dobi, in sicer z izzivanjem težnosti in iskanjem novih variacij preko metode Feldenkrais. Če ni variacij oz. diferenciacij potem to vodi v to, da možgani spijo. Torej, da so možgani budni nenehno potrebujejo iskanje ravnotežja. Tako nam iskanje drugačne poti vzpostavljanja ravnotežja da idejo, na podlagi katere je moč izboljšati višjo funkcijo možganov. Gibanje je edina stvar, s katero lahko nadgradimo in najdemo višje funkcije v možganih. Te višje funkcije v možganih so odvisne od osnovnih funkcij v zgodnjem razvoju, npr. kako najdemo svoje fizično ravnotežje, da se sami usedemo in da vstanemo. Za prvi korak v svojem življenju moramo vzpostaviti psihofizično ravnovesje. Dojenček na podlagi izkušenj v zgodnjem obdobju gradi in integrira zaznave, ki jih kasneje izraža z dejavnim vključevanjem v življenje, v katerega vse

bolj in bolj vstopa samostojno/ nesamostojno in samosvoje / nesamosvoje v posameznih obdobjih razvoja skozi celotno življenjsko pot, opirajoč se na informacije doživljanja samostojnega reševanja, sprva gibalnih izzivov uravnavanja ravnotežja in kasneje ob nujnih izkušnjah, ki jih nudi življenje na razvojni poti. S prehitro pomočjo in rešitvijo iz navidezno mučnega položaja dojenček ne more v popolnosti izrabiti svojega razvoja. Za reagiranje potrebuje čas. Čas, v katerem zaznava informacije, ki jih prejema zaradi položaja, v katerem je. Svoj reakcijski čas, da spremeni položaj in reagira, je daljši, kot čas, v katerem odrasli želi pomagati dojenčku iz navidezno zapletenega položaja. S skrajševanjem časa, v katerem lahko dojenček sestavi določen gibalni odgovor na prejete informacije o položaju ali pa sploh neomogočanje tega časa, zaradi takojšnje intervencije starša, otroka le navajamo, da ne zmore brez odobravanja roditeljev ali usmerjanja in popravljanja že pri prvih poizkusih potegniti roke izpod trebuha, prepuščanju, da se v celoti sam odkotali z boka na hrbet ali trebuh in tako naprej vse do hoje, samostojnega prehranjevanja, vrtca, šole in iskanja svoje identitete v razvojnem obdobju pubertete in nadaljnjem življenju. V razvoju in za razvoj giba oz. gibanja je potrebna nenehna diferenciacija, ki popelje v nove variacije. Že sam razvoj po sebi žene dojenčka, da raziskuje podlago. Da se lahko zgodi, kar se v razvoju mora zgoditi, je nujno, da je dojenček veliko na tleh. Ko je na tleh, lahko zaznava, kako mu tla nudijo podporo za akcijo in kako se obnašati v prostoru, kjer nanj deluje težnost. Diferenciacijo gibanja in delovanja sile težnosti skozi telo učinkovito zaznava tudi med nošenjem v nosilkah (npr.: Indijanke, Afričanke – preko dneva je dojenček ves čas z njimi in v avtentičnem gibanju matere med vsemi opravili). Zaradi tega lahko učinkovito izrablja tla, ko ga odložijo. Da lahko izkoristimo podlago za svoje gibanje moramo občutiti težnost. Občutenje težnosti poraja izvorne gibe. Nastanek izvornih gibov in gibanja posledično poraja zadovoljstvo s samim seboj. Zadovoljstvo s samim seboj pa se navzven kaže v tem, kako se uporabljaš in kako se izražaš v prostoru. Čutenje povezave s težnostjo je orientacija. Dobra orientacija pomeni dobra samoorganizacija. Pedokinetika ne išče rezultatov, ampak išče izvorno gibanje in uporabo sebe. Nikoli, res nikoli, ne sugeriramo, kako naj bi potekala linija giba. Kajti to je osebno odkritje in proces učenja vsakega dojenčka posebej! Zato RFP ne usmerjajo v ponavljanje idealne linije gibanja, niti ne korigirajo. Gre za to, da z RFP ustvarjamo polje, kjer lahko otrok izrabi oporo prijema, tal ali druge podlage, da povsem sam odkrije svojo idealno pot premika – giba v prostoru glede na silo teže in kako občuti center stabilnosti, prenašanje težišča in posledično reguliranje tonusa, kar se dogaja posledično zaradi izhodišča za kvalitetno (kinetična veriga – prostost sklepov) premikanje sile skozi skelet. Pa naj gre za preprost poteg prstov v usta ali obrat glave za zvokom ali s pogledom. Pri razvoju in rasti gre za anatomske procese in fiziološke procese. Gre za celo vrsto sprememb v razmerjih, strukturi in obliki, do katerih prihaja v individualnem razvoju. Gre za spremembe kompleksnosti strukture in oblike. To pomeni rast. Vzrok za to je rast celic. Spremembe

kompleksnosti oblike pomeni diferenciacija. Vzrok za to je različen razvoj rastočih celic. Različno vzpostavljene nevrnske komunikacijske poti med celicami. V razvoju dojenček z gibom išče variacije, posledično se razvija diferenciacija. To pa vodi otroka k nabiranju izkušenj. Vsako obdobje v otrokovem razvoju mu omogoča pridobivanje novih izkušenj, ki so za posamezno obdobje razvoja tipične in nujne za učinkovito samorealizacijo. Te izkušnje pridobiva preko interakcije z okoljem. Osnovo zanjo pa predstavljajo senzorični in motorični procesi. V kolikšni meri in predvsem kako se aktivirajo kontrolne povezave, je odvisno od samostojnega premikanja oz. reševanja na videz zapletenih položajev (nabiranje izkušenj) in spoznavanja danega okolja, v katerem se lahko premika. Otrok se rodi z refleksi preživetja. Namen zgodnjih refleksov je predvsem zaščita novorojenčkov in dojenčkov pred škodljivimi dražljaji (Marjanovič Umek in Zupančič, 2004). Zgodnji refleksi naj bi imeli prilagoditveno nalogo. Pedokinetika izrablja dejstvo, da razvoj zaščitnih refleksnih vzorcev omogoča otroku ohraniti stabilen položaj, če pride do aktivnega/pasivnega premika. Ti refleksi se ohranijo ob sodelovanju zavesti/korteksa – kontrola drže glave – refleks padalca. Kaže integriteto ravnotežnostnega sistema, kasneje omogoča samostojno sedenje in stojo (Peter Gradišnik 2008). Refleksno vedenje igra pomembno vlogo pri spodbujanju zgodnjega razvoja osrednjega živčnega sistema in mišic (Papalia, 2003). Papalia ugotavlja, da, ko med drugim in četrtem mesecem starosti postanejo dejavni višji možganski centri, kažejo dojenčki položajne reflekse: odzive na spremembe položaja in ravnotežja. *Na primer*, ko se dojenčki prekucejo naprej, zaradi padalnega refleksa iztegnejo roke in ublažijo padeč. Večina zgodnjih refleksov izgine od šestega do prvega leta starosti. Gibalni refleksi, kot sta hoja in plavalni refleks, so podobni hotenim gibom, ki se ne pojavijo še nekaj mesecev potem, ko zgodnji refleksi že izginejo. Znanstvena razprava o tem, ali gibalni refleksi pripravijo pot njihovim hotenim gibom ali ne, še vedno traja. Pedokinetika tu podaja pomembna spoznanja o vmesnem dogajanju. To so izvorni gibi! Zgodbo razvoja pedokinetika začne s položajem novorojenčka na trebuhu. Refleks fleksije mu omogoča, da krči kolena k trebuhu in obrača glavo levo in desno ter brado poteguje navzdol – to so ključni momenti premikanja, ki skozi skelet organizirajo premik sile – zaznavanje prenosa težišča. Otrok povsem spontano potegne roko izpod trebuha. Organizirati se pričinja mobilnost vretenc hrbtenice. Zaradi premikanja v tem položaju, se organizira rotacija vratne hrbtenice, in zaradi potegovanja kolen navzgor in sočasnega obračanja glave, se težišče prenaša preko medenice iz leve na desno stran telesa. Hrbtenica postopno iz enojne krivine pridobiva temelj organizacije ledvene in vratne krivine, ki se na osnovi nadaljevanja gibanja telesa horizontalno in rotiranja okoli svoje osi, razvije na nevtralno pozicijo z optimalno organizacijo aktiviranja mišic iztegovalk in upogibalk telesa. Sledi povsem mehanski premik iz horizontalnega v vertikalni položaj, ko otrok pridobi dovolj izkušenj za aktiviranje kompleksnih gibanj, ker je njegov ŽS aktiviral mobilnost sile premikanja preko skeleta in v tem času pridobivanja teh izkušenj

ustvaril vzporedne kognitivne procese. Ta optimalna organizacija hrbtenice se ne more zgoditi, kadar otroka plosko odlagamo in dvigujemo na hrbet oziroma pol na bok in potem na hrbet, ali če je večinoma do 4. meseca samo na hrbtu, ali če ga držimo vzravnane in ga pri tem podpiramo. V primeru takšnega ravnanja, se aktivacija mišic upogibalk in iztegovalk organizira na podlagi vsiljene vertikalne pozicije hrbtenice, posledično so vretenca hrbtenice toga mobilna – predvsem v C7 in Th12. Posledično otrok nima možnosti razviti danih smeri gibanja medenice, kontraravnotežja in neuspešno izrablja delo mišic, ki v takšnem primeru delajo preveč in predvsem ne v kontekstu kinetične verige. Mehanska osnova optimalnega in funkcionalnega gibanja je porušena. Seveda tudi tak otrok obsedi, vstane in shodi – vendar izvedba le tega je nesigurna, hrbtenica ne razvije zdravih krivin, stopala se krivijo. Za ohranjanje vertikalnega položaja se premočno aktivirajo mišice iztegovalke. Otrok nima opore v skeletu in izkoristka moči mišičnega dela ob premikanju – posledično je nestabilen, nesiguren, jokav in zahteva, da se mu pomaga.

Izvorno gibanje

Izvorni gibi se pojavijo posledično, kadar refleksna gibanja usmerimo skozi dotik in nego dojenčka. Skozi razvoj se aktivirani izvorni gibi ob ponovnem vzpostavljanju premikanja v prostoru ne glede na podporno površino organizirajo v hoteno gibanje, z nadaljnjimi izkušnjami preko premikanja pa v bolj ali manj funkcionalno gibanje. Z RFP delujemo na aktiviranje izvornih gibov. Preko izvornih gibov dojenček vzpostavlja učinkovit nadzor hotenih gibov. Nadzor z optimalnim vzpostavljanjem ravnotežja omogoča učinkovito notranjo stabilnost, ne glede na podporno površino. Dojenček tako lahko, med odmikanjem od navidezne sredine, vse bolj in bolj obvladuje kontrolne funkcije vzpostavljanja ravnotežja v odnosu med glavo in hrbtenico ter glavo in stopali. Med tem premikanjem organizira skelet in povezavo med posameznimi mišicami, ki sodelujejo v celostnem gibanju. Gibanje poteka preko sklepov tekoče in navzven se zdi, kot da se otrok poigrava sam s seboj. Med tem poigravanjem se organizira mišično skeletni sistem in po zakonih biomehanike in gravitacije spontano najde povezave, kje v telesu je točka potiskanja v tla za to, da se z drugim delom telesa lahko dvigne. Proces poteka spontano zaradi aktiviranja premikanja in zorenja živčnega sistema, ki le tako pridobiva potrebne informacije, s katerimi oblikuje nevronske povezave. V kolikor otrok ni na tleh, ali je na tleh redkeje, so te informacije revne ali pa jih sploh ni. Prav tako so pomanjkljive, v kolikor mu hitimo pomagati. Točka, kjer smo mu pomagali, zanj predstavlja informacijo, ki ne nosi vseh podatkov od A do B. Ta točka je zanj prazen prostor. Če je teh praznih prostorov veliko, otrok ob tem ne čuti notranjega polja varnosti, zato joče. Zunanja pomiritev okrepi prazen prostor. Otrok ob tem, ko se znajde v praznem prostoru, ki ga je vse več in več, vse pogosteje joka. S prehitro pomočjo smo mu vzeli potrebno senzomotorično izkušnjo, kinestetično izkušnjo in čutenje premika od A do B

