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Pedagogical model of training classic exercise "Kettlebell jerk"

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Abstract: Since ancient times the exercises with kettlebells were one of physical development means among people. Kettlebell lifting is a cyclic strength involving kind of sport. A person should lift kettlebells as many times as it's possible within strictly defined time period in a standing position. There are the following competitions in kettlebell lifting: classical double-event, long cycle jerk, army kettlebell jerk, kettlebell juggling. We studied "Kettlebell jerk" exercise from classical double-event. ***Materials.*** The article considers the results of the research works by native and foreign authors, survey among the respondents concerning the basis of the technique of "Kettlebell jerk" classic exercise. ***Research methods.*** Information sources analysis and summarizing, survey among the respondents, pedagogical experiment, methods of mathematical statistics. Results. We created a pedagogical model of training classic exercise "Kettlebell jerk", the important components of which include the following: the parts of the exercise fulfillment, the phases of the exercise fulfillment, the elements of the exercise fulfillment. We revealed the main technical elements of training classic exercise "Kettlebell jerk". The organized pedagogical experiment showed the effectiveness of created by the authors pedagogical model: the respondents from the experimental group demonstrated 5-7% better results, than the respondents from the control group. ***Conclusion.*** We stated that for the coaches and athletes it was reasonable to use the created by us pedagogical model of training classic exercise "Kettlebell jerk" in the training process while preparing individual training tasks. The results of the pedagogical experiment showed that the created by us pedagogical model is not suitable for every athlete-weightlifter. The coaches should take into account physical abilities and somatotype of the athletes. Scientific novelty of the research is in creation of the pedagogical model of training classic exercise "Kettlebell jerk". Practical value is in the pedagogical model of training classic exercise "Kettlebell jerk" introduction into the training process of athletes-weightlifters.
Keywords: swimmers, divers, physical development indices increases, body weight content.

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Introduction

Since ancient times the exercises with kettlebells were one of physical development means of among people. Kettlebell lifting is a cyclic strength involving kind of sport. A person should lift kettlebells as many times as it's possible within strictly defined time period in a standing position. There are the following competitions in kettlebell lifting: classical double-event, long cycle jerk, army kettlebell jerk, kettlebell juggling. We studied "Kettlebell jerk" exercise from classical double-event.

Classic exercise "Kettlebell jerk" is a repeated speed-strength oriented action. The exercise is not difficult, but it demands high technical and physical readiness of athletes-weightlifters.

Materials and methods

In kettlebell lifting, in particular during classic exercise "Kettlebell jerk" fulfillment, it is important to pay attention to technical training and physical readiness of an athlete.

During scientific-methodical sources, the research works by native and foreign authors, survey among the respondents analysis we managed to solve the problem concerning the topic of the research. It means that the classic exercise "Kettlebell jerk" demands technical mindsets [Bolotin, 2022, p.157].

We created the pedagogical model of training classic exercise "Kettlebell jerk" (Fig.).

Speaking about the technique of jerk

development, we can state that the quickness of its fulfillment would be increased, more correct sequence of the muscle inclusion into work would be found. It should provide more complete realization of strength oriented abilities of an athlete-weightlifter [Davidenko, 2021, p.54-59].

