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The effect of great strength and speed exercises in developing the muscular ability of young handball players

Sardar Hkem Mohamed[1] , Hussam Mohammed Headan[2]

[2]University of Diyala / physical education and sport sciences

[1]Diyala Education Directorate

Email Id : Drhussam@sport.uodiyala.edu.iq, sardarhakeem65@gmail.com

ABSTRACT: Sports training is one of the most important sciences in the sports field because of its great role in supporting the training process and developing the training status of the athlete by finding the best methods to upgrade the physical, skill, and planning level and reach to achieve training goals and achievement.

The concept of physical abilities in the sports field means the association of two different physical traits with each other, which results in the correlation of a physical trait that combines the characteristics of these two physical traits. For example, the ability of the rapid force represented by the explosive force and the force characterized by speed is a mix between the maximum force and the speed So, the athlete must have these two characteristics in order for him to show perfect fast strength ideally, and muscle groups that have fast ability are characterized by high muscle tension characterized by rapid contractility and muscle relaxation.

I.INTRODUCTION:

The training of the athletic strength of the athlete, whether at the beginning of the training age or at the beginning of the general preparation period comes in the early stages of the actual training, since this trait is the basis of the athletic work, as an athlete who has a high degree of muscle strength can match the difficult training requirements as well as high preparedness To develop and upgrade the level of other physical attributes, the concept here is to train strength is the maximum muscle force, and the athlete's speed training comes at the stage of acquiring an acceptable level of muscle strength because the speed is muscle contractions that are characterized by a high speed that generates a high frequency in movement, and it is recognized that speed training has a relationship Great for the central nervous system, which is responsible for sending the nerve signals to the muscle for contraction and relaxation.

Through the foregoing, the importance of research is evident in focusing on the basic components of the fast strength and training it in the correct image so that the athlete has sufficient strength and speed so that the two physical characteristics can then be reconciled to produce a rapid force that helps the athlete achieve the performance and achievement requirements, that is one of the reasons that The researchers called for a study of this case is the presence of variation among young players in the explosive strength and the speed, and sometimes the deficiency of this muscle ability among some of them, which greatly affects the level of performance during the competition or training alike, and the resort of some coaches to the use of special exercises Directly without referring to the strength and speed elements of the athlete in a way that might adversely affect the level of the athlete, and the research problem is to answer the question that does training for maximum strength and speed individually affect the explosive force and the speed characteristic of young

handball players ???, and **aims The research** seeks to know the effect of training the extreme force and speed on the fast force represented by the explosive force and the speed characteristic of the young handball players. Two researchers have significant differences between the pre and post -tests of the research variables represented by maximum force, speed, and explosive strength, which is characterized by speed.

II.RESEARCH METHODOLOGY AND FIELD PROCEDURES

Research Methodology:

The two researchers used the experimental approach with one group design with pre- and post-testing to suit it and achieve the research objectives.

The research sample:

The research sample included the players of Diyala Sports Club with handball, who were chosen intentionally, and they numbered (18) and (6) players were excluded for the assistance of them in the exploratory experiment. Thus, the number of the research sample reached (12), and then homogeneity was conducted among the members of the sample in Research variables and results showed homogeneity of the sample.

Tools:

• Physical and skill tests

• Legal hand balls

• Handball field

• Medical scale

• dynamometer

• Weights different weights

• Legal Weightlifting Bar

• electronic stopwatch **Research tests:**

The muscular ability tests, which are the explosive power and the distinctive velocity of the arms and legs, were determined by relying on the most used tests in the Iraqi environment.

First: test the maximum strength of the arms

Static Maximum Force Test (Loay Ghanem Al-Sumaidi and others, 403,2010)

Second, the maximum strength test for the two men

Examination of the maximum strength of the muscles of the two men (Louay Ghanem Al-Sumaidai and others, 2010: 403)

Three: speed test

The enemy is a distance of (30) meters from the high start (Loay Ghanem Al-Sumaidaie and others, 2010: 432)

Throw the 3-kilogram medical ball over the head to the maximum distance to measure the explosive strength of the muscles of the arms (Sayed Abdel-Maksoud, 1997: 257).

Second: The vertical jump (sargent) to measure the explosive strength of the muscles of the two men (Muhammad Hassan and Nasruddin 2002: 84).

