International Journal of Psychosocial Rehabilitation, Vol. 24, Issue 01, 2020
ISSN: 1475-7192

The effect of exercises using repetitive training method on special strength and concentration (LDH-CPK) Achievement among young weightlifters

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Abstract*: The importance of the research lies in preparing a training method in the iterative training method and knowing the extent of its effects on the muscles through measuring (LDH-CPK). In addition to its effect on achievement in the snatching high for the young category. The research problem is reflected in a better performance in developing and improving the special strength and less harmful to the muscles through training and enzymatic measurement (LDH-CPK), This is accompanied by the improvement in achievement in weightlifting. The research aims to identify the differences between the pre and post measurements in the special strength and concentration (LDH-CPK) and the achievement in the snatching height, as well as by preparing exercises in a repetitive training method, the researcher used the experimental approach, and the research community determined the weightlifters of the Port and South Oil Club of the young category with a weight of (62 kg). The research community reached (9) fourers. The researcher chose (7) fourers and made homogeneity for the research sample. The most important conclusions are the effect of repetitive training on muscle strength and enzymatic (CPK-LDH), which reflected its positive effects on achievement, and the researcher recommends emphasizing the use of modern training methods and methods while taking into account the emphasis on examining enzymes before and after training.*

Key word*: **repetitive training method** ; **special strength** .*

Introduction and the importance of research:

The advanced level witnessed by all sports is from the collaboration of different sciences and their employment to the science of athletic training, so the use of training methods and styles and measurements of physical abilities that fall within the characteristics and features of effectiveness with chemical variables are among the important things in improving achievement and the importance of research lies in preparing a training curriculum in a way Repetitive training and knowing the extent of its effects on the muscles and ruptured accidents through the measurement of (LDH-CPK) in addition to its effect on achievement in the snatching high for the youth category.

Research problem: -

There is a difference between some schools in weightlifting training, especially in building special strength, and significantly between the Russian and Bulgarian schools that adopt the method of high-intensity young training, the research problem lies in better performance in developing and improving special strength and less harmful in muscle rupture through the measurement of LDH-CPK This is accompanied by improvement in achievement in weightlifting, and the researcher would like to put these results in the hands of players and coaches in finding appropriate training methods to develop achievement.

research aims:

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• Preparing exercises using the method of repetitive training and its effect on the special strength and concentration (LDH-CPK) and achievement in the snatching lift.

• Identify the differences between the pre and post measurements in the special strength and concentration (LDH-CPK) and the achievement in the snatching height of the research sample.

Research hypotheses: -

The existence of statistical lyceum differences between the pre and post measurements in the special strength and concentration (LDH-CPK) and achievement in the snatching height in the research sample.

Areas of research: -
Human field: Weightlifters (62 kg) for Al-Minaa and South Oil Sports Club
Spatial Field: Weightlifting Hall of the Al-Minaa Club and Laboratory (Al-Barzanji).
Temporal field: Period from 3/10/2019 to 4 /1/ 2020.

Repetitive training method
This method is characterized by the use of intensity up to (90-100%) of the maximum limit for the player as a maximum load and it is one of the basic methods in the training process as this training leads to affecting the various systems and organs of the athletic body, especially the nervous system directly, which leads to the rapid occurrence of central fatigue It also occurs as a result of the occurrence of the phenomenon of Lactic Oerine Religion (acid), that is, the inability to supply the muscles with their full need of oxygen (**226: 5).** It is known as a volume or the period of the effects of exercises on the body's functional systems **(50:12).**
(CPK) enzyme
(CPK)enzyme is one of the cellular enzymes that has a wide spread in body tissues **(1123 - 1015: 7)**. The main source of formation of this enzyme is the cytoplasm found in the cell, as well as its presence in the mitochondrial tissue that is often rich in it **(15: 115-119).**
LDH enzyme
It is known as lactate dehydrogenase. This enzyme is present in most cells of the body and is not present in the blood in large quantities. This enzyme is present in large quantities when released by the cells of the body as an indication of the occurrence of a defect in them, such as the occurrence of abnormal developments within cells or the occurrence of destruction of the content of these cells. This enzyme is present in the form of five isotopes in different parts of the body, such as the heart, lungs, liver, muscles, leukocytes, and lymph nodes, and these isotopes are present in one part of the body, such as the heart, kidneys, and liver. These isotopes are released into the blood and the damage location of cells can be determined by identifying the type of these isotopes **(9: NET).**

Research methodology and field procedures
Research methodology
The researcher used the experimental method for its suitability and problem solving

The research community and sample
research identified the research community with weightlifters for Al-Minaa and South Oil Club youth group (62 kg) where the research community reached (9) fourers and the researcher chose (7) fourers and conducted homogenization of the research sample.

