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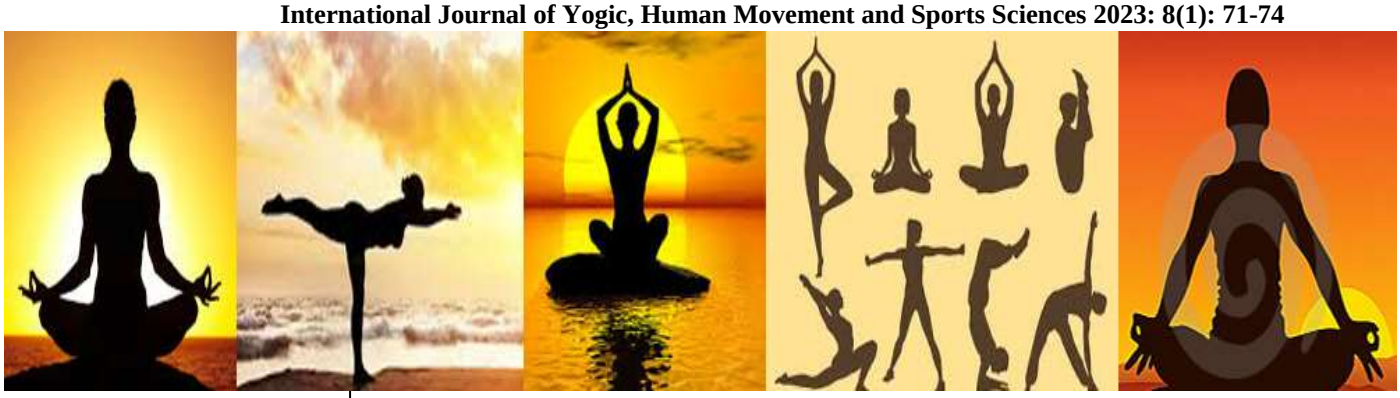

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The effect of special rapid strength training on the development of some physical abilities of young 100-meter runner

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Abstract
The aim of the research is to prepare special rapid strength exercises to develop some physical capabilities of the research sample members, to identify the effect of special rapid strength exercises in developing some of the physical abilities of the research sample, the researchers used the experimental approach for its suitability and the nature of solving the research problem, as this approach is one of the most accurate types of approaches And the best and most efficient way to reach accurate results, the research community was selected from young 100m runners in the Specialized School (Talented) affiliated to the Ministry of Youth at ages (18- under 20 years) and they numbered (10 runners) and they were divided into two experimental and control groups, each group (5) Runners, representing the original research community by 100%, where physical tests were conducted, including the long jump test of steadfastness, the 30-meter sprint from the flying start, the 100-meter running achievement test from the starting position from the sitting position, the researcher reached the following results that the special rapid strength exercises prepared had an impact Positive and effective in developing some physical variables (explosive power, speed-distinguished power, and maximum speed among the experimental group members).
The exercises using means and auxiliary tools according to the performance that were used within the special fast strength training and set have an effectiveness in developing the achievement.

Keywords: Effect, special rapid and strength

Introduction
At the present time, the phenomenon of studying the development of records for athletics competitions is of interest to researchers and scholars in order to identify the factors that contributed to the occurrence of this development, leading to the achievement sometimes, and it has recently appeared the rapid development of the digital achievement of 100-meter running in the world and the development of the technical performance of running, and this does not come Randomly, but with the training efforts of the coach and the player, and the coach's use of advanced training methods to increase the efficiency of the main muscle groups and help related to effectiveness, which ultimately helps increase the production of the necessary special force that contributes to the development of achievement among short-distance runners. The (100-meter) event is one of the fastest events in the track and field, in which everyone seeks to achieve new things in it at the local and global levels, which requires the development of physical capabilities such as maximum speed, long speed and acceleration, depending on the rationing of training curricula that serve the development of this event, which requires conducting and conducting several studies that contribute to Achieving the desired goal and ensuring that the efforts exerted by the player and the coach are not lost, hence the importance of research on the impact of rapid strength in developing some of the physical abilities of 100-meter runners for young men.