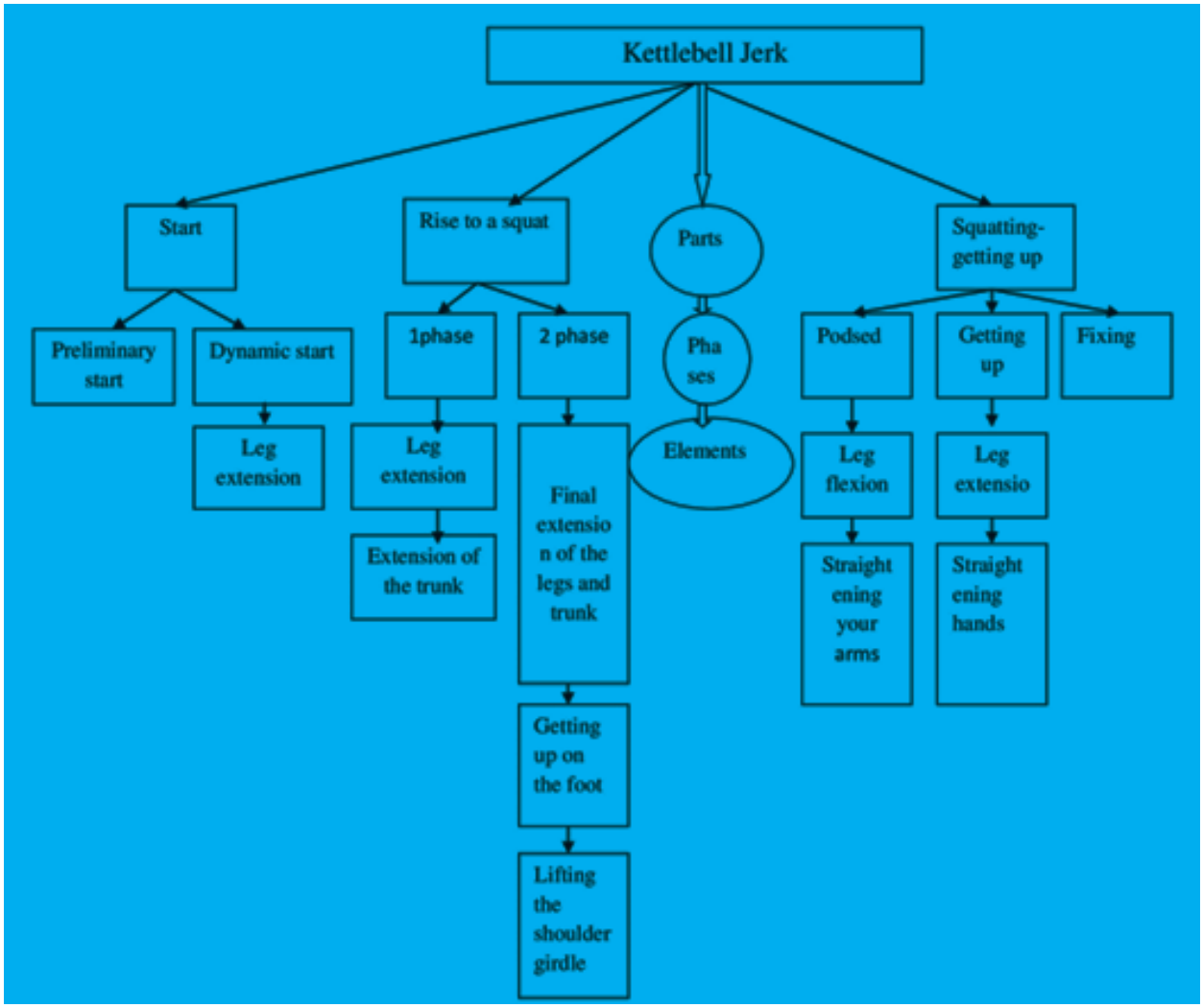

Fig. Pedagogical model of training classic exercise "Kettlebell jerk"

Results and discussion

Classic exercise "Kettlebell jerk" includes three interconnected parts:

- start;
- uprise till squat;
- squat-rising.

Start is the main motor objective during maximal amount of jerk fulfillment within the definite time period [Kraft, 2020, p.306-308]. In this connection at the start physical abilities of an athlete should be maximal.

Start in a kettlebell jerk is divided into two phases:

- preliminary;
- dynamic.

The position of the separate parts of the body in a dynamic start change, the same as in classic kettlebell jerk, is caused by the necessity to balance the system an athlete-kettlebell relating to legs.

A squat during the kettlebell jerk fulfillment is necessary to realize precisely, quickly, confidently. A squat can be fulfilled in a different way: with the feet placing and without it – with unfolded toes [Pronin, 2022, p.331-335].

