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The effect of applied anaerobic exercises on the development of some special physical abilities and the level of digital achievement for long jump players under 20 years' old

Haider Abdul-zahra rbeit

E-mails: haiderrabeet@gmail.com

Baghdad/ 3rd Karkh

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Abstract

The modern scientific progress in the numbers of applied anaerobic exercises to develop the physical capabilities and according to the intensity used in the training and in a manner commensurate with the need of each physical ability in terms of adaptation to physical effort, and the effectiveness of the long jump is one of these activities that require special physical specifications and capabilities aimed at achieving the best achievements, where the research problem is determined in The achievement of female players in the long jump event does not rise to acceptable levels, as a result of a weakness in physical capabilities. Therefore, it has become impossible to develop these capabilities, as well as achievement in the long jump event, except through organized training. The research aims to prepare applied anaerobic exercises in developing some The physical capabilities and achievement in the digital level of the long jump players under 20 years old, and the researcher used the experimental approach with the pre and post-test of the experimental and control groups to suit the nature of the research. The research sample was selected using a comprehensive enumeration method, and the sample was divided into two groups, the experimental group and the control group, with a rate of (10 no exercises) for each group, applied anaerobic exercises were applied for a period of eight weeks, at the rate of three training units per week, and the researcher used the statistical bag (spss) to process the data. Long term under 20 years old.

Keywords | **anaerobic exercise, physical abilities, long jump achievement**

Introduction:

Sports training is one of the important sciences within the curricula of physical education that needs multiple aspects of preparation, including (physical, skillful, tactical, psychological, moral, and cognitive). The sport of arena and field games includes various activities, (14) some of which are related to running, others to throwing, and a third to jumping and jumping for men and women according to the type of activity. Therefore, all these activities need development in achievement, as the Iraqi number for the long jump in 1984 is (5.41 m) and up to this point The moment did not break this number, and due to the modern scientific progress, ideas came up with the numbers of applied anaerobic exercises to develop physical capabilities, according to the intensity used in training, and in a manner commensurate with the need of each physical ability in terms of adapting to physical effort, and (12) confirmed that the effectiveness of the long jump is one of these activities that require Special physical capabilities and specifications aimed at achieving the best achievements. This event requires the development of physical abilities, so that the performance is agile, strong, with distinctive movement coordination. He indicated (11) that it is a technical and complex activity that requires A time to develop achievement, so it needs effective training based on measurements and regular training foundations. Hence, the

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importance of research is evident, the effect of anaerobic applied exercises to develop physical capabilities due to the specificity of this event. Thus, the research gains its importance by setting a future vision for the development of physical characteristics and digital levels that may benefit research, trainers and academics in identifying On effective training methods in the field of training by providing successful and economical solutions in terms of time and effort and knowing their positive impact in bringing about the required development and improving the level of female players in a better way. Sports in the country are still suffering from some obstacles that hinder their progress, especially the effectiveness of the arena and the field, especially the effectiveness of the long jump for the female players, where the research problem is determined that the achievement of the female players in the long jump effectiveness does not rise to acceptable levels, as a result of a weakness in the physical capabilities on which it has become impossible to These abilities, as well as achievement in the long jump, can only be developed through pain training Organize, that is, the practice of the event according to a coordinated training approach, so the researcher decided to develop a training program according to anaerobic exercises to develop the variables of research and achievement for the effectiveness of the long jump and obtain high results that contribute to the development of the digital level of this game.

Among the research objectives: identifying the effect of anaerobic exercises on the development of some special physical capabilities of female long jumpers under 20 years old. Identifying the effect of anaerobic exercises on developing the level of digital achievement of female long jumpers under 20 years old. As for the research hypotheses: there are statistically significant differences between the pre-measurement and telemetry on the development of physical abilities for the benefit of telemetry.

There are statistically significant differences between the pre-measurement and the post-measurement on the development of physical abilities in favor of the post-measurement. 2022. Spatial field: the playground of the Specialized School for Talented Care in the Ministry of Youth and Sports / Baghdad Governorate.

