THE DYNAMICS OF INDICATORS OF PHYSICAL QUALITIES OF BOYS AGED 10-13 YEARS UNDER THE INFLUENCE OF DIFFERENT TYPES OF TOURISM ACTIVITIES

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Annotation. Compared to the development of physical qualities of young men engaged in hiking, biking and water sports tourism. Shows the development of the physical qualities of young men who do not engage in sports clubs. The study involved 18 children (age 10-13 years) in each of the groups. Classes are held on standard programs tourist sports clubs, which provide for 216 hours per year (2 sessions per week with duration of 3 hours each). Determined that the long-term and systematic training tourism contribute to the level of physical fitness tourists. Found that different types of tourism have a different effect on the development of a variety of physical properties. Classes hiking more improves flexibility, agility and speed-strength, cycling - speed, agility, and speed-strength, water tourism - force.
Keywords: physical quality, sports, hiking, biking, tourism.

Introduction

Nowadays the level of physical preparedness of children has an unsatisfactory level. One of the principal reasons for this is insufficient physical activity of children, disproportion between mental and physical workload. In some researches it is indicated [1, 4], that the protracted limitation of necessary physical activity results in atrophy of muscles, violation of bearing and functions of internals, descent of psychical and physical capacity, origin of chronic diseases of cardio-vascular system and metabolism. Many scientific works [3, 5, 7, 8] indicate that physical activity of children decreases during studying at school. It is related with reduce of children's interest to the traditional types of physical exercises. Nowadays such kind of sport, out-of-school studies and active rest as sport tourism gaining a mass popularity. It combines not only forming of vitally necessary abilities and skills, development of morally volitional and intellectual qualities but also perfection of motive abilities [2]. It is determined that systematic engaging in sport tourism has positive influence on the improvement of physical preparedness of children, though lower comparing to the sportsmen [6]. Due to the difference between types of tourism their influence on the same physical qualities is different.

On the basis of aforesaid problem of determination of engaging in different kinds of tourism influence on the level of physical qualities development of boys aged 10-13 is defined as vital.

Research is executed according to the research plan in the field of a physical culture and sport on 2011-2015 according to the theme 3.8 "Theoretic-methodology basics of system construction of the mass checking and estimation of physical preparedness development level of different groups of population". State registration number is 0111U000192.

Purpose, tasks of the work, material and methods

Purpose of the work is to determine the influence of engaging in different kinds of tourism on the level of physical preparedness of boys aged 10-13.

*Methods of research and work organization***.** The following methods are used in the research: analysis of scientifically-methodical literature, pedagogical methods (testing of physical abilities, pedagogical experiment), methods of mathematical statistics.

Boys from the groups of the pedestrian, bicycle and water types of tourism of the Chuguev district center of tourism, ethnography and excursions of youth total number of 54 persons aged 10-13 during three years of going in for sports (different types of tourism) and boys of the same age, who were not engaged in sport sections total number of 18 persons took part in research.

Studies of different types of tourism were carried out according to the typical programs of sport-tourism groups that provide 216 hours a year: 2 classes weekly of 3 hours each.

Research results and discussion.

Researching of physical qualities indices under engaging in different kinds of tourism testifies that results of boys have positive but different dynamic during 10-13 years.

Figure 1 shows that 3 years of being engaged in pedestrian tourism improves boys' flexibility and partly dexterity and speed-power qualities, bicycle tourism enhances rapidness, dexterity and speed-power qualities, water tourism increases strength.

