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Dynamics of development in traditional training cycles of types of strength and tension in highly qualified wrestlers on belts

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Abstract

Purpose: dedicated to substantiating the advantages of using special tests and computerized equipment "PDSKB -SHER" in the formation of strength qualities of wrestlers on belts with the help of isokinetic exercises and their evaluation.

Methods: literature analysis, methodological tests designed to assess strength qualities, including carpal, torso-lumbar dynamometry, heart rate monitoring and computerized measuring equipment "PDSKB-SHER", created in the dissertation, pedagogical experience and variational and statistical methods.

Results: Highly skilled belt wrestlers increased their explosive power - up by 82.5%, down by 19.3%. Physical qualities that ensure the performance of complex coordination techniques are developed by 17.4-21.5%.

In order to develop the types of strength and tension in the training sessions of highly qualified belt wrestlers who are part of the national team of Uzbekistan, explosive and maximum strength and strength endurance exercises and motor games are being introduced. As a result, the effectiveness of experimental exercises and motor games used for the development of strength and tensotype in the exercises of wrestlers on the belts of the experimental group increased the quality of explosive force by 31.2%, maximum strength by 38.9%; Explosive power with regular isokinetic exercises on the simulator - 57.4%; down - 17.3%; maximum lifting force - 82.5%; down - 19.3%; has been achieved.

Conlcusion: As a result of studies conducted at the second stage of the pedagogical experiment, it was found that the explosive force when lifting up the "frame" of the projectile in CG engaged in traditional meaningful training before the experiment was 1876.3 ± 335.78 N, and this indicator was 1887.6 ± 339.81 N after the experiment. Thus, the rate of growth of explosive force when moving the resistance (frame) up in this group was 11.3 N or 6.8%. In EG, who regularly performed specialized isokinetic exercises, outdoor games and 3 months of exercises characteristic of belbogli kurash in the simulator during 11 months of experimental content, the explosive force indicators registered in this direction before the experiment amounted to 1875.8 ± 332.29 N, and 1983.5± 1983.5 after the experiment, 344.53 N. The growth rate of explosive force increased in this group by 107.7 N or 57.4%.

Keywords: isokinetic exercises, belt wrestlers, experimental group, techniques, technical and tactical techniques, development and evaluation.

Introduction

It is revealed that ensuring the effectiveness of technical and tactical training in the process of long-term sports training depends on general and special physical qualities, methods and means of their gradual development in accordance with the specific features of each sport. based on many fundamental studies (LP Matveev; VN Platonov; LP Volkov; MA Godik, YF Kuramshin, AA Maksimenko; LD Nazarenko; JK Kholodov, VS Kuznetsov). Functional (physiological) foundations of physical qualities and motor skills are also expressed in some sources (VM Smirnov, VI Dubrovsky, ND Graevskaya). Studies on such topics were conducted in almost all types of wrestling (with the exception of belbogli ku-rash) and according to the recorded results, relevant scientific conclusions and practical and methodological recommendations were given (VF Boyko, GV Danko; ZB Boltaev; B Veselov; SV Eliseev; AA Karelin; IB Tarakanov; NA Tatanov; FA Kerimov). The range of extensive research conducted on belbogli kurash or the training of highly qualified belt wrestlers is extremely limited, and they are mainly devoted to the study of methodological aspects of training and competitive processes, topics of physical and technical and tactical training.

Methods

Literature analysis, methodological tests designed to assess strength qualities, including carpal, torso-lumbar dynamometry, heart rate monitoring and computerized measuring equipment "PDSKB-SHER", created in the dissertation, pedagogical experience and variational and statistical methods.

Results and discussion

The terms and conditions of the pedagogical experiment, the content of the traditional and experimental training options conducted in the control and experimental groups consisting of wrestlers on belts belonging to the weight category of 73 kg participating in the

experiment are highlighted. The experimental group explains the name of special exercises designed to form strength qualities (fast, maximum, explosive strength) and their content.

