THE PREPARATION OF TOURISTS TO THE SKI SPORTS TOURS IN A LIMITED TIME IN ORDER TO PREVENT INJURIES AND ACCIDENTS

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Annotation. *Purpose:* compare indicators of testing tourist skiers at different stages of the preparatory period to ski sports hike of third grade. Determine the effectiveness of training programs created to the tourists Categorical ski sports to prevent injuries and accidents in a limited time. *Material:* The study involved 13 people aged from 21 to 65 (4 women and 9 men) with different experiences of hiking trails and various levels of total tourist preparedness. *Results:* The test results obtained before beginning the process of preparation are treated upon its completion, and immediately after passing categorical hike. In practice, the effectiveness of the proposed training programs of tourists to ski sports tours is proved. *Conclusions*: The created program can be recommended to tourist clubs, associations and organizations as the base in preparation for ski sports campaigns for the prevention of accidents and injuries.
Key words: sport tourism, tourists, ski trip, injuries, prevention, testing, training program.

Introduction

Despite the fact that sports tourism is becoming more and more popular every year, and thousands of new fans are pouring into the tourist movement, none of his species is not included in the Olympic program and is not a professional sport. Of course, the competition in certain types of sports tourism is held in the various championships and tourist centers, clubs, station, tourist clubs of universities, enterprises and organizations are preparing tourists athletes. But at the same time, mainly, sports tourism is still developing volunteer, thanks to the enthusiasm of tourists.

Sports hike is a component, the most active and dynamic part of the tourist activity, combining voluntary lovers of hiking, skiing, mountain, water, bike, car, motorcycle, speleological tours and fans of travelling in collapsible vessels of different classification [4].

With all its popularity sports tourism was, is and will be extreme and traumatic sport, therefore the problem of safety sports tours is one of the most important and at the same time complex problems of tourist movement [4, 14].

The great number of publications devote to prevention of accidents and injuries in various kinds of sports tourism and skiing, in particular. The basis of this work is many years' experience gained in the practice of sports tourism, both in the form of competitions in technique of sports tourism and sports and tourist hikes [3, 5, 9, 11, 14, 15].

Publications on this problem are only in the periodical literature and usually limited by moral and ethical side of individual cases. This level of information, and even more generalizations required some practical conclusions, of course, is insufficient and it does not respond social importance of the problem.

In recent years, the complexity of ski sports tours has increased significantly. Tourists skiers in mountainous taiga, tundra, Arctic regions overcome hundreds of kilometers, while away from civilization for several weeks. Sometimes these trips are made during the polar night, in the midst of an Arctic winter [2, 6, 10, 16].

To undergo such routes without a single accident and survive, we need extensive knowledge of the area in which the hike plans and conditions of passage, a sufficient level of total tourist, physical, technical, psychological, ski and ski, topographic and medical preparedness, skills and experience to ensure the ability of living in harsh winter conditions [5, 7, 9, 12, 17].

The work is done under the plan of Scientific Research at the Department of Physical Education and Sports of Kharkov National Economic University named after Semen Kuznets.

Purpose, tasks of the work, material and methods

Purpose of the work is to develop a training program for tourists skiers to ski sports tours of various complexity in the limited time given to prevent injuries and accidents.

Research objectives:

1. Compare test results of the experimental group at various stages of preparation.
2. Determine the effectiveness of developed training programs of tourists skiers to ski sports tours.
3. Check in practice (ski sports tours of third difficulty) the consistency and efficiency of the proposed training program for tourists skiers.

The practical significance - this program can be implemented in the tourist clubs of universities, enterprises and organizations, children's hiking clubs, tourist associations and organizations as a base for the preparation of tourists to the ski sports tours.

Materials and Methods. Researches were carried out from September to February, 2011-2012. Experimental group consisted of 13 people (9 men aged 21 - 65 and 4 women aged 24 - 28) having different experiences in water, hiking and mountain hikes, wishing to be trained according to the proposed program and take part in ski sports tours. For many years, all participants included in the group, engaged in various kinds of sports have many sports categories. Members of the group to the beginning of the experiment had a different experience of ski sports tours.

Due to the fact that tourists are not professional sportsmen, and usually goes in for several kinds of sports tourism, multi-year program of continuous training cannot be, because during one tourist season one can prepare to

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water trips, in the spring-summer period, and in another they can prepare to a ski trip in the winter, or during one calendar year he can participate in several different hikes, having a special skills for them. Accordingly, the period of preparation for categorical ski sports hike was limited in time.

