"Crossfit" as a direction of physical training of students of a pedagogical university

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Abstract

Objective of the study was to determine the possibilities and directions for the implementation of a modern fitness direction in a pedagogical university - crossfit.

Methods and structure of the study. The first-year students of the faculty of physical culture and sports (n-21) and students of the non-sports faculty of a pedagogical university (n-27) took part in the pedagogical experiment. At the first stage, the attitude of students to crossfit, knowledge of the methodological and organizational forms of its implementation, as well as the desire of students to engage in this fitness area at a pedagogical university were determined. At the second stage, an entrance control and an assessment of the physical and functional readiness of students for crossfit classes were carried out.

Results and conclusions. It is shown that the effectiveness of the implementation of the CrossFit direction in the extracurricular activities of students of a pedagogical university depends on the organizational and methodological support of both the classes themselves and the forms of control that allow using an individualized approach already in the first CrossFit classes. The authors propose a form of crossfit training in extracurricular activities of students of a pedagogical university, which has a high resource potential and the possibility of its implementation among young students.

Keywords: *crossfit, physical and functional fitness, high-intensity training, test tasks and functional tests, complex control.*

Introduction. One of the most discussed and controversial trends in the modern fitness industry is CrossFit [1, 2, 5, 6, 8]. One of the reasons for the discussions is the lack of understanding by scientists and practitioners of its methodological and physiological essence. Some of them perceive crossfit as a type of circuit training [2, 4], others - as a direction for developing strength endurance, and some look at this type of fitness much more broadly, emphasizing its technical complexity [5, 6, 7].

Along with this, the interest of students in CrossFit is growing, which dictates the need to find ways to implement this direction at the university.

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Methods and structure of the study. First-year students of the Faculty of Physical Education and Sports (n-21) and students of the non-sports faculty of a pedagogical university (n-27) took part in the pedagogical experiment. At the first stage, it was necessary to find out the attitude of students towards crossfit, knowledge of the methodological and organizational forms of its implementation, as well as the desire of students to engage in this fitness area at a pedagogical university.

At the second stage, entrance control and assessment of the physical and functional readiness of students for CrossFit classes were carried out. The diagnostic program consisted of the following test tasks and functional tests:

- motor tests of physical fitness: hanging pull-ups (boys), flexion-extension of arms while lying down

(girls); standing long jump; lifting the body from a supine position; shuttle run 3x10 m; running 2000-3000 m; hanging on bent (angle 90 degrees); deadlift dynamometry; dynamometry of power endurance (holding time 75% of the maximum result of hand dynamometry);

• functional tests: Stange test; Stange-Serkin test; orthostatic test; vital capacity of the lungs (VC); vital index (VC/body weight); Skibinskaya index.

Results of the study and discussion. Analysis of the results of the study showed that students of the Faculty of Physical Education and Sports and students of general faculties have an ambivalent attitude towards CrossFit. Students of the sports department are quite familiar with CrossFit, they have already formed a positive attitude towards it, while students of the non-sports department demonstrate a low level of knowledge of CrossFit, only 6.5% know what kind of fitness direction it is and what its methodological features are. and forms of organization of classes. It must be said that after the presentation of CrossFit, most of the students from non-sports departments expressed a desire to engage in this area both during and after school hours.

An assessment of the physical and functional readiness of students from the sports and non-sports faculties, carried out as part of the ascertaining experiment, showed different levels of readiness for CrossFit classes, which indicates the need to implement an individualized approach from the first lessons. All students from non-sports departments were divided into three groups: with low, below average and average levels of readiness. Levels above average and high were left for the possibility of further dividing students according to the growth rate of the abilities being studied. Two groups were formed among the students of the sports department; one group consisted of students with a high level of physical and functional readiness; they immediately began working according to individual plans drawn up on the basis of training microcycles used in crossfit. Students of the other group also worked on individual plans, in which the main emphasis was on the development and improvement of those conditions (physical, functional, technical) that will allow the student to perform more complex and varied CrossFit exercises.

