

THE EFFECT OF DEEP TRAINING OF THE TRUNK MUSCLES ON THE DEVELOPMENT OF EXPLOSIVE POWER AND THE CRUSHING KNOCKING SKILL OF YOUNG VOLLEYBALL PLAYERS

Abdullah HameedSaleh Al-thubaini and Dhiyaa Abdulateef Abdulrazaq*

General Directorate of Education, Baghdad, the first Karkh, Ministry of Education / General Directorate of Education, Baghdad, the first Karkh, Iraq.

Abstract: The research included four sections. The first section contained the introduction to the research and its importance. The deep training of the muscles of the trunk and abdomen was discussed using methods, special training methods for these muscles and the skill of overwhelming volleyball with one volley. At the moment of advancement, which is therefore on the speed of the body of the players, which requires investing the movements of the various parts in order to find a distinct motor transport. Young people use the experimental approach to its suitability to the nature of the problem. The research sample consisted of (14) youth players divided into two groups and conducting tribal tests. The researcher used special exercises for the trunk muscles using special tools and tools, then the dimensional tests. The researcher concluded that the adoption of deep training exercises for the trunk muscles works to develop speed And the accuracy of the skill of overwhelming the young players in volleyball.

Key words: Training; Volleyball; Young; The trunk muscles; Deep training

INTRODUCTION

The sports training process aims to reach the athletes, to the highest levels, in achievement, and the training programs differ according to their requirements, in performance and competition, and achieving these requirements is one of the main pillars of development, in performance as well as achieving achievement and thus reaching the goal by reaching high levels, and therefore must be directed Developing the athlete's training condition, in line with these requirements. The modern training is characterized by relying on the precise specialization in order to know the progress made in the training programs, especially the use of special methods and training methods. And the skill of crushing hitting with volleyball is one of the skills that depend mainly on the speed of movement of the arm and the strength of the jump or the momentary force in a moment The advancement and accuracy of performance, as it requires investing the movements of the different parts in order to find a distinct kinetic transmission such as the jumping force and the speed of movement of the feet and transfer them to the player's arm, and this skill has special technical performance, and mechanical conditions constitute the kinetic method of this performance, so it is necessary to develop the basic muscles leading to the movement as well Muscle support and supportive of this skill by trying to link strength and speed exercises for all the muscles of the body involved in the basic performance and assistance and supportive muscles for this skill performance and movement performance in a streamlined and accurate kinetic transmission and from here show the importance of research using deep training exercises or the so-called deep muscle training which It targets the deep muscles of the player's torso (the abdomen and back muscles), which have an important and supportive role in the movement of players up and the performance

Manuscrito recibido: 09/12/2020
Manuscrito aceptado: 13/04/2020

Dirección de contacto: Dhiyaa Abdulateef Abdulrazaq,
General Directorate of Education, Baghdad, the first Karkh,
Ministry of Education / General Directorate of Education,
Baghdad, the first Karkh, Iraq

Correo-e: dhia_abdul_latif@yahoo.com

of the strength Dorsal Q and great importance in maintaining balance for the player's body during rapid movement and rapid stopping, as well as protecting the internal organs of the body as these muscles are the center or main axis of movements of the arms and legs as deep muscles contribute to stabilizing the back and pelvis and transfer the kinetic speed from the legs to the movement of the arms as well as it gives the strength that the torso needs in most movements and exercises as well as good training for these deep muscles will lead to an increase in the ability of players to perform other skills and raise the amount of strength and control of strength trends and works to raise the technical level and get the highest skill performance. Here the importance arises in preparing deep muscle exercises to develop the explosive power of the working muscles at the moment of rise and know the impact of these exercises on the accuracy of the skill of overwhelming hitting among young players

Through the field researcher's experience in the field of training, especially in volleyball, he noted that there is a low level of performance of the overwhelming hitting skill at the level of youth teams in our country compared to what the players achieve for other countries in the international and continental championships for the youth category and this case attracted the attention of the researcher and may return for several reasons Including weakness in the physical capabilities, especially the explosive strength of the muscles of the legs, the movement and flow of movement, and the movement of the various organs quickly, for the working or support muscles of the trunk muscles, then to the hands and the importance of these capabilities among the players, and the relationship of these variables to the skill of overwhelming hitting that requires them to reach the highest point to get rid of the defense And direct the ball accurately and know the extent of its impact on performance. All of this generated for the researcher a problem through there is a weakness in the smooth flow of movement between the legs, trunk and hands, so try to resort to the use of deep training of the muscles of the trunk (abdomen and back) to develop this skill, which will help in trying to avoid weaknesses during the kinetic performance of the overwhelming hitting skill

The research goals arePreparing exercises for deep torso muscles (abdomen and back) for volleyball players for youth and Knowing the effect of these exercises on the deep torso muscles (abdomen and back) for the youth

category in developing explosive strength and accuracy of overwhelming beating among volleyball players.