At the beginning of the experiment the whole group was tested by measuring the *«Quantity of health»*. At one time, this concept identifies the backup of possibilities of an organism, introduced by N.M. Amoz. According to him, health is the maximum productivity of organs while maintaining the quality of the limits of their functions.

The *«Quantity of health»* is determined by counting the arithmetic average of the series (at least five) functional tests and test of the level of development of physical qualities, which indicators are compared with the norm (100% of predicted values for the age) (Table 1) [1].

Table 1

The rating of the «Quantity of health» and men's biological age (women's requirements are 10% below)

Indicators, tests	Age (years old)								
	20	30	35	40	45	50	55	60	65
The pulse rate after getting on the 4th floor (strokes/min.)	106	108	112	116	120	122	124	126	128
The pulse rate in 2 min. (strokes/min.)	94	96	98	100	104	106	108	108	110
Running 2400 m (min/sec)	11,5	12	12,5	13	13,5	14	14,5	15	–
Systolic blood pressure (mm Hg)	105	110	115	120	125	130	135	140	145
Diastolic blood pressure (mm Hg)	65	70	73	75	78	80	83	85	88
Stange's test (c)	50	45	42	40	37	35	33	30	25
Hench's test (c)	40	38	35	30	28	25	23	21	19
Bondarevskiy's test (c)	40	30	25	20	17	15	12	10	8
High jump (cm)	50	45	43	41	39	37	35	33	30
Pulling up on a crossbeam (times)	10	8	6	5	4	3	2	1	1
squatting (times)	110	100	95	90	85	80	70	60	50
Rising body from lying position in a sitting position (times)	40	35	30	28	25	23	20	15	12

In our study we used 12 functional tests for men and 11 for women. On completion the process of preparation for the hike, and after returning from the hike, the group was also tested to determine the *«Quantity of health»*.

Results of the research.

Conducted researches of the physical preparedness to determine "the quantity of health" showed that this indicator has exceeded 100% in 10 out of 13 before preparing, and the rest ranged from 94% to 99%. The average indicator in the group was 104%.

During five months, the group held general physical (development of general endurance, power quality, speed, coordination, agility, etc.), topographic (map reading, compass work, orienteering, movement on the GPS receiver), general tourist (organization of halts, camp equipment, organization sleeping place, methods and types of making fires), health (the study of drugs, first aid after frostbites, stopping bleeding, bandaging and tires, artificial respiration, heart massage) special tourist (personal and team insurance, work with ropes, carabineers and the belay braking systems, work in systems, knotting, making scraper, rescue and transportation of the victim), ski and mountain ski (ski improvement of techniques of classical moves, overcoming obstacles, ways ascents, descents, turns, braking and stopping) the preparation [4 , 8, 11, 13].

A month before the ski sports hike, the group has successfully held a training trip around Kharkov region.

Before the hike the group was tested again to determine the "quantity of health". The result showed that at the moment all members of the group had records more than 100%. Obtained data was between 104% - 141%. The average rate was 118%.