Third: The front-wheel drive thrust test for a period of (10 seconds) to measure the force marked by the velocity of the muscles of the arms (Laith Ibrahim, 2008: 90).

Fourth, a partridge test on one leg, 30 meters, to measure the characteristic strength at the speed of the muscles of the legs (Haval, 2004: 104).

Fifth: Test of strength and accuracy of correction (Dia and Nouvel 2001: 487).

Pre-test

Pre-test were conducted on the individuals of the research sample on Saturday 3/8/2019 and in the hall of the Directorate of Youth and Sports / Diyala, and all the conditions for conducting the tests were established in order to be provided in the post-tests.

THE TRAINING PROGRAM FOR MAXIMUM STRENGTH AND SPEED:

The main experiment was conducted on the individuals of the research sample on Monday 4/8/2019 at the hall of the Sports and Youth Directorate / Diyala, as the vocabulary of the training curriculum was prepared by the researchers according to the scientific foundations for training the maximum strength and speed, and it was applied to the members of the research sample by Team coach, the researchers were limited to supervising the conduct of the training units only, and the general features of the training curriculum were as follows:

The implementation of the training curriculum took three months at the rate of two training units per week pertaining to maximum strength and speed and outside the vocabulary of the training curriculum for the trainer, as training was conducted on the development of the maximum strength in the first two months by two training units on Sunday and Wednesday, i.e. (16) training units, while the speed was training on it In the third month, at the rate of two training units per week at the rate of (8) training units, and the training was in the general preparation period.

- The time for applying the vocabulary of the research method is (25-30) minutes from the physical part of the training unit, as the total time for the maximum strength training curriculum was (448) minutes, and the total time for speed training was (240) minutes.

- The researchers used the repetitive training method.

Ripple of pregnancy during the period of application of the curriculum was (3-1)

- Approving weights and distances as a basis for identifying training stresses in the training curriculum.

• The number of iterations is appropriate to the player's ability to allow him to perform the iterations without any decrease in the speed of performance according to the required severity.

• Intermittent rest between exercises ranges between (2-3) minutes and rest between groups (3-5 minutes).

• Internal load ripple (1-1) and external load ripple (3-1), the total intensity of the training unit is calculated by way of calculating the total strength of the total exercises in the daily training unit.

Post-test

The post-tests were carried out on Sunday, 1/11/2019, on the individuals of the research sample, after confirming that the same conditions for carrying out the tribal tests were confirmed as possible.

III. RESULTS OF MUSCLE TESTS AND THEIR DISCUSSION:

Table (1) the values of the arithmetic mean, standard deviations, mean differences and deviations of the mean, and the calculated value of T for pre and post- tests of search variables

Variables		Pre-test		Post-test		A differences	Std differences	T		Significance
		A	Std	A	Std			Calculated	error percentage	
The maximum force	arms	42.08	2.39	46.16	4.98	4.08-	3.75	3.76	.003	Sign
	legs	72.16	2.72	79.75	2.59	7.58-	.91	29.17	.000	Sign
Speed		4.41	.34	4.28	.29	.125	.096	4.48	.001	Sign
Explosive force	arms	9.72	.83	10.62	1.02	.89-	.29	10.66	.000	Sign
	legs	36.58	1.83	39.50	1.78	2.91-	1.37	7.327	.000	Sign
Distinctive force speed	arms	7.58	.79	9.16	1.11	1.58-	.51	10.652	.000	Sign
	Right leg	7.97	.48	7.55	.49	.425	.12	12.113	.000	Sign
	Left leg	8.45	.66	7.96	.62	.483	.16	9.947	.000	Sign

Table (1) shows the statistical parameters of the research variables tests for the experimental group, which shows the existence of significant differences between the pre and post tests. This proves the validity of the research hypothesis.

From the above table, it appears that the maximum strength and speed have evolved among the members of the research sample. The researchers attribute this development to the effectiveness of the exercises used and

codified their loads in a way that aims to develop these two traits separately, as the codification of the training load is one of the most important factors that contribute to raising the efficiency of the trait It is intended to develop it during training, and God Al-Bassati's command states that "lifting the weight heavily (90% -100%) and by repeating (1-6) works on developing maximum force" (God's command, 1998: 96), and Sarmad Saeed states that training is highly (80% -100%) of the maximum capacity, and repeating (1-7) for one exercise works to develop the maximum strength "(Sarmad Saeed, 2007: 98).

