

QUALIFICATION AND TRAINING OF STUDENTS FOR POWERLIFTING CLASSES

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Introduction. The principal precondition of efficient sports activity is the correct qualifying and an adequate technique of training of the involved. These components can substantially differ according to the needs of specific sports. Powerlifting as one of power sports is getting more popular among young students nowadays [2]. Meanwhile, V.I. Ilyinich notes, that a desire of a student is not enough for the enrolment in the sports educational department - some preliminary preparation or a talent for chosen kind of sport is required. In other words, in this case, not only "you choose, but you are also being chosen" [5]. The European testing system offers two most informative tests for the maximum arbitrary muscle force estimation - carpal dynamometry and torso dynamometry. Trainers traditionally use the "standing vertical jump" to estimate speed and strength qualities. Applying these tests, it is possible to estimate the strength of, respectively, wrist, back and leg muscles. According to I.N. Manko, in three powerlifting exercises the strength of power lifters is manifested differently. During squats and deadlift the maximum force is achieved at the beginning of a movement, and its manifestation decreases gradually, but the "squat" exercise is distinguished by the biphasic force manifestation [8]. A.M. Dvorkin believes that this fact - when rising from a squat and passing the "dead spot" - is associated with the change of muscle groups involved [3]. According to Yu.I. Ivanov, the main criteria of external impact estimation in the power training method are: weight, number of repetitions and the combination of different modes of operation [6]. In order to improve training process A.M. Doronin suggests studying the biomechanical structures of athletes' motor actions, based on the regulation of muscle contraction modes [4]. A.N. Vorob'ev considers that the mastery of rational technique is possible only if the individual characteristics of athlete's body build are taken into account while training [1]. According to A.A. Kaplunov and A.P. Popov, young athletes' training shouldn't be intended to achieve high sports results in the early years of learning. It should be carried out with the prospect of long-term growth in the field of sports, which continues after the transition to a group of senior athletes [7].

The purpose of the study was to design the test model of qualification and sports training for

students lacking powerlifting experience. The task of the study was to allocate the rules of qualification, specific features of distribution of training load in powerlifting classes.

Materials and methods. The 10-year educational research with the use of the experimental model of qualification of power lifters and the plan of distribution of training loading was carried out among medical and agrarian university students without powerlifting experience. Five rules of qualification were allocated as a result of our work: 1) beginner should have the desire to do powerlifting and have ambitious intentions to win the competitions; 2) should have enough strength, as the initial qualification bar weight is determined in competitions; 3) an athlete needs a high level of strength endurance or the potential for its development, as the main task is to lift the bar three times, with a progressive weight, in each of the three competing exercises; 4) beginner should have flexibility, otherwise correct mastering of competitive movements is impossible (squat, bench press, deadlift); 5) power lifter should have good motor coordination, for example, during a squat the aim is to lift the bar up and down while maintaining the body balance on a small area of support. In this case the motor coordination is getting more difficult for powerlifter, because, according to the competition rules, an athlete has to change the weight of the bar three times in each exercise, causing the change of the state of muscle exertion, and it is possible to violate the exercise technique as a whole. Powerlifting is not only lifting the maximum weight in three exercises, but also a sport that requires precise power actions as a motor system, and correct execution of those actions is assessed by the competition judges.

Practice has shown that an athlete reaches and overcomes different forces when lifting the bar: a) bar weight (gravity); b) bar inertial force, which depends on the bar weight and velocity; c) gravity and inertial force of own body. These factors are the decisive criteria for assessment of athlete's technique and power during qualification.

The suggested methodology involves the mechanism of calculation of mechanical work performed in every competitive exercise. When lifting the bar the mechanical work (A) is measured by multiplying weight - P (bar weight) to the lifting height (h) ($A = P \times h$). The obtained data are used to determine the training load while training beginners. The estimation of the body response to the load is carried according to heart rate. The level of technical skills is indicated in the protocol of qualification in addition to quantitative results, as well as the presence of strong-willed fight with a bar each time. Thus, the places of each athlete in all three exercises are being defined and the best in each weight category are being chosen.