(polno senzomotorično zaznavanje od A do B pomeni, da ni praznega prostora). Poleg tega pri vsakokratni pomoči ali pogosti pomoči, dojenčka sami naučimo, da z jokom pride do zelene smeri. S tem krepimo vzorec vse večje luknje »bolj jokam, hitreje pride rešitev«. Otroka naučimo, da hitro in veliko joče, ker na jok odreagiramo in ga rešujemo. Frustracija, ki zaradi tega sprva ni velika, kasneje predstavlja tako za mamo, očeta in otroka zelo velik zalogaj, da ta konflikt prestopijo. Mnogokrat se zgodi, da ga sploh ne. Kopičenje takšnih konfliktov oblikuje določen vzorec obnašanja in premikanja otroka. Pedokinetika tu z RFP odpre varno polje, kjer lahko otrok ta prazen prostor ponovno razišče samostojno in pridobi manjkajoče informacije od A do B. Jok ni več potreben, občutek varnega polja se okrepi, prav tako občutek »zmorem sam«. Z uporabo RFP takoj po rojstvu do praznega prostora sploh ne pride. Nenehno popravljanje in prehitra pomoč dojenčku odvzame izkušnje, kako in kaj naj stori. Prevelika skrb za otroka je obnašanje, pri katerem otroka preveč varujemo in mu odvzamemo nujen čas odziva, da najde primeren gib. Tak otrok nima izkušenj s preizkušanjem svojega gibanja, ker mu je bila prehitro ponujena pomoč. Tako se vzpostavlja informacija o praznem prostoru. Če se na poti porajanja izvornih gibov vmešavamo v gibanje otroka s popravljanjem, ker nas otrokov zvit položaj moti, naredimo konflikt razvoja. To se vidi že zelo zgodaj, takoj po rojstvu. Primer: neučinkovita podpora glave glede na smeri gibanja trupa vodi do neustreznega aktiviranja potrebnih sodelujočih mišic. Posledično se vzpostavljanje povezav vratnega dela hrbtenice med glavo in prsnim košem slabo organizira. Takšno je izhodišče za nadaljnjo dozorevanje povezav med glavo in medenico in vse navzdol do stopal. To pomeni, da so premiki togi, ker gibanje ne poteče preko vseh sklepov tako kot lahko bi oz, tako kot je za to anatomsko, fiziološko in nevrolško grajen človek. Raziskovanje skozi gib in spoznavanje samega sebe se iz izvornih gibanj integrira v hotene gibalne akcije. To so gibi, s katerimi nam dojenček pokaže svojo izbiro s prijemom zelenega predmeta. Če mu je dana izbira, bo vedno izbral. Nudenje izbire aktivira živčni sistem, kar omogoča vzpostavitev zapletene funkcije razločevanja, primerjave, odločanja in na koncu akcije. Prijel bo tudi, ko nima izbire. Torej, ko mu je v vidnem polju ponujen predmet neposredno pred roke. Razlika je v tem, da ponujena izbira in vodenje iz vidnega polja in nazaj vodi v aktivacijo, ki intenzivno usklajuje informacije med levo in desno hemisfero, število sinaps v nevronske mreži pa se najverjetneje povečuje. S hotenim gibanjem se oblikujejo njegova razmišljanja, da v vsaki situaciji najde rešitev in kasneje tudi odgovor. Vsak človek lahko najde svoj osebni slog, svojo pot, ki je optimalna, glede na njegovo vzpostavljanje stabilnosti ter fiziološke in anatomske predispozicije. Vsak potrebuje svoj čas, pogojen z doživetimi izkušnjami, ki se nalagajo v CZS. Povratna informacija preko senzoričnega sistema je izredno pomembna za utrditev zaželenih povezav in ustrezno dokončno formacijo CZS. (Gradišnik, 2008). Človeški vrsti je skupno, kako se razvija, vendar se vsak znotraj tega okvirja razvije, postavi na noge in deluje na povsem samosvoj,

individualen način (Feldenkrais, 1990). Vsak od nas govori, se premika, čuti in razmišlja po svoje – skladno s svojo podobo, ki je nastajala vse od rojstva. Pedokinetika v svoji teoriji upošteva zakonitosti razvoja, med katere uvrščamo: silo težnosti, razvoj hrbtenice, razvoj možganov in vpliv staršev/okolja na razvoj. Vsa področja so tesno povezana in se stalno prepletajo, saj so medsebojno odvisna. Njihova interakcija skozi razvoj predstavlja temeljno osnovo notranje opore človeka. V konceptu pedokinetike pomeni notranja opora, opora, ki jo zaznavamo v sebi, da sami izberemo med različnimi možnostmi, zaznavamo diferenciacijo in da si upamo zato iskati različne možnosti, da upamo ustvariti nove možnosti in zavestno ter zvedavo raziskovati izzive uravnavanja ravnotežja na vseh nivojih življenja.

Sila težnosti

Sila težnosti, s katero je človek v direktnem stiku od rojstva, je kasneje v življenju pomembna za njegovo razumevanje gibanja in uporabo sebe v prostoru. V položajih, pri katerih sila težnosti vpliva nanj ugodno za razvoj, je sposoben že zelo zgodaj držati glavo v ustreznem položaju glede na položaj telesa v prostoru. Tudi Assiante (1995, v Piek, 2006) poudarja, da na vzpostavljanje gibanja dojenčka v prvih 6 mesecih vpliva sila težnosti, saj dojenčki razvijajo ravnotežje v cefalokavdalni smeri (sposobnost hotene kontrole mišic poteka od glave navzdol). Poleg položaja dojenčka in vpliva sile težnosti so pomembne tudi dojenčkove izkušnje, ki oblikujejo občutek varnosti. Odločilnega pomena je drža staršev in njihovo vzpostavljanje in razumevanja stabilnega položaja, s katerim vodijo dojenčka in se z njim premikajo.

Razvoj hrbtenice

Zaradi nerazvite hrbtenice, ki je pri dojenčku v obliki enojne krivulje, mu ustrezajo položaji, v katerih je ta v nevtralnem položaju in ne ravna. Ravne linije in nos, obrnjen v strop, povzročijo dojenčku nelagodje, nemoč in delujejo na neustrezno aktivacijo mišic iztegovalk in upogibalk hrbtenice. Z dozorevanjem preko gibalnih izkušenj hrbtenica razvije svoje značilne krivine. To vodi v napredovanje gibanja skeleta, kar omogoča dojenčku, da preide iz kotaljenja v rotacijo in kasneje v vzravnavo. Kako se ta organizacija vzpostavi v zgodnjem razvoju, je temelj človekove drže in vzpostavljanja ravnotežnega položaja ne glede na podporno površino. Vsekakor na to vplivajo tudi razvojno fiziološke sposobnosti zorenja kosti, nekatere dedne spremembe, kot tudi nevrološko fiziološke spremembe zorenja živčnih poti skozi hrbtenjačo. Pridobivanje spretnosti kontrole mišic sledi kraniokavdalnemu vzorcu: Krajši nevroni mielinizirajo prej.

Razvoj možganov

Človeški možgani in osrednje živčevje se začno razvijati pri treh tednih gestacije po zaprtju nevrnalne cevi. Trije možganski mehurčki se začno razvijati le teden dni kasneje. Prve možganske vijuge je videti pri šestih mesecih gestacije (Gradišnik, 2008). Genotip vsakega človeka omogoča vse pojavne oblike gibanja in premikanja. Vprašanje je le, ali jih preko izkušenj gibanje osvoji ali ne. Kako preko njih kasneje v življenju človek udejanja svojo aktivnost, je odvisno od poti razvoja aktivacije izvornih gibov in organiziranje le-teh v hoteno premikanje v obdobju razvoja do samostojne hoje. Do prvega leta starosti intenzivno nastajajo nevrnske povezave, ki se povezujejo, oblikujejo in so temelj njihovemu spajanju v možganih v določene vzorce izražanja in obnašanja, ki jih kasneje v življenju prepoznamo kot navade (Bregant, 2007). Koliko časa bo otrok potreboval za osvojitve plazenja in hoje, je odvisno od hitrosti funkcionalnega organiziranja v možganih. Tako vedno znova nadgrajuje predhodni korak koordinacije (plazenje) in ga vzpostavi v hojo. Nekateri na tej poti zgodnjega razvoja ne aktivirajo nobene od možnih pojavnih oblik premikanja (govorimo o zdravih dojenčkih), ne zato, ker tega ne zmorejo, ampak je to lahko posledica okolja, v katerem ni bilo prave spodbude, za aktiviranje gibalne naloge. Razvoj dojenčka je odvisen od izkušenj in danih pogojev za pridobivanje le-teh, s čimer se strinja tudi Bregant (2007), ki potrjuje, da zorenje možganov ni samoumevno zaradi starosti, vendar je pogojeno z izkušnjami preko preprostih gibanj do kompleksnih gibalnih nalog skozi celotno življenje. Že pri vsakdanjem negovanju, na primer pri menjavi plenice, lahko omogočimo aktivno in celotno gibanje iz boka na bok, kar omogoča aktivno izmenjavo informacij v obeh možganskih polovicah in učinkuje na kvalitetno vzpostavljanje zapisov nevrnske mreže. Začetni del tvorbe nevrnske mreže je gensko kontroliran in določen vnaprej. Toda vnos senzoričnih informacij iz okolja je izredno pomemben v zgodnjem razvoju (Gradišnik, 2008).

Sinapse in nevroni

Pri 1. letu imamo 20-krat več sinaps kot ob rojstvu. V starosti 3 let je vzpostavljeno okrog 80% sinaptičnih povezav. Do 20. leta starosti se njihovo število nato zmanjša za 50%. 100 milijard možganskih nevronov ima vsak po cca 15000 sinaptičnih povezav z drugimi nevroni. Zunanji svet izoblikuje možgansko arhitekturo preko vida, sluha, vonja, dotika, okušanja. Primarne reakcije potekajo pretežno na subkortikalnem nivoju (Gradišnik, 2008).

Vpliv staršev

Kako otroku na poti razvoja nudimo oporo, ko je ne potrebuje, in obratno, pogojuje njegovo samozavest, pogum za ponovno vedoželjno in iskrivo poizkušanje samostojnih podvigov v razvoju. Z informacijami, ki jih prejema o tem, kako otroku prepustimo prostor in čas, da nekaj opazi sam, sam seže po izbranem predmetu, se upre z jokom, se zaradi življenjske

sile, ki raste v njem, premika po tleh, kakorkoli zmore oblikuje ključne povezave svojega razvoja in delovanja.

