

The effect of changing resistors training on developing some functional and physical indicators for runners

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Abstract

This section has been included to get acquainted with the research, as it contained the introduction in which the researcher addressed the need to use new types of modern training methods to upgrade athletics and short-distance players in particular and is one of the most important requirements that must be paid attention to in order to develop the levels of these players to the highest possible degree so The researcher was interested in using one of these methods in her study, and this method (variable resistances training), a method that relies on the use of various exercises such as jumping barriers and weightlifting exercises in various forms and with intense stress and a codified training volume in order to know the extent of the impact of these exercises on the development of special strength and some physiological and mechanical aspects and access to Achievement, according to a well-executed kinetic performance and path, in one of the most important short distance races, which is the 200m race. Hence the importance of the research in trying to identify the extent of the effect of using the method of variable resistances such as the use of weightlifting exercises and plyometric exercises and mixing between these two types of exercises in one method and continuous pregnancy and for a specific period of time on the development of functional, physical and mechanical aspects of the hostile (200 m). The research problem came that most of the training curricula did not give the focused importance of studying the effects of this type of differential strength training by scientific methods that depend in its study on the physiological, physical and mechanical aspects. Therefore, the researcher decided to address this problem as a contribution to the possibility of developing an accurate scientific approach and a modest attempt to advance the curricula Training by using variable (differential) resistance exercises in an effective way leads to improving mathematical technique and raising the level of achievement. The objectives of the research, to know the effect of the variable resistance training method in developing the values of some functional, physical and biomechanical variables and achievement for the 200m hostility from the members of the experimental group. Identify the differences in the values of some physical and functional and biomechanical variables and the achievement of the 200m enemy between the pre and post tests of the experimental and control groups. Identify the results of differences in the values of some physical, functional, and

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biomechanical variables, and accomplish the 200m enemy between the two experimental and control groups in the dimensional tests.

The research assumptions included. There are statistically significant differences between the results of physical tests, functional and mechanical indicators, and achievement before and after the use of the variable resistivity training method for members of the experimental group. There are statistically significant differences between pre and post tests in the values of some physical and functional variables and mechanical bio and achievement in the non-200m for the experimental and control groups. There are statistically significant differences between the experimental and control groups in the values of some physical, functional and biomechanical variables and achievement in the enemy of 200 m in the dimensional tests.

Key words : *changing resistors training , developing some physical and functional variables and mechanical bio and achievement.*

I. Introduction

Every sporting event requires that the athlete possesses levels of strength, speed and some physical abilities, and since the training methods and programs have a role in determining the physical and physiological abilities to evaluate the athletic performance during the various training stages for the purpose of detecting the strengths and weaknesses and avoiding the mistakes that occur in the engineering path of a line The movement for delivery to solve the motor duty with the best economic methods and implement the skill performance under biomechanical and physiological conditions so that this does not exceed the framework of laws and biological regulations related to that required skill.

And athletics activities are among the activities that differ from each other in terms of characteristics and components. They include running, bouncing and throwing. Running activities include many types, including what are called short distances, including what is called medium and long.

The use of new types and modern training methods to upgrade athletes in general and short-distance players in particular is one of the most important requirements that must be paid attention to in order to develop the levels of these players to the highest possible level, so the researcher has paid attention to the use of these modern training methods to improve the players The enemy of short distances according to the necessary requirements, so the researcher used the method of varying resistances (variable), a method that relies on the use of various resistance exercises on an ongoing basis for a specific period of time and without interruption, such as jumping exercises with barriers and weight training in various forms and with an emphasis and a trained training volume in order to know the extent of The effect of these exercises on the development of the strength of performance and the development of some physiological and mechanical aspects and access to achievement in accordance with performance and a kinetic path. In one of the short distance races, he is the 200-meter sprint champion for the Iraqi champions.

The effectiveness (200 m) is one of the activities that is characterized by strength, speed and special endurance as this event is characterized by special mechanical technical stages that all play an important role in achieving the high achievement of the hostility of this event directly in addition to that the technical performance and its mastery is a high rate in achieving the completion requirements and from here The importance of this study came to add something new between the integration of the level of technical performance and the development of physical, mechanical and functional qualities of the runners of this competition in the country to achieve the technical performance and the mechanical conditions accompanying it and the extent of its compatibility with each other. The hostility of exploiting its own forces to resist external forces affecting performance and moving parts of the body in a smooth manner to ensure the achievement of the requirements for success in successive stages of effectiveness and achieve the goal in the fullest way..