Method and procedures:

The researcher used the experimental approach with an experimental design with a pre and post-test for two equal groups (experimental and control) due to its suitability to the nature of the research. The research community and its sample: The research community identified the long jump players of the Specialized School for Nurturing Talent in the 2022 sports season, whose number is (20 players). Sample homogeneity and evenness:

Table (1)
shows the homogeneity of the research sample

Variables	Measurement unit	Arthmatic mean	Median	Standered deviation	Coefficient of torsion
Length	Meter	152.122	150.000	1.532	0.236
Weight	.Kg	58.231	58.000	1.457	0.176
Age	Year	17.128	17.000	1.567	0.341

The value of the coefficient of torsion is limited to ±3, which indicates a moderate distribution of the population

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Table (2)
The results of the post-tests show the physical abilities and achievement of the control and experimental groups

Motor abilities	Experimental group		Control group		calculated t-value	Error level	Statistical significance
	A	STD	A	STD			
maximum speed	5.045	3.176	5.082	5.287	0.786	0.897	Unsign
The explosive power of the legs	2.245	4.453	2.001	8.454	0.987	0.665	Unsign
Carrying force with hopscotch, right and left, for a distance of 100 meters	20.231	6.893	22.567	7.763	0.751	0.5674	Unsign
Long jump feat	4.234	6.334	4.012	6.452	0.456	0.435	Unsign

Sign Below the significance level ≤ 0.05 and below the degree of freedom (n-1) = 9

As for the means of collecting information: (observation, tests and measurements, Arabic and foreign sources and references).

As for the devices and tools used in the research: the long jump event stadium, 40 indicators, 30 barriers, 4 (2) Japanese-made electronic stopwatches, a measuring tape, (1) Sony video camera with a frequency (24 images) 1 Dell laptop computer, 1 electronic medical scale.

As for the tests used in the research:

First: a 30-meter run test from the flying start (7)

Second: the long jump test of steadfastness (4)

Third: a test of running by jumping for a distance of 100 meters from the high start (9), which he also referred to (3).

Fourth: The name of the test: Achievement of the long jump (6), and he referred to it (10).

Exploratory experiment: The researcher conducted an exploratory experiment on (4) female players on 10/1/2022 in the playground of the Specialized School for Talent Nurturing in the Ministry of Youth and Sports / Baghdad Governorate

Tribal tests: The researcher conducted the tribal tests on 12/1/2022 in the playground of the Specialized School for Talent Nurturing in the Ministry of Youth and Sports / Baghdad Governorate

The main experiment: the sample began executing exercises on 15/1/2022 until 15/3/2022, and the duration of the training program: (8) weeks, and the total number of training units: (24) training units, and the number of weekly training units: (3) units, And the weekly training days: (Saturday - Monday - Wednesday), and the training method used: high-intensity interval training, and the training intensity used: (80-90%).

Post-tests: The post-tests were conducted on 3/18/2022 in the stadium of the Specialized School for Talent Care in the Ministry of Youth and Sports / Baghdad Governorate, and the researcher took into account the provision of conditions similar to the pre-tests in terms of (time, place, tools used, and the method of conducting the implementation of the tests).

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Results:

View and analyze the results of the differences between the two research groups (experimental - control) for the variables under study

Presenting, analyzing and discussing the results of pre and post-tests in the physical variables and achievement of the experimental group.

Table (3)

It shows the results of the pre and post-tests of the experimental group in the physical variables and the achievement under study

Physical variables	Pre test		Post test		A D	Calculated T value	Error level	Statistical significance
	A	STD	A	STD				
maximum speed	5.045	0.238	5.022	0.668	0.334	8.554	0.001	Sign
The explosive power of the legs	2.245	0.675	2.411	0.456	0.654	5.897	0.004	Sign
Carrying force with hopscotch, right and left, for a distance of 100 meters	20.231	0.456	19.7687	0.897	0.567	9.672	0.006	Sign
Long jump feat	4.234	4.667	4.456	0.432	0.784	8.445	0.003	Sign