Pomembno je, da ga ne popravljamo, stabiliziramo ali nameščamo v stabilne položaje. Otroka, ki ga spremljamo z vso pozornostjo in ga želimo spoznati, razumeti, se z njim vred učiti in raziskovati, ne usmerjamo, ne pozicioniramo in ne ščitimo toliko, da bi zavrli njegov svoboden razvoj spoznavanja z ravnotežjem in prestrezanjem. Svoj strah, da bo padel, preusmerimo v zvedavo opazovanje, kako se malo bitje loti podviga, da se obrne, posede in shodi. Otrokova opora raste skladno z njegovimi poizkusi premikati se, samostojno najti prijeten položaj, ki ga popelje v igranje z ravnotežjem v vseh nivojih. Vodi v pogumno in zvedavo iskanje zanimivih glasov, predmetov v okolju in poišče način, da pokaže, kaj želi. Ob prvem neuspelem poizkusu se tako ne ustraši, ampak pogumno ponovi malo drugače in tako sestavlja na milijone preostalih delčkov, ki oblikujejo čvrsto oporo znotraj sebe. Z jokom izraža novo stanje in zaznava sprememb ali željo po nečem novem in drugačnem in ne predvsem strahu. Ko otrok ob prvih poizkusih prehoda iz stabilnega položaja izgubi ravnotežje, izgubi iz rok igračo, sprva ne joka zato ker ga je strah ali je negotov. Če mu prepuščamo gibalne rešitve, ob tem ne joka več. Če ga sami ves čas prestrezamo, nenehno rešujemo in opozarjamo, kaj in kako naj pogleda, prime ali naredi, pa z vse bolj silnim jokom zahteva pasivno rešitev – tolažbo starša. Dejstvo je, da naše ravnanje botruje otrokovim odzivom. Če smo ga naučili, da je jok sredstvo, s katerim pride do nečesa, potem ga je kasneje res strah. Negotovost je posledica pomanjkanja izraženih izvornih gibov, ki jih še ni izvabil iz sebe v zgodnjem razvoju. Tako smo inicirali vzorec takega joka, ki kasneje postane sredstvo, s katerim nekaj doseže, in ne joka, ki privre na dan v potrebnih in iskrenih trenutkih. V odrasli dobi potrebujemo pogum, da se lahko zjokamo. Kako blagodejen in osvobajajoč je jok v odrasli dobi vemo in čutimo vsi, ki si ob potrebni situaciji to dovolimo. Še toliko bolj je pomemben za otroka, ki še ne zmore govoriti. Otrok, ki je samozavesten in gotov v svojo intuitivno kontrolo ravnotežja, ne bo dovolil, da se ga drži za roko in vzdržuje vzravnani stabilen položaj ali da se ga celo spodbuja v hojo. Počepnil bo in se jezil. S tem prosi, da mu pri tem pomembnem podvigu ne pomagamo, saj hoče to storiti sam, povsem samosvoje ter takrat, ko bo on to želel! Če človek shodi s pomočjo in ne sam, se prav tako v skladu s to izkušnjo oblikuje vzorec v možganih. Hoja, gibanje in izražanje se v nadgradnji razvoja opirajo na podlago teh izkušenj. Vse življenje išče oporo in stabilnost zunaj sebe in kliče druge, da ga rešujejo. S tem notranjim zaznavanjem sebe se človek izraža navzven in komunicira z okoljem.

SKLEP

RFP omogočajo vzpostavljanje optimalnega vzorca aktivacije mišic agonistov (mišica, ki izvede gib), antagonistov (mišica, ki je na nasprotni strani in izvaja nasprotno agonistu) ter

sinergistov (mišice, ki pomagajo agonistu pri izvedbi giba), ki sočasno delujejo pri posameznem gibu. Z uporabo RFP lahko delujemo na ustrezno frekvenco in število akcijskih potencialov. Poleg ustrezne aktivacije alfa-motoričnega sistema, RFP lahko učijo tudi aktivacijo gama motoričnega sistema dojenčka, ki pa je pomemben za vzpostavljanje primerne mišičnega tonusa (vzdražnosti mišičnega vretena). Le-to pogojuje, kako se mišice optimalno vključujejo v funkcionalno gibanje. Za razbijanje stereotipa o gibalnih mejnikih je tudi Newel (1986), dokazal, da lahko dojenček izvede pincetni prijem pred prvim letom starosti, če mu je podana skodelica ustrezne velikosti. S tem se še enkrat potrdi, kar potrjujejo izkušnje pedokinetike, da na aktiviranje izvornih gibov za prijemanje ne vpliva starost, ampak izkušnje in oblika predmeta.

Izkustvena praksa pedokinetike širi svoja spoznanja. Širi strokovno teoretična znanja različnih sodobnih raziskovalcev in nevroznanstvenikov na področju plastičnosti možganov in druga strokovna spoznanja, ki so teoretična in ločena. Pedokinetika pokaže na integracijo v praksi, ki jo izvaja že desetletje. Zato so ugotovitve različnih raziskovalcev zelo pomembne.

Ugotovljene so bile naslednje povezave teorije s praktičnim delom v pedokinetiki:

Gibanje, kot so refleksni in spontani gibi novorojenčka, predstavljajo veliko izkušenj (Gesell in Amatruda, 1945, v Piek, 2006). Ti naj bi imeli svoj namen in predstavljajo izhodišče kasnejših hotenih gibanj. Pozitivne izkušnje, vodijo do optimalnejšega gibanja zaradi povratnih informacij v možganih (Thelen in Spencer, 1998), kar lahko pripelje do boljše motorične kontrole telesa. Pozibavanje, poskakovanje in ritmični gibi imajo pomembno vlogo kasneje pri razvoju lokomocije (Haas in Diener, 1998), saj se vse te informacije shranjujejo in povezujejo v možganih. V prvih šestih mesecih so pomembne gravitacijske sile (Assiante, 1995, v Piek 2006), zato je v tem obdobju pomembno upoštevanje biomehanskih zakonitosti (najpomembnejša je sila težnosti). Pri opisu RFP dviganja in spuščanja, lahko vidimo povezavo pri upoštevanju teh sil, saj s krožnimi gibi in nosom proti tloravni, dojenčka mirno premikamo iz položaja v položaj, brez podpore glave. Pri neupoštevanju teh sil se lahko mišice hrbta preveč aktivirajo, kar pripelje do ekstenzije (krajšanja hrbtnih mišic in posledično krčenje rok nazaj) in to se lahko prenese v vzorec kasnejšega gibanja. Z raziskavo (Newel, 1989) o uspešnem pincetnem prijemu pri štirih mesecih, lahko rečemo, da je podpora telesa pomembna pri uspešnosti izvedbe dane naloge. Tako lahko predpostavimo pomembnost opore na rokah ob primerni podpori telesa (primer RFP: prenos teže preko sredine), kot izkušnja in boljše izhodišče za kasnejše premikanje po prostoru. Kontrola drže je rezultat izkušenj (Sveistrup in Woollacott, 1996, v Piek, 2006) in ker dojenček za kontrolo telesa uporabi vidno informacijo (Jouen, 1988; v Piek, 2006) so igrive igre kot je raziskovanje, pomembne pri zaznavanju kontrole telesa tudi kasneje v razvoju. Ker ima vsak otrok svoj motorični načrt, svojo rešitev pri enakem problemu (Harbourne idr., 1987, v Woollacott,

1993), lahko predpostavimo, da se motorični načrti oblikujejo glede na izkušnje in niso že v celoti zapisani. Z igrivimi nalogami (RFP: iskanje oporne točke) tako lahko povečujemo število izkušenj. To lahko posledično pripelje do boljše koordinacije gibanja in večjo usklajenost mišic pri posameznem gibanju, kar pripelje do večjega gibalnega znanja.

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ŠPORTNE POČITNICE KOT INOVATIVEN PRISTOP ORGANIZACIJE PROGRAMA INTERESNE ŠPORTNE VZGOJE MED POLETNIMI POČITNICAMI

SPORTS HOLIDAYS AS AN INNOVATIVE APPROACH TO ORGANIZING A PROGRAMME OF SPORT EDUCATION DURING THE SUMMER HOLIDAYS

Primož SULIČ

Zavod za šport, Ajdovščina

IZVLEČEK

Poletje je v Športnem centru Ajdovščina živahno, saj ustanova ponuja imenitne pogoje in programe tako za aktivno preživljanje prostega časa šolarjev, kot za rekreativce in profesionalne športnike. Zavod za šport Ajdovščina je to dosegel z aktivnim delom ter povezovanjem z društvi, ustanovami, športniki, šolami in posamezniki. V letu 2003 pa je Zavod za šport Ajdovščina prvič tržišču ponudil Športne počitnice – celodnevni počitniški program za šolarje, s poudarkom na učenju plavanja in predstavitvi športnih panog, hkrati pa program vsebuje celodnevno varstvo, vključno s prehrano, kar je velikega pomena za starše. Zavod za šport Ajdovščina kot nosilec projekta skrbi za koordinacijo, promocijo programov, pridobivanje nepovratnih sredstev na različnih javnih razpisih, skupaj s podizvajalci pa tudi za organizacijo poteka posameznega projekta oziroma športnega programa. Končni rezultat takšnega organizacijsko finančnega modela je krepitev sodelovanja med športnimi društvi, ustanovami ter posamezniki. Rezultat oziroma sinergija navedenih dejavnikov so manjši stroški organizacije in promocije projektov, zagotavljanje določene kvote honorarnih delovnih mest v lokalni skupnosti in posledično dostopna, oziroma nizka cena za končnega potrošnika - uporabnika.

Ključne besede: Menedžment v športu, šport otrok in mladine

ABSTRACT

The Sports Centre Ajdovščina offers a lively and entertaining summer by providing excellent conditions and programmes of leisure activities which are suited for schoolchildren, recreationists and professional athletes. The Ajdovščina Sports Institute managed to do so by active planning and connecting with sports associations, institutes, athletes, schools and interested individuals. In 2003, the Ajdovščina Sports Institute offered sports holidays for the first time. The programme included all-day activities for schoolchildren during summer holidays, with special attention dedicated to swimming lessons and introduction to various sports. In addition, the programme offered full-day childcare with meals which is of great

importance to working parents. In its role of project developer, the Ajdovščina Sports Institute is in charge of the marketing part and the part that regards winning grants in various public tenders. Together with subcontractors the institute is also responsible for the organization of single projects or sports programmes. The final result of this organisational and financial model of operation is the strengthening of cooperation among sport associations, institutes and individual persons. The synergic effect of all indicated factors is also noted in reduced costs of project organisation and promotion, a certain number of part-time jobs in the local community and an affordable price of such programmes for the consumer or users.

Keywords: Sports management, Sport for children and youth

ORGANIZIRANOST ŠPORTA V LOKALNI SKUPNOSTI

Šugman v knjigi Organiziranost športa doma in po svetu (1998) navaja, da se v lokalnih skupnostih običajno srečujemo z dvema subjektoma organiziranosti športa. Javni zavodi za šport, šole, vrtci so institucije v javnem interesu, medtem ko so športna društva in njihova združenja ter zasebniki, katerih ustanovitelji so fizične osebe, predstavniki civilne športne sfere. Najpomembnejši nosilci športne dejavnosti v lokalni skupnosti so zagotovo športna društva in javni zavodi. Program izvedbe športnih aktivnosti se kaže v načrtnem delu v posameznih smereh, opredeljenih v nacionalnem programu športa. V Ajdovščini se število društev povečuje, kar kaže na povečano število aktivnih občanov vseh starostnih skupin. Predvsem pa se v zadnjem času ustanavljajo športna društva, ki se ukvarjajo s športno rekreacijo ter interesno športno vzgojo otrok. Priljubljenost športa se kaže predvsem v množičnem rekreativnem udejstvovanju v vzdržljivostnih športnih panogah, kot so triatlon, tek in plavanje.

Javni Zavod za šport Ajdovščina, katerega ustanovitelj je Občina Ajdovščina, je zadolžen za planiranje ter pomoč ustanovitelju pri izgradnji ter upravljanju športne infrastrukture, za pomoč pri delovanju Športne zveze ter za izvajanje javnih in tržnih programov, opredeljenih v letnem programu športa lokalne skupnosti.

Športna zveza Ajdovščina, katere ustanovitelji so športna društva, je strokovna vez za usklajevanje potreb športnih društev med Občino Ajdovščina ter upravljavci športne infrastrukture. Poleg usklajevanja organizacijsko strokovnih segmentov športa pa je Športna zveza tudi izvajalec določenih projektov za potrebe športnih društev (podelitev priznanj za športne dosežke, Mini olimpijada - promocija športnih društev, nosilec in sofinancer programa športa otrok in mladine, skupaj s posameznimi podizvajalci).

Baza otrok, udeleženi v športnih programih, se zagotovo nahaja v vrtcih ter šolah. Zato so dobri medsebojni odnosi, zaupanje ter strokovno povezovanje z vzgojnimi in pedagoškimi institucijami, ki so hkrati tudi sami izvajalci letnega programa (šolske in obšolske športne

dejavnosti), ključni segment za pridobivanje otrok v športna društva. Sodelovanje in povezovanje se kaže pri usklajevanju terminov uporabe športnih objektov, pomoči pri organizaciji promocijskih projektov Športne zveze, organizaciji šolskih športnih tekmovanj ter krožkov, ki nastajajo v sodelovanju s športnimi društvi.

Namen programa Športne počitnice

Ustvarjanje pogojev za kakovostno preživljanje prostega časa mladih s športom je ena pomembnejših nalog vseh, ki delajo z mladimi. Osnovni cilj ponujenih interesnih programov športa otrok in mladine je privabiti čim več mladih v programe ter posamezna športna društva, ne glede na njihova različna znanja in sposobnosti.