The search differences There are statistically significant differences between the control and experimental groups in the post-test and in favor of one of the two groups

The Human Field: (14) players from Erbil ClubThe areas of research are

Time domain: for the period from 5/5/2019 to 30/7/2019

Spatial domain: Iraq – Erbil

Fundamentals of deep training :

It includes learning and mastering the motor skills in the specialized sport necessary to reach the top ... and this can be seen when comparing the requirements of training strength and speed activities ... Strength+. Physical fitness.Fast, elongated strength, agility, flexibility.To agreevelocity elongation ... But the defining characteristic of special fitness is the use of special exercises in the same direction.

MATERIALS AND METHODS:

Research Methodology:

Because the research problem is of an experimental nature, the researcher has used the experimental approach to suit the nature of the problem.

Search community and sample:

Because the research problem is of an experimental nature, the researcher has used the experimental approach to suit the nature of the problem Tables (1,2,3)

Means of gathering information, tools and devices used in research:

Means of gathering information, devices and tools used in the research:

Means of collecting information

Technical observation and experimentation-

Table 1: Normal distribution in some special measurements under consideration.

skewness	Mediator	standard deviation	Arithmetic mean	measruing unit	variable	sequence
0.325	18	0.513	17.571	Year	Age	1
0.356	75	5.432	76.857	Kg	Mass	2
0.092	185	4.905	184.714	cm	Length	3

Table 2: Equivalence between the two groups.

skewness	Mediator	standard deviation	Arithmetic mean	measruing unit	variable	sequence
0.066	599.5	11.996	599.714	Net	Explosive force	.1
1.221	20	1.107	20.15	M / t	Ball speed	.2
0.244	14	1.392	13.642	Degree	The accuracy of the overwhelming beating	.3

At a degree of freedom (12) and the significance level (0.05)

Table 3: Equivalence between the two groups of special measurements under consideration.

indication	Error level	t	Experimental group		Control group		variable
			standard deviation	Arithmetic mean	standard deviation	Arithmetic mean	
random	0.554	0.609	12.31	601.71	12.284	597.71	Power
random	0.599	0.540	1.375	20.314	0.837	19.985	the speed
random	0.586	0.560	1.511	13.428	1.345	13.857	The accuracy of the overwhelming beating

- . Personal interviews-
- . -Tests and measurements
- : Tools and devices used in the research
- . Weights added in the form of belts or different weights-
- . The Swedish balls are varied-
- . Short and long rubber cords (8)-
- . - Roller drawing device
- . Different medical balls weights-
- . Various terraces of heights-
- . 20m metallic tape measure-
- . Chinese-made Dell laptop Model N5110-
- . A Japanese-made electronic scale block measuring staves-
- . -Force Platform (Zebrice), (German-made).

Field research procedures:

Overwhelming test:

The purpose of the test

Measuring the accuracy of the country's high crushing knocking skill.

Hardware and tools

Volleyball court, ten volley balls, duct tape, two levels, one of which are placed in the corner of the stadium so that the two interior corners are (5) cm away from the side and end lines.

Performance specifications:

After the coach performs the preparation from center (3) and directs the ball to the center (4) in which the laboratory is located and after the ball arrives, the laboratory performs the crushing knocking skill ten times in a correct legal manner so that the laboratory performs (5) attempts on the back rank and then (5) Other attempts on the front rank, as shown in Figure (8).

The conditions:

It is required to perform an overwhelming beating every time that it is in accordance with the legal conditions for skill.

In the event that the coach or preparer is wrong in preparing for an overwhelming beating, try again.

Registration method:

(4) points are given for each correct crushing hit, in which the ball falls on the rank.

(3) points are given for each correct crushing hit, in which the ball falls in the planned area.

Two points are given for each correct crushing hit in which the ball falls in Area (A) (B).

One point is given for each correct crushing hit in which the ball falls in Area (C)

A score of 0 is given for every crushing blow in which the ball falls off the field or bounces from the net.

Research Measurements:

Measuring force:

The German Force Plate Form (Zebris) platform was installed with dimensions (150 x 50) cm and height (2) cm. After trying the data, the data is transferred to an Excel system and the time corresponding to the highest strength is extracted and the first time recorded for the petition is subtracted The output of the force time is extracted by the maximum force: it is the largest force the player places on the platform for power from the moment of relying on the moment he left the platform in the stage of advancement and is calculated in the unit of (Newton) and put (40) cm from the side line and (20) cm from the area line The forehand, and its front edge was in contact with the line of the frontal area, and in the overwhelming countryside bias it deviated by (40) degrees towards the inside of the field, and to adjust the direction of the platform with the angle of the overwhelming countryside beating.