Research problem
The 100-meter event is one of the very exciting speed games that depend in nature on the phosphagen system and0 are linked to several factors such as speed rate, explosive power, maximum power, and the power distinguished by speed, which must be known to the player

and monitored continuously and periodically in order to improve the level of achievement and enhance the positive aspects. The race is very short, not exceeding 10 seconds, and to reduce the possibility of making a mistake or a defect. Recently, the rapid development of the digital achievement of 100-meter running in the world and the development of the technical performance of running has appeared. This does not come randomly, but rather through the training efforts of the coach and the player and the coach's use of advanced training methods and programs Purposeful standardized training and constantly detecting the athlete's condition through advanced equipment, which ultimately helps to develop achievement for short-distance runners. Where the researchers noticed by watching the Iraqi runners at the local and even the international level, there is a clear weakness at the beginning of the start compared to the world runners, and the reason is the lack of focus on explosive strength training in a large way, so the importance of the research came in the use of special rapid strength training in developing some physical capabilities of the youth 100-meter runners.

Research Aim

1. Preparing exercises for the special rapid strength to develop some of the physical capabilities of the research sample members.
2. Identifying the effect of special rapid strength training on the development of some physical abilities of sample members.

Hypothesis

There are statistically significant differences between the pre and posttests of the experimental and control groups for physical variables.

Research Methodology

The researchers used the experimental curriculum due to its suitability and the nature of solving the research problem, as this experimental is one of the most accurate, best and most efficient types of approaches in reaching accurate results.

The research sample

The research community was selected from young 100m runners in the Specialized School (Talented) affiliated to the Ministry of Youth at ages (18- under 20 years) and they numbered (10 runners) and they were divided into two experimental and control groups, each group (5) runners, representing the original research community by 100%.

Equipment, tools and means used in the research

- Arab and foreign sources.
- International Internet Information Network.
- Personal interviews of experts.
- Exploratory experience.
- Tests and measurementst.
- A form for recording the results of physical tests and achievement.
- Data form.
- Statistical means.
- Foot scan devices (3).
- Electronic carpet device (Time it).
- One video camera (high speed) with a tripod that captures 1000 photos/sec
- (3)Cameras type SONY D70E.
- Special software for kinetic analysis (kinovea).
- Measuring tape 100 m - 50 m.
- Electronic stopwatch (KISLO) number (5).
- SAMSUNG computer.
- Assistant working group.
- Weight measuring device (1).
- Cones number (10).

Tests

Long jump test (94:1)

- The aim of the test: to measure the explosive power in the long jump forward.
- Tools needed: A suitable place for jumping, with a width of (one and a half meters) and a length of (three and a half meters). The place should be obstacles, and not smooth.
- Measuring tape: Foot scan device.
- Procedures: The place of the jump is planned with parallel lines, each line indicating the distance between it and the ascent line in meters.
- Description of performance: The tester stands behind the starting line with the feet slightly apart and parallel, as the insteps of the feet touch the starting line from the outside, and the pointer is on the (foot scan) board placed at the starting line outside the hole.

The laboratory begins with swinging the arms backwards with the knees bent and leaning forward slightly, then jumps forward for the maximum possible distance, by pushing the knees with the arms swinging forward.

- Each tester is given three attempts.
- Registration: The measurement shall be from the starting line until the last part of the body touching the ground towards the take-off line.

*The starting line is 5 cm wide and within the measurement. Each laboratory is given three attempts
The tester shall calculate the best attempt among the attempts and the value recorded for the foot scan device.

Sprinting 30 meters from the flying start (2: 110-112)

1. The purpose of the test: to measure the maximum speed.
2. Tools: A stopwatch, a tape measure, an area of land where there is a start line and an end line, and the distance between them is (40 m), a first start line and a second start line at a distance of (10 m) from the first line, and a finish line at a distance of (40 m) from the first line. The first line and (30 m) from the second line, a video camera, and Figure No. (1) Shows this.

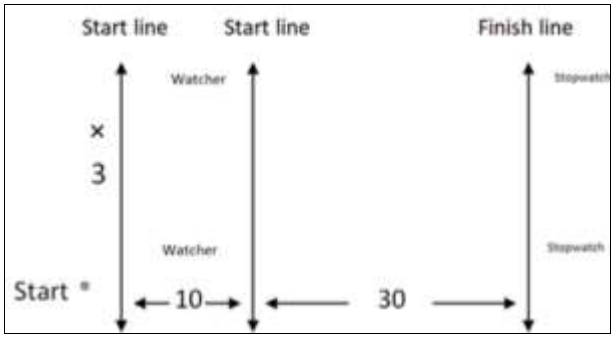

Fig 1: Shows the 30-meter sprint test from the flying start

Performance specifications: The test begins with each tester taking a standby position for the test behind the first line.

