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Raising the level of physical fitness as one of the program tasks implemented during a scout camp[1]

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Abstract

The article presents the results of the own research carried out during the scout colonies in July 2022. The research included an examination of the following: whether and to what extent the level of physical fitness of 24 children aged 7-10, participating in program activities carried out during the recreation, increased during the two-week scout camps in Rusinowo (at the Polish seaside). The following research hypothesis was set: It is hypothesized that during a scout camp, children will raise their level of physical fitness in all tests. Based on the results presented, it was found that the children did not raise their level of physical fitness in all competitions of the test. In most of the trials, the results of the second measurement were better, while results worse than in the first measurement were also noted. Therefore, it should be concluded that the research hypothesis set was not confirmed. However, during the study, differences were observed due to the gender of the children, with a predominance of better results in girls.

Keywords: physical fitness, EUROFIT, children aged 6-10 years, scouts

Introduction

Movement is one of the most primal and basic life activities of every human being. It is essential to live and function, while physical exercise is used to maintain physical fitness, which is necessary for the proper functioning of the human body.

General development, despite the many individual differences, proceeds very similar in all children, but certain characteristics or forms of behavior are common and characteristic of children in a particular period of life.

The early school period, covering the age of 6 to 10 years of a child's life, is characterized by high physical activity. A child starting school shows mastery of basic motor forms, and at this time becomes susceptible to all motor patterns, including movement.

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Motor development occurs with growth, differentiation of organs and systems. By the term motoricity is understood the totality of human behavior, capabilities and motor needs. Its development is influenced by both biological rules and the rules of social development. Therefore, human motoricity is defined as the result of biological motor functions and socially determined human activities [1]. Thus, the development of movements is a reflection of the assumed processes and mechanisms that occur in ontogeny. The richness of human movements is infinite, so we can divide motor skills into several types:
a. productive motoricity, i.e. activities the purpose of which is the production of material goods;

b. combative motoricity, related to the struggle for existence;

c. athletic motoricity, which accompanies the improvement of physical fitness and strengthening of the body;

d. expressive motoricity, which is the richest field of human movements, including facial expressions, gestures, body poses, which is a factor of interpersonal communication of everyday life [2].

Movement is a component of many elements. In the movement procedure, we will notice that the goal dominates the form, and will be dictated by tactics that include the content of the movement, the idea of movement and the form of movement [3]. Each movement contains a specific charge of force, speed and endurance, which are the physical properties of human developing in ontogenesis and dependent on the structure and function of the organism. So it can be said that physical fitness is the result of the development of all motor traits, which are: strength, endurance, agility, flexibility, speed and power. Physical fitness is therefore associated not only with the function of the locomotor apparatus, but with the biological action of the whole organism. "Strength is the ability to overcome resistance in activities. Speed is the ability to make movements in the shortest possible time for given conditions. Endurance is the ability to perform work for a long time without compromising its productivity. Agility is the ability to quickly perform changes in the direction of the whole body. Flexibility is the ability to achieve a large amplitude of movements. Power is the ability to release as much force as possible in the shortest possible time"[4].

Physical fitness is measured by physical fitness tests, which should be accurate and reliable. Accuracy is understood as whether a test measures what it was supposed to measure, and reliability is the compatibility of the results obtained by the same subjects in a test carried out at different times. In addition to accuracy and reliability, each test should be easy to apply in a variety of conditions and be able to assess basic motor skills. Taking measurements should not take much time and require special skills from the subjects. They help to consciously guide the development of fitness. The most well-known and most frequently used fitness tests include: L. Denisiuk's Physical Fitness Test, R. Trześniowski's Physical Fitness Meter, International Physical Fitness Test, Chrominski Test, EUROFIT, K. Zuchora Physical Fitness Index, YMCA Test.

The degree of mobility is determined by the state of preparation of their motor system to perform various arbitrary movements, related primarily to all human activity in various conditions. Mobility is "the product of spontaneous and directed motor activity, gained by mastering a large range of movement habits" [5]. Any exercises with elements of throwing, jumping, as well as bows, locomotive movements, supports and overhangs are a test of the extent to which the child has mastered natural forms of movement. Each child has certain adaptability, so the purpose of the exercises should be to direct their skills and abilities in such a way as to fully develop, shape and consolidate them. This is done by a series of basic exercises that shape such activities as: running, jumping, throwing, climbing, maintaining balance, etc. Teaching them allows one to facilitate establishing contact with peers and the opportunity to participate in games and activities.

The exercises are also associated with educational values that help prepare the child for life, adaptation to the environment and character formation. Thus, they play an educational role, i.e. they shape certain properties of cooperation and social coexistence, while shaping important personality traits. Therefore, it is a weighty factor in the upbringing of young scauts. Various forms of movement have an impact on the nervous system, giving the opportunity for active rest, create conditions for relieving nervous tensions. From scout collections, the child has a stock of attractive games and plays, which one has the opportunity to pass on to his relatives or colleagues.