Interesni programi so del športne vzgoje, ki potekajo izven rednega šolanja. Počitnice ponujajo odlično priložnost za organizacijo projekta, katerega cilji so razvoj gibalnih sposobnosti, druženje ter vključevanje otrok v posamezne športne panoge. Skladno z Zakonom o športu je namen javnih zavodov za šport zagotavljanje pogojev za izvedbo programov izvajalcev letnega programa športa. Istočasno pa se pri upravljalcih športnih objektov pojavlja težnja po optimalni izkoriščenosti športnih površin in infrastrukture.

S skupnim dogovorom med Občino Ajdovščina ter Športno zvezo Ajdovščina smo v letnem programu športa oblikovali model razdelitve kvote ur v lokalni skupnosti. Kvota ur, namenjena izvajalcem letnega programa športa, je tako procentualno porazdeljena po okrajih, glede na zvrst posamezne športne panoge. S takim modelom ureditve smo centralizirali športne panoge po posameznih športnih objektih, ob tem pa so upravljalci športne infrastrukture dobili tudi določeno kvoto ur v posameznih obdobjih, ki jih lahko koristijo kot prihodek iz naslova tržne dejavnosti ali pa izvajajo lastne športne programe. V pogovoru s posameznimi izvajalci letnega programa športa smo, skladno z razpoložljivostjo kvote ur ter potrebami okolja po oblikovanju ponudbe rekreativnih programov za odrasle ter športnih programov za otroke, definirali programske vsebine na letni ravni.

Eden izmed najboljšejših programov, ki jih organizira Zavod za šport Ajdovščina skupaj z posameznimi podizvajalci, so počitniški programi, preko katerih se zagotavlja:

- koristno preživljanje prostega časa otrok ter odraslih;
- izvedbo plavalnih tečajev, ki so nadgradnja obveznemu plavalnemu opismenjevanju v osnovnih šolah in vrtcih;
- prepoznavnost in priljubljenost športnih panog, predstavljenih udeležencem športnih programov, posledično pa tudi večje vključevanje otrok v posamezna športna društva;
- honorarna delovna mesta za strokovne delavce v športu;
- dobra izkoriščenost športne infrastrukture Športnega centra Ajdovščina;
- promocija zdravega življenja;

- promocija športnega centra.

Ekonomski vidiki izpeljave projekta

Šugman, Bednarik, Kolarič v knjigi Športni menedžment (2002) navajajo, da različni izvajalci športa financirajo svojo dejavnost iz različnih virov:

Proračunska (javna) sredstva:

- *Sredstva državnega proračuna, ki se vsako leto opredelijo v državnem proračunu. Za pridobitev teh sredstev velja načelo javnih razpisov kot za vsa druga proračunska sredstva.*
- *Sredstva lokalnih skupnosti občin, ki se določajo vsako leto v proračunih občin*
- *Sredstva Fundacija za šport iz iger na srečo. Upravlja jih svet fundacije tudi za pridobitev teh velja načelo razpisov.*

Ne-proračunska (zasebna) sredstva:

- *Sredstva sponzorjev*
- *Sredstva donatorjev*
- *Sredstva gospodinjstev*
- *Darila*
- *Druga sredstva*

Projekt športne počitnice je financiran delno iz nepovratnih sredstev, delno pa stroške programa krijejo starši, oziroma udeleženci programov. Zavod za šport Ajdovščina se z aktivnim iskanjem virov trudi, da je prispevek staršev (udeležencev) čim manjši. Projekt je sofinanciran iz dveh nepovratnih virov:

- proračun Občine Ajdovščina, višina sredstev se določa v letnem programu športa;
- sredstva Fundacije za šport, pridobljena na javnem razpisu.

Ajdovščina je nekdanj slovela po dobrem gospodarstvu, pa tudi po odličnih športnikih in dobrih pogojih za treniranje in športne priprave. V tistih časih je tu nastal eden najboljši športnih centrov v takratni Jugoslaviji. Cvetenje gospodarstva pa je v veliki meri podpiralo uspešne športne klube. Danes je situacija obrnjena na glavo. Sredstev iz gospodarstva za podporo profesionalnemu športu skorajda ni več. Še manj ga ostaja za namene rekreativnih športnih programov. Tradicija pripadnosti športa pa je iz strani domačih podjetij še vedno prisotna. Pripadnost športnim organizacijam je čutili skozi materialne oblike pomoči pri organizaciji športnih programov ter dogodkov. Tako skorajda ne mine domača športna prireditev brez Mlinotestovih sendvičev in Fructalovih sokov. Gospodarstvo v slovenskem prostoru še vedno ostaja pomemben dejavnik sofinanciranja športa. Počitniški programi Zavoda za šport

Ajdovščina so tako sofinancirani iz javnih sredstev, kolikor jih uspe vsako leto sproti pridobiti, razliko do končne cene pa poravnajo uporabniki – udeleženci programov. Glede na bogato ponudbo programov v naši regiji pa kaže, da je Zavod za šport Ajdovščina uspešen pri pridobivanju nepovratnih sredstev, saj glede na polno zasedenost in dosedanje izkušnje kaže, da so programi kakovostni, predvsem pa cenovno ugodni.

Prostovoljno delo v projektu in njegovi učinki

Šugman, Bednarik, Kolarič v knjigi Športni menedžment (2002) navajajo, da so prednosti, ki jih projektu prinašajo prostovoljci, številne. Za društva, ki se odločajo pristopiti v program dela, je značilno, da pri njih obstaja velika notranja motivacija, ki lahko izvira iz različnih moralnih in etičnih izhodišč. Projekt Športne počitnice zahteva veliko organizacijskih dejavnosti, predvsem pa zadostno količino odraslih in usposobljenih ljudi, ki jih Zavod sam ne more zagotoviti. Velik del človeških virov zagotovijo športna društva ter druge ustanove. To so prostovoljci, brez katerih bi programe težko izpeljali. V sodelovanju s Športno zvezo Ajdovščina, oziroma njihovimi člani, smo oblikovali način predstavitve športnih panog oziroma društev med poletnimi počitnicami.

Odločitev za sodelovanje v projektu je seveda preko skupnega dogovora pogojena:

- s potrebo športnega društva po promociji svoje dejavnosti ter posledično pridobivanjem novih članov;
- z razpoložljivostjo časa strokovnih delavcev v športu;
- z vsebino športne panoge glede na starost otrok v posameznem terminu izvedbe programa.

Učinek sponzorstva

Sodelovanje prostovoljcev, članov posameznih športnih društev, ki v projektu sodelujejo z namenom promocije svoje lastne organizacije, bi lahko označili tudi kot sponzorstvo. Šugman, Bednarik, Kolarič v knjigi Športni menedžment (2002) navajajo, da je sponzor društva tisti subjekt, ki z ekonomskega vidika delno ali v celoti prevzame financiranje društva ali projekta. S sponzorsko pogodbo uredita subjekta medsebojne odnose tako, da imata obojestransko korist. Sponzor zagotovi društvu določena materialna ali denarna sredstva, društvo pa zagotovi sponzorju propagiranje njihovih izdelkov ali storitev. Dogovor med Zavodom za šport Ajdovščina ter posameznimi športnimi društvi bi lahko povzeli tako, da Zavod za šport Ajdovščina s pomočjo marketinških aktivnosti projekta zagotavlja določeno bazo, oziroma število otrok, ustrezen prostor ter termin. Posamezna športna društva nato izvedejo zastavljen program s predstavitvijo svoje dejavnosti, s katero posledično lahko pridobivajo nove člane.

Dopolnilni program ostalih športnih in drugih organizacij

Dopolnilni program v športnih počitnicah je namenjen predvsem razbremenitvi otrok od športnih aktivnosti. Gre za sproščujoče ustvarjalne dejavnosti, ki jih otroci izvajajo na lastno željo. V popoldansko dejavnost jih umeščamo enkrat tedensko. Služijo predvsem spoznavanju različnih poklicev, ustanov ter popestritvi programa - zabavi.

Honorarna delovna mesta

V Evropski beli knjigi o športu (2007) je navedeno »da je šport dinamični in hitro rastoč sektor z določenim ekonomskim vplivom in lahko prispeva k uresničevanju oziroma zagotavljanju gospodarske rasti in ustvarjanju novih delovnih mest. Lahko služi kot sredstvo za lokalni ali regionalni razvoj, ponovno oživitev mestnih območij ali razvoj podeželja. Šport ustvarja sinergije in lahko spodbuja nastanek novih partnerstev za financiranje športa.« Zavod za šport Ajdovščina je ustanovljen predvsem za upravljanje s športnimi objekti ter pomoč ustanovitelju pri načrtovanju gradnje športne infrastrukture. Poleg tega pa zavod opravlja tudi naloge za potrebe Športne zveze Ajdovščina ter je poleg športnih društev aktiven pri izvedbi letnih programov športa. Zavod za šport Ajdovščina skupaj z notranjo organizacijsko enoto Hišo mladih zaposluje 16 ljudi. Glede na organizacijsko strukturo dela je kadrovska sestava redno zaposlenih na Zavodu za šport Ajdovščina formirana na naslednji način:

- Direktor
- Pisarniški referent
- Vodja športnih programov
- Vodja mladinskega hotela
- Strokovni sodelavec za mladino 2X
- Receptor
- Vzdrževalci športne infrastrukture 5X
- Vzdrževalec ½ ter Receptor ½ mladinskega hotela
- Čistilka-športni center 2X
- Čistilka-mladinski hotel

Glede na povečan obseg dejavnosti pri izvedbi ter organizaciji športnih programov pa je kadrovska struktura Zavoda za šport Ajdovščina premajhna, oziroma neustrezna. Iz navedenih razlogov se je izkazala potreba po honorarnih delovnih mestih, za katere je pogoj izobrazba športne smeri. Izobrazbo je mogoče pridobiti le na programih usposabljanja nacionalnih panožnih zvez, članic Olimpijskega komiteja Slovenije – Združenja športnih zvez,

potrjenih iz strani Strokovnega sveta vlade RS za šport. Združenje tako izdaja veljavne nazive za opravljanje strokovnega dela v posameznih športnih organizacijah. Strokovno usposobljenost pa se, glede na značilnosti posamezne športne panoge, potrjuje obdobjno, na licenčnih seminarjih, organiziranih iz strani posameznih nacionalnih panožnih športnih zvez. Pogoji za pristop strokovnega delavca v športu k delu, opredeljenem v letnem delovnem načrtu posamezne športne organizacije, je poleg strokovnega naziva tudi veljavna, oziroma potrjena licenca za določeno obdobje. V nameri dobrega medsebojnega sodelovanja smo s posameznimi izvajalci letnega programa športa podpisali pogodbe, v katerih so opredeljene obojestranske naloge in zadolžitve ter obdobja izvajanja posameznih športnih programov oziroma projektov. Vzvod za ureditev tovrstnega področja pa je tudi Zakon o uravnoteženju javnih financ (Uradni list RS, št. 40/12, 96/12) ki navaja: da je sklepanje pogodb dovoljeno na podlagi soglasja ustanovitelja, ki ga mora uporabnik proračuna pridobiti pred začetkom postopka izvedbe dela. Soglasje za podpis pogodb se izda na podlagi zahteve če gre za delo, ki je posledica izvedbe posebnih projektov, če so za te projekte zagotovljena dodatna finančna sredstva«.

Taka organizacijska struktura omogoča konstruktivno ter načrtno planiranje izvedbe programov tako Zavodu za šport Ajdovščina, kot programov, ki so v domeni posameznih podizvajalcev. Društvo, oziroma posamezni podizvajalec, ima na ta način načrtno planirano letno dejavnost v posameznih obdobjih, tako za izvedbo programov Zavoda za šport, kot za izvedbo lastnih programov. S sistematičnim načinom dela na letni ravni (načrtovanje, izvedba, nadzor ter končna analiza projektnega dela) se hitro pokažejo tudi rezultati. Poudariti velja, da je cilj tovrstnega dela vzpodbuditi mlade k športni aktivnosti, vse do profesionalnega tekmovalnega športa ter splošna promocija rekreacije za zdravje. Hkrati pa se s povečanim obsegom tovrstnih športnih aktivnosti krepi tudi gospodarska dejavnost na področju športa in rekreacije, ustvarjajo se nova honorarna ali pa stalna delovna mesta.