Research problem

The technical (technical) differences between the world champions are very specific in achieving the digital achievements, which made the increase in the intensity of competition and for the various levels of matters that have emerged at the international and regional levels for the various sporting events through reliance on the various sports sciences and the extent of the interaction of these sciences in order to develop these Achievements, especially in athletics, where researchers and trainers focused on developing training curricula that included the use of modern training methods to develop physical characteristics related to the type of effectiveness or the required skill in addition to raising the efficiency of functional and mechanical indicators. We see that most training curricula did not give the focused importance of studying the effects of this type of strength training with different scientific methods that depend in their study on the physiological, physical and mechanical aspects, in addition to that we find that the mechanical conditions and laws differ from one activity to the other, so we find that the mechanical laws and their motor requirements constitute a dynamic burden on Enemy players 200m, and that does not require the powers of the powers to increase the effects of the repellent force.

research aims

-Identify the differences in the values of some physical, functional, and biomechanical variables, and accomplish the 200-meter enemy between the pre and post tests of the experimental and control groups.

- Knowing the results of the differences in the values of some physical, functional, and biomechanical variables and achievement of the 200m enemy between the two experimental and control groups in the posttest tests.

Research hypotheses

- There are statistically significant differences between the results of physical tests, functional and mechanical indicators, and achievement before and after the use of the variable resistivity training method for members of the experimental group.

- There are statistically significant differences between the pre and post tests in the values of some physical and functional variables, and the mechanical mechanism and achievement in the non-200 m for the experimental and control groups.

- There are statistically significant differences between the experimental and control groups in the values of some physical, functional and biomechanical

- variables and achievement in the 200-meter enemy in the post-test.

II. Research Methodology

The choice of the curriculum depends mainly on the nature of the problem that is to be solved, as the researcher used the experimental design in order to suit the nature of the study, and the design of the one group was used before and after the test .

Research community and samples

The researcher chose the sample of her research in the intended intentional way and the reason for the deliberate choice is that they represent the high level in the diameter of the effectiveness of (200 m) and the research sample consisted of the best (eight players) advanced, and the researcher divided the research sample in a random (simple) way into two groups where the first group was (The control group (four players) is trained using the traditional training method while the second (experimental) group (four players) is trained using the variable (variable) resistance method.

Research Tools

To provide a set of devices and tools necessary for the purpose of using them to solve the problem, whatever those tools, and to make sure that these tools are suitable for research to achieve hypotheses. In fact, the researcher used the devices, tools and means that helped the researcher to conduct his research, as follows:

- Ten (3500National mx) frequency video cameras (25 images / second) with tripod.
- VHS type videos.
- Computer (P4 type)
- TV set (1), type SONY.
- CDs.
- Phosphorescent stickers to mark the body's joints.
- Contraindications according to international specifications, number (6.(
- Height and weight scale device.
- low training contraindications.
- The amalgamation apparatus.

The Testes

Measured variables:

Heart rate measurement, anaerobic power measurement, Endurance Speed, Endurance Strength.

Applied Test

After polling the opinions of experts and specialists in the field of sports training in order to get to know the way to work in the training unit and the appropriate training loads, the researcher prepared the preparation of the training curriculum, which includes the use of the variable resistance method (different exercises) as the research sample was divided into two groups and the first group (experimental) was trained Using plyometrics and weightlifting exercises (double exercises), while the second group (control) remained trained on the vocabulary of its traditional approach given by the trainer, knowing that the training curriculum was applied as of the corresponding Saturday for a period of (8) weeks, at the rate of (3) weekly training units. The training 2019/1 / 27 program included a total of (24) training units within two months. The researcher has applied this curriculum by using free weights, barriers and running by jumping, as this training method is the proposed experimental method for the researcher to reach the maximum limits of the degree of effectiveness through the use of force in different methods. The only way is to use the usual training methods, which leads to avoiding a plateau current and hence a break in the course of the development of the level of strength.

In order to achieve the training unit and achieve its goals, it was necessary to observe the foundations and conditions for the development of each component of the training unit components according to their impact on the vital aspect to ensure more effective, so there must be an accurate determination of the intensity of each exercise and the number of repetitions and periods of special rest.

Through this, the researcher stresses the need for the exercises used to be similar to the performance requirements during the competition in order to benefit from the effects of these exercises to achieve the required fluidity. The use of this method, which consists of a group of exercises consisting (6-10 repetitions) and strongly between (60-80%) and timing The performance here is slow despite the high level of strength being exerted due to the heavy weight used while the performance of another group is good (30-50%) of the maximum possible intensity and at a very high timing and (8) groups must be performed in this manner in the training unit and also can Reaching the contrast is not only through a few loads but also by switching between maximum power loads - bearing strength - the speed of the force in an explosive style of using loads by lifting weights - and exercises without the use of additional loads and these exercises can be used with stability and anchor such as bouncing feet in addition to what has been provided, the rest between Exercise and another (5: 1) seconds. The ratio of work to rest. As for rest between one group and another (2-5 d), to recover recovery again.

By looking at the scientific information above, the researcher found that the vocabulary of the curriculum came according to what is proportional in terms of intensity and size in addition to the appropriate time during the experimental unit. The researcher worked on the progression of exercises from easy to difficult by performing exercises and bounce moves and partitions, then using boxes and terraces. Various barriers and heights in addition to the use of weights of different weights and the

sample used the iron device (maltagn) and all exercises were given according to the training program shown in Appendix No. (in the training unit). The researcher made sure that the total training loads for both groups are as similar as possible.