It should be noted that one of the methodological features of constructing CrossFit classes is the cross-use of exercises from various sports, this allows you to change functionality, metabolic pathways for energy production and modalities of tasks performed. All of this dictates the need to go beyond any specific sport or training regimen, thereby improving various muscle groups and energy systems specific to different sports.

Classes with students of non-sports faculties are built on a different principle; in the first part of the lesson, general developmental and special exercises are performed, the main purpose of which is to prepare the body for the upcoming strength work. In the next part of the class, strength exercises are performed (back/front squats, deadlifts, standing presses, and bench presses), followed by metcon, or metabolic training. It is a set of exercises, most often short in time, in which it is proposed to work with small additional weights or without the use of equipment. In the final part, a set of special exercises is performed that enhances the recovery processes: mobility, stretching, hanging, elements of self-massage, etc.

Much attention in the process of practicing CrossFit is paid to the control and regulation of physical activity, where all types of control are consistently implemented: operational, current and stage-by-stage. Stage control is carried out using benchmarks. Benchmarks in CrossFit are test tasks (complexes) that allow you to assess the level of functional and physical fitness of those involved, and subsequently reflect the dynamics of the changes that have occurred. The content of benchmarks is scaled depending on the level of preparedness and qualifications of those involved. In our case, sports students initially performed a simple version of the beginner benchmark called Loredo, which consisted of the following six rounds of timed exercises: 24 air squats; 24 push-ups; 24 walking lunges; 400m run.

For students of non-sports faculties, the content of stage control was the input control tasks presented above.

Operational and current control is implemented directly in the training process of CrossFit classes. The main task of operational control is an express assessment of the student's state in which he is at the time of performing or immediately after completing an exercise (a series of exercises, or a lesson). The content of this type of control also includes an urgent assessment of the technique of the exercises being performed, which is very important in the first classes, when the basics of the technique of special CrossFit exercises are just being formed.

Operational control in our classes is the most important; it allows you to quickly regulate the load during classes. The objectivity of operational control was ensured by fitness bracelets – Garmin Vivosport. Recorded heart rate indicators allow us to adjust the volume and intensity of exercise. At the initial stage, training for students of non-sports faculties took place

in the 1st pulse intensity zone, followed by a smooth transition to the 2nd; in some types of training, a transition to the 3rd pulse zone was allowed.

It must be said that all students carried out a morning self-monitoring procedure, measuring heart rate at rest, immediately after waking up, without getting out of bed, which made it possible to daily monitor the processes of adaptation of the body to training loads. Current control allowed us to collect and analyze the information necessary to plan loads or correct them in training microcycles.

The conducted stage control, which completed a series of microcycles (n-12), showed a significant increase in results in all recorded entrance control exercises among students of non-sports departments. The highest results were recorded in tests characterizing functional readiness: Stange test, Stange-Serkin test, orthostatic test, Skibinskaya index.

For the first time, students of the sports department performed a set of test tasks - a benchmark - as a stage control. Analyzing these results, we can conclude that the time and quality of exercise performance varies greatly, this is most likely due to the sports specialization of students prior to starting CrossFit. The students' time to complete the entire complex was much higher than the average values for CrossFit athletes; none of the students met the time range of 30 minutes.

The implementation of the experimental CrossFit program outside of school hours is carried out during the 1st and 2nd semesters. The number of training sessions per week for students of non-sports departments is two sessions; students of the sports department attend classes three times a week. Own results of the formative experiment, their statistical processing can be presented in subsequent publications of the journal.

Conclusions. The study showed that CrossFit is an effective form of organizing the physical and functional training of students in comparison with classical circuit training and general physical training classes. This is achieved due to the functional variability of the load, its intensity and direction, borrowed from various sports, which together allows for a comprehensive effect on the body of those involved.

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