Therefore, many studies have emphasized the importance of resistance training on the development of types of strength, especially those that rely on the use of weightlifting and with relatively high stress (Talha, 1997: 16), and it is agreed (Hakkinen: 1985) that continuing with high-intensity training is represented by the amount of heaviness The user is one of the most important factors that lead to the development of maximum muscle strength (Hakkinen, 1985: 125).

Also, the speed exercises used that codify their training loads according to the scientific foundations of speed training and that had a good impact in developing the speed characteristic of the individuals in the research sample, as the speed trait was trained after the completion of the maximum strength training, which also contributed in turn to speeding up the development of the speed character, Ibrahim Al-Sakkar reports, quoting Dentman, "The development of strength for the muscles involved in running increases the speed of running significantly" (Ibrahim Al-Sakkar, 1998: 311), and Mansour Jamil states that "The development of strength works to develop the element of speed" (Mansour Jamil, 1990: 44).

Through the results reached, it was found that training the maximum force and speed worked to develop the force characterized by speed and explosive power among the members of the research sample, as the development of muscle strength increases the ability of the muscle to overcome different resistances during a specific time, so that "the movement is based Always to work against resistance and when the muscle is more powerful, the hindering effect of the various resistors on speed decreases, and then the performance increases in the specified time (Raad Jaber, 1995: 117), and since the force marked with velocity and explosivity is composed of the force component and the velocity component It can be increased by increasing the strength component or the speed of the muscle contracting, or increasing both, and usually the best way to increase it is to increase the strength component "(Issam and Muhammad, 1997: 72), and this explains to us the reason for the development taking place in strength tests characterized by speed and strength Explosive due to the development of the muscle strength of this group.

Table (2) the effect size for training the maximum force and velocity in the explosive force, which is characterized by velocity

Variables		Pre-test		Post-test		Effect size	Kind of impact
		A	Std	A	Std		
Explosive force	arms	9.72	.83	10.62	1.02	1.07	Big
	legs	36.58	1.83	39.50	1.78	1.59	Big
Distinctive force speed	arms	7.58	.79	9.16	1.11	2	Big
	Right leg	7.97	.48	7.55	.49	0.88	Big

	Left leg	8.45	.66	7.96	.62	0.73	Big

Table (2) shows the size of the effect of training the maximum force and speed on the muscular ability of the members of the research sample, as the results show that the exercises of maximum strength and speed that were used in the training curriculum have significantly affected the explosive strength and the strength marked by the speed of the arms and legs of the members of the research sample. The researchers attribute this great influence to the effectiveness of strength training, which helped in developing the maximum force that is the basis in sports work and which the rest of the physical characteristics depend on, and that the athlete's possession of the maximum strength helps him in raising the level of general physical fitness, in addition to the development of the speed feature that helped the muscle gain Sufficient flexibility and speed in receiving the nerve signal of contraction and muscle extinction, and as a result of the development of the maximum force and velocity a positive reflection on the development of the explosive force and the force characterized by velocity, the fact that these two muscular traits are composed of the maximum force and velocity, and any development in them in a balanced way reflects positively on the muscle capacity (the explosive force and the force Distinguished by speed) and vice versa from this, any deficiency in one of these two physical attributes will be negatively reflected in the performance of the muscular ability, as "linking strength and speed is one of the requirements for athletic performance and is one of the factors that distinguish athletes who are distinguished for having a great amount of strength, speed and the possibility of linking them in An integrated form of movement that creates strength and speed for optimal performance "(Ibrahim Al-Sakkar, 1998: 312).

VI.CONCLUSIONS AND RECOMMENDATIONS:

After the results reached by the two researchers, which proved that the development of maximum force and speed greatly affected the development of explosive power and the speed characteristic of the individuals in the research sample, as developing a physical characteristic indirectly through targeting the original components helps in its development faster and this is what the research results have proven As the development of the attribute of maximum force first separately and then the attribute of speed separately secondly, it positively reflected on the explosive force and characterized by speed, so that the focus is on the maximum force and the time period for training it more than the speed attribute, because the speed depends on the maximum force greatly, so it must be The balance of training in a way that guarantees the improvement of the level of these two attributes, and it is preferable to use this method during the general preparation period and then give specialized training in the special preparation period to upgrade the level of explosive strength and the speed in the specialized activities whose performance depends on these two physical characteristics.

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