Table (1)
Shows the moderation of the distribution of research sample

Seq	Variables	Measuring units	Arithmetic medium	Standard deviation	Coefficient of torsion
1	length	cm	167.142	2.853	-0.984
2	weight	Kg	62.857	0.626	0.740
3	age	year	22.571	0.786	-1.760

4	Training age	year	3.857	0.690	0.174
5	Achievement	Kg	87.142	7.312	0.545

The means, tools and devices used in the search

- Sources and references - tests and measurement
- Internet - Information Collection Form
- LDH Diagnostic Kit - CPK Diagnostic Kit
  beds
- Iron hall containing all weights and devices - tape measure - medical ball weight (3 kg)

Tests and measurements used in the research
Special strength tests
Distinctive Force Test for Arms (3:40) (8: 157)
The purpose of the test: to measure the distinctive velocity of the arms.
Tools: Swedish seat, weights (20 kg).
Performance description: When starting, the two arms are in a full armature that raises a weight of (20 kg). The player is required to lower the bar and raise it up along the arm's length and calculates the number of performances during (10 seconds).
Test sitting from lying with legs extended (13: 346-347)
The purpose of the test: To measure the force marked by the speed of the abdominal and curved muscles of the torso.
Test description: From lying and hands clamped behind the head with feet fixed with the help of a colleague, lifting the torso and pressing the knees by touching the elbows and recording the largest number in (10 / sec).
Distinctive Force Test for Legs (11:40)
The purpose of the test: to measure the distinctive velocity of the legs.
Performance method: bend the knees and extend them for (10s) for both genders
Devices and tools: Iron bar (20 kg), stopwatch**.**
Exam description: From standing position, the player bends the knees and extends them fully during (10 seconds), noting that no member of the body is resting on the ground except the feet.
Scoring: Number of times bending and extending during (10th).
Pressure test of lying (3:116)

The purpose of the test: This test measures the strength of the arms.
Devices and tools: iron terrace, iron bar, various weights
performance specifications: The weight bar (20 kg) is placed on special straps, and the player takes a recumbent position on the back above the handrail. The arms are in a tidal position with shoulder width wide. When the starting signal is given, the player extends the arms fully, then bends and extends the arms until the voltage runs out**.**
Calculation of grades: The player's score is calculated by the number of times the arms are bent and extended correctly.

Dead tit test (dead lift) for torso. (3: 113)
The purpose of the test: This test measures the strength of the stretched torso muscles.
Devices and tools: iron bar, various weights
Performance specifications: the player's feet are in front of the bar, and the feet have a wide shoulder width, the player drops down and grabs the bar with mixed fist (one palm pointing forward and one pointing backward). The distance between the two grips with the breadth of the shoulders, the hip fold and the tilt of the torso forward in front, so that the knees remain extended and the shoulder above the bar, the player raises the torso to pull the bar to the height of the thighs until the effort is exhausted**.**
Score calculation: The player continues to bend and stretch the torso without resting or stopping to score the most number of times until fatigue.
Back Squat Test (3: 116)

The purpose of the test: This test measures the strength of the legs**.**
Devices and tools: iron bar, various weights, and vertical supports.
Performance specifications: The player places the iron bar (20 kg) behind the head above the shoulder blades in a position to perform the test. The player stands and the back muscles straight, looking forward, feet touching the

floor, the heels in a point directly to the front or a little to the side, shoulders back, the player bending slowly The hip and knees until the thighs are parallel to the ground, then return to the starting position by extending the legs, the head is perpendicular to the torso, the shoulders remain slightly behind.
Score calculation: The laboratory bends and extends the legs without rest to record as many times as possible until the effort is exhausted.