When given permission to start (the start signal), the tester runs at an upward speed that reaches its full potential at the second start line.

Each tester is assigned an observer who takes his place at the second start line, and the observer stands raising one of his arms in front of his torso, and when his competitor crosses the second start line, he lowers his arms quickly while the timekeeper runs the clock with this signal.

When the tester crosses the finish line, the timekeeper stops the clock and calculates the time it took for the tester between the signal given by the observer and the moment he crossed the finish line.

- **Recording:** The time is recorded to the nearest 1/100 of a second - the best time recorded in the two attempts is calculated for the laboratory, then the time was also extracted through the kinovia program.

Achievement test of 100m running from the sitting starting position (3:58

- **The aim of the test:** To measure the achievement of a runner's run (100 m).
- **Tools used:** A shooting gun, a stopwatch number (3), a legal running field.
- **Method of performance:** The runner stands behind the start line of the (100 m), then he hears the word (on the line) by referee, the runner sits on the line and stands firm, and when he hears the word (bring up), he raises his hip slightly to the top, almost above the shoulders, and stands still, and when he releases referee, the runner starts running as hard as possible Speed to the end of the racing line.
- **Scientific conditions:** Each runner is given an attempt only for the successful attempt.
- **Recording Method:** The time taken by the runner while running the (100 m) is calculated.

Exploratory experience

The exploratory experiment was conducted on three players from the research sample in order to accustom the players to conducting the tests in order to understand them and not be afraid of them, and to avoid the difficulties, obstacles and problems that the players face as a result of the implementation of the tests.

Pre-tests

After completing the exploratory experiment and avoiding the difficulties and obstacles, the researchers conducted a group of pre-tests on the research sample. The tests were implemented after the researchers explained how to perform the tests and their sequence in brief. In order to work as much as possible to create the same conditions during the post-tests.

Master experience and application of special fast strength training

After the physical and video tests, and after taking a scan of the feet of each player using two scanners, a mark is placed 25 meters from the start of the 100-meter run (in the middle of the first 50 meters of the race distance) with adhesive tape, then another mark is placed 25 meters before the end of the race distance. (in the middle of the second 50-meter distance), one of the Foot scan devices is placed on the first mark, and the second Foot scan device is placed on the other mark, then the instruction is given, so that the player runs in the

Running field in which, the Foot scan devices are present, so that one of the feet touches the first device, and then one of the player's feet touches the device. The second one takes the necessary data for each player, knows the footprint of the player, and measures the momentum of each player. On the basis of this data, the researchers carried out special rapid strength exercises. Some of these exercises were selected and applied to the sample, as follows:

The training units were applied to the experimental group represented by (5) runners representing the Specialized School for Gifted Athletics of the Ministry of Youth and Sports on the same community. The vocabulary of the training curriculum prepared by the team coach was applied:

The curriculum continued to be applied at a rate of (8) weeks (3) training units per week.

The researchers used in the preparation of special rapid strength exercises repetitive training and that the maximum intensity of the player.

The researchers took into account the gradual training load while controlling the number of repetitions, their intensity, and the rest period between repetitions and sets.

The researchers depended on the duration of rest relative to the time of effort.

The researchers relied on adjusting the components of the training load (volume, intensity, and comfort) according to the level and ability of the runner, relying on some scientific sources and personal interviews in the field of sports training, as well as the exploratory experience.

The training intensity was calculated according to the ability of the runners.

The intensity of the training units amounted to (85-100%) in the power characteristic of speed and explosive power.

The Foot scan was used during training, at a rate of once every two weeks, in order to monitor, evaluate, and measure the force and pressure areas of the player's foot, to know the correct performance and position of the foot, and then prepare special strength exercises to correct the position of the player's foot in a way that suits the correct performance and obtain the greatest driving force to achieve the paths The appropriate correct method that helps the player to improve the length of the step by reducing the number of steps at the expense of the length of the step.