III. Results and discussed

View and discuss search results:

Table (1) Shows the arithmetic mean, the standard deviations, the calculated and tabulated (t) values, and the significance of the differences between the experimental and experimental groups in the post-tests in the functional and physical variables under consideration.

the test	Pre-Test		Post-Test		Calculated value of T	Table (T) value	Significance
	A	Std	A	Std			
HP rate at rest	84	17.987	89.25	13.147	0.557	2.447	Non Sign
Anaerobic capacity	7297.15	473.704	515.857	332.344	3.895	2.447	Sign
Endurance Speed	15.99	0.784	17.755	0.443	1.718	2.447	Non Sign
Endurance Strength	25.187	1.814	27.857	2.354	1.741	2.447	Non Sign

The previous discussion of the results of the functional tests of the two research groups (between the pre-test and the post-test) has to do with the nature of the differences that occurred between the post-test tests for the two research groups presented in the above table and it also gives clarification, as it becomes clear that both approaches (the proposal that the researcher used on the group The experimental and traditional methods used on the members of the control group) had the same effect regarding the variable of the heartbeat before the effort, where the athletes who practice regular exercises slowly and continuously are characterized by that this regularity of training affects the heart rate in the state of rest, which means an increase in the volume of blood paid In every heartbeat, as the heart increases its effectiveness in pushing blood as a result of this or that training. This condition helps to provide and economize on the energy needed to make the heart itself1.

As for the anaerobic ability variable, the results indicated that the members of the experimental group had outperformed the members of the control group in the dimensional tests, and

this is due to the development of this ability and its association with the different resistance exercises used by the experimental group that worked to rise and increase the efficiency of the anaerobic capacity, and that this type of training has This led to a decrease in fatigue factors (accumulation of lactic acid in the blood), as well as the fact that the exercises used had similar skills and the same characteristics of this performance, which helped to achieve effective performance by increasing its speed, as the development of the anaerobic capacity is related to the development of muscle strength and depends on the type of exercises that The researcher used it in her training curriculum, which worked to provide anaerobic energy to the muscles through the rapid source of energy^{2,3}.

As the distances that are characterized by the appearance of the special endurance capacity (the speed of the force and the endurance of the speed of the force) will be less as a result of the large distances for the strength⁴. while this feature did not appear among the members of the control group even if the differences were not significant in the results of this group with the results of the experimental group⁵. where the The non-significant differences in the results of the speed and rapid strength of this group made the distances for these capabilities less and thus increase the distances for the capabilities of the speed of force and the endurance of the speed of the force, as well as the direction of training of the members of the control group is always towards developing the bearing of speed and the bearing of force without emphasizing the capabilities of the rapid strength and speed In particular, this gave another advantage in not showing statistically significant differences⁶.

IV. Conclusions and recommendations

Conclusion

Through the above presented results and the researcher's analysis and discussion of these results, he reached the following conclusions:

-An evolution appeared in the functional variables of the two variables (pulse after effort and anaerobic capacity) for the members of the experimental group, which indicates the effectiveness of the given (proposed) exercises in influencing the systolic ability of the heart muscle, which caused a decrease in this rate as a result of the association of these exercises with the activity of the nervous system as it leads to a decrease in The performance of these exercises as for the variable of anaerobic ability has indicated the superiority of the experimental group in the dimensional tests. This is due to the development of this ability and its correlation with the different resistance exercises that led to an increase in the efficiency of the anaerobic ability.

- The effect of the experimental group was evident at the expense of the control group in physical tests (bearing strength and speed tolerance), which indicates the effectiveness of the exercises used in the differential strength training curriculum. And that contributed to the development of the special strengths of the members of the experimental group, despite the lack of indication of the results.

Recommendations

Through what has been concluded, the researcher recommends the following recommendations:

- The need to use these exercises that increase the efficiency of the anaerobic capacity, which is an indication of great benefit during periods of recovery and when implementing training units that contain high repetitions and stresses, which led to a decrease in fatigue accumulation factors of lactic acid in the blood, which helped to achieve effective performance and increased its speed.
- Emphasis on the continuation of training among short-distance runners, especially with extreme intensity, which increases the reduction of the heart rate during physical effort, as the use of different exercises in this program is used to measure the training status of athletes.
- Emphasizing the different strength exercises to increase the actual rapid and explosive strength to improve and develop the ability of the muscles working in the tidal and flexion movements in the legs to ensure the kinetic ranges of performance.
- The need for trainers to rely on the quality of these exercises because it is one of the training means that plays an important role in developing capacity as one of the effective physical characteristics in increasing physical efficiency and developing the other basic physical characteristics.
- The use of variable resistance training, training methods, and training load components plays a role in the functional adaptations that occur in athletes.
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