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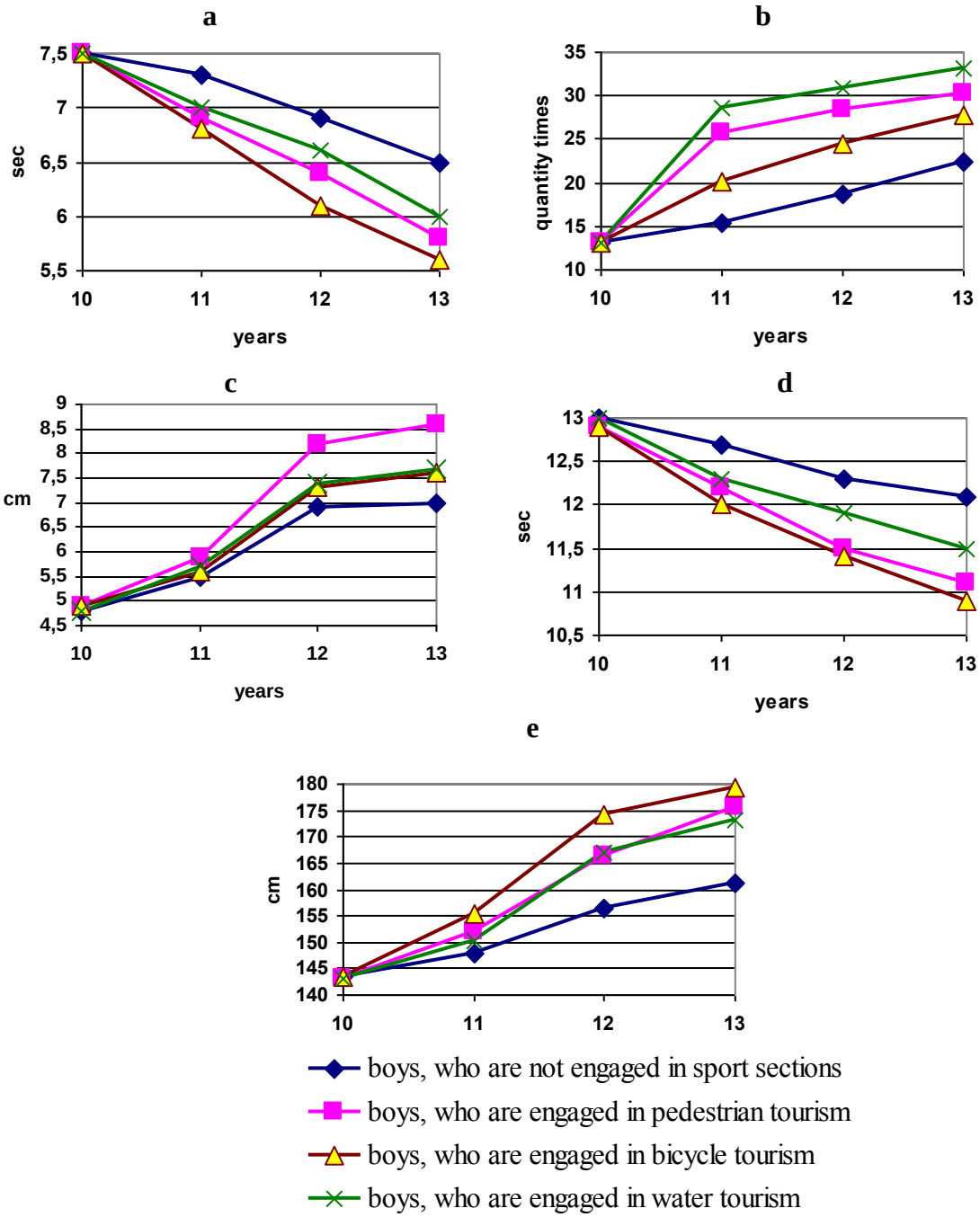

Fig. 1. Physical qualities indices of boys aged 10-13 from different experimental groups ($n_1=n_2=n_3=n_4=18$):
a) 30 meters run; b) flexing and extension arms support, lying on the floor; c) forward trunk flexion from a sitting position; d) shuttle run 4x9m; e) standing jump.

The greatest increase of speed qualities index (30 m run) was received in the groups of tourists aged from 10 to 11 years (table 1). Results of hikers declined by 0.6 sec, bicycle tourists results decreased by 0.7 sec, water tourists results shortened by 0.5 sec, but reliable changes were not received ($p>0.05$). In the age from 11 to 12 years indices of the boys who did not attend sport sections and water tourists improved by 0.4 sec ($p>0.05$). Reliable changes in the index of rapidness in this period were got only in the group of bicycle tourists which increased by 0.7 sec ($t=2.35$; $p<0.05$).