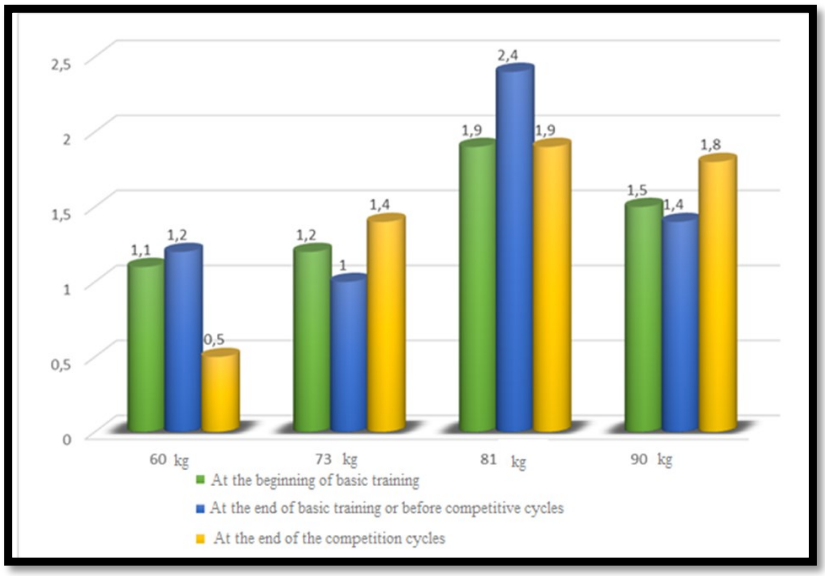
The statistical methods used in the analysis of the results (n,x,δ,t,p), methodological tests of the measuring equipment "PDSKB-SHER", objectivity and reliability of the results obtained are shown.

A comparative analysis of the results of current research is carried out. In particular, the strength qualities of wrestlers on belts belonging to different weight categories can be

Table 1. Dynamics of development of indicators of maximum strength among wrestlers on highly qualified belts in annual training cycles (x± σ, January-November 2022)

Weight category / Tests	60 n=38	73 n=43	81 n=35	90 and + n=32
At the beginning of basic training (January)				
1. Dynamometry of the body and waist, (kg)	136,5±9,77	141,7±10,24	149,4±8,75	161,8±11,36
2. Dynamometry wrist-paw of the right hand, (kg)	56,2±3,18	58,5±4,13	62,7±5,63	67,6±7,15
3. Dynamometry wrist-paw of the left hand, (kg)	54,4±3,21	57,2±3,91	59,8±4,55	65,2±5,11
At the end of basic training or before competitive cycles (March)				
1	137,2±7,26	140,6±8,13	149,1±7,68	162,3±9,17
2	55,7±2,93	58,8±3,77	63,8±4,12	68,4±6,15
3	54,3±3,14	56,9±3,64	61,5±4,15	65,7±4,88
At the end of the competition cycles (November)				
1	135,8±6,17	139,3±7,22	147,6±7,54	161,5±8,09
2	55,2±3,13	57,6±3,21	61,5±5,11	67,2±6,07
3	54,5±3,06	55,8±3,41	58,8±4,05	64,4±4,75

Fig 1. . Diagrams representing the asymmetric difference in the strength of the wrist-paw of the right and left hands, registered in the annual training cycles of wrestlers on belts of different weight categories (as of 2022)



fixed with significantly different characteristics under the influence of traditional training and competitive loads carried out in different cycles of the annual training process, for example, according to the results of a 2016 study, the strength of the lumbar spine and the strength of the flexor muscles of the hands-paws are marked on a low level at the beginning of basic training, but there was no significant increase in these qualities at the end of basic training or before competitive cycles (see table 1).At the end of the competition cycles, there was a decrease in the strength of the body-waist, right and left arm-wrist-paw. At the end of the base cycles of 2022, the level of these types of power increased slightly, but at the end of the annual training, it was found that the quality of these types of power decreased again (see figure 1).

The exercise used to assess fast and maximum dynamic strength endurance: the maximum possible number of throws of a ball weighing 3 kg on a horizontally mounted marker with a height of 3 m for 60 seconds for wrestlers belonging to the weight categories of 60, 73, 81, 90 kg, respectively, initially amounted (at the beginning of the basic training) to 29.17 ±3.09, 29,02±2,97, 26,72±3,19, 25,15±2,87 kg, by the end of basic training or before competitive cycles, these indicators decreased (see table 2).

It is important to note that it was noticed that these weakened indicators were further reduced under the influence of official competitions and trainings that were used in the competition cycles. It is safe to say that fast and maximum dynamic strength endurance by the end of the annual training is clearly reduced, firstly, by the increase in fatigue symptoms, secondly, by the weak formation of strength endurance, and thirdly, it is based on the insufficiency of measures to restore working capacity at the end of traditional training and competitions.

In hanging on the horizontal bar, representing the quality of abdominal muscle tension in isometric order, bending the legs 90° horizontally and maintaining this position, the highest indicator (37.06 ± 4.78 s) and the lowest indicator (29.07 ± 3.27 s) were recorded. wrestlers of the weight category have 90 kg.