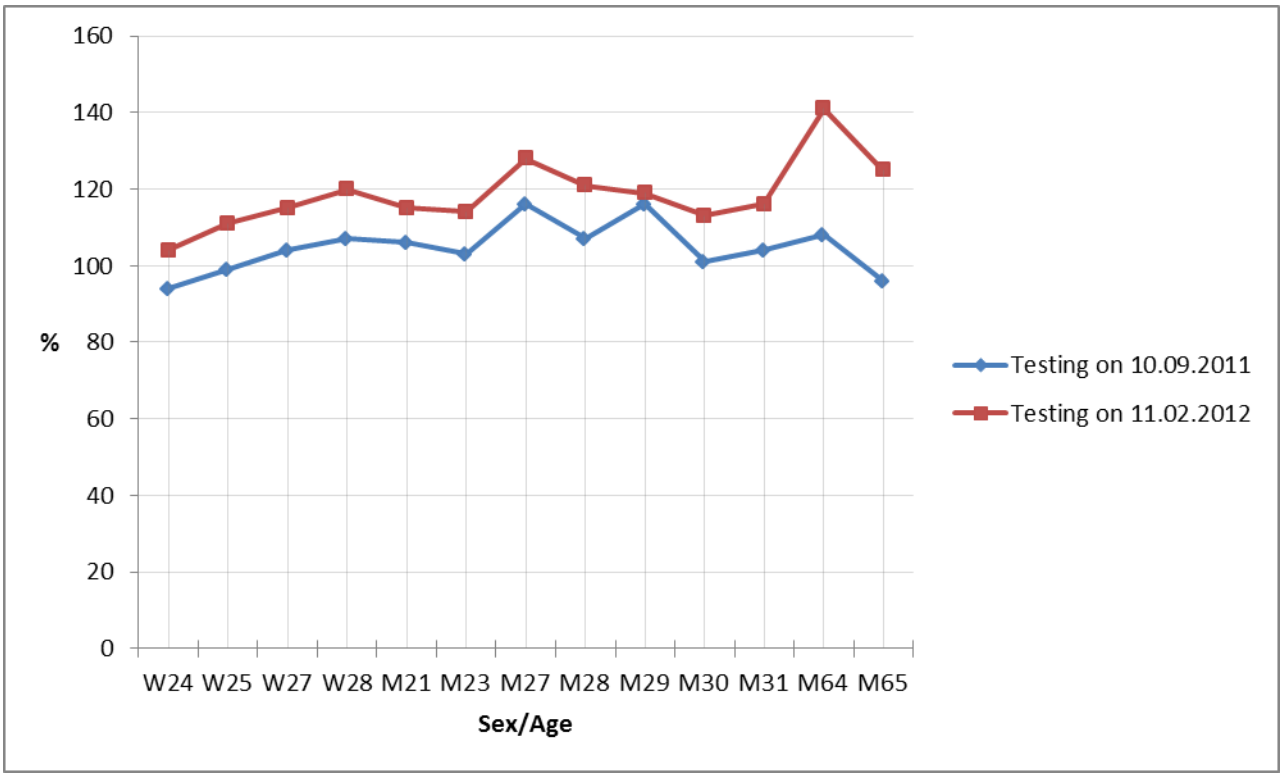
Table 2

Summary of tourists training program to ski sports tours of different degrees of difficulty in a limited time

№	Content of training programs	Period of training						In total
		September	October	November	December	January	February	
		Amount of classes/ hours						
		12/36	13/39	13/39	13/39	8/168	6/18	65/339
I	Physical training (hours): 1) Development of general endurance: hiking, cross-hiking, cross-races, skiing movement. 2) Development of power qualities: exercise at the gym, with burdening, on a crossbeam, parallel bars, etc.	8 5	10 7	10 7	10 7	5 3	3 2	46 31
II	Topographic training (hours): 1) Work with map and compass. 2) Moving on GPS navigator. 3) Participation in orienteering competitions in their age groups.	2 2 6	2 2 3	3 1 3	1	1 1	1	10 6 12
III	Tourist training (hours): 1) General: packing backpack, methods and types of making fires, making halts, installation of bivouac and organization of sleeping place, etc. 2) Special: work in safety systems with carabineers, ropes, etc. Self-insurance and team insurance.	3	3	3	3	3	2	17
IV	Ski training (hours): 1) Improving techniques of classic ski moves. 2) Overcoming of natural obstacles (ditches, moats, fallen trees, etc.) 3) Hill climbing in different ways.	3	6	6	3 2 2 2	 2 2 1		20 4 4 3
V	Mountainous ski training (hours): 1) Improvement of ski techniques (turns, braking, stop) 2) Overcoming the descents of varying steepness and difficulty.				2 4	1 4	 1	3 9
VI	Medical training (hours): 1) The study of drugs. 2) Medical first aid. 3) Organization and carrying out rescue operations. Transporting of the victim.	2 2	1 2 3	 6	1 2	 1	 1	4 7 10
VII	Testing (hours)	3					6	9
VIII	Training ski tour (hours)					144		144

Ski racing hike of the 3rd c.d. (category of difficulty) on the territory of the Kola Peninsula on the route: St. Taybola – lake Votozero – lake Remesozero – the pass between Kunicha Shapka and Remesuayvench – lake Verhyavr – the river Kitsa – Turchepakench – the river Triberka – lake Verhniy Lunyavr – Zasheyka – the river Nyvka – Semen – st. Lovozero, which took place in the period from February, 20 to March 1, 2012, the group was successful. The route was overcome in a strictly scheduled. In the severe real conditions all tourist experience, expertise of skiers and other ski hikes was applied by the tourists skiers in practice, received practical pieces of advice, knowledge and skills gained

