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## The effect of Battle rope exercises to develop some physical and motor abilities and the accuracy of performing the smash hit skill for volleyball players

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### Abstract

Researchers tended to use a variety of methods. Battle rope exercises are one of those methods that are a means to improve the skillful and physical aspects, and the physical and motor abilities are considered one of the pillars on which the physical and skillful preparation depends, and their importance increases in the accuracy of the crushing skill of hitting the volleyball, and from here comes the importance of the re-search with the necessity of diversifying training methods and tools, as it may be the use of exercises Battle rope is the best method for improving the physical level of the players, and their effect is reflected on the accuracy of the skill of the crushing blow. Through the follow-up of the two researchers and their interview with the coach and dialogue with him regarding the players in the specialized center for volleyball, they found weakness in the physical and motor capabilities of the players, which was reflected in the accuracy of the skill of the crushing strike, which prompted The two re-searchers attempted to find out the effect of battle rope exercises on the physical and motor abilities and the accuracy of the smashing skill of the volleyball players. The aim of the research is to prepare Battle rope exercises for the Volleyball Specialist Center and to identify the effect of Battle rope exercises on some physical and motor abilities and the crushing accuracy of volleyball. The two researchers used the experimental design with one experimental group, and the research sample consisted of (10) players in the sport of volleyball. It was chosen by the intentional method, and the duration of the implementation of the training program lasted (8) weeks, at the rate of (3) training units per week. The crushing blow of volleyball players, and the results demonstrated the development of the research group in the explosive ability, which is distinguished by the speed of the arms, and the results demonstrated the development of the research group in agility and compatibility. Similar studies on different age groups.

### Keywords

Battle rope, crushing blow

### Introduction:

The process of sports training is a complex and intertwined process, and it is not simple, and it no longer depends on randomness. Researchers in the field of sports training tended to use a variety of modern training methods aimed at possessing players with high physical, motor and skill capabilities that enable them to perform ideally during training and competition. Battle rope exercises are exercises with which one of the heaviest sports tools is used, which is heavy ropes, and they are practiced in the form of unilateral, bilateral, or circular waves exercises,

and they are a means to improve the skill and physical aspects to achieve the accuracy of the skill because of the resistance it bears on the parts of the body, especially the muscles working at the performance

Physical and motor abilities are considered one of the pillars on which physical and skillful preparation depends, and they are important for most games and sporting events, as they enable the athlete to perform motor performance in the best way, and their importance increases in offensive skills in volleyball, as they are decisive

in scoring points, and one of the most important of these skills is the crushing blow in the ball game Volleyball, as this game is one of the games that includes sequential and overlapping skills, starting from serving and ending with defending the court, and from here comes the importance of research on the need for a variety of training methods and tools. The use of Battle rope exercises in volleyball may be the best method for advancing the level of performance and contributes to improving the physical level and The skill of the two players and their effect on the accuracy of the skill. And through the follow-up of the two researchers and their interview with the coach and the dialogue with him regarding the players in the specialized center for volleyball, they found weakness in the physical and motor capabilities of the players, which was reflected in the accuracy of the skill of the crushing blow, which prompted the researchers to make an attempt to find out the effect of battle rope exercises on the physical and motor capabilities and the accuracy of the skill of the crushing blow. for volleyball players (10). The aim of the research is to prepare Battle rope exercises for the specialized center in volleyball and to identify the effect of Battle rope exercises on some physical and motor abilities and the accuracy of the crushing strike in volleyball, as well as to identify the

differences between the pre and post-tests of the re-search group in some physical and motor capabilities and the accuracy of the skill of the crushing strike for volleyball players. The two researchers found that there are statistically significant differences between the pre and post-tests of the research group in some physical and motor abilities and the accuracy of the volleyball smash.

**Method and procedures**

The two researchers used the experimental approach for its suitability to the nature of the research by designing one experimental group with a pre and post-test, "which is the approach that can test the real hypotheses of the relationships of cause or effect" (7). Volleyball and their number is (122) players, and the two researchers selected them by the intentional method from the players of the specialized center of the Rusafa Directorate / 3 in volleyball, whose number is (14) players whose ages are under (17 years) for the season (2021-2022) and their number is (4) players, as the research sample became (10) players at a rate of (8%), as shown in Table (1), which shows the description of the research sample.

**Table (1)  
shows the description of the research sample**

Community	Sample		Exploratory experience	
The volleyball specialized centers are the six Baghdad districts (Al-Karkh 1/20 players, Al-Karkh 2/20 players, Al-Karkh 3/20 players, Al-Rusafa 1/21 players, Al-Rusafa 2/22 players, Rusafa 3/20 players)	Players of the specialized center of the Directorate of Rusafa / 3 in volleyball		players 4	
The number is 122 players, aged 17 years	Number	players 14	ratio	
	ratio	%8	%3	

The two researchers conducted homogenization for some variables, as shown in Table (2).