Based on the registered results and their comparative analysis, the following conclusions can be drawn:

Current studies conducted during the training period of 2021 show that at the beginning of basic training, low back strength and wrist flexor strength, which is lower than that of average trained wrestlers in other types of wrestling, play an important role in highly qualified wrestlers on belts of various weight categories although this was done, by the end of basic training or before the end of the competition, there was no obvious increase in these qualities, it was even known that these indicators partially weakened in the 73 kg weight category of wrestlers. At the end of the competition cycles, it was found that the strength of the torso-waist, right and left arm wrist-hand clearly decreased. This situation can be justified, in our opinion, by the fact that the corresponding exercises used in traditional training have an ineffective value, or the symptoms of exhaustion were not eliminated in time, and the ability to work was not restored.

Although it was noted that at the end of the basic cycles of the preparation period by 2022, the strength of the torso-waist and arms increased slightly in wrestlers of all weight categories, but at the end of the annual training, the level of these indicators differed in that it significantly decreased compared to the initial results. This dynamic change was also observed with respect to the strength of the flexor and extensor muscles, which demonstrated rapid and maximum strength endurance.

The maximum possible number of throws of a ball weighing 3 kg on a horizontally mounted marker with a height of 3 m for the maximum possible time of 60 seconds for wrestlers of the weight categories 60, 73, 81, 90 kg, used to assess fast and maximum dynamic strength endurance, initially amounted to 29,17± 3,09, 29,02± 2,97, 26,72±3,19, 25,15± 2.87 c kg, by the end of basic training or competitive cycles in advance, these indicators decreased. It is important to note that there was a further decrease in these reduced indicators due to the influence of official competitions and training used in competitive cycles. It is safe to say that by the end of the annual training, rapid and maximum dynamic strength endurance is clearly decreasing, firstly, fatigue symptoms are increasing, secondly, strength endurance is poorly formed, and thirdly, it is based on the lack of measures to restore performance after traditional training and competitions.

In hanging on a horizontal bar, which represents the quality of tension of the abdominal muscles in an isometric order, and bending the legs 90 degrees horizontally, leaning on the crossbar with their hands, this position was

Table 2. Dynamics of fast and maximum dynamic strength endurance among highly qualified belt wrestlers in annual training cycles (x± σ, January-November 2016)

Weight category Tests	60 n=39	73 n=46	81 n=41	90 ва + n=35
At the beginning of basic training (January)				
1. Throws of a ball weighing 3 kg on a horizontally mounted marker with a height of 3 m for 60 seconds	29,17±3,09	29,02±2,97	26,72±3,19	25,15±2,87
2. Throws of a ball weighing 3 kg on a horizontally mounted marker with a height of 3 m for 60 seconds	35,83±4,16	37,13±3,88	38,76±4,07	41,27±4,25
At the end of basic training or before competitive cycles (March)				
1	28,09±2,73	27,16±2,11	26,17±2,79	24,31±2,43
2	33,19±3,12	35,06±3,13	37,13±3,97	38,15±4,01
At the end of the competition cycles (November)				
1	27,14±2,18	26,03±2,31	25,33±3,22	24,02±2,33
2	32,07±3,03	33,27±2,74	36,37±3,25	37,87±3,73

achieved by wrestlers belonging to the 73 kg weight category (34.53 ± 4.47 s), and the lowest indicator (29.13 ± 3.96 s) was recorded in wrestlers of the weight category categories of 90 kg. It is noteworthy that a progressive decrease in the initial real indicators was revealed both by the end of the main training cycles and by the end of the competition cycles. It should be noted that isometric tension or static force is not important in other types of wrestling, but this type of tension has its share in belbogli kurash. Therefore, it is appropriate to focus on the formation of such strength qualities in wrestlers on belts.

Conclusion

The effectiveness of technical and tactical techniques in training in all sports, including wrestling, especially in competitions, primarily depends on fast and maximum dynamic strength endurance and its heart rate value. If this ability and its functional component are poorly formed, then the fast and maximum strength inherent in the athlete cannot withstand prolonged loads performed for a certain period of time. The results of the studies conducted in this regard show that the fast (in 60 and 10 seconds) and maximum (in the maximum possible time) dynamic strength endurance recorded for all tests did not differ significantly in different indicators. For example, the maximum number of throws of a ball weighing 3 kg for 60 seconds on a marker installed at a height of 3 m was 31.27 ± 3.57-27.06± 2.97 times (in the case of early real pointers) in all weight categories (fast power endurance), which was 35.43±4.16-41.83± 4.66 times. In our opinion, these indicators, insufficiently recorded by highly qualified belt wrestlers (especially heavyweights), decreased at the end of basic training (March) and towards the end of competitive cycles. In this case, it shows that the traditional meaningful training conducted by wrestlers does not have the features of rapid formation of these qualities. In addition, as observed during the study, it can be assumed that the lack of restorative measures at the end of each workout prevented the formation of not only strength qualities, but also other physical qualities in a progressive direction.

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