Izvedba programa Športne počitnice

Celostni razvoj otroka si brez športa težko predstavljamo. Lahko bi dejali, da je vključevanje otrok v šport zelo dobra (nujna) izbira pri zapolnitvi njihovih pristočasnih dejavnosti. Program športne počitnice je zasnovan skladno s principi razvoja otroka od 5 do 13 let. Pri tej starosti gre namreč za bistven poudarek na razvoju koordinacije, kar se izvaja preko izvedbe različnih športnih programov ter njihovih vsebin. Glede na zgledno sodelovanje z Občino Ajdovščina ter Športno zvezo Ajdovščina pri oblikovanju in snovanju organizacijskega segmenta športa v lokalni skupnosti, smo z domicilnimi športnimi društvi – člani Športne zveze Ajdovščina – oblikovali celovito ponudbo počitniških aktivnosti v obdobju 6-ih tednov.

Organizacijska struktura programa obsega:

- Jutranje varstvo z zajtrkom med 6:30 in 9:00;
- Izvedba športnih programov ali plavalnih tečajev s športnimi aktivnostmi od 9:00 do 11:00 ure;
- Prosto kopanje pod nadzorom vaditeljev od 11:00 do 12:00 ure;
- Kosilo od 12:00 do 13:00;
- Izvedba športne aktivnosti, predstavitev športne panoge ali obisk posamezne institucije od 13:00 do 15:00;
- Prosto kopanje pod nadzorom vaditeljev ter popoldanska malica od 15:00 do 17:00;
- Petkov končni izlet v adrenalinski park ali paintball.

Program ni odvisen od vremena – v primeru slabega vremena se aktivnosti preselijo pod streho. To je še eden od pozitivnih vidikov sodelovanja – tako zavod, kot društva, se pri izvedbi programa lažje prilagajamo nepredvidenim okoliščinam. Programe v tem primeru izvajamo v dvoranah Športnega centra Ajdovščina, plavalne tečaje pa nadomestimo z drugimi športnimi aktivnostmi. S takšno organizacijsko strukturo se seveda izognemo nadomeščanju izpadlim uram plavanja ali pa drugih športnih vsebin, kar pomeni, da projekt izpeljemo skladno z načrtovanim programom. Učinki takšnega modela se kažejo v predvidljivosti udeležbe projekta iz vidika uporabnika pri planiranju ter organiziranju dela strokovnega kadra.

Vsebinska zasnova programa

Projekt športne počitnice je vsebinsko usmerjen v spoznavanje različnih športov, s poudarkom na plavanju. Voda je namreč med otroci izredno priljubljena, hkrati pa nam javna infrastruktura omogoča izvedbo. Ob aktivnostih pa je potrebno poskrbeti tudi za vse ostale nujne dejavnike. Program poteka od ponedeljka do petka, od 6.30 do 17.00, v šestih zaporednih počitniških terminih.

Jutranje varstvo

Poteka od 6:30 do 9:00, uvedli smo ga zaradi potrebe staršev, ki so zaposleni in jim takšna oblika programa izredno ustreza. Vsebine jutranjega varstva so ustvarjalne delavnice, risanje ... Otroci imajo v program varstva vključen tudi zajtrk.

Plavalni tečaji s športnimi aktivnostmi

Plavanje in igre v vodi potekajo v dopoldanskem času – med 9. in 12. uro na Letnem kopališču Ajdovščina. Program je sestavljen iz različnih nivojev učenja plavanja, glede na otrokovo starost in predznanje.

Poletna športna šola

Ta program je nadgradnja plavalnih tečajev. Izvaja se v popoldanskem delu Športnih počitnic, po kosilu, med 13. in 15. uro. V tem času udeležencem Športnih počitnic predstavljajo svoje dejavnosti različna društva, ustanove ali športniki: lokostrelstvo, konjenišтво, kajak-kanu, jamarstvo ... Po tem delu programa sledi še prosto kopanje do 17. ure.

Nogometni kamp

Program se prične ob 9:00 uri z vadbo nogometa vse do 11:00 ure. Odvija se na igriščih z umetno travo v bližini letnega kopališča ter na glavnem mestnem nogometnem stadionu, kar je še posebej imenitno za nadobudne mlade nogometaše. Med 11:00 in 12:00 uro imajo udeleženci kampa prosto kopanje na letnem kopališču pod nadzorom vaditeljev. Od 12:00 do 13:00 kosilo. Popoldanski čas pa je namenjen vadbi nogometa ter prostemu kopanju. Program v popoldanskem času popestrimo tudi z organizacijo iger brez meja ter vadbo nogometa na mivki.

Plesni kamp

Program se prične ob 9:00 uri v dvoranah Športnega centra Ajdovščina, ki so opremljene z ogledali ter primerno glasbeno opremo za vadbo plesa vse do 11:00 ure. Med 11:00 in 12:00 uro imajo udeleženci kampa prosto kopanje pod nadzorom vaditeljev. Od 12:00 do 13:00 kosilo. Popoldanski čas od 13:00 do 15:00 ure pa je namenjen vadbi plesa obisku raznih institucij (Centra za usposabljanje Slovenske vojske obisk Gasilsko reševalnega centra Ajdovščina ter prostemu kopanju pod nadzorom vaditeljev. Od 15:00 do 17:00 ure imajo udeleženci kampa prosto kopanje pod nadzorom vaditeljev.

Triatlon kamp

Program se prične ob 9:00 uri pred Športnim centrom Ajdovščina. Okolica Športnega centra namreč ponuja razgiban teren za izvedbo teka otrok v obliki orientacije ter izvedbo programa kolesarjenja otrok ki poteka v varnem okolju, brez prisotnosti avtomobilov. Med 11:00 in 12:00 uro imajo udeleženci kampa prosto kopanje pod nadzorom vaditeljev. Od 12:00 do 13:00 kosilo. Popoldanski čas pa je namenjen drugemu delu vadbe, ki poteka v obliki plavanja, kolesarjenja ali teka ter prostega kopanja na letnem kopališču vse do 17:00 ure.

Košarkarski kamp

Program se prične ob 9:00 uri v dvoranah Športnega centra Ajdovščina. Vadba košarke traja do 11:00 ure. Sledi prosto kopanje na letnem kopališču Ajdovščina ter kosilo od 12:00 do 13:00 ure. Od 13:00 do 15:00 poteka izvedba drugega dela vadbe ali obisk posamezne institucije ter prosto kopanje po nadzorom vaditeljev vse do 17:00 ure.

Plavalni kamp

Program se prične ob 9:00 uri na letnem kopališču Ajdovščina. Vadba plavanja v popoldanskem delu poteka v obliki učenja ter igre vse do 12:00 ure. Skupaj z ostalimi udeleženci kampov poteka kosilo vse do 13:00 ure. Od 13:00 do 15:00 drugi del vadbe plavanja ter športne aktivnosti v dvoranah vse do 17:00 ure. V primeru slabega vremena, zaradi vsebine ter ciljev, program odpovemo.

Sistematičnost, red in disciplina v pedagoškem ter organizacijskem procesu

Škof v knjigi *Šport po meri otrok in mladostnikov* (2007) navaja, da si morajo vaditelji oziroma trenerji v pedagoškem procesu postaviti jasne okvire ter cilje posamezne vadbe. Naloga športnega pedagoga je, da v vsakem trenutku otroci vedo, kaj se od njih pričakuje. V kolikor programska vsebina ni dovolj jasno definirana iz pedagoškega ter organizacijskega vidika postane pedagoški delavec ter organizator nezmožna strokovnega ukrepanja.

Pri načrtovanju ter snovanju projekta Športne počitnice se o vsebinski ter organizacijski zasnovi usklajujejo vidiki pedagoških ter organizacijskih vsebin posameznega programa. Skladno s tem se formirajo tedenski programi vadbe v odvisnosti od starosti otrok, števila prijav ter vrste posameznega programa. Ob tem se definira potrebna oprema ter vse ostale vsebinske ter organizacijske posebnosti, s katerimi se seznanijo tudi starši.

Škof še navaja, »da če bo otrok in mladostnik vsaj nekaj let deležen zgleda trenerja z značajem pravega ravnanja z njim ter vsebinsko in organizacijsko dobro izpeljanih programov, potem bo dobil vse tisto najboljše, kar lahko šport nudi mlademu človeku.«

Izpeljava projekta z znanimi lokalnimi ter drugimi športniki

Mladi športniki se radi identificirajo s svojimi idoli ki jih spremljajo po medijih. Prav iz tega sledi, da otroci pogostokrat izbirajo športno panogo glede na športnika, ki je uspešen in ga poznajo iz medijev. Program popestrimo z organizacijo dogodkov ali vadbe, na katere povabimo znane športnike iz lokalnega okolja ter širšega slovenskega prostora. Imamo različne izkušnje s profesionalnimi športniki. Nekateri se z veseljem in takoj odzovejo, drugi

so bolj zadržani. Poudariti velja, da je tudi sodelovanje z mladimi poslanstvo profesionalnih športnikov.

Oglaševanje

Potencialni uporabniki ponudbe športnih programov izvajalcev letnega programa športa se prav zagotovo nahajajo v šolah. Zato je skupno sodelovanje z institucijami vzgoje in izobraževanja, poleg izvedbe letnih programov, neizogibno tudi pri oglaševanju športnih programov.

Okrožnica Ministrstva za izobraževanje, znanost in šport št. 6034-1/2013/48 navaja, da je družba nasičena z različnimi ponudniki oglaševanj obšolskih ter drugih dejavnosti. Zato je ministrstvo na pobudo staršev ter Zveze potrošnikov Slovenije leta 2012 začelo z akcijo »Za šolo brez oglasov«. Okrožnica navaja, da morajo biti učenci v celoti izvzeti iz neposrednega nagovarjanja ponudnikov zavarovanj, obšolskih ter drugih dejavnosti ter da se v šoli določi posebno mesto, kjer so dostopne zloženke s ponudbami obšolskih dejavnosti, ki jih ravnatelj ocenjuje kot primerne. Na ta način so se nekoliko zmanjšale možnosti oglaševanja točno določeni ciljni skupini. Zaradi stalnih sprememb v sodobne družbe moramo biti fleksibilni pri načrtovanju marketinških aktivnosti. Projekt oglašujemo na več načinov, pri tem se trudimo čim bolj izkoriščati možnosti brezplačnega oglaševanja, kot je na primer komunikacija preko socialnih spletnih omrežij.

Brošure ali zloženke

Brošure ali zloženke vsebujejo vse splošne informacije o naših programih – termine, urnike, cenike, ponudbo ... Namenjene so predvsem staršem, zato jih distribuiramo predvsem po šolah. Na voljo pa so tudi na vseh ostalih mestih, kjer bi se lahko zadrževali potencialni uporabniki naših programov: na recepciji zavoda, na TIC Ajdovščina in ostalih info-centrih, v knjižnici ... Veliko pa k distribuciji in posledično pridobivanju novih uporabnikov pripomorejo društva, s katerimi sodelujemo. Gre za zanimiv in uspešen mrežni način.

Lokalni časopis-Ajdovske novice

Občina Ajdovščina izdaja občinsko glasilo, mesečnik, z naklado 6500 izvodov. Časopis prejema vsa gospodinjstva v občini brezplačno. Javne ustanove in društva pa imamo možnost sodelovanja, objavljanja svojih programov. Zavod za šport Ajdovščina tesneje sodeluje z lokalnim časopisom ter pomaga pri urejanju športnih strani, v zameno pa seveda objavlja vse svoje napovedi, predstavlja člane Športne zveze Ajdovščina in obvešča o drugih pomembnih športnih zadevah.

»Jumbo plakati«

Z jumbo plakati smo ciljali predvsem na potencialne potrošnike izven naše občine, saj imamo dobre kadrovske zmožnosti, kakovostno vsebino programa ter razpoložljivo športno infrastrukturo. Poleg pridobivanja novih potencialnih športnikov v programe ta način posredno služi tudi za prepoznavnost športnega centra Ajdovščina.