**Table (2)**  
**shows the homogeneity of the sample in the research variables (height, mass, age, training age)**

Variables	Measuring unit	Asthmatic mean	Median	Standered deviation	Coefficient of torsion
High	.Cm	168 .31	169	3 .43	0 .23
Wight	.Kg	62 .20	61	6 .28	0 .65
Age	Year	16 .31	16	3.02	0 .54
training age	Year	3.125	3.000	0.991	0.378

It is noted from Table (1) that the values of the torsion coefficient for the variables referred to in the table were confined between (+\_1), which indicates the homogeneity of the research sample and that it is within the moderation distribution. The two researchers prepared a questionnaire for a group of tests presented to the experts and specialists in sports training, volleyball, testing and measurement, and an agreement rate of 80% was adopted if the two researchers adopted tests of throwing a medical ball weighing (2 kg) from standing (3) bending and extending the arms from the front support position 10 sec. (6) zigzag running between the figures 20 m (7) numbered circles (8) crushing accuracy test: (4) and a reconnaissance experiment was conducted on (4) players from the community of origin on Monday corresponding to 15/ 2/ 2021 at 3 in the afternoon, and after that, the two researchers applied the tribal tests on the research sample in

the indoor hall of Al-Hussein Sports Club with volleyball in Baghdad at 3:00 pm on Wednesday, 2/16/2021. 3 units per week, and the exercises were applied at a time ranging from (25-30) minutes from the main part of the unit, and the high-intensity interval training method was used, with a number of groups ranging from (2-4) groups, and the work-to-rest ratio was 3-1, with a training intensity of 85-95%. It was extracted from the maximum rate of strokes  $\text{Heart} = 220 - \text{the age of the athlete}$  and extracting the partial intensity =  $\text{heart rate for each exercise} \times 100 / \text{maximum pulse rate}$ , and after applying all the training units, the two researchers conducted the post tests on Monday 4/18/2021 in the manner and conditions in which the pre-tests were conducted, the curriculum started from 17 -2 until 17-4-2021

**Results:**

**Table (3)**

**shows the arithmetic mean, standard deviations, the difference of the arithmetic mean, standard deviations, and the calculated and tabulated (T) value of the research sample in the pre and post tests**

Variables	Pre tests		Post tests				Calculated T	Significant level	Significant
	A	STD	A	STD	P P M	A D			
Medicine ball throw test	4 .13	0 .82	6 .13	1 .62	2.00	1.34	6 .85	0.000	Sign
Bending and extending the arms from the forward support position in 10 seconds	9.000	1.414	11.200	0.8366	2.2	1.6431	2.99	0.005	Sign
Zigzag running between the pillars 20 m	12.798	0.812	10.848	0.993	1.95	0.181	6.362	0.000	Sign
Numbered circles	10.402	1.718	8.836	1.667	1.566	0.051	5.856	0.000	
Smash hit accuracy test	19 .23	2 .47	20 .51	2 .42	1.28	0.42	7 .521	0.000	Sign

**Discussions:**

By observing table (3), which shows that the values of (T) were all statistically significant in (in the research variables. The two researchers attribute the occurrence of these changes to the battle rope exercises and rationing the training loads in a scientific manner appropriate to the age and training stage of the research sample, as the two researchers took into account training with gradual loads during implementation of the program by training the different muscle groups, especially the muscles of the arms, as indicated (2) (13). Which is very important in volleyball competitions and movements that are performed for one time, as in throwing and jumping games, or in all group games that include compound movements” (9). The degree of acceleration of multiple movements, which is one of the important physical and performance requirements in the game of volleyball, which was and still is the subject of many studies, which is composed of the two characteristics of strength and Speed in different proportions” (11) as indicated (5) “that the development of some

forms of force such as explosive power, which is distinguished by speed, is accompanied by a development in the degree of accuracy of skill, as it indicates (12) “The strength that is distinguished by speed is related to the accuracy of skill, so the more The player owns it well, the accuracy of the skill was high (14).” The two researchers attribute the significant differences of the compatibility and agility variable that appeared in the post-test to the Battle rope exercises that were used in the training curriculum for the sample, which played a major role in the coordination of the player's movements for the correct work he performs, in addition to the time period in which the crushing hitting skill is performed. A good volleyball player is the one who is distinguished The gracefulness of movement when performing, and the coordination between the foot and the eye is one of the mechanisms that contribute to the success of the player in carrying out the motor duties (19). The researchers believe that the development of the compatibility component depends on the ex-tent of complete harmony

between the work of the nervous and muscular systems in terms of implementing the muscle reaction to the nerve signal issued to it accurately and in harmony and agility (18), in the game of volleyball, you need all of these two elements, especially the crushing strike, where compatibility needs to rise and hit the ball at the highest and most appropriate point. Ability is an important element of agility, and in the absence of a quantity of ability, the body has lost a large part of agility in motor performance (12). "

