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MOTOR SKILLS ASSESSMENT OF YOUTH AGED 13-14

INTRODUCTION

Physical activity is one of the most basic conditions allowing to lead a healthy lifestyle. As it is very important at every stage of life, it plays a fundamental role for children and youth by conditioning their proper mental, physical, and social development. In puberty, which is a natural process of ongoing transformations, an organism prepares and adapts itself to social roles. Interests and passions are formed, requiring recognition of the child's environment and family and engagement in the educational process. Consequently, it seems advisable to orient this process in such way that a young person can make most of it and use it to one's advantage.

Each organism develops and grows at its own pace to eventually become mature and adult. Therefore, puberty is a very interesting period regarding the physical development. Along with changes in sole appearance, the proportions of body change itself what influences motor skills of teenagers. Besides, sex differences become more recognizable. Nowadays, studies of the activity and development of motor skills of teenagers are still conducted what only proves how much interest this subject can generate.

A healthy development of a human being is understood as their ability to live independently and prolong the specie. It is possible due to proper differentiation, growth and maturation of all the body organs and systems in a human body. Differences that make up distinctions in particular periods of person's life are subject to qualitative changes. The process of going through puberty reveals new functions of organs which previously were not performed despite having adequate anatomic structures. The whole process of somatic development composes a base for development of motor skills and comprising all the features of humans by determining their physical fitness (Przewęda, 1981).

The development of motor skills is distinctive by observing acquiring new ranges of motions, learning to perform complex activities, more and more intelligent and deliberate motor behaviour and increase in physical fitness. Spontaneous physical

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activity as well as needs, motivation, and interest in physical activity are changing too (Woynarowska, 2000).

Motor development is exceptional in the whole process of physical development for a couple of reasons. First of all, motor symptoms are the most often form of reaction to the stimulus received from the environment and by that stimuli a variety of biological values in human organism are discovered. The fact that muscle movements reflect all the functions of an organism convinces representatives of the medical world to explore it looking in motor tests for the best criteria to study children and youth physical development, as well as to assess performance and health of adults.

The number of motions which can be performed by a human being is enormous. Depending on their purpose and content, different types of motor performance can be discussed. Most often motor performance is divided into productive, expressive and sport performance. Importantly, the motor development of children and youth encompasses changes in all types of motor performance. First of the aforementioned motor performance – productive – includes actives and actions oriented to produce material goods and are related to taking up a job. Expressive motor performance is a particularly broad set of motions. It includes gestures, body positions, facial expressions, etc., used to communicate and express emotions. This set of motions can be used in diagnostics as it reveals the child's current condition and predicts their reactions. Sport motor performance consists motions associated with playing and doing sports, as well as with increase in physical fitness, stimulating development and physical health, and providing joy and recreation.

Puberty is clearly divided when it comes to motor skills of boys and girls. With age those differences increase. Boys' motor skills are still improving whereas girls' development is completed at that age (however still can be improved by doing sports). After age 13, girls' motor coordination is subject to little changes, the strength and motor skills do not improve if not maintained by proper sport activities. Around age 14-15 they may even decrease what only proves that at that age the natural motor development of girls is halted and its further improvement is only a consequence of a lifestyle and regular sport activities. This fact is related to the obligation imposed on schools to provide appropriate amount of physical activity at every stage of education. When it comes to girls, it is observed that they are prone to motor skills involution as students of age 18-23 are less fit that students of age 14-15. Boys complete their motor skills development in adolescence and no involution was observed in further years (Szilagyi-Pągowska, 2006).

PURPOSE OF THIS WORK, MATERIALS AND METHODS

Purpose of this work was to assess the interdependence between selected parameters of motor skills between girls and boys age 13-14. The study was conducted on youth attending Junior High School in Stanisławów Pierwszy who is fit to participate

in P.E. classes. They were students of the first year and age 13-14. Group I – students of sport class (10 lessons of P.E. per week) – was composed of 15 girls and 15 boys. Group II – students of general class (4 lessons of P.E. per week) – had the same ratio. Studied groups were to do some physical fitness tests (6 exams selected from EUROFIT European Physical Fitness Test: speed of limb movement, agility, jumping ability, static strength, core strength, running speed tests) and examined in questionnaire in March of 2015.

Statistical analysis was performed using Statistica statistical package (10PL version on Medical University of Warsaw academic license). Test Chi^2 was used to compare differences between examined groups, while t-Student was used to compare independent tests. The limit of significance was established at <0.05.

RESULTS

From the analysis of obtained data, 60% of the examined youth had BMI levels within the norms and the rest of participants were underweighted. Anthropomorphic data collected during the study made it possible to assess the youth by using the growth chart and the results confirmed their proper physical development.

The results analysis indicated that Group I achieved better results (346.57 points in total) than Group II (303.89 points). Comparison by sex showed that girls with total points of 326.34 managed to score slightly more points than boys who scored 324.13 points. The best results in both groups were achieved in a test measuring reflex (plate tapping). Group I achieved the lowest scores in sit-ups, whereas Group II was the worst in flexibility test, i.e. sit-and-reach test. Regardless of which group was tested, both girls and boys were the best at reflex test. By analysing the results in detail, it was observed that statistically significant differences between Group I and II were noted in 3 out of 6 tests: Plate Tapping ($p<.001$), Standing Long Jump Test ($p<.005$) and Shuttle Run Test ($p<.001$).