Oglaševanje »od ust do ust«

Slednja oblika oglaševanja je izredno učinkovita. Vendar pa ima ob pozitivnih lahko tudi negativne učinke. Odvisna je od kakovosti vsebinske in organizacijske izpeljave projekta, oziroma od zadovoljstva uporabnikov. V kolikor imamo dobro kontinuiteto izpeljave posameznih projektov, nam taka oblika oglaševanja, poleg ponovnega vračanja starih, prinese tudi veliko novih uporabnikov.

Oglaševanje v spletnih medijih

Naraščajoči trend uporabe spletnih ter družabnih omrežij je že pred leti pokazal potrebo po razvoju spletnih komunikacijskih orodij. Poleg lastne, sodobno opremljene in uporabniku prijazne spletne strani je danes nuja tudi komunikacija preko socialnih omrežij ter e-marketing. Spletna orodja dajejo veliko možnosti. Poleg učinkovitega oglaševanja namreč lahko navezujemo direktne kontakte z našimi uporabniki, ustvarjamo baze podatkov ter beležimo njihove povratne informacije. Šugman, Bednarik, Kolarič v knjigi Športni menedžment (2002) navajajo, da moramo informacijski sistem, ki bo zadovoljil vsem zahtevam pri njegovem postavljanju določiti projektno skupino. To naj sestavljajo strokovnjaki iz različnih sorodnih področji, ki se medsebojno dopolnjujejo. Skladno z naraščajočim trendom elektronskega komuniciranja je naložba v spletni marketing pri posameznih športnih organizacijah eden izmed pomembnih dejavnikov za konkurenčni pristop na trgu dela ter komuniciranje s potencialnimi uporabniki športnih storitev.

Učinek projekta na promocijo in obisk športnega centra

Glede na organizacijski model športa v lokalni skupnosti je zlasti v poletnih mesecih razpoložljivost športnih površin dostopna tudi ostalim izvajalcem letnega programa športa ter zunanjim uporabnikom. Tako dvorane v športnem centru, kot letno kopališče, so v poletnih časih zasedeni z zunanjimi obiskovalci, uporabniki programa Športne počitnice, pa tudi športniki na pripravah. Težko bi izmerili multiplikativne učinke projekta na obisk športnega centra. Pa vendarle velja pravilo, da ljudje raje obiskujejo športne centre s široko ponudbo športnih in rekreativnih storitev. Kjer se »dogaja«, je tudi bolj zabavno, ljudje pa se radi srečujejo.

Učinek projekta na malo gospodarstvo

Projektno delo ni vezano zgolj na storitve strokovnih delavcev v športu, temveč se njegovi učinki odražajo tudi v domačih podjetjih. Znotraj projekta namreč potrebujemo tudi prehrano, prevoze, občasno ozvočenja ali druge tehnične dodatke ... Obsežnejši kot je projekt, večji so učinki ter tesnejši odnosi sodelovanja med posamezno športno organizacijo ter ponudniki ostalih storitev.

ZAKLJUČEK

Pedagoško in strokovno delo v športu lahko pojmuje kot vrh organizacijske piramide pri strateškem načrtovanju izvedbe posameznih projektov na področju športa. Pri organizaciji programov oziroma posameznih projektov se srečujemo s povezovanjem in usklajevanjem različnih vidikov stroke, znanja, predvsem pa motivacijske naravnosti človeških virov pri formiranju določenega segmenta, ki je pomemben pri snovanju, načrtovanju ter izpeljavi posameznega programa. Seveda ključ uspeha ni enostranski in tudi zasluge pri projektu nikoli ne prepisujemo posamezniku ali posamezni športni organizaciji. Projekt mora biti snovan ter razdeljen na posamezne naloge. Te razvijamo z določeno kontinuiteto, strategijo ter vizijo. S takšnim načinom dela poleg projekta razvijamo tudi človeške vire, kar je bistvena naložba v razvojni potencial določene lokalne sredine.

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Zakon o uravnoteženju javnih financ (ZUJF), Ur.l.RS št. 40/12, 96/12.

SMUČANJE GIBALNO OVIRANIH

SKIING OF PHYSICALLY DISABLED PEOPLE

Nika ŠUC

POVZETEK

Alpsko smučanje je eden izmed najbolj razširjenih in priljubljenih zimskih športov. Dostopen je širši množici ljudi, ki si pridobijo ustrezno gibalno znanje ter smučarsko opremo. Prav tako pa je alpsko smučanje priljubljeno tudi med osebami, ki so gibalno ovirane. Prilagojeno alpsko šolo smučanja v grobem delimo na stoječe smučanje in sedeče smučanje. Metodika tako prilagojene alpske šole smučanja kot učenja sedečega smučanja temelji na metodiki učenja klasičnega alpskega smučanja, s prilagoditvami, izpuščanjem nekaterih storitev in/ali uporabo različnih pripomočkov. Pri gibalno oviranih osebah običajno opisujemo cerebralno paralizo, poškodbe hrbtenjače, amputacijo ali druge prirojene malformacije. Glede na vrsto in stopnjo gibalne oviranosti določimo na kakšen način bo oseba z gibalno oviranostjo zmožna spustov po belih strminah ter izberemo najbolj optimalno. Pogoji za učenje stoječega smučanja je samostojna stoja smučarja. Za sedeče smučanje poznamo več pripomočkov, kateri ustrezajo spektru različnih gibalnih motenj. S primernim smučarskim pripomočkom tako lahko smučajo tudi najtežje gibalno ovirane osebe. Med smučarske pripomočke za sedeče smučanje uvrščamo monoski, biski, kartski in tandemski. Ne le samo smučanje, izrednega pomena je tudi priprava smučanje. T.i. smučarska gimnastika pred začetkom smučarske sezone, izbira smučišča, ogrevanje, privajanje na sneg in presedanje v pripomoček. Pomembno vlogo pri učenju prilagojenega smučanja ima učitelj smučanja, ki mora poznati ne le metodiko smučanja temveč tudi vse smučarske pripomočke, njihove prilagoditve, predvsem pa posamezne gibalne motnje, njihove značilnosti, zmožnosti oseb z gibalno oviranostjo in kontraindikacije posameznih gibalnih motenj.

Ključne besede: prilagojeno alpsko smučanje, osebe z gibalno oviranostjo, smučarski pripomočki, učitelj smučanja

ABSTRACT

Alpine skiing is one of the most common and popular winter sports. It is accessible to the general crowd of people who acquire adequate knowledge of physical abilities and ski equipment. Alpine skiing is also popular among people who are physically disabled. Adapted alpine ski school is roughly divided into standing and sit- skiing. Methodology of both is based on alpine ski school, with adjustments, omitting certain services and/or using different devices. As persons with disabilities we usually describe people with cerebral palsy, spinal cord injury, amputation or other congenital malformations. Type and degree of physical disability determine how a person with a physical impairment is capable of skiing and based on that information we select the most optimal way and device. Condition for learning standing skiing is an independent standing. For seated skiing there are several devices which correspond to a range of different movement disorders. With proper ski device also the most difficult physically disabled persons can ski. Set of sit-skiing devices includes monoski, biski, kartski and tandemski. Not only just skiing, a paramount importance is also the preparation for skiing. The so-called ski gymnastics before the start of the ski season, the choice of ski slopes, warming up, getting used to the snow and transfer into the device. Important role in learning persons with disability how to ski have the ski instructor who needs to know not only the methodology of skiing but also all ski devices, their adaptations, in particular individual movement disorders of disabled, their characteristics, abilities of people with physical disabilities and contraindications of each movement disorders.

Keywords: adapted alpine skiing, person with disability, ski accessories, ski instructor

UVOD

Alpsko smučanje je eden izmed najbolj razširjenih in priljubljenih zimskih športov, smuča namreč preko štiristo tisoč ljudi, je del vzgojno izobraževalnega programa, priljubljen rekreativni šport in hkrati tekmovalna panoga. Je zimski šport, ki je dostopen širši množici ljudi, ki si pridobijo ustrezno gibalno znanje ter smučarsko opremo. Ko omenjamo gibalno znanje, kaj pa osebe z gibalno oviranostjo, si tudi one lahko pridobijo znanja, ki bi jih pripeljala na zasnežene strmine?

Različne motnje gibanja posameznikom narekujejo različen tempo življenja, ukvarjanja s športom, smučanja. Osebe z motnjami gibanja se odločijo za sedeče smučanje, če nimajo gibalnih zmožnosti za stoječe smučanje, pa čeprav prilagojeno, z dodatnimi pripomočki ali pomočjo učitelja smučanja. Med sedeče smučarje štejemo osebe s cerebralno paralizo, osebe po poškodbi hrbtenjače in osebe z amputacijo obeh spodnjih okončin. Tu je seveda pomembna tudi stopnja oviranosti, saj se te med sabo zelo razlikujejo. Poleg stopnje gibalne oviranosti pa sta ključnega pomena funkcionalnost in samostojnost osebe z gibalno

oviranostjo. Tu gre za predhodno terapevtsko obravnavo, rehabilitacijski proces, osvajanje temeljnih dnevnih opravil, vzdrževanje in izboljševanje gibalnega stanja in nenazadnje za usvajanje športnih dejavnosti. S pravilnim izvajanjem vsakodnevnih opravil in ukvarjanjem s športom lahko osebe z gibalno oviranostjo vzdržujejo visoko stopnjo vzdržljivosti, imajo dobro ravnotežje, pomembno za sedeče smučanje, hkrati pa imajo dovolj moči, da zmorejo biti športno dejavni (Šuc, 2011).

Prav tako kot motnje gibanja pa se razlikujejo tudi smučarski pripomočki. Osebam z gibalno oviranostjo nudijo različne možnosti uporabe, kvalitete smučanja, sposobnosti samostojnega smučanja, optimiziranja tehnike, doseganja vrhunskih rezultatov v tekmovalnem smučanju ter ekstremnih podvigov. Proizvajalci smučarskih pripomočkov za sedeče smučanje so iznašli različne vrste pripomočkov in tako omogočili vsem osebam z motnjami gibanja smučanje (Šuc, 2011).

Ker pa ne gre zgolj za dober pripomoček ali stopnjo oviranosti, temveč tudi za smučarsko znanje, so na tem mestu ključni tudi učitelji smučanja, ki s svojim znanjem omogočijo učenje smučanja gibalno oviranim. Učitelji prilagojenega alpskega smučanja morajo biti ne le dobri smučarji in pedagogi, poznati morajo tudi značilnosti in kontraindikacije gibalnih motenj, proces rehabilitacije, seznanjeni morajo biti z drugimi obravnavami, povezati morajo zmožnosti osebe z izbiro pripomočka, in znati prilagoditi pripomoček vsakemu posamezniku. Pogosto pa učitelji smučanja niso le to, saj s smučarji invalidi sodelujejo tudi na drugih področjih, poleg tega pa morajo sodelovati tudi z ostalimi osebami v smučarjevem vsakdanu (Šuc, 2011).

Poleg gibalnih zmožnosti sedečih smučarjev pa ne gre zanemariti psihološke in čustvene komponente osebnostnega razvoja. Mnogi, ki se odločijo za sedeče smučanje niso še nikdar v življenju smučali, niso še izkusili take hitrosti, morda samostojnega premikanja skozi prostor, vožnje s sedežnico, ipd. Ravno zaradi tega težimo k popolnemu uspehu, pa čeprav morda z več pomoči ali drugim smučarskim pripomočkom. Pri prilagojenem alpskem smučanju gre tudi za obliko druženja, ko se osebe z gibalno oviranostjo enkrat naučijo smučati, gredo lahko na smučarske počitnice z družino ali prijatelji. Je oblika samopotrjevanja, to zmorem, znam. Hkrati pa je lahko dopolnilna naloga celostne obravnave ali rehabilitacije posameznika (Šuc, 2011).