Experimental section. The work of a university trainer-teacher has a number of specific features including planning of the training process. It is divided into two cycles: autumn-winter and winter-

spring, each made of four months. In the summer time (practice, vacation), not all of students can attend training sessions regularly and do exercises intensively. So the transition period is planned for that time (independent work), in order to support the needed level of physical and technical skills of an athlete. The first training cycle of general pre-season begins in September, the second - in February; these months form the period of general psychophysical training; the amount and intensity of training are increasing stepwise from 30-40 to 70-80% relative to the maximum possible. The pre-season includes October-November and March-April, the amount of recommended load is up to 100 % and the wave-like changes of intensity reach 90% at the end of a cycle. December and May form the season when athletes are actively involved in various competitions, the amount of load is reduced to 40-50%, and the intensity rises to 100%. We apply training three times a week with a day of rest in between. The workout begins with an introductory section, followed by a special workout with the use of simulators and the main work with weight; the final part includes the mandatory stretching exercises.

Results and discussion. The implementation of the experimental model of qualification, training and distribution of training load for beginners during the first year, for those who have not been involved in powerlifting, can significantly strengthen the powerlifting teams of medical and agrarian universities. During the ten years of performances at the inter-university games of the Saratov region the SSMU team has won prizes five times: once the third place, three times - the second, once - the first. SSMU students participated in city, regional, national and international competitions, became champions and prizewinners. In 2006 at the Open European Championship, SSMU team member, medical faculty student, Alexander Romanov completed the qualification requirements of master of sports (total weight - 770 kg), being awarded the title of master of sports in powerlifting, set 3 European records among juniors: squat - 335 kg, bench press - 250 kg. He became a two-time European champion (powerlifting and bench press). In 2007 in Austria at the WUAP European Benchpress Championship (with the doping control), SSMU team member Grishechkina Lyudmila, medical faculty student, became an absolute champion in the weight category up to 56 kg with a result of 300 kg, set three records in the exercises: squat - 110 kg, bench press - 75 kg, deadlift - 125 kg. At the XXI WPC World Powerlifting and Bench Press Championship Grishechkina Lyudmila became an absolute champion in the weight category up to 52 kg with the result of 310 kg. She set three records in Europe with a total weight of 310 kg and separate exercises: bench press - 75 kg, deadlift – 127,5 kg. In 2008 at the Russian Powerlifting Championship in Rostov-on-Don Grishechkina Lyudmila completed the qualification requirements of master of sports. She became an absolute champion in the weight category up to 52 kg with a total weight of 307,5 kg. In 2012, at the

WPC / AWPC European Powerlifting Championship in Rostov-on-Don Irina Ageeva, a second-year student of the dentistry faculty, became a European champion in the weight category up to 60 kg, with a total weight of 197,5 kg. Fifth-year student of pediatric faculty Vyacheslav Shmatov became a European champion in the weight category up to 75 kg, completed the qualifications of master of sports with the total weight of 550 kg. In a separate exercise - bench press -150 kg, set a record for Russia, Europe and the world. Three masters of sport, seven candidates for master of sport, eight first-category athletes were trained during the educational experiment in the sports perfection group "powerlifting".

In 2008 the powerlifting team of SSAU named after N.I. Vavilov won first place team at the II Summer Universiade between the universities of the Ministry of agriculture. In 2010, the Powerlifting Championship was held during the III Summer Universiade between the universities of the Ministry of agriculture on the sports base of the Agricultural University in Saratov town. The competition was attended by more than 30 agricultural universities of Russia. SSAU team won second place team. The Universiade was attended by over 200 athletes, including 1 honored master of sports, 4 international master of sports, 15 masters of sports of Russia, 70 candidates for master of sports, 72 first-category athletes and more than 50 second-category athletes. In 2012 SSAU team took third place team in the IV Summer Universiade between the universities of the Ministry of agriculture.

The powerlifting team of SSAU has taken first places at the inter-university games of the Saratov region for ten years. Many SSAU team athletes completed the qualifications for candidates to masters and masters of sports of Russia and became champions and winners of competitions at various levels while training according to this method.

Conclusions

1. The designed model has an advantage in respect to saving time for qualifying beginners for powerlifting classes compared to the common methodology when the qualification process takes several months of training. Using the suggested technique, one can allocate the most perspective candidates for powerlifting classes in the very beginning of the academic year.
2. The subjected model of qualification and training of powerlifters ensures selecting sports actions with beginners in respect to their weight categories with a specific goal, estimating the intensity of work, promoting individualizing the load intensity for every athlete and efficient competitive performance already during the first year of training.

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