Sign under significance level ≤ 0.05 and below degree of freedom (n-1)

Presenting, analyzing and discussing the results of the pre and post-tests of the physical variables and achievement of the control group

Table (4)

shows the results of the pre and post-tests of the control group in the physical variables and the achievement under study

Physical variables	Pre test		Post test		A D	Calculated T value	Error level	Statistical significance
	A	STD	A	STD				
maximum speed	5.082	0.2341	5.040	0.657	0.556	7.078	0.000	Sign
The explosive power of the legs	2.001	2.567	2.223	0.689	0.345	6.889	0.000	Sign
Carrying force with hopscotch, right and left, for a distance of 100 meters	22.567	0.765	21.011	0.887	0.562	5.667	0.000	Sign
Long jump feat	4.012	0.334	4.238	0.443	0.235	8.789	0.000	Sign

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Sign under significance level ≤ 0.05 and below degree of freedom (n-1)

Presenting, analyzing and discussing the results of post-tests in the physical tests and the achievement in question for the control and experimental groups

Table (5)
Shows the results of the post-tests in the physical tests and the achievement in question for the control and experimental groups

Physical variables	Experimental group		Control group		Calculated T value	Error level	Statistical significance
	A	STD	A	STD			
maximum speed	4.082	0.1356	5.001	0.236	7.675	0.001	Sign
The explosive power of the legs	2.589	0.5677	2.499	0.765	4.876	0.002	Sign
Carrying force with hopscotch, right and left, for a distance of 100 meters	18.998	0.5681	20.321	0.543	8.897	0.002	Sign
Long jump feat	4.678	0.1237	4.456	0.653	6.432	0.000	Sign

Sign under significance level ≤ 0.05 and below degree of freedom (n-1)

Discussion:

The tables of the pre and post tests show the results of the research variables of the research sample, and the results showed that there are significant differences in the post test in favor of the two groups. The variable maximum speed and in favor of the post-test in terms of the vocabulary of the various exercises and the type of special distances to develop the maximum running speed. These exercises focused on the muscles of the feet, legs and thighs, among the main muscles responsible for the speed of the female players. Which is reflected in the development in the speed of its production (2), so there are significant differences between the pre and post-tests in the variable of the explosive power of the two men and in favor of the post-test and the explosive power. (13) Explosive strength is a critical feature of building a strength capability that matches And the properties of sports, the duties of preparing the special force are carried out in a direct joint relationship with the preparation of the special technique, and he stressed (15) that the most important feature of the explosive force is that it increases the motor performance in the sense that the strength gained from this type of training leads to a better motor activity in the practiced sports activity By increasing the ability of the muscles to contract at a faster and more explosive rate during the range of motion in the joint and at all speeds of movement (5), as the differences are significant between the pre and post-tests in the force endurance variable and in favor of the post-test as well, the development of force

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endurance is also related to the development of explosive force through The special exercises commensurate with the conditions and requirements of the skill and with certain repetitions. Also, the exercises used by the researcher, which depended on the number of repetitions and the speed of movement, as well as the use of various strength exercises with body weight and jumping exercises and their repetition from one leg to another gave a positive effect on strengthening the muscles of the legs, thigh and leg, while The speed of the steps as a result of the action of the harmonious contractions of the working muscles through the process of effective exchange between stretching and muscle contraction during the performance of the exercises (1) The differences are significant between the pre and post-tests in the long jump achievement variable and in favor of the post test, and this development is a logical result of it, as the work focused on implementation according to the correct scientific foundations and that the effect of the exercises and the training method used had the main role through rationing the training load and it was It is clear in the development of muscle strength working in the two legs, which in turn led to the development of the rate of speed, that it is possible to increase muscle strength while using special training methods, and this means an increase in the amounts of strength for these muscles, so the transitional speed increases, which means the speed of muscle contractions when performing the movement, so speed is achieved In the process of contraction of muscle fibers that are required to contract during exercise and skill) (8).