Vertical Jump Test (4: 391)
The purpose of the test: To measure the explosive strength of the muscles of the legs
Tools: chalk - tape measure
Performance method: The player grabs a piece of chalk and then stands next to the wall, extending the arm as high as possible and setting a mark on the wall. The number on which the mark is placed is recorded, the player from standing position swings the arms down and back with the torso bent forward and downward with the knees bent half (right angle) then the player extends the knees and pushes the feet together to jump upward with the weighted arms firmly forward and to the top to get them to the maximum height possible and then put another mark at the highest point he reached. We extract the jump distance by the difference between the two marks (from standing and jumping).
Arm's Explosive Force (2:25)
Throw the medical ball (3 kg) from sitting

The purpose of the test: To measure the explosive strength of the arms.
Test procedure: The player sits on the chair holding the medical ball with two hands so that the ball is in front of the chest and under the level of the chin. The stem must also be attached to the edge of the chair. A rope is placed around the chest of the player to attach the torso to the chair.
Scoring: Calculate the travelled distance.

Chemical tests and measurements

Measurement (CPK – LDH)

The researcher checked out (5 C) of venous blood from the research sample before the training curriculum through a medical associate (Haider Abdul Rahim) and repeat the same test after the experimental curriculum

Measuring achievement in snatching lift

The achievement test was conducted inside the ballast hall of Al-Minaa club ,by performing regular hijacking cranes and in a competitive atmosphere between players and in the presence of the full arbitration crew and the achievement was confirmed.

Pre-measurements

In 3-4 / 10/2019 The researcher made the test for the experimental sample in the weightlifting hall of Al-Minaa Sports Club, according to the following mechanism

- **A <u>chemical variable (CPK – LDH)-</u> <u>measuring achievement</u> - <u>measuring special strength</u>**

The main Experience

The researcher made the necessary adjustments to the training curriculum (Appendix1) It was very carefully codified and made the following

2- The program application, which contains:

a) (32)Training unit by (4) Units per week.

b) The program was implemented for a period of (8 Weeks).

c) Course Time (1:30 hour).

d) the researcher takes into consideration the training load components and its formations in the training curriculum prepared by him where the level of performance of the intensity of the training ranges (85 %-100%) with a few

iterations ranged between (1-6) As for the rest periods, they ranged(2:30-3 m) one exercise and another and pulse returned to (110-120) between courses and the load formations for the training units are (1- 1).

Post-measurements

After completing the implementation of the experimental variable, in 5-6 / 1/2020 in the Weightlifting Hall of Al-Mina Sports Club, the researcher conducted tests and post-measurements, and with the same framework of the pre-tests.

Statistical means

The researcher used the statistical bag SPSS Issuance 23 In processing search results

Show results

View, analyze and discuss the results of pre-test and post-test measurements in the research sample

Table (2)

Shows the mean, standard deviation, standard errors of differences and (T) Calculated value, Probability Value, and Statistical Significance in Pre- and Post-Test of the Research Sample of the Researched Variables.

Seq	Variables	measuring unit	Pre-test		Post-test		Standard error	Values t Calculated	Probability value	Statistical significance
			Arithmetic mean	standard deviation	Arithmetic mean	standard deviation				
1	The swift force of the right-leg	M	39,714	1,253	43,571	0.975	0.445	8,399	0.000	moral
2	The swift force of the left-leg	M	38,285	0.775	41,857	1,214	0.480	7,426	0,000	moral
3	The swift force of the two arms	number	30,857	2,340	35,000	2,309	0,404	10,253	0,000	moral
4	The swift force for torso	number	41,857	2,035	49,142	2,267	0.680	10,712	0,000	moral
5	The explosive force of the arms	M	4,850	0,081	5,100	0.222	0.061	4,050	0,000	moral
6	The explosive force of the legs	cm	44,285	1,380	50,000	1,732	0,359	15,894	0,000	moral
7	Elongen strength in the arms	number	93,285	2,870	102,714	3,251	1,087	8,666	0,000	moral
8	Elongen strength in the legs	number	32,571	1,272	38,000	1,914	0.336	14,717	0,000	moral

9	**Elongen strength in the torso**	**number**	**91,857**	**3,760**	**98,285**	**4,423**	**0,895**	**7,175**	**0,000**	**moral**
10	**Achievement**	**Kg**	**87,142**	**7,312**	**94,285**	**6,725**	**0,857**	**8,333**	**0,000**	**moral**
11	**CPK**		**185,2**	**5,87**	**150,45**	**6,88**	**11,544**	**3,01**	**0,000**	**moral**
12	**LDH**		**25,8**	**1,33**	**58,22**	**2,55**	**4,484**	**7,23**	**0,000**	**moral**

From the results presented from the above table, it appears that the values of (T)Calculated for the following variables (the swift force of the left and right legs, the swift force of the arms and torso, the explosive strength of the arms and legs, the force elongation of the arms ,legs and the torso, the achievement and focus CPK and LDH)Hit respectively (8,399 - 7,426 - 10,253 - 10,712 - 4,050 - 15,894 - 8,666 - 14,717 - 7,175 - 8,333 - 3,01 - 7,23)Also it appears that the attached probability value is less than (0.05)This indicates that there are significant differences between the pre and post tests, and for the benefit of the post tests.

