

## Effect of using core stability trainings on the level of the performance of some attacking skills in volleyball

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### Introduction and research problem:-

Through follow-up volleyball games and either him signals some references and scientific The nature of volleyball in the movements anaerobic are mostly from 5-15 seconds and then rest of 10-15 seconds, which is repeated through games and exercises volleyball thousands of times, and cut on average during the performance of the match about 1500 -2000 m punctuated by some of the means that the launch of bio-energy anaerobic player speed and muscular strength. ( 2 : 27,28 )

good core stability training can help maximise running performance and jump, Power is derived from the trunk region of the body and a properly conditioned core helps to control that power, allowing for smoother, more efficient and better co-ordinated movement in the limbs. (6)

In light of this opinion researcher trying to design a training program using training core stability to development some of its skills in volleyball.

### Research aims:-

This research aims to design a training program with using core stability trainings, To show its impact on the: -

- 1.physical variables to the development of the research sample.
- 2.Development of the skill level of the research sample.
- 3.Identify the percentages of improvement of physical and skill tests for the research sample.

### Research Hypotheses:-

1. There is a significant statistical differences between the averages of indices (pre- post) of the sample in the development of some of the physical variables in favor of the dimensional measurement.
- 2.There are significant differences between the averages of indices (pre- post)

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of the sample in the development of the skill level for the benefit of telemetric.

**Terms used:**

**Core stability:**

describes the ability to control the position and movement of the central portion of the body, Core stability training targets the muscles deep within the abdomen which connect to the spine, pelvis and shoulders, which assist in the maintainance of good posture and provide the foundation for all arm and leg movements.

(6)

**previous studies:**

- Research **Paul.W.Marshall 2005 (3)** heading " Core stability exercise on off aswiss ball " Targeted Evaluation of the activity of the lower back muscle while performing various exercises on the Swiss ball, It has been used experimental method, the sample 80 person, The most important results The presence of statistical significance in the

increase and activation of the lower back muscle through the motivation of the performance of the Swiss ball exercises and their positive impact on the muscles of the lower back.

**Research procedures:**

**First, the research methodology:**

The **researcher** used the experimental method due to its suitability to the nature of this study, it has hired one of the experimental designs for one group of measurement using berfor and after.

**Third: The research sample:**

Was selected sample way deliberate on the (30) players, Has been chosen (10) players from the Police Sports Club under 17 years old season 2015/2016 experimental group , and the number of exploratory sample (20) player (10) players from the Police Sports Club and outside the core sample, (10) players from Esco sports Club in order to conduct scientific transactions ( Believe – stability ).

**The homogeneity of the sample:****Table (1)****Statistical characterization of the sample individuals in the variables "Age – Height - Weight - old training" N = 30**

<b>Variables</b>	<b>measuring unit</b>	<b>means</b>	<b>Medium</b>	<b>Std Deviation</b>	<b>skewness</b>
Age	Year	18.64	18.04	0.86	0.106
Height	C.m	178.36	177.55	2.37	0.032
weight	K.g	70.46	69.32	1.62	0.557
Old training	Year	5.42	4.92	1.05	0.419

**Table (2)****Statistical characterization of sample in the physical and skill tests individuals N = 30**

<b>variables</b>	<b>Measure unit</b>	<b>Means</b>	<b>Medium</b>	<b>Std Deviation</b>	<b>skewness</b>
<b>Vertical jump of run</b>	c.m	48.05	48.00	6.05	0.32
Wide jump of stability	c.m	230.44	230.10	11.33	0.79
Sit Ups (Bent Knees)	repeat	13.16	13.00	1.14	0.42
Reverse Sit Ups	repeat	22.31	23.00	1.18	0.18
push the Medical ball handed	c.m	5.10	4.60	0.84	0.86
push the Medical ball of the right hand	c.m	4.25	4.70	0.53	0.13
push the Medical ball of the left hand	c.m	3.95	3.60	0.37	-0.67
Spike serve	points	12.45	12.00	1.33	0.26
Cross spike	points	14.68	14.00	1.22	0.38
Line spike	points	13.74	13.00	1.41	0.44

Table(1) (2) shows the homogeneity of the research sample in physical and skill tests, as the skewness of research sample are between (+3, -3) in the variables.

### **Third, tools and means of data collection:**

To collect data and information on this research was to use the following tools and methods:

#### **1. Reference Scan:**

The researcher conducted a survey of specialized studies in a game of volleyball and scientific references in order to:

- (a) identify and record physical tests that are commensurate with the research sample.
- (b) identify and record skills tests that are commensurate

with the research sample.  
(c) identify and record the contents of the training program.

### **Fourth: Scientific transactions used for the tests:**

#### **1. Believe physical and skill tests: -**

The sincerity of tests by two groups, the first group representing players Police Sports under 17 years old (distinctive group), on Sunday, 4/ 10/2015 AD Police Sports Club.

The second group of players Esco Sports Club under 17 years old (Group undistinctive) on Saturday, 3/10/2015 AD Esco Sports Club.