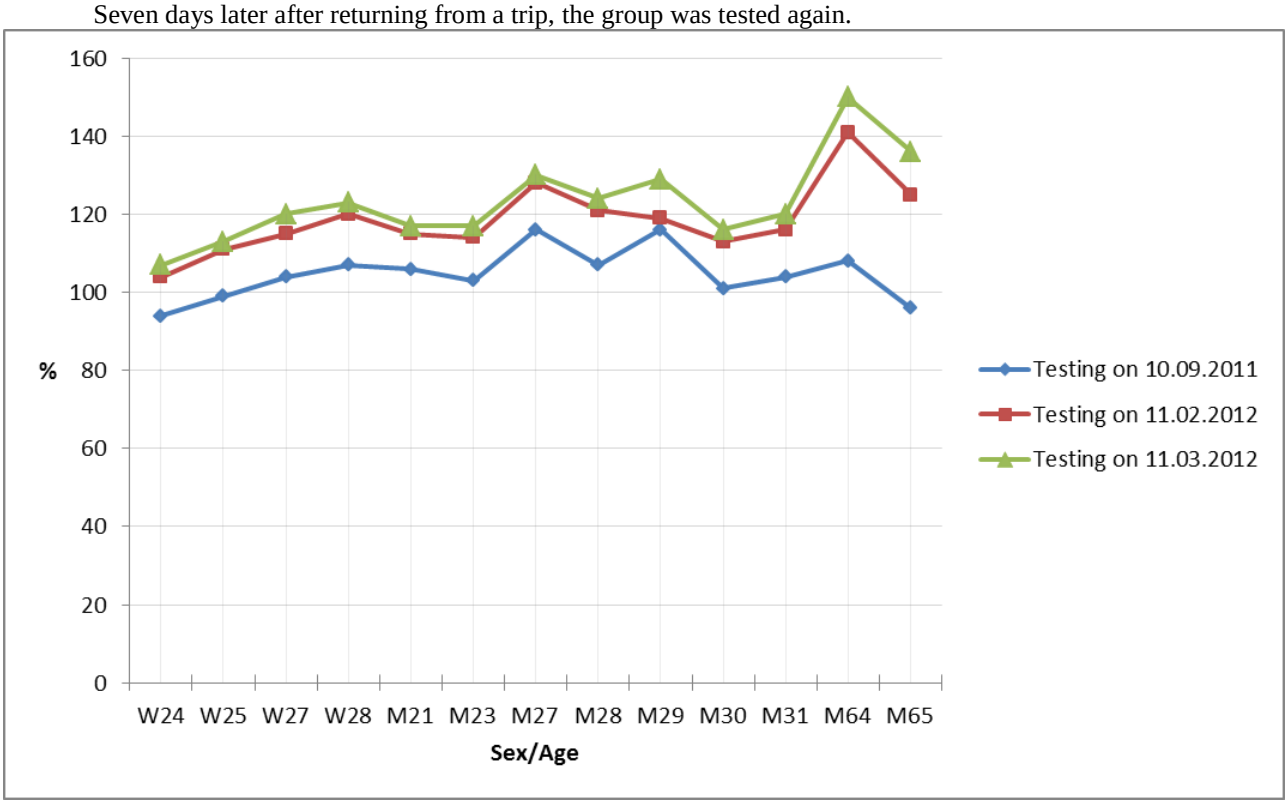
and improved in the process of training for a hike were used, observed discipline strictly and the leader of group's instructions were followed.



Pic.1 Participants of the experimental group's dynamics of change of the «Quantity of health»:

% - participants of the experimental group's indicators of "quantity of health", sex / age – sex / age of the participants, W24 - woman of 24, M30 – man of 30, etc., testing on 10.09.2011 – indicators of testing on 10.09.2011, testing on 11.02.2012 – indicators testing on 11.02.2012.

Seven days later after returning from a trip, the group was tested again.



Pic. 2. Participants of the experimental group's dynamics of growth of the «Quantity of health»:

% - participants of the experimental group's indicators of "quantity of health", sex / age – sex / age of the participants, W24 - woman of 24, M30 – man of 30, etc., testing on 10.09.2011 – indicators of testing on 10.09.2011, testing on 11.02.2012 – indicators testing on 11.02.2012, testing on 11.03.2012 – indicators testing on 11.03.2012.

At this time the results were in the range of 107% – 150%, and the average rate was 123%.

Table 3

Participants of the experimental group's changes of the «Quantity of health»

Sex/age	Date		
	10.09.2011	11.02.2012	11.03.2012
	Results, %		
W/24	94 %	104 %	107 %
W /25	99 %	111 %	113 %
W /27	104 %	115 %	120 %
W /28	107 %	120 %	123 %
M/21	106 %	115 %	117 %
M/23	103 %	114 %	117 %
M/27	116 %	128 %	130 %
M/27	107 %	121 %	124 %
M/29	116 %	119 %	129 %
M/30	101 %	113 %	116 %
M/31	104 %	116 %	120 %
M/64	108 %	141 %	150 %
M/65	96 %	125 %	136 %

W/24 – the indicators of woman of 24 at different stages of testing, etc.