GIBALNE MOTNJE

Amputacije

Rehabilitacija ljudi po amputaciji se začne z operacijo ter konča s ponovno vrnitvijo posameznika v družbo. Izid in uspeh sta odvisna od mnogih dejavnikov. Zmanjšane zmožnosti in zdravja razdelimo na zdravstveno stanje, telesne funkcije, telesne zgradbe, dejavnosti in sodelovanje ter osebne in okoljske dejavnike. Zdravstvena stanja so vzrok za

amputacijo (bolezni, poškodba) ter druge in prejšnje bolezni in poškodbe, ki lahko vplivajo na potek in izid rehabilitacije. Telesne funkcije so gibljivost sklepov, mišična moč, stabilnost sklepov, pa tudi funkcije srca, pljuč in drugih notranjih organov, ki so lahko okvarjene zaradi osnovne bolezni, ki je vzrok za amputacijo ali zaradi drugih bolezni, ki jih ima posameznik. Med telesne zgradbe uvrščamo samo amputacijo (višina, dolžina in oblika krna, brazgotina, druge spremembe na koži). Dejavnosti in sodelovanje so pri ljudeh po amputaciji spodnjega uda predvsem težave pri njihovem gibanju, lahko tudi pri njihovem opravljanju dnevnih in gospodinjskih aktivnostih, aktivnosti v prostem času in zaposlitvi, če je oseba zaposlena, in mora pri delu veliko stati in hoditi (Burger, 2010).

Cerebralna paraliza

Cerebralna paraliza je nenapredujoča, vendar spreminjajoča se motnja drže in gibanja, ki jo povzroča okvara ali razvojna motnja osrednjega živčnega sistema nastala v zgodnjem razvojnem obdobju. Zgodnja možganska okvara povzroči motnjo v razvoju možgan. Otrokov razvoj je lahko upočasnen ali pa je razvoj gibanja nepravilen. Prevladujejo lahko nepravilni gibalni vzorci, ki vodijo v kontrakture in deformacije. Sam mehanizem poteka razvoja pri otroku, ki je imel zgodnjo možgansko okvaro še ni znan. Pogostost cerebralne paralize ni nič manjša kot pred leti, še vedno se od 1000 otrok rodita s cerebralno paralizo 2 do 3 otroka. Kljub razvoju medicine in rasti življenjskega standarda, lahko rečemo, da število otrok s cerebralno paralizo pravzaprav narašča. Vzrok pa je v izboljšanju in intenziteti perinatalne medicinske nege, s čimer se zmanjša umrljivost novorojenčkov in istočasno povečuje preživetje nedonošenčkov, kasnejša posledica pa je cerebralna paraliza (Vute, 1999).

Cerebralna paraliza ali možganska motorična ohromelost je izraz za vrsto neprogresivnih nevroloških pojavov, zaradi poškodb dela ali delov možganov, ki nadzorujejo in usklajujejo mišično napetost, reflekse, položaj telesa in gibanje. Poškodbe, ki nastanejo pred ali med porodom, so pogosto posledica pomanjkanja kisika v možganih, nalezljivih bolezni matere med nosečnostjo in neskladnosti krvnih skupin staršev (Rh-faktor). Cerebralna paraliza se lahko pojavi tudi zaradi predčasnega poroda in mehanskih poškodb glave. Prav tako se cerebralna paraliza lahko pojavi v zgodnjem postnatalnem življenju (Vute, 1999).

Cerebralna paraliza "pomeša" sporočila med možgani in mišicami. Glede na to, katero sporočilo je prizadeto, poznamo tri tipe cerebralne paralize. Mnogi ljudje s cerebralno paralizo imajo kombinacijo dveh ali več tipov. Zapletenost cerebralne paralize in njenih učinkov se razlikuje od ene do druge osebe. Zato je včasih težko natančno opredeliti, kateri tip cerebralne paralize ima otrok (Šmid, 2008).

Cerebralno paralizo pa lahko spremljajo poleg gibalne oviranosti in motenj drže še številne druge motnje, npr. motnje učenja, epilepsija, motnje sluha, govora in vida, zaostanek v intelektualnem razvoju ali vedenjske težave. Kljub temu je približno 40 odstotkov oseb s

cerebralno paralizo povprečno intelektualno razvitih. Možganska poškodba se skozi življenjska obdobja ne poslabšuje, s pravilno obravnavo posameznih segmentov pa lahko vplivamo na funkcionalnost osebe v vsakdanjem življenju. Nekateri simptomi se spreminjajo skozi čas npr. v času hitre rasti, adolescence, staranja so lahko bolj izraziti (Šmid 2008).

Poškodbe hrbtenjače

Strokovnjaki uporabljajo ime centralni živčni sistem. Ime predstavlja možgane in hrbtenjačo. Oba organa živčevja sta zaščitena s kostjo; možgani z lobanjo, hrbtenjača s hrbtenico. Lobanja je s hrbtenico zelo čvrsto povezana z odprtino, v kateri leži del hrbtenjače. Ta je pravzaprav podaljšek možganov, saj jo prav tako sestavlja sivina (živčne celice - nevroni) in belina (živčne niti, živci - aksoni). Velika večina živčnih celic leži v možganih, manj v hrbtenjači. Ena živčna celica se razteza od možganske skorje do organa, ki ga oživčuje (dolžina 2 metra) ali do druge živčne celice v možganih, hrbtenjači ali ponekod ob organih. Razlika v zgradbi med možgani in hrbtenjačo je v legi sivine, ki je pri možganih na površini (možganska skorja) in le deloma v globini (možganska jedra), pri hrbtenjači, ki se začne že v lobanji, pa v sredini.

Hrbtenjačo ščitijo vretenca, ki sestavljajo hrbtenico. Hrbtenico ovijajo mišice in povezujejo vezivni trakovi (ligamenti). Hrbtenjača leži v hrbteničnem (spinalnem) kanalu, ki ga tvorijo vretenca. S prednje strani jo obdaja vretenčevo telo, z zadnje pa kostni obroč, iz katerega štrli pri strani sklepna dela med vretenci in zadaj trnasti nastavek. Glavna območja so:

- vratni (cervikalni) del: 7 vratnih vretenc in 8 vratnih živcev,
- prsni (torakalni) del: 12 prsnih vretenc in 12 prsnih živcev,
- ledveni (lumbalni) del: 5 ledvenih vretenc in 5 ledvenih živcev,
- križnični (sakralni) del: 5 križničnih vretenc, ki so zrasli v eno kost (križnico) in 5 križničnih živcev,
- repni (kokcigealni) del: 1-3 kokcigealnih vretenc in 1-3 kokcigealnih živcev.

Če se poškoduje hrbtenjača v vratnem predelu, nastopi tetraplegija, oslabeledost ali negibljivost vseh štirih okončin (rok in nog). Če je poškodba nižje, nastopi paraplegija, oslabeledost ali negibljivost spodnjih okončin (samo nog). Poškodba vretenca se večinoma razlikuje od mesta okvare oživčenja. Prizadetost mišic in gibljivosti je odvisna od obsega poškodbe hrbtenjače. Če pride do popolne prekinitve, hotnih gibov ni mogoče napraviti, občutki so ugasli, večinoma pa nastopijo krči mišic pri draženju zaradi ohranjenih živčnih celic v hrbtenjači pod poškodbo. Kadar so okvarjene živčne celice, ki oživčujejo gibanje mišic na okončinah, postanejo mišice ohlapne (flakcidne). Pri delnih okvarah živčnih celic so deloma ohranjeni občutki, včasih pa tudi hoteno gibanje (Hall in Hill, 1996).

PRILAGOJENO ALPSKO SMUČANJE

Stoječe smučanje

V kolikor je oseba z gibalno oviranostjo zmožna samostojne stoje, jo običajno učimo smučanja stoje z določenimi prilagoditvami. Sledimo klasični alpski šoli smučanja, z določenimi prilagoditvami. Pri osebah s cerebralno paralizo sta prepovedana klinast in plužni položaj smuči, v začetnih fazah učenja pa se izogibamo tudi lateralni fleksiji trupa. Osebe po amputaciji sledijo klasični alpski šoli smučanja, uporabljajo pa pripomočke – protezo in/ali stabilizatorje (Šuc, 2011).

Sedeče smučanje

Med sedeče smučarje sodijo tisti, ko niso zmožni samostojne stoje. Glede na vrsto in stopnjo oviranosti učitelj smučanja izbere primeren smučarski pripomoček. Smučarski pripomoček izberemo tako, da smučarju zagotovimo čimvečjo samostojnost, hkrati pa stoodstotno varnost in uspeh pri smučanju. Prav tako učenje sedečega smučanja sledi klasični alpski šoli smučanja – prilagajanje na opremo in sneg, drsenje, zaustavljanje, padci in pobiranje, zavoj k bregu – pahljača zavojev, smučarski loki, osnovno vijuganje, nadaljevalne oblike smučanje in izpeljanke alpskega smučanja (Šuc, 2011).

SMUČARSKI PRIPOMOČKI

Biski

Bi-unique je dizajniran kot okreten, vzdržljiv smučarski pripomoček za posameznike, prav tako pa je uporaben kot učni pripomoček. Je enostaven za uporabo ter primeren za vse, ki nimajo bodisi dovolj šnje moči trupa, bodisi koordinacije, da bi lahko smučali z monoskijem. Je stabilen, nizek ter uporaben na lahkih do srednje zahtevnih smučiščih. Ustreza več različnim smučarjem in njihovim sposobnostim. Smučar je lahko v njem samostojen, hkrati pa je pripomoček lahko vodljiv s strani smučarskega učitelja (Šuc, 2011).

Monoski

Monoski je najbolj razširjen in uporabljan pripomoček za sedeče smučanje. Zato so različni proizvajalci proizvedli več različnih prototipov, ki služijo svojim namenom. Odlikujejo ga prilagodljivost posameznemu smučarju, možnost doseganja velikih hitrosti, relativno majhna teža, dober hidravlični sistem, možnost uporabe tako vlečnice kot sedežnice, uporaba običajnih alpskih smuči, dobra odzivnost na smučišču ter možnost dodatkov, ki omogočijo lažje učenje smučanja z monoskijem. Rekreativni tj. začetniški modeli so ponavadi nižji, saj s tem pridobijo na stabilnosti, medtem ko so tekmovalni modeli višji, bolj odzivni, dopuščajo več stranskega nagiba (Šuc, 2011). Na trgu se dobi tudi Kartski in Tandemski, ki pa nista tako razširjena in jih uporablja manjša množica ljudi, prav tako pa ju nimamo v Sloveniji.

Stabilizatorji

Stabilizatorji so dodatni pripomoček sedečih smučarjev. So t.i. bergle, na katere so pritrjene manjše smuči. Omogočajo avtonomijo smučarja. Osebe, ki ne uporabljajo stabilizatorjev morajo vedno imeti spremljevalca. Omogočajo samostojno premikanje po ravnem terenu, naprej, nazaj, vrtenje okoli lastne osi, ter začenjanje zavoja, saj služijo kot pivot, okoli katerega smučar naredi zavoj. Nastavljivi so po dolžini ter naklonu smučke. Začetniki uporabljajo daljše, ter s pravokotnim naklonom smuči, medtem ko imajo boljši smučarji in tekmovalci krajše stabilizatorje ter nastavljene smuči pod večjim kotom. Za samostojno uporabljanje stabilizatorjev je potrebno imeti kar nekaj moči v rokah in v zgornjem delu telesa (Šuc, 2011).

ZAKLJUČEK

V zadnjih letih je možno zaznati velik porast interesa vse večjega števila gibalno oviranih oseb za smučanje, vedno več in vedno boljše smučarske pripomočke, vse boljše smučarsko tehniko sedečih smučarjev, hitrejše tekmovalce in bolj prilagojena smučišča. Gibanje in športna rekreacija imata pomembno mesto v današnji družbi, saj vemo, da vplivata tako na telesni in duševni razvoj, kot tudi na čustveni in psihosocialni. Vsi imamo potrebo po gibanju in enako velja tudi za osebe z gibalno oviranostjo, čeprav zaradi motenj ne morejo izvajati vseh športno-rekreativnih aktivnosti. Hkrati pa tudi ne poznajo vseh možnosti za športno dejavnost. Pogosto jih je strah poizkusiti novo športno dejavnost, saj si ne predstavljajo, kako bi jo s svojo gibalno oviranostjo lahko izvajali. Zato je potrebno osebam z motnjami gibanja predstaviti prilagojeno alpsko smučanje, jim razložiti možnosti, predstaviti različne pripomočke in jih vzpodbujati k športni aktivnosti, tudi pozimi. Začetki so vedno težki, še težji pa so, če so neuspešni, zato je nujno predstaviti in učiti smučanje postopoma, z veliko mero potrpežljivosti in vztrajnosti ter stremeti k uspehu, navdušiti za smučanje čim večje število oseb z motnjami gibanja.