The results discussion

The movements needed by the quadrilateral in order to perform the systemic levers correctly is to integrate muscular and nervous, this is supported and propped by a special type of force, which is the maximum force, as its use gives a great ability to lift a large or very heavy weight. Abdullah Ahmad Shehata stresses (14: 93-94) “Since the goal of lifting a heavy weight in the sport of weightlifting needs to be appropriate force in order to succeed and here confirms that the maximum force is very appropriate for sport of weightlifting”. In addition, the use of such a kind of strength and the method of repetitive training, which is characterized by high severity, made a clear change to all research variables in terms of development This is evident from the appearance of the level of adaptation occurring in the young weightlifters and the effect of the exercises prepared by the researcher and the lack of effect occurring in the muscle tissue. This gives physiological responses that show progress at the level, which are illustrated by the results of the level of development progress of the sample. The researcher believes that the differences in the values of measurements before and after the implementation of the training approach, this is the approach of the trainer with the presence of change evidence of the presence of changes in the internal environment with a physiological response from the body's systems with a significant impact on the adaptation of the anaerobic energy system. The table also shows the test between the experimental and control groups and in favor of the experimental group, whenever the values of (CPK) are few evidence of the absence of tissue damage and the adaptation of lifters to the content of the training curriculum. And the ability of the anaerobic energy system is better for the experimental group, since the prepared exercises are almost all from the first system (ATP-PC). And in case of effort, the value of (CPK) increases in order to increase generation of (ATP) and decreases in the case of rest, because the state of rest is keeping (CPK). The researcher also believes that an increase in the activity of enzymes is always after performing the physical effort and that the method of repetitive training has the effect of developing enzymes and chemical effects in the research sample. The researcher agrees with Falah Mahdi (1: 2005) “By increasing the activity of metabolic enzymes in particular (CPK) during training and physical effort”. The results of our research are consistent with the findings of Ahmed Mahmoud Ali (2: 9(Presence of improvement ratios for post measurement from pre- measurement of the two enzymatic (CPK-LDH). Quoted from Ahmed Mahmoud Ali (10: 2017) ,training in some competitions such as weightlifting does not lead to an increase in mitochondria as mentioned in some recent reports. It has been found that some enzymes that enter into metabolic processes that produce energy, this enzymatic activity is increased by training Related to the muscles.

Conclusions

1-All enzymatic variables are within the normal limits in rest and after physical exertion.

Increased index concentration (CPK and LDH) After training curriculum and physical effort.

2-There is an indication of an adequate level of adaptation in the chemical indicators under study for the research sample.

3-There is an increase in the level of anaerobic capacity in terms of increased enzymatic indicators (CPK and LDH).

4-Evolution of the level of achievement of the experimental sample.

Recommendations

1-To ensure that the training curriculum exercises develop movements and skills similar to the type of effectiveness.
2-To ensure that exercises develop anaerobic ability consistent with the type of effectiveness (weightlifting).

3-Periodic checks in chemical variables to ensure the goals of the training curriculum and player safety.
4-Testing in other chemical indicators on other categories.
5-Emphasizing the use of modern training methods and methods that are consistent with the type of energy system as in the method of repetitive training

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Appendix (1)

A model of repetitive training curriculum

Seq	The name of the exercise	Distress	the group	Repetition
1	Snatching sit from chairs	90%	3	5
2	Static Clean + moving jreek	90%	4	5
3	Snatching pull	85%	3	5
4	Front Squat	85%	3	6

Seq	The name of the exercise	Distress	the group	Repetition
1	Clean jeerk	85%	4	5
2	Push Wide back + Squat	85%	3	1 + 5
3	Snatching pull a little bend	85%	4	5
4	Back Squat	90%	3	6