

The effect of similar performance of rubber ropes exercises on developing special strength and achieving discus throwing for female juniors

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Abstract

The purpose of this paper isto prepare exercises similar to performance using rubber ropes with the legalization of training loads for these exercises during the performance stages, and to identify their impact on the special strength and the achievement of discus throwing for young women aged (16-17) years.The researcher adopted the experimental method with a one-group design with two pre and post-tests for its suitability and the nature of the objectives and problem of the research.The research sample included the players of the Athletics Training Center / Diyala Education Directorate for the year (2020/2021), the junior category, and the number of them are (6) players who were chosen by the intentional method, and homogeneity was extracted for them in the research variables.After the results of the research, we concludeRubber ropes exercises similar to performance have contributed to the development of explosive strength and speed characteristic of the muscles of the legs and arms, and this was positively reflected through the clear impact on the achievement of discus throw among the members of the research sample.The researchers recommends the use of these exercises because of their great impact on the muscular strength of the female discus throwers, as well as being a training method that ensures the presence of external resistance with positive and health effects compared to free weights whose use can lead to complications on the bone formation of the joints, especially for young women and athletes with young ages.

Introduction:

The great progress made in the level of achievement in athletics activities, in general, came as a result of the great development in methods, tools and modern training devices that came as a result of research and scientific experiment according to the correct foundations and rules, as well as a precise orientation towards achieving training goals.

The process of preparing discus throwing players requires a lot of effort by the player and the coach alike, and it is represented in the scientifically systematic training process in the general and private technical and physical aspects to reach

them to the highest level in order to achieve achievement, and one of the important things for the player is her enjoyment of a high level of fitness elements The general and private physical, and this, in turn, is reflected positively on the technical performance of the effectiveness of the discus throw to meet the requirements of successful and distinguished performance, so we see many coaches using various and different training methods and methods in order to gain time, achieve the desired training goals and raise the level of the player's fitness elements. Rubber ropes are one of

the training tools and one of the flexible resistances that are used to develop and develop muscular strength. The nature of performance in this type of exercise differs from traditional weight training exercises in that it achieves appropriate muscle excitability throughout the duration of one exercise. "As the elastic resistance used in any kind, whether rubber rope or sandow tapes, is characterized by an increase in its resistance as its stretch and stretch increases during the central movement of the exercise, and this requires increasing the intensity of the muscle contraction against this resistance continuously throughout the kinetic period of the exercise until the end of the movement, and thus the arousal has achieved The muscles of the muscles that work more effectively in all points of the movement path of the central movement of the exercise" (Haidan. 2019), This method is also characterized by solving the problem of the necessity of slowing the central movement of the exercise during at least the last third of its motor range in order to avoid causing a shock to the bone formation of the joint body joints, which can occur when performing strength exercises with weights if the acceleration of the central movement of the exercise continues until its end. In rubber rope exercises, the source of resistance does not remain in a state of inertia (a fixed amount of resistance) in the direction of increasing the movement of the joints to a greater extent than the extent allowed after the end of the central movement of contraction, as in traditional weight training exercises, but rather the source of resistance remains pressing against the direction of joint action The joint in the performance of the movement, and this is what works to preserve the joints from being subjected to an inertial impulse state (Helmy.2015).

Research importance:

The importance of research in the use of rubber ropes in paths similar to the motor paths of the actual performance in discus throwing and the projection of resistances on the working and supporting muscles in the throw in a different way during the implementation of the movement from the start stage to completion.

Research problem:

The issue of poor physical preparation for female players in the Iraqi environment is one of the problems that plague women's sports in all activities and events, due to the lack of activities and competitions per year, and this leads to a decline in their physical level. Effective, and from here comes a question, which is, do exercises with rubber ropes similar to performance develop the special strength and achievement of female discus throwers?,

Research objective:

- prepare exercises similar to performance using rubber ropes with the legalization of training loads for these exercises during the performance stages
- Identify their impact on the special strength and the achievement of discus throwing for young women aged (16-17) years.

Research hypotheses:

- The researchers assumes that there are significant differences between the pre and post-tests among the sample members in the variables of the research under study.

Research methodology and field procedures:

Research Methodology:

The researcher adopted the experimental method with a one-group design with two

pre and post-tests for its suitability and the nature of the objectives and problem of the research.