Measuring the speed of the ball:

The researcher used the Sports Radar (American-made) device to calculate the speed of the ball, and the device contains a button to run and the device calculates the speed (in miles or kilometers), and the result of the speed calculation appears on a screen that is facing the person holding the device, and starts his work by pressing the play button to calculate the speed when Grip the hand until the moment the ball is touched, leaving the push button to calculate the speed.

Exploration Experience

In order to pay attention to the accuracy and validity of the performance and to avoid the difficulties that may occur during the procedures of the field experiment, the researcher conducted a first exploratory experiment dated (5/5/2019) four 'clock in the afternoon in Erbil Club on a group of young players where distances and dimensions were fixed and the work of the devices and all aspects Testing and measurement.

Main experience

Tribal tests for the research sample.

The pre-test was conducted on the research sample at exactly four o'clock in the afternoon of Thursday, 5/8/2019 in the Erbil Club Hall after preparing the forms for the players' names, to facilitate the work and record the results obtained by each player while preparing the necessary tools for testing, placing devices and implementing the test from Before the players.

The main experience:

- The training exercises prepared on 11/5/2019 began and continued until 7/30/2019.

The implementation of the training curriculum took (11) weeks, at the rate of (3) training units per week (Saturday, Monday, and Wednesday), i.e. a total of (33) training units during the duration of the research.

The experimental group performs deep muscle exercises after performing the main part of the training unit determined by the trainer and continues from (15-25) minutes that are on two or three groups of exercises, which are exercises for deep muscles in the trunk (back and abdomen) using various Swedish tools and medical balls to develop The strength of this muscle training

- The researcher considered the training curriculum prepared by the trainer and the training stage when developing exercises for the research sample, the tools used, the method of implementation and economic conditions, and this set of exercises of auxiliary exercises that work with the auxiliary muscles

The use of the Swedish ball in some exercises that target the mlfidus muscle in the back, as well as the internal abdominal muscles, as well as the use of pulleys in training to strengthen the internal abdominal muscles and the back and the use of body weight in exercises that target the abdominal and back muscles by leaning on the arms, separating the stomach and withdrawing it to the chest The rubber cord.

The total training units totaled (33) training units.

Work with the experimental group was limited during the allotted time from the main section.

The remaining time of the training unit during which the experimental group works with the team coach.

Dimensional tests:

The post test was conducted on the research sample at five o'clock in the afternoon on 4/8/2019 in the same hall, and the researcher was keen to provide the same conditions and requirements in which the tribal physical tests were conducted.

Statistical means

The researcher used the statistical program (spss) to process and extract the research data

explosive strength of the two men, the speed of the ball, and the accuracy of the overwhelming beating. The nature of its performance and with the general form of performing specialized skills leads to better results. Training also focused on exercises that tend to focus on the muscle groups of overwhelming hitting skill and its correct path, so as to secure the economy in effort and ensure the smoothness of movement. As "skill is a characteristic of effective performance and the development of motor responses to the learner, it means organizing and arranging the work of muscle groups in the direction of movement" and here it appears (HaiderNawar Hussain) "Exercise or training during the educational unit was found to help improve performance and it depends Basically on the type of educational unit and the training mission, " so the results of the exercises were reflected on these indicators and the results were logical (Table 6).

The results of Table (4) showed that there is an evolution in the explosive strength of the two men, the speed of the ball's launch, and the accuracy of the overwhelming beating of the experimental group at the expense of the control group. The researcher believes that the reason for this moral difference is due to the effectiveness of the deep training that he prepared, and the experimental group used it through exercises characterized by strength and speed And the flexibility of the muscles of the trunk (abdomen and back) that led to the development of the work of the trunk muscles and consequently by the movement of overwhelming beating and the strength of the strike, as well as to invest in the force of the jump, which made the differences in the values of this variable tend to the experimental group at the expense of the control group in the level of strength and speed of these muscles, which show its importance In the upgrading stage, in which the relationship between the momentum and the momentum of the vertical acceleration must be in the same manner, as this skill requires speed in moving and the force in hitting the ball and directing the ball to the place far from observation, and the jumping force is one of the main factors that affect upgrading to the top It is also of importance to achieve the optimum relationship between payment and accuracy of performance. Here Englehorn stresses, "One of the most interesting situations in the mathematical field is when it requires both precision (timing or location), and speed (such as overwhelming beating) within the same task or the same timing" The strength of the special muscles of the abdomen and back and showing a high flow of movement and movement of the movement. Here (HaiderNawarHussain) confirms that the movement movement "is one of the most important movement indicators that enables the player to improve his performance as he works to increase the acceleration of the body during the kinetic range. Rather, it starts from the end of the first movement, and this is considered one of the most important indicators of mathematical movements. These results are in agreement with what he indicated (Magill). The faster movement sometimes makes the individual more accurate, so rapid movement and acceleration at this speed makes you more consistent in The timing of the movement, as the fastest could be better if the skill required us to move quickly in the first place " This was what he was aiming for in-depth training and therefore the results were logical.