It is more favorable to fulfill the squat without the feet placing, because it is fulfilled quicker and it helps to use the lifting power of a hand, leg and a body. However, such kind of a squat can be successfully fulfilled only if a person has very flexible joints [Pronin, 2022, p.312-315].

Kettlebell jerk starts with an energetic kettlebell second pull. A kettlebell should move in accordance with pendulum effect. The rhythm of the exercise fulfillment

should be three-stroke. During the first stroke the first phase is fulfilled – pull, during the second stroke- second pull, swing, jump under the weight, the third stroke- rising from the squat, fixation. The second pull is the most stressed phase [Pronin, 2022, p. 26-30].

During the research we organized the pedagogical experiment. The first and the second kettlebell lifting teams of Mikhailovsk Military Artillery Academy (Saint-Petersburg) took part in the experiment. During the pedagogical experiment we stated that the model of training classic exercise "Kettlebell jerk" introduction into the training process helps athletes-weightlifters to increase their sport result. Tables 1,2, present the results of the experiment.

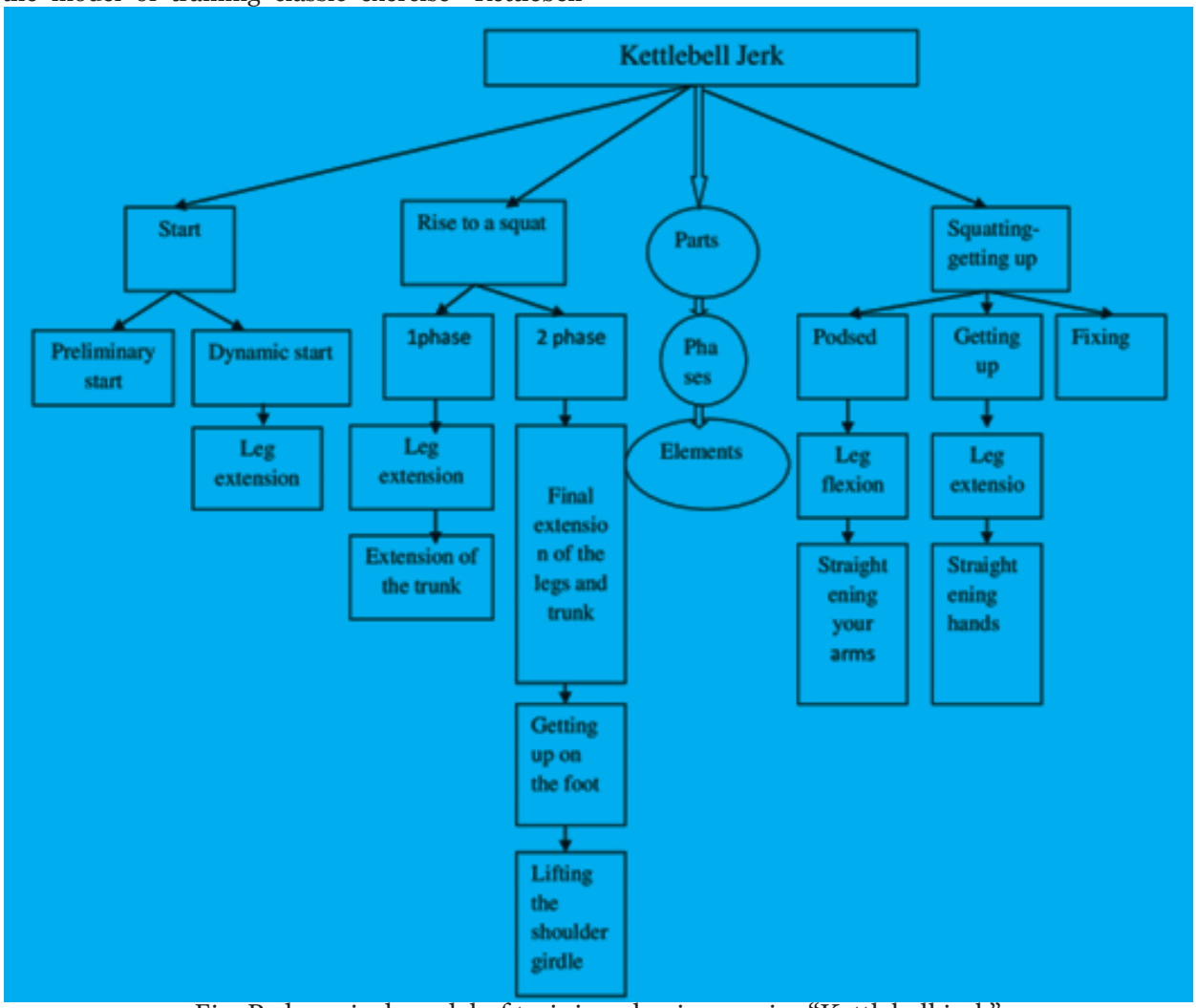

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Table 1

The indices of "Kettlebell jerk" exercise fulfillment before the experiment

Respondents	Weight of an athlete, kg	"Kettlebell jerk" exercise fulfillment	Respondents	Weight of an athlete, kg	"Kettlebell jerk" exercise fulfillment
Time of classic exercise "Kettlebell jerk" fulfillment during 10 minutes with the weight 32 kg					
1 CG	63	100	1 EG	63	90
2 CG	68	97	2 EG	68	104
3 CG	73	111	3 EG	73	115
4 CG	78	140	4 EG	78	135
5 CG	85	150	5 EG	85	155
6 CG	85+	180	6 EG	85+	159

Table 2

The indices of "Kettlebell jerk" exercise fulfillment after the experiment

Respondents	Weight of an athlete, kg	"Kettlebell jerk" exercise fulfillment	Respondents	Weight of an athlete, kg	"Kettlebell jerk" exercise fulfillment
Time of classic exercise "Kettlebell jerk" fulfillment during 10 minutes with the weight 32 kg					
1 CG	63	99	1 EG	63	100
2 CG	68	98	2 EG	68	111
3 CG	73	100	3 EG	73	125
4 CG	78	141	4 EG	78	141