Community and sample research:

The research sample included the players of the Athletics Training Center / Diyala Education Directorate for the year (2020/2021), the junior category, and the number of them are (6) players who were

chosen by the intentional method, and homogeneity was extracted for them in the research variables, the value of the skew coefficient appeared between (± 3), and this indicates the homogeneity of the sample and the results being not affected by individual differences, as shown in Table (1).

Table (1) shows the homogeneity of the sample in the research variables

Variables	Mean	Median	Std. Deviations	Skewness
Explosive strength of the arms	5.280	5.50	.5227	.967
Explosive strength of the legs	28.40	29.0	1.341	.166
The speed characteristic of the arms	6.20	6.0	.836	.512
The speed characteristic of the legs	11.77	11.94	.695	.788
achievement	17.25	17.5	0.790	1.186

Devices and tools used in the research:

- Arab and foreign sources.
- Physical exams.
- CASIO type (3) electronic stopwatch.
- Rubber ropes (6).
- Athletics field.
- Laptop type DELL
- FOX type whistle.
- tape measure.

Tests for research variables:

The variables of the research included the special strength and achievement of discus throw, and the special strength of the discus girls was represented by the explosive and speed-distinguishing force of the muscles of the legs and arms, and the tests of these variables were determined by analyzing the content of many studies in the Iraqi environment for these variables, which are as follows:

First: Throwing a medical ball weighing 3 kg from above the head to the maximum distance to measure the explosive strength of the muscles of the arms (Maksoud.1997).

Second: Vertical jumping (sargent) to measure the explosive strength of the muscles of the legs (Jassim.2008).

Third: The push-up test in the front stand position for a period of (10 seconds) to measure the speed characteristic of the muscles of the arms (Jassim.2008).

Fourth: The Bounding test on one leg 30 m to measure the speed characteristic of the muscles of the legs (Al-Zahawi.2004).

Fifth: Discus Throw accomplishment Test:

A mini-competition was conducted on the individuals of the research sample similar to the actual competition, giving three attempts to each player and

calculating the highest result among these attempts).

Field research procedures:

Pre-tests:

The pre-tests were carried out on the members of the research sample on Saturday, 3/10/2020, as the physical tests were conducted first, and after completion, a sufficient rest period was taken, and then the discus achievement test was applied, and after the tests were completed, their results were recorded in a form prepared for this purpose. The pre-test conditions were fixed in order to conduct the post-test.

Method of exercises with rubber ropes similar to the kinetic path of performance:

After completing the tribal tests, the implementation of the exercise curriculum with rubber ropes was started on Monday, 5/10/2020, on the members of the research sample by the coach of the Athletics Training Center of the Diyala Education Directorate, according to the following:

- The exercises were carried out in the physical part of the main section of the training unit, with a duration of (25-30) minutes.
- Implementation of the exercise curriculum took (8) weeks and included (24) training units of (3) training units per week and for days (Saturday, Monday, Wednesday). 11/2020.
- The high intensity interval training method was used to form the training loads and in the special preparation period.
- The time of applying the vocabulary of the research method is (25-30) minutes from the

physical part of the training unit, as the total time of the elastic resistances curriculum reached (648) minutes, divided equally for the explosive force and speed characteristic of the legs and arms by (162) minutes for each of them.

- The pregnancy ripple during the period of application of the curriculum was (2-1) and (3-1).
- Adopting the resistance of rubber ropes as a basis for determining the training intensity in the training curriculum, by calculating the tensile strength of the rubber rope using an electronic scale to measure the tensile resistance and determine the length of the rubber rope in the exercise (Haidan. 2019), and the total intensity of the training unit is calculated by calculating the total stress Total exercises in the daily training unit.
- The number of repetitions is appropriate for the ability of the junior so that it is allowed to perform the subsequent exercises without any decrease in the speed of performance according to the required intensity, and the repetition time ranged between (10-15) seconds and the number of totals (2-4) groups.
- Intermittent rest between repetitions ranges between (30-60) seconds at a rate of (1-2), and rest between groups (60-90) seconds, both positive and negative.

Post-tests:

The post-tests were carried out on the individuals of the research sample on Monday, 30/11/2020, as physical tests were first conducted on the research

sample and after it was completed, a sufficient rest period was taken, and then the discus achievement test was applied, and after completing the tests, their results were recorded in a form was prepared for this purpose, and the post-test was carried out under the same conditions as the pre-test.