RESULT AND DISCUSSION

The results of (Tables 4 and 5) showed that there is an evolution in the

CONCLUSIONS

- Adopting deep training exercises for the trunk muscles develops the explosive

Table 4: Shows the calculated value of (t) for comparison between pre and post tests of the control group.

Indication of differences	Level of significance	Calculated value (t)	Pe	P	after		Before		measuring unit	Variables	sequence
					standard deviation	Arithmetic mean	standard deviation	Arithmetic mean			
moral	0.001	5.661	3.338	7.142	12.837	604.85	12.284	597.71	Net	Power	1
moral	0.001	6.337	0.310	0.742	0.897	20.728	0.837	19.985	M / t	the speed	2
moral	0.005	4.382	0.690	1.142	1.414	15.0	1.345	13.857	Degree	The accuracy of the overwhelming beating	3

Freedom degree (6) and error level (0.05)

Table 5: Shows the calculated value of (t) for comparison between the pre and post tests of the experimental group.

Indication of differences	Level of significance	Calculated value (t)	Pe	P	after		Before		measuring unit	Variables	sequence
					standard deviation	Arithmetic mean	standard deviation	Arithmetic mean			
moral	0.010	3.772	15.741	22.142	16.077	623.85	12.311	601.714	Net	Power	1
moral	0.000	7.886	0.824	2.457	0.956	22.771	1.375	20.314	M / t	the speed	2
moral	0.000	17.816	0.487	3.285	1.380	16.714	1.511	13.428	Degree	The accuracy of the overwhelming beating	3

Freedom degree (6) and error level (0.05)

Table 6: It shows the differences between the experimental and control groups.

indication	Error level	t	Experimental group		Control group		variable
			standard deviation	Arithmetic mean	standard deviation	Arithmetic mean	
moral	0.031	2.443	16.077	623.85	12.837	604.85	Power
moral	0.001	4.119	0.956	22.771	0.897	20.782	the speed
moral	0.041	2.295	1.380	16.714	1.414	15.0	The accuracy of the overwhelming beating

At a degree of freedom (12) and the significance level (0.05)

strength of the legs for young volleyball players.

- The adoption of deep training exercises for the trunk muscles develops the speed of the ball for the crushing knocking skill of young volleyball players.

- The adoption of deep training exercises for the muscles of the trunk works to develop the accuracy of the skill of overwhelming the young players in volleyball.

Endorsement:

- Adopting deep training for volleyball players and using them in training.

- Diversity in the use of modern training methods and various and appropriate training methods that breaks deadlock and develops performance.

- The importance of using a precise scientific diagnosis of the weaknesses of volleyball players.

- Carrying out similar studies and research in other volleyball skills, or at different samples and levels.

REFERENCIAS

Haider Nawar Hussain; The effect of different altitudes of barriers on the development of some motor manifestations according to biomechanical indicators and the technical performance of running 110 meters of barriers for beginners (Master Thesis) University of Baghdad - College of Physical Education 2008. p 42.

Haider Nawar Hussain; The effect of some educational programs to develop some kinetic aspects and technical performance of the long jump event for beginners, ages (15-16) years, PhD thesis, University of Baghdad - College of Physical Education 2012, p. 82..

Qassem Hassan Hussein. Sports Psychology, Principles and Applications in Training: (Baghdad, Higher Education Press, 1990).

Muhammad Subhi Hassanein and Hamdi Abdel Moneim; The scientific foundations of volleyball, methods of measurement and evaluation. I. Cairo: The Book Center for Publishing, 1997, p. 206.

Englehorn, R. (1997). Speed and accuracy in the learning of a complex motor skill, (Perceptual and Motor Skills), p85..

Magill, R.A.(1998). Motor learning: Concepts and application., (Boston, MA: Mc,Graw) p65.

Urra, B. A., Barrios, Y., & Placencia, T. (2019) Comparación de niveles de bienestar en función de la realización de ejercicio físico en adultos mayores chilenos. Ibero-American Journal of Exercise and Sports Psychology, 14(1), 81-86.

Instituto Nacional de Estadística (2019). Ministerio de Economía y Empresa. Gobierno de España. Recuperado de <http://www.ine.es/jaxi/Datos.htm?path=/t15/p419/p01/a2003/l0/&file=01011.px>.

Bondarev, D., Laakkonen, E.K., Finni, T., Kokko, K., Kujala, U.M., Aukee, P., & Sipilä, S. (2018). Physical performance in relation to menopause status and physical activity. Menopause, 25(12), 1432-1441.