Comparison of answers to question 1: *Do you think that physical activity is good for your health?* showed that 83% children from the sport class (Group I) answered *definitely yes* and 17% *rather yes*. The distribution of answers from the general class (Group II) was different: 67% chose answer *definitely yes*, 30% *rather yes*, and 3% *rather not*. Children from Group I presented more strong-minded opinions related to the positive influence of physical activity on health than children from Group II (in which 3% thought that physical activity is not beneficial for their health).

Questions *How do you evaluate your parents' physical activity?* and *How do you evaluate your siblings' physical activity?* provided interesting results as well. Youth from Group I more frequently answered *perfect* (respectively: 10% and 37%), *very good* (respectively: 30% and 33%), and *good* (50% and 23%), whereas in Group II most of the answers were *good* (respectively: 43% and 40%) and *fair* (33% and 13%). Physical activity of their peers from Group I was seen as *perfect* (37%) and *very good*

(50%), whereas youth from Group II saw it as *very good* (40%) and *good* (57%). All the students of the sport class stayed active outside of school as well, which was the answer given only by 77% of students of the general class.

In one of the questions, students were asked to assess their physical fitness. 23% of students from Group I thought it was *perfect*, 43% *very good*, and 33% *good*, whereas only 20% from Group II students believed that it is *very good*, 60% *good*, and 20% *fair*.

DISCUSSION OF THE RESULTS

Puberty is a period of life that has much to offer for scientists who are interested in its motor, physical, and mental aspects. Authors from all corners of the world study this subject. Many publication and works related to problems of children development were written in Poland and there are still new studies being in progress. The very first works are dated back to the 19th century, when F. Suligowski, W. Kosmowski and L. Dudrewicz have undertaken anthropologic studies of children (Kotarska, 2005). When it comes to contemporary scientists, one can mention, inter alia, J. Trempała (2011) or B. Harwas-Napierała (2005). Such numerous and long-lasting studies as well as publications prove unfading interest in the subject along with continual need to undertake and analyse it taking into consideration the development and shaping the child's body in the entire adolescence cycle.

Among many various tests examining the motor skills of young people, the EUROFIT European Physical Fitness Test was selected for this study. It is a comprehensive test allowing to assess many elements defining the physical fitness. The precise division to age groups and possibility to study the speed, endurance, and agility provides an accurate picture of the general physical fitness of examined students.

This analysis confirms that general physical fitness of girls and boys is comparable (only slightly more points were scored by girls). The results of individual tests were very uniformly distributed; the statistical significance ($p>0.005$) was noted only in long jump to the advantage of girls. Moreover, the results were comparable to the study of A. Maszorek (1997), who believes that until age 13 the development of girls and boys is similar. When comparing youth regarding class they attended, in 3 out of 6 tests the statistical significance was observed to the advantage of the students from the sport class.

While making the analysis, the BMI index was calculated as well. The study of H. Popławska and others (2011) shows that either decreased or increased BMI index influences the general physical fitness. According to the author, the decreased physical fitness is related to the increased body weight. Nonetheless, in the above work this conclusion is not statistically relevant because in none of the two groups there was an overweight student.

After analysis of the further data from questionnaires, it may be stated that physical activity in families of sport class students contributed to the fact that those students

are more eager to stay active. There are publications claiming that parents greatly influence their children's physical culture. Moreover, youth intensively participating in the P.E. classes has greater awareness of how physical activity benefits their health (Grzegorczyk et. al., 2008). Unfortunately, the group of general class students did not share this awareness which is an alarming conclusion. Regarding the research of J. Świderska-Kopacz and others (2008), small amount of physical activity and passive leisure are trends more and more observed among junior high school students; there is a very low awareness of how such lifestyle influences health (Jodkowska et. al., 2005).

CONCLUSIONS

Amount of time spent on physical activity contributes to the differences in test results assessing motor skills performance. Motor skills of girls and boys age 13-14 are comparable. There was no significant relationship observed between the BMI index and physical fitness, as the BMI index was normative.

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Keywords: motor skills, youth, physical development

Abstract: Motor skills, diversity of motor development, its versatility and dynamics in the very first stages of life depict how humans, initially helpless beings, in a short time master the skills to perform complex activates. Not only they begin to freely move in a world surrounding them but they gradually start to control it and put it under their command. Due to those factors, changes in motor skills of children are far more recognizable processes than differentiation, growth and going through puberty.

OCENA SPRAWNOŚCI MOTORYCZNEJ MŁODZIEŻY W WIEKU 13 I 14 LAT

Słowa kluczowe: sprawność motoryczna, młodzież, rozwój fizyczny

Streszczenie: Sprawność motoryczna, bogactwo rozwoju ruchowego, wielostronność i dynamika w pierwszych etapach życia ukazują, jak człowiek, początkowo bezradny, w ciągu krótkiego okresu czasu opanowuje czynności złożone. Nie tylko sam może swobodnie poruszać się w świecie, który go otacza, ale także potrafi go opanować i sobie podporządkować. W związku z tym przemiany motoryczne u dzieci są bardziej widoczne niż zachodzące zjawiska różnicowania, wzrastania i dojrzewania.