The two researchers believe that it is natural that the results of the explosive ability as a result of the Battle rope exercises for the upper extremities represented by the muscles of the arms are reflected in the accuracy of the skill of the crushing strike (15), especially the moment of hitting and the height of the body's center of gravity at the moment of touching the ball with high accuracy and the least possible time without dissipating the muscular ability obtained by the player (1). Directing voluntary movements towards a specific goal requires high efficiency from the muscular and nervous system and complete control over the voluntary muscles to direct them to-wards a specific goal (16). Therefore, the two researchers see the need for the volleyball player to possess the characteristic of the explosive and distinctive ability of speed in the muscles of the body with maximum strength and speed to obtain the accuracy of the skill of the crushing blow (17). "The crushing skill is one of the offensive skills that has a direct impact on the course of the match and is the first in its ranking in terms of effectiveness in achieving victory for the team" (2)

### **Conclusions:**

The results proved that the curriculum with Battle rope exercises has a role in developing the physical and motor abilities and the accuracy of the skill of the crushing strike of the volleyball players, and the results confirmed the development of the re-search group in the explosive ability and the speed of the arms, and

the results con-firmed the development of the research group in agility and compatibility between the foot and the eye.

And through the conclusions reached by the two researchers, it was recommended

The need to use battle rope exercises in the training process because of its clear importance for developing physical capabilities, especially the explosive ability that is distinguished by the speed of the arms, in addition to the movement capabilities of the players (compatibility, agility). Using this type of exercise with different samples from first-class club teams and conducting similar studies on categories different ages

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**Appendix (1)**

**Training unit (week 5), Monday 24/2/2021**

**The aim of the unit: to develop the explosive ability, which is characterized by speed, agility, and compatibility**

**The time per unit is 120 min.**

**Training time (30-45)**

Unit	Exercises	Intensity	repetition time	Groups	Rest between groups	Rest between one exercise and other	total performance time
Second	Standing, holding the rope 8 m with the arms, moving it in single waves, and jumping forward and backward continuously	%85	16sec. repetition 5	3	.sec 90	40 .sec	12 minutes
	Hold the rope from each end and hit the ground	%80.82	.sec 65	3	.sec 90	.sec 40	12 minutes
	From a standing position, grab the rope, walk forward and backward, and make waves and maintain them	%85	.sec 84	3	.sec 90	.sec 30	minutes 9
	Hold the rope and make circles Double in by rotating the arms	%81.46	.sec 87	2	.sec 90	.sec 40	10 minutes
Total							43 minutes

## تأثير تمرينات Battle rope لتطوير بعض القدرات البدنية والحركية و دقة أداء مهارة الضربة الساحقة للاعبين الكرة الطائرة

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مستخلص البحث

اتجه الباحثين الى استعمال اساليب متنوعة . فتمرينات Battle rope هي احدى تلك الأساليب التي تعد وسيلة للارتقاء بالنواحي المهارية والبدنية وتعد القدرات البدنية والحركية احد الركائز التي يتوقف عليها الاعداد البدني و المهاري وتزداد اهميتها في دقة مهارة الضرب الساحق بالكرة الطائرة ومن هنا تأتي اهمية البحث بضرورة تنوع اساليب وأدوات التدريب فقد يكون استعمال تمرينات Battle rope هو الأسلوب الأفضل للارتقاء بالمستوى البدني للاعبين وينعكس تأثيرهما على دقة مهارة الضربة الساحقة ومن خلال متابعة الباحثان ومقابلتهما للمدرب والحوار معه فيما يخص اللاعبين في المركز التخصصي لكرة الطائرة وجدنا الضعف في القدرات البدنية والحركية لدى اللاعبين الذي انعكس على دقة مهارة الضربة الساحقة الامر الذي دفع الباحثان الى القيام بمحاولة معرفة تأثير تمرينات Battle rope على القدرات البدنية والحركية ودقة مهارة الضربة الساحقة للاعبين الكرة الطائرة . و هدف البحث الى اعداد تمرينات Battle rope للمركز التخصصي بالكرة الطائرة والتعرف على تأثير تمرينات Battle rope في بعض القدرات البدنية والحركية ودقة الضرب الساحق بالكرة الطائرة . اذ استعملت الباحثان التصميم التجريبي ذو المجموعة التجريبية الواحدة، وتكونت عينة البحث من (10) لاعبين في رياضة الكرة الطائرة تم اختيارها بالطريقة العمدية، واستمرت مدة تنفيذ البرنامج التدريبي (8) اسابيع وبواقع (3) وحدات تدريبية في الاسبوع , وبعد تنفيذ البرنامج التدريبي توصلت الباحثان الى عدة استنتاجات اهمها , اثبتت النتائج بان المنهج بتمرينات Battle rope له دور في تطوير القدرات البدنية والحركية ودقة مهارة الضربة الساحقة لدى لاعبي الكرة الطائرة , وأثبتت النتائج تطور مجموعة البحث في القدرة الانفجارية والمميزة بالسرعة للذراعين وأثبتت النتائج تطور مجموعة البحث في الرشاقة والتوافق واوصت الباحثان على ضرورة استعمال تمرينات Battle rope خلال برامج التدريب المختلفة لما لها من تأثير في فاعلية دقة المهارات للاعبين كذلك اجراء دراسات مشابهه على فئات عمرية مختلفة

Battle rope، الضربة الساحقة

الكلمات المفتاحية