Table 1

Matrix of indices changes reliability for 30 m run of 10-13 aged boys from different groups ($n_1=n_2=n_3=n_4=18$)

Age	11 years	12 years	13 years
10 years	1 – 0.30; p>0.05 2 – 1.46; p>0.05 3 – 2.02; p>0.05 4 – 1.24; p>0.05	1 – 1.23; p>0.05 2 – 2.98; p<0.01 3 – 4.35; p<0.001 4 – 2.45; p<0.05	1 – 2.13; p<0.05 2 – 5.00; p<0.001 3 – 6.64; p<0.001 4 – 4.70; p<0.001
11 years		1 – 0.63; p>0.05 2 – 1.49; p>0.05 3 – 2.35; p<0.05 4 – 1.02; p>0.05	1 – 1.29; p>0.05 2 – 3.62; p<0.01 3 – 4.63; p<0.001 4 – 3.90; p<0.01
12 years			1 – 0.93; p>0.05 2 – 2.46; p<0.05 3 – 2.22; p<0.05 4 – 1.98; p>0.05

Boys who: do not attend sport sections – 1; are involved in hiking – 2; are engaged in bicycle tourism – 3; are engaged in water tourism – 4

Within the period of observation after the groups of 10-12 aged boys results in the tourists groups authentically improved. So, there was 1.1 sec ($t=2.98$; $p<0.01$) time decreasing of overcoming 30 m in the group of pedestrian tourists, results improvement by 1.4 sec ($t=4.35$; $p<0.001$) in the group of bicycle tourists and improvement of 0.9 sec ($t=2.45$; $p<0.05$) in the group of water tourists. There were no reliable results of 30 m run in the group of those boys who didn't attend sport sections ($t=1.23$; $p>0.05$).

There were authentically improved indices of rapidness in all the groups of tourists aged 13 respectively to the age of 12 and 11. These results were the following: 0.6 sec ($t=2.46$; $p<0.05$) and 1.1 sec ($t=3.62$; $p<0.01$) in the group of pedestrian tourists, 0.5 sec ($t=2.22$; $p<0.05$) and 1.2 sec ($t=4.63$; $p<0.001$) in the group of bicycle tourists, 0.6 sec ($t=1.98$; $p>0.05$) and 1.0 sec ($t=2.90$; $p<0.01$) in the group of water tourists respectively.

The biggest increasing of indices of flexing and extension arms support lying on the floor was received for the age of 11, which is 12.5 times ($t=5.91$; $p<0.001$) relatively to 10 aged boys in the group of hikers, 6.9 times ($t=3.22$; $p<0.01$) in the group of bicycle tourists and 15.5 times ($t=8.11$; $p<0.001$) for water tourists group. At the same time there was only 2.1 times ($t=0.65$; $p>0.05$) increasing in the group of the boys who didn't attend sport sections (table 2). For the age from 11 to 12 and from 12 to 13 indices of flexing and extension arms support lying on the floor of the boys who were engaged in pedestrian tourism improved by 2.7 and by 1.9 times respectively, for the boys engaged in bicycle tourism these indices improved by 4.3 and 3.3 times, for the boys who were engaged in water tourism results changed for better by 2.2 and 2.3 times and for those boys who didn't attend sport sections indices improved by 3.3 and 3.7 times accordingly ($p>0.05$).

Table 2

Matrix of indices changes reliability of flexing and extension arms support lying on the floor of boys aged 10-13 in different groups ($n_1=n_2=n_3=n_4=18$)

Age	11 years	12 years	13 years
10 years	1 – 0.65; p>0.05 2 – 5.91; p<0.001 3 – 3.22; p<0.01 4 – 8.11; p<0.001	1 – 2.26; p<0.05 2 – 9.52; p<0.001 3 – 7.54; p<0.001 4 – 11.30; p<0.001	1 – 4.74; p<0.001 2 – 13.88; p<0.001 3 – 11.71; p<0.001 4 – 16.93; p<0.001
11 years		1 – 0.92; p>0.05 2 – 1.13; p>0.05 3 – 1.81; p>0.05 4 – 1.01; p>0.05	1 – 2.14; p<0.05 2 – 2.13; p<0.05 3 – 3.42; p<0.01 4 – 2.33; p<0.05
12 years			1 – 1.50; p>0.05 2 – 1.15; p>0.05 3 – 2.07; p>0.05 4 – 1.44; p>0.05

Boys who: do not attend sport sections – 1; are engaged in pedestrian tourism – 2; are engaged in bicycle tourism – 3; are engaged in water tourism – 4

Within the whole period of research indices of strength authentically improved in all the groups. In the group of the boys who didn't attend sport sections results increased by 9.1 times ($t=4.74$; $p<0.001$); for the boys who were engaged in pedestrian tourism the result improved by 17.1 times ($t=13.88$; $p<0.001$); in the group of the boys who were engaged in bicycle tourism the outcome increased by 14.5 times ($t=11.71$; $p<0.001$) and in the group of the boys engaged in water tourism it increased by 20.0 times ($t=16.93$; $p<0.001$).

