

INFLUENCE OF FITNESS JUMPING ON THE FUNCTIONAL CONDITION OF THE ORGANISM OF MIDDLE AGED WOMEN

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One of the relatively new types of recreational physical culture that is gaining popularity among various age categories of the population is fitness jumping [1, 2]. Practical activities carried out by us in this direction show a positive attitude and interest in jumping of middle-aged women, a positive impact on the emotional state and mental performance of the students [3].

The active expansion in the fitness practice of jumping requires the strengthening of scientific research aimed at substantiating the training programs used with the population, studying the effectiveness of these classes to identify their health and pedagogical effectiveness.

The purpose of the study is to investigate the impact of physical fitness classes on fitness jumping on the level of physical development of middle-aged women.

Material and methods. At the first stage, the scientific and methodological literature on the problem of the health status of middle-aged women, the influence of fitness jumping on the development of physical qualities, physical development, and the functional state of the body are analyzed.

At the second stage, a pedagogical experiment was been conducted. The study involved 18 women, aged 35 to 54 years, engaged in the health group of EI "VSMU" and who are employees of this institution. The pedagogical experiment lasted 16 weeks from February to May 2018, the women were engaged in fitness and fitness classes twice a week in the fitness room «Fortios» «VSMU». The characteristic of the functional state of the body and physical fitness of a group of women is given.

We used the following research methods: analysis of scientific and methodological literature, anthropometry, the method of indices and functional tests, methods of mathematical statistics «Statistika 10.0».

Findings and their discussion. At the beginning of the pedagogical experiment, and then at the end of the women, anthropometric measurements were made, indexes were calculated, and functional tests were carried out. As a result, it was found that after a fitness jump class, changes were observed in the BMI, where, at the beginning of the study, the average rate among those involved was according to the WHO standards, «overweight people (pre-fat)» category – $25,02 \pm 2,55$ c.u. At the end of the experiment, the average value of BMI moved to the «norm» category – $23,03 \pm 2,63$ c.u. ($p < 0,05$). The SI study allowed us to determine the increase in the indicator from $43,99 \pm 4,56$ kg to $48,68 \pm 5,52$ kg ($p < 0,05$), but the level remained unchanged within the «below

average» range. Continuing to investigate the level of physical development of women (according to the table of L.G. Apanasenko), it was determined that the state of the cardiorespiratory system, as well as the recovery processes in the organism after exercise, by Martin test, also changed, so the average fell from $80,67 \pm 17,24$ to $75,67 \pm 18,47$ s – level «above average».

The Robinson index, used to assess the level of functional status of the cardiovascular system (indirectly reflecting oxygen consumption), in the women studied varied from $93,87 \pm 9,73$ to $93,31 \pm 10,28$ points, which indicates a level “below average”. To assess the functional state of the respiratory system in the pedagogical research, the test of Stange and Genche was used. It was found that the average breath-holding time after inhalation (the Stange test) changed from $36,33 \pm 9,83$ to $40,89 \pm 9,71$ s ($p < 0,05$), and the average of the breath-holding characteristics after exhalation (Genche test) increased from $19,56 \pm 4,51$ to $23,83 \pm 5,90$ s ($p < 0,05$), the obtained data stated that the subjects belong to practically healthy people. The functional state of the nervous system and the neuromuscular apparatus was been assessed using Romberg's test, or rather its modification according to E.Ya. Bondarevsky, as a result of which the average time of the static position of the participants at the beginning of the experiment was obtained $9,33 \pm 3,88$ s, at the end time increase up to $11,11 \pm 3,46$ s (table 1).

Table 1 – The level of physical development of women of the experimental group, the average age is $44,28 \pm 6,45$ years

Periods	The beginning of the experiment (n=18)			P	End of experiment (n=18)		
	$\bar{X} \pm \sigma$	min	max		$\bar{X} \pm \sigma$	min	max
Weight, kg	$70,83 \pm 7,83$	65	95	$p < 0,05$	$65,17 \pm 7,64$	54	87
DMH, kg	$31,06 \pm 3,80$	25	40	$p > 0,05$	$31,56 \pm 3,85$	25	40
HR, уд./min	$77,67 \pm 7,40$	66	90	$p > 0,05$	$77,22 \pm 8,03$	60	90
SBP, (m.o.m)	$121,00 \pm 7,42$	105	130	$p > 0,05$	$120,42 \pm 5,35$	105	130
BMI, c.u	$25,02 \pm 2,55$	22,22	31,38	$p < 0,05$	$23,03 \pm 2,63$	18,47	28,74
SI, kg	$43,99 \pm 4,56$	37,5	52,31	$p < 0,05$	$48,68 \pm 5,52$	39,39	57,63
Martin test, s	$80,67 \pm 17,24$	59	119	$p > 0,05$	$75,67 \pm 18,47$	59	119
Robinson Index, points	$93,87 \pm 9,73$	75,9	112,5	$p > 0,05$	$93,31 \pm 10,28$	75,9	112,5
Romberg test, s	$9,33 \pm 3,88$	5	20	$p > 0,05$	$11,11 \pm 3,46$	7	21
Shtange test, s	$36,33 \pm 9,83$	20	54	$p < 0,05$	$40,89 \pm 9,71$	25	59
Genche test, s	$19,56 \pm 4,51$	15	31	$p < 0,05$	$23,83 \pm 5,90$	17	35

Conclusion. The conducted pedagogical experiment stated that the analysis of anthropometric measurements, functional tests, and their derivatives in women revealed changes. It is also necessary to cancel the fact that in the experimental group after passing a course of fitness jumping, such statistically significant indicators as weight, BMI, SI, LI, as well as indicators of the functional state of the respiratory system, according to Stange and Genche, have changed. Thus, the use

of fitness jumping confirms the high health-developing potential for the body involved.

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DEVELOPMENT OF BALANCE IN YOUNG PEOPLE WITH INTELLECTUAL DISABILITY

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In the life of people with intellectual disabilities, coordination abilities play an important role, since they ensure the quality of the entire motor activity. One of the most important coordination abilities is balance. In ontogenesis of a normally developing organism, a person's equilibrium is constantly being improved, reaching a level at a young age that ensures the high-quality performance of all basic vital activities (walking, running, overcoming obstacles, jumping, etc.). The peculiarities of the development of equilibrium in persons with intellectual deficiency are still relatively little studied. The scientific and practical significance of this knowledge lies in their use by specialists in the development of methods and programs aimed at the development and correction of coordination abilities (in particular, equilibrium) of the contingent under consideration.

Purpose of the study is to explore the level of development of equilibrium in people of young age, with moderate and severe degree of intellectual deficiency.

Material and methods. The level of development of equilibrium with the help of "Romberg's Test" was studied in people who are in the Department of