Physical activity is an inseparable part of any collection of young scauts, during which static elements are intertwined with motor ones. There are also specially dedicated methodological tools (badges) emphasizing sport, such as teams' ones (e.g. Olympian) and individual skills (e.g. swimmer, gymnast). It is also worth mentioning the program proposal of the ZHP Headquarters "In a healthy body is a healthy friend" [6], which gives team members specific methods of working in scouting, emphasizing health and physical activity.

Objectives, material and test methods

The aim of the study was to find out whether and to what extent during the two-week scout camps in Rusinów the level of physical fitness of children aged 7-10, participating in program activities carried out during rest,

increased. It is worth emphasizing that it was not a sports camp, but in most of the groups there was a program of physical activities. During the camp, the children had a 10/15 minute warm-up every morning, they made 3 hiking trips (total c.a. 23 km), and spent time outdoors every day. During their stay at the camp, they had organized 4 field games, 4 trips to the beach with a swim in the sea, 1 visit in the aquapark and 2 sport team games.

The subject of the study was to determine the differences in individual physical fitness tests carried out at the beginning and end of the scout colony among both girls and boys.

When undertaking the described research, the main research question was posed: did and to what extent the level of physical fitness of the participants of the scout colony increase? and two specific questions:

1. In all attempts of the physical fitness test, has the level increased and to the same extent?
2. Are there gender differences?

On the basis of such formulated research questions, the following research hypothesis was put forward: It is assumed that during the scout colony, children will increase their level of physical fitness in all trials.

As a research tool to conduct the test during the camp, on the basis of which physical and motor fitness were assessed, the EUROFIT fitness test was choosen. The test was composed as follows:

1. 50 m run - running speed test. At the signal "to the places" the tested person puts an offense leg behind the starting line in the high starting position (no low start is used). Then, at the "start" command, it runs as fast as possible to the finish line. The time is measured with an accuracy of 1/10 of a second.
2. Long jump from the spot - a test of power (leg strength). The subject stands behind the line, and then from the simultaneous reflection of the foot he makes a long jump at a distance, to the sandbox. The jump measured in cm. What counts is the result of a better jump. The length of the jump is between the jump line and the last trace of the heels.
3. Shuttle run. At the signal "to the places" the subject stands on the starting line. At the command "start" runs to the second line (distance 10 m), picks up a block from a semicircle, and then returns to the starting line, where he puts the block (the block can not be thrown). Then he runs for the second block and, returning, puts it again in a semicircle. The time shall be measured to the nearest 1/10 s The test shall be completed when the second block is in a semicircle.
4. Bends forward with lying back for 30 s - a test of the strength of the abdominal muscles. The subject lies on a mat with his feet 30 cm wide apart and his knees bent at right angles. Hands intertwined on the back of the neck. The tested person is helped by a partner who holds his feet so that they break away from the ground. At the "start" signal, the subject bends forward by touching his knees with his elbows and then returns to the starting position. The exercise lasts 30 seconds. The number of bends made in 30 seconds is recorded.
5. Forward bend - a test of flexibility. The subject stands on the stool so that the toes cover its edges, feet compact, knees straight. Then he bends forward, marking as low as possible with his fingers the trace on the scale attached to the stool for this purpose. The result is read in cm. and can take negative values in the case of values below the set norm.

In each test competition, the subjects had two trials (measurements).

The research group included 24 people aged 7 to 10 years, including 12 girls, aged 9-10 years and 12 boys, aged 7-10 years. In total, the group included one 7-year-old, four 8-year-olds, eleven 9-year-olds (6 girls and 5 boys) and seven 10-year-olds (6 girls and a boy). The research group consisted of participants of the colony, members of the ZHP Hufiec Łódź-Górna. All needed permissions were obtained from the parents to conduct physical fitness tests.

Research results

On the basis of the EUROFIT physical fitness tests carried out twice (Trial 1 - at the beginning and Trial 2 - at the end of the colony) and the results obtained, presented in two tables and on four graphs, it is possible to verify the research hypothesis.

Table 1 shows collectively the results for 5 competitions obtained during the first wave of measurement (Trial 1), by all participants broken down by gender. The results are presented both in the converted point values obtained in individual competitions, as well as in the values of the arithmetic mean and median. Median values were selected for inference due to the better reliability of the assessment, thanks to the neutralization of the impact of individual marginal deviations, with a small size of the studied population. It was noticed that the girls are more fit in all test attempts.