M/30 – the indicators of man of 30 at different stages of testing, etc.

The obtained results follow that ski sports hike itself had also a positive effect on the growth of indicators of all members of the experimental group's the "quantity of health".

Conclusions

1. The participants of experimental group's comparative analysis of the results received at various stages of preparation were done.

2. It founds out that having classes on the created program promote the growth of physical qualities and increase the functionality of the body. The minimum growth rate was 11%, maximum is 42%. The average growth rate in the group is 19%.

3. The efficiency of the created and suggested training programs for tourists skiers to ski sports tours of different complexity was proved in practice (ski sports hike of the 3rd c.d.). The route was passed completely. The schedule of movement is sustained. All trip participants coped with their duties and were able to overcome the physical activities on the route. Dangerous and difficult sections were overcome according to the recommendations and basic tourist sports tours experience. Accidents and injuries were not during the hike.

Perspectives for further research: the program will be created for the training of tourists to mixed (complex) sports hikings.

References:

1 Amosov N. M. *Razdum'ia o zdorov'e* [Thinking about health], Moscow, Physical Culture and Sport, 1987, 64 p.
2 Ajdaraliev A. A. Maksimov A. P. *Adaptaciia cheloveka k ekstremal'nym usloviiam* [Human adaptation to extreme conditions], Leningrad, Science, 1988, 126 p.
3 Birzhakov M. B. Kazakov N. P. *Bezopasnost' v turizme* [Safety in tourism], Moscow, Gerda, 2005, 208 p.
4 Bulashev A. Ia. *Sportivnyj turizm* [Sport tourism], Kharkov, 2009, 331 p.
5 Bulashev A. Ia. *Gody i tropy* [Years and trails], 2008, vol.3, pp. 107-116.
6 Bulashev A. Ia., Kaplina L. I., Toporkov A. N. *Naukovij visnik Mikolayivs'kogo derzhavnogo universitetu* [Scientific bulletin of Mykolayiv State University], 2009, vol.24(4,2), pp. 15-18.
7 Volkov B. N.N *Metodicheskie rekomendacii po obespecheniiu bezopasnosti lyzhnykh puteshestvij* [Guidelines to ensure the safety of ski trips], Moscow, TSRIB "Tourist", 1980, 64 p.
8 Zyrianov V. A. *Podgotovka gornolyzhnika* [Training mountain skier], Moscow, Physical Culture and Sport, 1970, 192 p.
9 Il'ichev Iu. A. *Shkola vyzhivaniia* [School of survival], Moscow, MGITK "Road"1991, 97 p.
10 Kanep V. V., Slucker D. S., Shafran L. M. *Adaptaciia cheloveka v ekstremal'nykh usloviiakh sredy* [Human adaptation to extreme environmental conditions], Riga, Zvaigzne,1980, 184 p.
11 Lukoianov P. I. *Zimnie sportivnye pokhody* [Winter sports trips], Moscow, Physical Culture and Sport, 1979, 150 p.
12 Mikhajlova L. A. *Sposoby avtonomnogo vyzhivaniia cheloveka v prirode* [Methods autonomous survival of man in nature], Sankt Petersburg, Peter, 2008, 271 p.
13 Khromov B. *Pervaia pomoshch' pri travmakh i transportirovka postradavshikh* [First aid for injuries and transportation of victims], Leningrad, Medicine, 1969, 240 p.
14 Shtiurmer Iu. A. *Opasnosti v turizme, mnimye i dejstvitel'nye* [Dangers in tourism, the imaginary and real], Moscow, Physical Culture and Sport, 2008, 123 p.
15 Shtiurmer Iu. A. *Profilaktika turistskogo travmatizma* [Injury Prevention tourist], Moscow, TSRIB Tourist, 1992, 96 p.
16 Haymes E.M., Dickinson A.Z., Malville N. and Ross R.W. Effects of wind on the thermal and metabolic responses to exercise in the cold. *Medicine* & *Science* in *Sports* & *Exercise*. 1982, vol.14, pp. 41-45.
17 Mathew Lazar, Purkaystha S.S., Jayashankar A., Nayar H.S. Physiological characteristics of cold acclimatization in man. *International journal of biometeorology*. 1981, vol.25(3), pp. 191-198.

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