Ključno vlogo pri učenju smučanja igra učitelj smučanja. Vsekakor ni v tem procesu sam, sodelovati mora v prvi vrsti s smučarjem, z ostalim strokovnim timom, ki obravnava smučarja, z upraviteljem smučišča, s proizvajalci pripomočkov in različnimi društvi. Smučarju in njegovi okolici mora predstaviti smučanje, na tak način, da se bo prilagojeno alpsko smučanje širilo in razvijalo. Poznati mora vse gibalne motnje smučarjev, pripomočke, metodiko in tehniko smučanja, le tako lahko kvalitetno in uspešno pomaga in poučuje smučarje.

Nazadnje, vendar najbolj pomembno pa ne pozabimo omeniti varnosti. Za varnost mora biti v vsakem trenutku učenja smučanja poskrbljeno. To ne pomeni zgolj, da moramo biti pozorni na druge udeležence na smučišču, kontrolirati hitrost smučanja, izbirati primerne terene sposobnostim in znanju, slediti učnim načelom in določilom na smučišču, temveč predvsem

koristiti smučarju, spodbujati športno dejavnost, razvijati gibalne sposobnosti, ohranjati ali celo izboljšati gibalne funkcije in izboljšati kvaliteto življenja gibalno oviranih.

Stremimo torej k čimvečji razširjenosti in poznavanju prilagojenih oblik alpskega smučanja in s pravim znanjem omogočimo dostop do užitkov na snegu tudi osebam z gibalno oviranostjo. Velik uspeh doživljamo pri poseganju v šolske programe – šole v naravi, kamor se lahko inkluziran otrok ali mladostnik vključi kljub svojim posebnim potrebam. Poleg tega je v zadnjih letih trend vključevanja v šport oseb po poškodbi.

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GENDER DIFFERENCES IN PARENTAL BELIEVES AND EXPECTATIONS IN YOUTH ICE HOCKEY

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ABSTRACT

The aim of this study was to inspect differences in three aspects of fathers' and mothers' child-specific beliefs regarding sport (Eccles, 1993; Fredricks and Eccles, 2004): expectations of child achievement in sport, perception of the value of some specific skills for child and beliefs connected to obtaining some specific socialization goals through sport. The research was done on the sample of 150 parents of male children aged 6-14 years attending ice hockey school. Due to small number of girls included in school (less than 10%), the results of their parents were excluded from analysis. The parents were approached while waiting for their children and asked to fulfill prepared questionnaire. The parents were given questionnaire containing six-point expectations of achievement in sport scale and nine-item scale of beliefs of positive influence of sport on child development. Both, mothers and fathers have high expectations of achievement and gender differences were not found. The result can be explained by specific characteristics of ice hockey in Croatia. Univariate analysis of variance of summative result on nine-items scale of beliefs show statistically significant gender difference on the level of $p < 0.04$. Both, mothers and fathers show highly developed beliefs of positive influence on development, but mothers have statistically higher results. Unexpected result of this research was slightly higher proportion of fathers than mothers in the sample. That can be explained by strong stereotype that ice hockey is "male sport", but can also be the sign that fathers' role is changing, as stated by Coakley (2006).

Keywords: parents, beliefs, ice hockey

MOTOR AND/OR PHYSICAL EDUCATION

GIBALNA IN/ALI ŠPORTNA VZGOJA

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ABSTRACT

Movement is one of the primary human needs. Inadequately satisfying the need for movement causes a special form of starvation (similar to malnutrition or dehydration), only that, because of the modern lifestyle, such a starvation remains unnoticed and hence, with a delay, at the level of self-perception and self-concept, even more insidious. The main problem with an adequate evaluation of physical needs is the dominance of passive movement (driving) over the active movement (walking). Further dilemma is caused by insufficient separation of transport (either passive or active) movement and physical activity (exercise). Given the fact that the cognitive development is directly depends on the kinesthetics, physical activity is an irreplaceable component of early child development and education. Development and existence of the civilization, in this sense, depends more on human hands than brain. Excessive technologization of modern life, undermining the use of active movement, represents a serious threat to a human phylogenetic self-concept as a being and requires strong countermeasures. This issue is one of the main tasks of the sport profession and largely determines its work content. Sport profession must treat movement as its own substance, which is processed through physical activities, primarily for maintenance, and hereafter for the physical education and competitive use of motor capacity. In addition, motor education is most appropriate carrier of all other educational contents (understanding and accepting capabilities, limitations, efforts, rules of conduct, order and everything else that constitutes socialization). This means that other forms of education, separated from physical activity, in one way or another (health, social, etc.), impose a disproportionate burden on the social community.

The article uses methodology of problem identification and deals with parsing the title topic for a further discussion.

Keywords: movement, sport, education, discipline

IZVLEČEK

Gibanje sodi med primarne človekove potrebe. Pomanjkljivo zadovoljevanje potrebe po gibanju povzroča posebno obliko stradanja (podobno kot podhranjenost ali dehidracija) le, da

je, zaradi sodobnega načina življenja, tako stradanje neopazno in s tem, z zamikom, na ravni samodoživljanja in samopodobe, še bolj zahrbtno. Glavni problem, pri ustreznem vrednotenju gibalne potrebe, je prevlada pasivnega gibanja (vožnje) nad aktivnim gibanjem (hojo). Nadaljnjo zagato povzroča nezadostno ločevanje transportnega (bodisi pasivnega bodisi aktivnega) gibanja od gibalne aktivnosti (vadbe). Glede na to, da je kognitivni razvoj neposredno odvisen od kinestetike, je gibalna aktivnost nenadomestljiva sestavina zgodnjega otrokovega razvoja in vzgoje. Razvoj in obstoj civilizacije je, v tem smislu, bolj odvisen od človekovih rok kot od možganov. Pretirana tehnologizacija sodobnega življenja, ki spodnaša uporabo aktivnega gibanja, resno ogroža filogenetsko samopodobo človeka kot bitja in terja odločno protiukrepanje. Ta problematika sodi med glavne naloge športne stroke in v največji meri določa njeno delovno vsebino. Športna stroka mora gibanje obravnavati kot lastno substanco, ki se z gibalnimi aktivnostmi kulturira, v osnovi zaradi vzdrževanja, v nadaljevanju pa zaradi športne vzgoje in tekmovalne uporabe gibalnih zmogljivosti. Poleg tega je gibalna vzgoja najbolj primeren nosilec vseh drugih vzgojnih vsebin (razumevanje in sprejemanje zmogljivosti, omejitev, naporov, pravil obnašanja, reda ter vsega drugega kar tvori socializacijo). To pomeni, da druge oblike vzgoje, ločene od gibalne aktivnosti, tako ali drugače (zdravstveno, socialno itd), nesorazmerno obremenjujejo družbeno skupnost. Prispevek se po metodologiji problemske identifikacije ukvarja z razčlenitvijo naslovne tematike za nadaljnjo obravnavo.

Ključne besede: gibanje, šport, vzgoja, stroka

THE CONGRUENCE OF MOTHERS', FATHERS' AND COACHES' EXPECTATIONS IN YOUTH BASKETBALL

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ABSTRACT

The most frequent reason for conflict between coaches and youth sport parents are “unrealistic expectations of over-protective parents” (Heinzmann, 2014). Unrealistic expectations of parents can produce stress to children, do not help youth sport development and can be the reason of burnout and dropout (Fredricks and Eccles, 2004). The aim of this research is to establish the congruence of expected results of youth basketball training in mothers, fathers and coaches. The sample of this study consists of 70 mothers, 70 fathers and 22 coaches from a highly rated municipal basketball school. Examinees were given the questionnaire including six items estimating probabilities of different future sport achievement of participants of basketball school, and eight items for assessment of importance of health, social and other developmental benefits of sport participation. Multivariate discriminant analysis resulted in one statistically significant discriminant function. On the positive side, it is defined by high achievement expectations and evaluation of sport as secure developmental surroundings without alcohol and narcotics. On the negative side, it is defined by lower expectations of sport success and the importance of sport as a situation to meet role models. Group centroids show that mothers and fathers are very near each other at the positive side of the function ($C_m = 0,45$, $C_f = 0,43$) opposed by coaches positioned far at the negative side ($C_c = -2,81$). The result show that both, fathers and mothers are less realistic in expecting sport success of their children than coaches.

Keywords: parents, coaches, achievement expectations

DEPENDENCE, ADDICTION AND PROBLEMS BY CREATING OF THE SELF

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SUMMARY

The problem issue arising from the title topic, originates mostly from inappropriate education and child treatment during growing up and lasts until the period on the verge from puberty to adolescence. Youngsters that face such problems in most cases cannot help themselves, while parents actually do not want to take over any guilt in relation to the upbringing of their own children.

The lack of movement, unbalanced diet and unhealthy lifestyle in general are important factors that cause threats to general health. The spiral model of motor/sport inactivity factors (Pišot, Šimunič, 2008) describes the lack of movement as the first element in the chain of health endangerment factors that leads to excessive body weight and in the decline of general motor competences. The decline in motor competences is another reason for irrational movement that leads to increased energy consumption, faster fatigue and consequently lower motor self-image and also poor bodily self-image. Poor bodily self-image has an important effect on the quality of life, leading to decreased social activities. The decline in social activities is one of the most important causes of the decrease of general motor sport activity. These factors follow in a spiral model as well as persistently and effectively alienate an individual from activities, which are necessary for a harmonised development (Pišot, Šimunič, 2013). The positive impact of being physically active and the formation of positive behavioural patterns, where active leisure time is present, has been confirmed several times. Not only the impact on health but also the connection between sport activity and bodily self-image as well as facing problem situations were proven on groups of children and adolescents. Therefore, it was also recommended to those who work with the youth, i.e. in planning the contents and level of difficulty of individual programmes, to ensure stimulative and positive climate (motivation, awarding) and the use of appropriate teaching strategies that would stimulate the inclusion in motor/sport exercise and the increase of the level of dealing with motor/sport activity (Dolenc, 2012).

The result of today's permissive education in the consumer and narcissist society is quite opposite than expected, if we think that there were many critiques on the account of authoritarian education in the past, which influences the image of an adult personality. Self-image of a child of non-biological parents is developing quite differently, since the process of identification is construed differently. In the context of this problem issue we have to understand the occurrence of neuroses and the resolution of Oedipus complex as the core of

neurosis, which is the most radical form explained by Sigmund Freud, the founder of psychoanalysis (Freud, 1977, in Vidnjevič, 2010, p. 101). Disorder in growing up is explained in the case of bulimia nervosa, which is quite a frequent "disorder" among young girls nowadays. Statistically, life risk among women for their development is eight percent. One man every seven to eight women gets sick and in general, the disease is linearly increasing (Gregorič Kumperščak, in Kores Plesničar, 2011). On the basis of this case we can conclude that psychoanalysis is the most appropriate treatment of addiction, since it first cures nevrosa and then the subsequent disorder (Freud, 1987, 1995, 2007). Besides other psychological (also psychotherapeutic) methods, persons with such disorders are mostly treated with words, therefore, we must not forget to add that the therapy also includes appropriate techniques/methods with socialisation approaches (Vulikić, 2007).

Considering motor/sport activity as the most extensive determination of content and tools of kinesiology, it would be much easier for us to understand where the possibilities are hidden, which could help integrative science to contribute to the development and quality of modern society. The mentioned contents offered in the form of exercise and training might be the rescue for increasingly inactive and occupied society and consequently all inappropriate physical and mental anomalies and difficulties. Exercise and/or training as a systematic transformation process, the goal of which is to develop motor competences – motor knowledge and abilities that will enable an individual in specific activity, the success of which is conditioned with motor efficiency, successful functioning – this process can be offered as a lever of development and the mean for achieving progress in various areas of work, where motor competences importantly contribute to the success, satisfaction, well being or better health. (Pišot, 2013).

Keywords: the ego ideal, nevrosa, Oedipus complex, bulimia, psychoanalysis, motor/sport activity, kinesiology contents

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