Conclusions:

The results showed a significant superiority between the pre and post measurement of applied anaerobic exercises in developing some physical abilities of the long jump players under 20 years of the experimental group in favor of the post measurement.

The results showed a significant superiority between the pre and post measurement of applied anaerobic exercises in developing the achievement of the long jump players under 20 years of the experimental group in favor of the post measurement.

Recommendations:

Interest and adoption of applied anaerobic exercises in the development of some physical abilities and achievement in the digital level of long jump players under 20 years.

And conducting similar studies and research on different age groups.

And conducting similar studies and researches to prepare training curricula that integrate other physical attributes with skillful performance for the purpose of contributing to achieving the best results.

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Appendix 1
First week

Training unit	Exercise syllables	Intensity %	Repetition	Groups	Rest between	
					Repetitions	Groups
Saturday	Run fast 50 meters from the jumper	85	4	3	1 min.	2 min.
	Run by jumping 100 meters		4	4	1 min.	2 min.
	Jumping to the sides from a barrier high (40 cm)		4	2	1 min.	2 min.

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Monday	Run 40 metres Run by jumping - and steadily (right - of 80 meters	85	4 4	3 3	2 min. 1 min.	3 min. 2 min.
Wednesday	meter run from -30 standing Run by jumping metres 100 Jumping over (10 obstacles) with different heights (20 (cm, 60 cm	85	4 4 3	3 3 2	2 min. 1 min. 1 min.	3 min. 2 min. 2 min.

تأثير تمرينات تطبيقية اللاهوائية على تطوير بعض القدرات البدنية الخاصة ومستوى الانجاز الرقمي للاعبات الوثب الطويل تحت 20 سنة

حيدر عبد الزهرة ربيط
بغداد / الكرخ الثالث

ان التقدم العلمي الحديث بأعداد تمرينات تطبيقية اللاهوائية لتطوير القدرات البدنية وحسب الشدة المستعملة في التدريب وبشكل يتناسب وحاجة كل قدرة بدنية من حيث التكيف بالجهد البدني، وفعالية الوثب الطويل احدى هذه الفعاليات التي تتطلب مواصفات وقدرات بدنية خاصة غايتها تحقيق افضل الانجازات, حيث تتحدد مشكلة البحث في ان الانجاز للاعبات في فعالية الوثب الطويل لا يرقى الى المستويات المقبولة، نتيجة لضعف في القدرات البدنية، عليه اصبح من غير الممكن ان تتطور هذه و القدرات وكذا الانجاز في فعالية الوثب الطويل الا من خلال التدريب المنظم، ويهدف البحث اعداد تمرينات تطبيقية اللاهوائية في تطوير بعض القدرات البدنية والانجاز في المستوى الرقمي للاعبات الوثب الطويل تحت 20 سنة، واستخدم الباحث المنهج التجريبي بالاختبار القبلي والبعدي للمجموعتين التجريبية والضابطة لملائمته لطبيعة البحث، وتم تحديد مجتمع البحث لاعبات الوثب الطويل المدرسة التخصصية لرعاية الموهبة في للموسم الرياضي 2022, والبالغ عددهن (20لاعبة)، اذ تم اختيار عينة البحث بأسلوب الحصر الشامل وقسمت العينة الى مجموعتين التجريبية والمجموعة الضابطة وبواقع (10 لاعبات) لكل مجموعة وتم تطبيق تمرينات تطبيقية اللاهوائية ولمدة ثمانية أسابيع وبواقع ثلاث وحدات تدريبية في الأسبوع الواحد واستخدم الباحث الحقيبة الاحصائية (SPSS) لمعالجة البيانات وتوصل الباحث إلى أهم الاستنتاجات ان تمرينات تطبيقية اللاهوائية اثرا في تحسين تطوير بعض القدرات البدنية والانجاز في المستوى الرقمي للاعبات الوثب الطويل تحت 20 سنة

مستخلص البحث

الكلمات المفتاحية | التمرينات اللاهوائية، القدرات البدنية، انجاز الوثب الطويل