Post-tests

The work team, under the supervision of the researchers, conducted the post-tests on the research sample in the Ministry of Youth and Sports.

Statistical means

The statistical system (SPSS) was used.

Table 1: The statistical system (SPSS) was used.

Groups	Tests	Mean	Std	Skewness	t
Control Group	Long jump	3.21	1.726	0.591	9.014
	Sprinting 30 meters from the flying start	5.41	1.966	0.423	7.308
	Achievement test of 100 m running from the sitting starting position	5.67	1.883	0.609	9.181
Experimental Group	Long jump	6.01	1.344	0.841	12.381
	Sprinting 30 meters from the flying start	7.83	1.211	0.599	9.133
	Achievement test of 100 m running from the sitting starting position	8.09	1.264	0.701	11.750

Through the aforementioned, the researchers attribute the reason for the development of the experimental group over the control group to the effectiveness of the directed exercises given to the experimental group. In terms of intensity, from easy to difficult and from simple to complex, which led to the implementation of the exercises in an optimal way that ensured the occurrence of development among the members of the experimental research sample, as giving physical exercises in a measured and deliberate manner leads to the occurrence of the desired adaptations from training and vice versa, giving the exercises randomly Its results are negative and lead to the failure of the required development due to the lack of the necessary adaptations necessary for the occurrence of development, since the explosive strength of the working muscles and their range of motion are among the most important physical variables that must be available for short distance runners. Through the use of a large group of muscles in the body, it led to the development and development of this ability, for what These muscles are of great importance in the performance of motor skills, as shown by the muscular ability of runners better from the use of small muscles, and this is consistent with what was indicated by (Allawi and Radwan, 1989) that "loads that use large muscle groups in
the body show the muscle capacity of the individual better than loads that use small muscle groups" (81:4).

Through the researchers following the modern methods according to the scientific methods in terms of the rated loads that are appropriate to the level of the runners, it had an1- impact on this difference between the two groups in the2- development of physical ability, and the rest periods between repetitions and between training units were appropriate.

For the effort exerted, as well as the gradient in the training load. As the researchers' interest in setting the standardized training volumes and stresses led to the emergence of significant differences in favor of the experimental group, the researchers attribute this to the coach's lack of interest in gradually training loads in terms of volumes, stresses, and appropriate rest for the purpose of developing those capabilities, as well as the lack of diversification in training for more than one training unit. And it agrees with these results (Zuhair Qassim Al-Khashab *et al*., 1999), as he mentioned that gradation to reach the best level of performance has become an important role in training, and that gradation means the course of the training plan according to the gradient from easy to difficult, gradient from simple to complex, and this is consistent with what (Al-Qaddumi, 1998) indicated that “the principle of privacy in training means that training should include movements that are similar to the nature of performance in the practiced activity” (12:5), and the researchers attribute this The achievement of the exercises used by the researchers within the rapid strength training of the sample and the diversity of these exercises, which aimed to develop the main physical capabilities (maximum speed, explosive force, the force distinguished by speed) which the runner (100 meters) needs has an effective role in the running technique and the production of successive movements Fast leads to a better achievement during the running distance, as well as the good consistency reached by the runner between the production of force and the appropriate speed in the running steps, which affected the length and frequency of the step relatively. And this was confirmed by (Kamal Darwish and Muhammad Sobhi Hassanein) that providing the abilities of strength and speed does not mean in all cases that the athlete has a strength distinguished by speed that he can benefit from in the sports event unless he has the skill in the possibility of merging the required and possible ratios of the two characteristics with what is required by the practiced activity From the aforementioned, the researchers conclude that the apparent development in the physical abilities of the members of the experimental group, compared to the members of the control group, came as a result of the standardized, rapid strength training that its members received.

It led to a qualitative adaptation of the organic systems and their functions, and (Robert) points out that (orienting the training process to developing physical qualities that improve technique is important in achieving the best achievements) (6:8).

Results

The prepared rapid strength exercises had a positive and effective impact on the development of some physical variables (explosive strength, strength characterized by speed, and maximum speed among the experimental group members).

The exercises using the aids according to the performance that were used within the special rapid strength exercises that are effective in developing achievement.

There is a clear development in the level of the selected physical capabilities of the young 100-meter runners who received special rapid strength training, and it did not improve among the players who trained without it.

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