Statistical methods: The search data was processed through the Statistical Package for the Social Sciences (SPSS).

Presenting, analyzing and discussing the results of the pre and post measurements in the research tests:

Table (2) Arithmetic means, standard deviations, difference of arithmetic means and their deviations for the pre and post measurements, and the calculated t value for the research variables.

Variables	Measuring unit	Pre-test		Post-test		arithmic mean of difference	standard deviation of differences	T value calculated	level Sig
		Mean	standard deviation	Mean	standard deviation				
Explosive strength of the arms	m	5.280	.522	6.00	.395	.72	.189	8.515	.001
Explosive strength of the legs	cm	28.40	1.341	31.00	1.224	2.60	.894	6.500	.003
The speed characteristic of the arms	Repetition	6.20	.836	8.20	.836	2.0	.707	6.325	.003
The speed characteristic of the legs	sec	11.77	.695	.465	10.63	1.14	.314	8.168	.001
Achievement	m	17.25	0.790	18.50	.753	1.33	.236	12.59	.000

Table (2) shows the values of the statistical parameters of the research variables in the two measurements, before and after, as well as the values of the (T) test, which appeared in succession for the explosive strength of the muscles of the arms (8.515) below the level of significance (0.001) and the explosive strength of the muscles of the legs (6.5)

Results and discussion:

After collecting the results of the pre and post-tests for the members of the research sample, these data were processed statistically by using the (T) test for the linked samples to find out the differences between the pre and post-tests of the research variables tests.

below the level of significance (0.003) and for the speed-distinguished force of the arms (6.325) below the significance level (0.003) and in the speed-distinguished strength test for the muscles of the legs it reached (8.168) below the significance level (0.001) and in the discus achievement test it reached (12.56) below the significance level (0.00), and this achieves

The research hypothesis, which acknowledges the existence of significant differences between the pre and post measurements in the tests of research variables.

The researchers attribute these moral differences to the exercises in which the rubber ropes were used according to paths similar to the movements of the technical performance of the effectiveness of discus throw, which led to the improvement and development of the working muscles and the supporting and minute muscles that participate in the performance stages, as well as the gradation of intensity from the beginning of the movement to the intensity What is required to be achieved in the exercise when reaching the main part of the movement, and then gradually decreases the intensity to reach the initial position of the exercise, and in this case, the intensity is focused on the central contraction and its focus on the working muscles, and then gradually reduce the intensity whenever the contraction becomes in the eccentric direction, i.e. in the case of muscle relaxation working, and this led to the rapid performance of the exercise and the lack of slowness in returning to the initial position, which helped to develop the strength characterized by speed and explosiveness among the members of the research sample, Crossly indicates out. "If there is no delay between the process of eccentric contraction (lengthening) and central contraction (shortening), then the amount of work done under this condition is translated by elastic energy released into the muscle during stretching" (Crossly, G.1984).

The development in the explosive strength and speed characteristic of the muscles of the legs and arms was positively reflected in the development of

achievement among the members of the research sample, and this was shown by the results of the research, as the exercises were similar to the kinetic paths, especially in the throwing part, starting from the stage of wrapping the trunk and extending the arm back and starting the process throwing in the presence of a rubber rope, and thus, shedding the variable resistance of the rubber rope during the movement helped in performing the exercises quickly and effectively, which reflected positively on the rapid strength, as the faster the muscle contraction generated a quick force, "The best that can be won and gained by achievement can be achieved when the key to the training parts is as close as possible to what works in the competition, and the more specific the training, the greater its impact on achievement, and this is a proven fact in the training of running and muscular strength" (Frag. 2012).

Conclusions and Recommendations:

Conclusions:

After the results of the research, we conclude Rubber ropes exercises similar to performance have contributed to the development of explosive strength and speed characteristic of the muscles of the legs and arms, and this was positively reflected through the clear impact on the achievement of discus throw among the members of the research sample.

Recommendations:

The researchers recommends the use of these exercises because of their great impact on the muscular strength of the female discus throwers, as well as being a training method that ensures the presence of external resistance with positive and health effects compared to free weights whose use can lead to complications on the bone formation of the

joints, especially for young women and athletes with young ages.

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