Table 1. Characteristics of the motor skills of the studied group of students in the first test

Lp.	Attempt	Sex	N	X	Xp	M	Mp
1.	50 metres	G	12	8,61	43,75	8,48	44,00
		B	12	9,89	20,25	9,75	15,50
		Total	24	9,25	32,00	9,11	29,75
2.	Long jump	G	12	126,92	46,42	128,50	47,00
		B	12	118,25	39,92	118,50	39,50
		Total	24	122,58	43,17	123,50	43,25
3.	Shuttle run	G	12	16,26	28,00	16,08	29,50
		B	12	18,40	14,67	17,95	2,50
		Total	24	17,33	21,33	17,02	16,00
4.	Forward bends from lying back	G	12	15,75	43,00	16,00	43,50
		B	12	14,08	39,83	15,00	44,00
		Total	24	14,92	41,42	15,50	43,75
5.	Forward bend	G	12	2,29	49,33	3,00	50,50
		B	12	-3,79	42,67	0,00	46,50
		Total	24	-0,75	46,00	1,50	48,50

Legend:

N – number of children
X- arithmetic mean
Xp - arithmetic mean of points
M – Median
Mp- Median points
Mp- Median points

Source: own research

Table 2 shows collectively the results for 5 competitors obtained the second wave of measurement (Trial 2) by all participants, in the same breakdown as in Table 1. The results are presented both in the converted point values obtained in individual competitions as well as in the values of the arithmetic mean and median. Analyzing the value of the median, it was noted that girls were more efficient in all test attempts but a greater point gain occurred in boys.

Table 2. Characteristics of the motor skills of the studied group of students in the second sample

Lp.	Attempt	Sex	N	X	Xp	M	Mp
1.	50 metres	Dz	12	9,61	31,58	9,37	33,00
		Ch	12	10,18	24,42	9,69	25,50
		Total	24	9,90	28,00	9,53	29,25
2.	Long jump	Dz	12	138,88	51,33	140,25	51,50
		Ch	12	118,83	42,33	118,50	42,50
		Total	24	128,85	46,83	129,38	47,00
3.	Agility run	Dz	12	16,18	30,17	16,35	31,50
		Ch	12	17,44	23,00	17,18	22,00
		Total	24	16,81	26,58	16,77	26,75
4.	Forward bends from lying back	Dz	12	18,42	48,00	18,50	50,00
		Ch	12	14,42	40,58	14,50	39,50
		Total	24	16,42	44,29	16,50	44,75
5.	Bending the trunk forward	Dz	12	5,46	54,42	6,00	55,50
		Ch	12	-3,25	44,00	-3,00	44,50
		Total	24	1,10	49,21	1,50	50,00

Legend:
N – number of children
X- arithmetic mean
Xp - arithmetic mean of points
M – Median
Mp- Median points
Source: own research

The comparison of results between Trials 1 and 2 is shown in Figure 1. Taking into account the median results (M and Mp), it can be concluded that in four of the five test samples, the physical fitness of the total children studied improved, and in one it had a similar value.

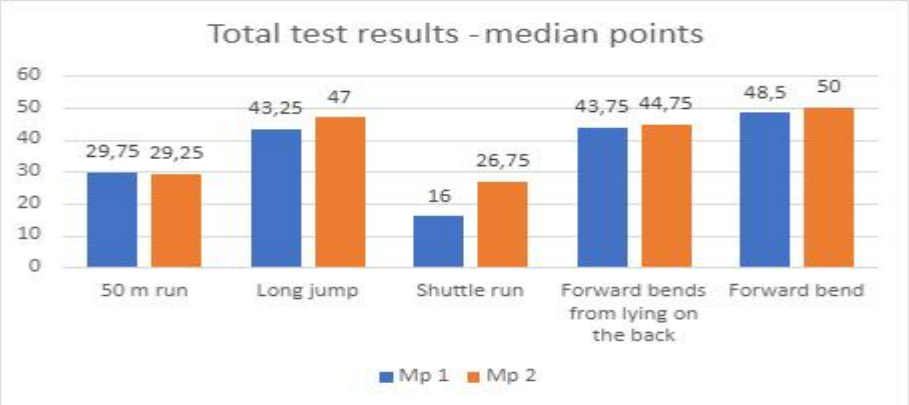

Figure 1: Median aggregate test results in the first and second trials (N=24)
Source: own research

Taking into account the gender division, it can be seen that the results of the girls (Figure 2) were higher than those of the boys and were improved in the Trial 2 in 4 out of 5 competitions of the test. The boys improved their results in 3 out of 5 attempts and these were competitions related to running and jumping.