5 CG	85	148	5 EG	85	166
6 CG	85+	181	6 EG	85+	179

During the pedagogical experiment the respondents from the control group used only classic exercises for the classic exercise "Kettlebell jerk" training. In the experimental group respondents used created by us pedagogical model of training classic exercise "Kettlebell jerk".

The results of the experiment showed that created by us pedagogical model of training classic exercise "Kettlebell jerk" was effective, but it is not suitable for all athletes, as the level of motor abilities development among the athletes is different [Trul, 2021, p.441-444].The respondents from the experimental group showed 5-7% better results, than the respondents from the control group. Coaches should take into account physical abilities and somatotype of the athletes during the training process and individual training tasks planning in order to achieve high results.

The effectiveness of a kettlebell lifting depends on the speed of weightlifter's body movement during the separate elements of kettlebell jerk fulfillment. Especially important is the quickness during the squat under the weight fulfillment. As during a squat the strength of a hand is not great and the kettlebell continues to move mainly owing to inertia (pendulum effect), it is important to fulfill the exercise technically correctly [Bolotin, 2018, p.43-52]. Moreover, in case this exercise is fulfilled quicker, it demands good weightlifter's physical fitness [Bolotin, 2021, p.223-227].

Conclusion

It was stated that for the coaches and athletes it is reasonable to use the created by us pedagogical model of training classic exercise "Kettlebell jerk" in the training process while preparing individual training tasks. The results of the pedagogical experiment showed that the created by us pedagogical model is not suitable for every athlete-weightlifter. The respondents from the experimental group demonstrated 5-7% better results, than the respondents from the control group. The coaches should take into account physical abilities and somatotype of the athletes, as athletes have different level of motor abilities development.

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