Within the age from 10 to 11 years the results in forward trunk flexion from a sitting position in the group of boys who didn't attend sport sections and bicycle tourists improved by 0.7 cm, for water tourists mentioned kind of exercise results improved by 0.9 cm and for hikers this change was 1.0 cm ($p>0.05$) (table 3).

Table 3

Matrix of indices changes reliability of forward trunk flexion from sitting position of boys aged 10-13 from different groups ($n_1=n_2=n_3=n_4=18$)

Age	11 years	12 years	13 years
10 years	1 – 0.34; p>0.05 2 – 0.72; p>0.05 3 – 0.51; p>0.05 4 – 0.65; p>0.05	1 – 2.06; p>0.05 2 – 3.79; p<0.01 3 – 2.64; p<0.05 4 – 2.78; p<0.05	1 – 1.98; p>0.05 2 – 4.27; p<0.001 3 – 2.77; p<0.05 4 – 3.24; p<0.01
11 years		1 – 0.72; p>0.05 2 – 1.96; p>0.05 3 – 1.48; p>0.05 4 – 1.44; p>0.05	1 – 0.75; p>0.05 2 – 2.30; p<0.05 3 – 1.66; p>0.05 4 – 1.74; p>0.05
12 years			1 – 0.12; p>0.05 2 – 0.90; p>0.05 3 – 0.48; p>0.05 4 – 0.58; p>0.05

Boys, who: do not attend sport sections – 1; are engaged in pedestrian tourism – 2; are engaged in bicycle tourism – 3; are engaged in water tourism – 4

At the age of 12 relatively to 11 year old the results in forward trunk flexion from sitting position of the boys who were not engaged in sport improved by 1.4 cm, for water and bicycle tourists the result increased by 1.7 cm and for pedestrian tourists it grew by 2.3 cm ($p>0.05$). For the age from 12 to 13 years changes in the indices of flexibility also didn't have authenticity ($p>0.05$).

The difference between final indices of flexibility and initial ones in the group of boys who were not engaged in sport sections formed 2.2 cm ($t=1.98$; $p>0.05$), in pedestrian tourists' groups it is 3.7 cm ($t=4.27$; $p<0.001$), for bicycle tourists it reached 2.7 cm ($t=2.77$; $p<0.05$) and for water tourists this difference is 2.9 cm ($t=3.24$; $p<0.01$).

Shuttle run requires the display of not only dexterity but rapidness too. Therefore the dynamics of the received results (table 4) partly coincides with 30 m run (table 1).

Table 4

Matrix of indices changes reliability of shuttle run 4×9 m of boys aged 10-13 from different groups ($n_1=n_2=n_3=n_4=18$)

Age	11 years	12 years	13 p years
10 years	1 – 0.40; p>0.05 2 – 1.39; p>0.05 3 – 1.72; p>0.05 4 – 1.35; p>0.05	1 – 1.40; p>0.05 2 – 3.81; p<0.01 3 – 4.10; p<0.001 4 – 3.17; p<0.01	1 – 1.82; p>0.05 2 – 4.90; p<0.001 3 – 6.04; p<0.001 4 – 5.20; p<0.001
11 years		1 – 0.57; p>0.05 2 – 1.63; p>0.05 3 – 1.25; p>0.05 4 – 0.76; p>0.05	1 – 0.87; p>0.05 2 – 2.56; p<0.05 3 – 2.43; p<0.05 4 – 1.64; p>0.05
12 years			1 – 0.48; p>0.05 2 – 1.57; p>0.05 3 – 1.98; p>0.05 4 – 1.35; p>0.05

Boys, who: do not attend sport sections – 1; are engaged in pedestrian tourism – 2; are engaged in bicycle tourism – 3; are engaged in water tourism – 4

So, runtime of the test shortened during all experiment, however authentic changes were received only for the age 10-12 and 11-13 years. In groups of hikers the runtime of shuttle run 4×9 m reduced by 1.4 sec ($t=3.81$; $p<0.01$) and 0.6 sec ($t=2.56$; $p<0.05$) respectively to the age groups. In the group of bicycle tourists the runtime became less by 1.5 sec ($t=4.10$; $p<0.001$) and 1.1 sec ($t=2.43$; $p<0.05$) accordingly.