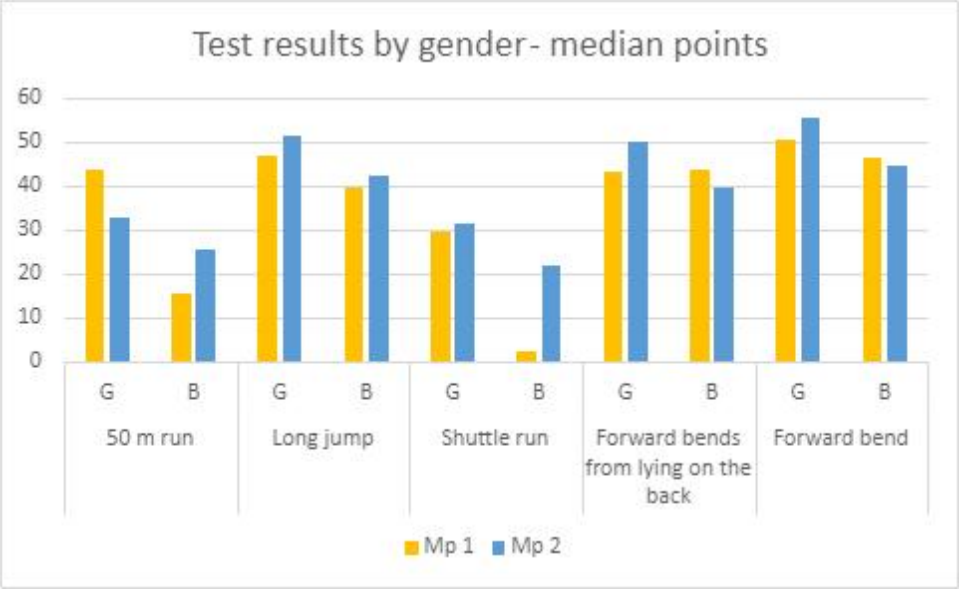

Figure 2: Median test scores in the first and second trials by gender (N=24)
Source: own research

Discussion and Conclusions

The overall level of motor performance of the tested group of children in early school age is at a low level and indicates the predominance of girls. Similar results were obtained in a group of six-year-olds studied by Węgrzyn and Szczepaniak [6]. The results in previously conducted research in the Świętokrzyskie Voivodeship (in 2006 among 2312 children 2312 children, including 1206 boys and 1106 girls) by Cieślak are slightly different – in the discussed age groups, a typical predominance of girls over boys was recorded only for flexibility. This may be related to the general decrease in physical fitness levels in children over a period of 16 years. However, as in our own research, there were slight differences in the level of motor skills depending on the age of the subjects. This phenomenon has been observed for: flexibility, abdominal muscle strength, lower limb strength, as well as shoulders and running speed measured by a pendulum run of 10 × 5 m. In addition, there was no progressive increase in averages in the group of girls for running speed [7].

The World Health Organization recommends a minimum dose of physical activity from a wide spectrum of behaviors, i.e.: games and movement games, movement, homework, school physical education lessons, etc.: at least 60 minutes of physical activity per day of moderate or high intensity, and the majority of it should be moderately intense aerobic exercise. At least 3 times a week, physical activity should include games and games with the ball, running, jumping, cycling or rollerblading, i.e. activities that increase strength, speed and flexibility [8, 9]. These recommendations can be confirmed by Paszkiewicz vel Pipilewicz on the basis of the EUROFIT physical fitness test among children 7-8 years old training and not training karate. The author points out that "both boys and girls, after a year of regular karate training, show slightly higher physical fitness than their peers. The difference increases significantly after the second year of training, because among karate players there was a significant progress compared to the previous year in each of the fitness tests carried out, while among non-training students there is a minimal regression of general fitness" [10].

Based on the results presented, it was found that the children did not increase their level of physical fitness in all competitions of the test. In most trials, the results of the second measurement were better (especially in those children whose results in the first attempt were at the lowest level), while the results were also worse than in the first measurement. Therefore, it must be concluded that the research hypothesis put forward has not been confirmed. During the study, differences were observed resulting from the gender of the children tested, with a predominance of better results in girls.

At the same time, there has been a noticeable decline in the general level of physical fitness among early school-age children in the last two decades. This is evidenced by the results obtained by children in individual samples of the EUROFIT test (most often these were points from the lower level of the scale), as well as the results of studies by other authors presented in recent years.

On the basis of the conducted analysis of the research, the following proposals can be presented for implementation as part of the implementation of the activity program for scout groups:
– paying special attention to the implementation of tasks related to the formation of physical fitness (gaining sports skills);
– conducting a physical fitness test every year to control the level of motor development of a child aged 6-10 years, introducing children to self-control;
– preparation of a guide on how to assess the level of motor fitness of scouts;
– propagating guides, both among scouts and parents of scouts, including proposals for forms of active spending of free time.

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