At the end of the research period the difference between final dexterity indices and initial ones formed for the bicycle tourists 2.0 sec ($t=6.04$; $p<0.001$), for pedestrian tourists it reached 1.8 sec ($t=4.90$; $p<0.001$), for water tourists it is 1.5 sec ($t=5.20$; $p<0.001$) and for the boys who were not engaged in sport sections the difference is 0.9 sec ($t=1.82$; $p>0.05$).

The greatest increase of indices of standing jump was received in all the groups at the age of 11-12 years. It can be explained by increase of speed-power potential and technique mastering of jump execution (table 5).

Table 5

Matrix of indices changes reliability of standing jump of boys aged 10-13 from different groups ($n_1=n_2=n_3=n_4=18$)

Age	11 years	12 years	13 years
10 years	1 – 1.20; p>0.05 2 – 2.90; p<0.01 3 – 4.11; p<0.001 4 – 2.30; p<0.05	1 – 2.21; p<0.05 2 – 7.03; p<0.001 3 – 9.58; p<0.001 4 – 8.51; p<0.001	1 – 6.07; p<0.001 2 – 16.68; p<0.001 3 – 17.81; p<0.001 4 – 16.62; p<0.001
11 years		1 – 1.33; p>0.05 2 – 3.84; p<0.01 3 – 5.57; p<0.001 4 – 4.62; p<0.001	1 – 3.61; p<0.01 2 – 9.03; p<0.001 3 – 10.57; p<0.001 4 – 7.90; p<0.001
12 years			1 – 0.85; p>0.05 2 – 3.15; p<0.01 3 – 1.97; p>0.05 4 – 2.49; p<0.05

Boys, who: do not attend sport sections – 1; are engaged in pedestrian tourism – 2; are engaged in bicycle tourism – 3; are engaged in water tourism – 4

So the first year results of standing jump in the group of bicycle tourists improved by 12.0 cm (t=4.11; p<0.001), in pedestrian tourists group the result increased by 9.0 cm (t=2.90; p<0.01), for water tourists the increase reached 7.2 cm (t=2.30; p<0.05) and for boys who were not engaged in sport sections it increased by 4.6 cm (t=1.20; p>0.05). During the second year the results improved by 18.8 cm (t=5.57; p<0.001), 14.4 cm (t=3.84; p<0.01), 16.6 cm (t=4.62; p<0.001) and 8.4 cm (t=1.33; p>0.05) respectively. Within the third year an increase of indices was less and formed 9.0 cm (t=3.15; p<0.01) in the group of pedestrian tourists, 6.3 cm (t=2.49; p<0.05) in the group of water tourists, increased by 5.2 cm (t=1.97; p>0.05) in the group of bicycle tourists and was 4.9 cm (t=0.85; p>0.05) in the group of boys who were not engaged in sport.

On the whole within the period of experiment standing jump indices in the group of boys who were not engaged in sport sections improved by 17.9 cm (t=6.07; p<0.001), in the group of hikers it increased by 32.4 cm (t=16.68; p<0.001), for bicycle tourists the result improve was 36.0 cm (t=17.81; p<0.001) and for water tourists it formed 30.1 cm (t=16.62; p<0.001).

Conclusions.

1. The analysis of scientifically-methodical literature indicates positive influence of physical activity on physical development and becoming of physiology functions of children body.

2. It is determined that different types of tourism have different influence on different physical qualities development. So, among all the groups most improved indices of flexibility (t=4.27; p<0.001), dexterity (t=4.90; p<0.001) and speed-power qualities (t=16.68; p<0.001) under the influence of engaging pedestrian tourism. Under the influence of bicycle tourism most changes were received in the indices of rapidness (t=6.64; p<0.001), dexterity (t=6.04; p<0.001) and speed-power qualities (t=17.81; p<0.001). Under the influence of water tourism most changes were received in the indices of strength (t=16.93; p<0.001).

In the prospect of further studies it is planned to determine the dynamics of physical qualities development of girls aged 10-13 under the influence of engaging in different kinds of tourism.

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