**Table (3)**  
**Significance of differences between the distinctive and undistinctive groups In physical and skill tests N 1 = N 2 = 10**

variables	Measurement unit	distinctive group		Undistinctive group		Means difference	Calculated 'T' value
		mean	s.d	mean	s.d		
Vertical jump of run	cm	49.36	5.15	37.28	3.25	12.08	4.44
Wide jump of stability	cm	229.64	11.52	180.66	8.14	48.98	7.76
Sit Ups (Bent Knees)	rote	13.45	1.62	10.08	1.05	3.37	3.90

**Follow Table (3)**  
**Significance of differences between the distinctive and undistinctive groups In physical and skill tests N 1 = N 2 = 10**

variables	Measurement unit	distinctive group		Undistinctive group		Means difference	Calculated 'T' value
		mean	s.d	mean	s.d		
Reverse Sit Ups	rote	21.17	1.35	17.14	1.64	4.03	4.24
push the Medical ball handed	cm	5.20	0.25	3.61	0.16	1.59	11.98
push the Medical ball of the right hand	cm	4.57	0.13	3.11	0.31	1.46	9.71
push the Medical ball of the left hand	cm	3.18	0.11	2.65	0.26	0.53	4.20
Spike serve	points	14.61	1.84	8.49	1.15	6.12	6.31
Cross spike	points	18.20	1.09	14.10	1.26	4.1	5.67
Line spike	points	17.57	1.16	13.22	1.39	4.35	6.02

The value of "T" Driven at the level (0.05) = (1.83)

Seen from the table (3) and no statistically significant difference between distinctive and undistinctive groups differences in physical and skill tests.

## 2. The stability of physical and skill tests:

Has been found stability of tests using test method

application and reapply coefficient (test-retest) on a sample, was seen as a researcher results of Significance for the group tests is distinctive as a first application, on Wednesday, 10/10/2015 AD Police Sports Club.

**Table (4)**  
**Reliability coefficient of physical and skill tests N = 10**

variables	Measurement unit	Implementation first		Implementation second		Means difference	Calculated 'T' value
		mean	s.d	mean	s.d		
Vertical jump of run	cm	49.36	5.15	50.19	4.74	0.83	0.897
Wide jump of stability	cm	229.64	11.52	230.31	10.64	0.67	0.906
Sit Ups (Bent Knees)	rote	13.45	1.62	13.29	1.49	0.16	0.914
Reverse Sit Ups	rote	21.17	1.35	21.00	1.41	0.17	0.961
push the Medical ball handed	cm	5.20	0.25	5.37	0.24	0.17	0.985
push the Medical ball of the right hand	cm	4.57	0.13	4.25	0.12	0.32	0.964
push the Medical ball of the left hand	cm	3.18	0.11	3.44	0.12	0.26	0.934
Spike serve	points	14.61	1.84	15.26	1.37	0.65	0.922
Cross spike	points	18.20	1.09	18.43	1.17	0.23	0.57
Line spike	points	17.57	1.16	17.81	1.34	0.24	0.39

The value of "T" Driven at the level (0.05) = (1.83)

Seen from the table (4) There were no statistically significant differences between the first and second two implementations in physical and skill tests demonstrating the enjoyment of these tests transactions High firming.

**Fifth: Training program: -  
 1.Steps design for the  
 Training Program:**

The training program is designed beside the rest of the other physical elements of the game of volleyball through: -

(A) determine the physical variables own exercises core stability.

(B) identify the basic variables for the program.

**2. Basis of developing the program:**

The training program was developed in accordance with the following principles: -

- keep the way wavey parts module.
- taking into account the balance between the degree of load and rest periods.
- was legalized intensity training loads in accordance with the pulse rate.

**- the formation of the load Degree through the stages of the program: -**

The **researcher** used the way wavey in the formation of the monthly load (1-3) during load degree from the first week until the twelfth week and used of the formation of load (1-1) in daily training all of units.

Use the pulse **researcher** as an indicator for the legalization of contraception and point to guide and evaluate the load and speed of performance and rest periods and the number of repetitions.

**Table (5)**

**Reached the target pulse according to the intensities of the various load**

S	Load intensity	Pulse rate	Benny load	Targeted pulse
1	<b>Maximum load</b> )69% - 50%(	132.5 : 158.15 p/m	55%	139.25 p/m
2			60%	146 p/m
3			65%	152.75 p/m
4	<b>Hefty load</b> )84% - 70%(	159.5 : 178.4 p/m	70%	159.5 p/m
5			75%	166.25 p/m
6			80%	173 p/m
7	<b>Medial load</b> )95% - 85%(	179.75 : 193.25 p/m	85%	179.75 p/m
8			90%	186.5 p/m
9			95%	193.25 p/m

**Sixth: The choice of assistants:**

The **researcher** chose three assistants from faculty of physical education.

**Seventh: exploratory study:**

The main scientific transactions of the tests used and the appropriate tools and equipment used in the study

and application of some units of the program.

**Eighth: Steps search application:**

**1. Before measurements:**

The **researcher** conducting tribal measurement and the experimental finding

homogeneity the variables on friday, 23/10/2015 AD.

**2. Implementation of the basic experience:**

The researcher from the application of the training program on Saturday, 24/10/2015 AD-to-day Wednesday, 13/1/2016 AD, and the duration (12) a week.

**3. After measurements:**

the researcher conducting the post measurements on Saturday, 15.1.2016 AD under the same conditions that were conducted in the before measurements.

**Presentation and discussion of the results: -**

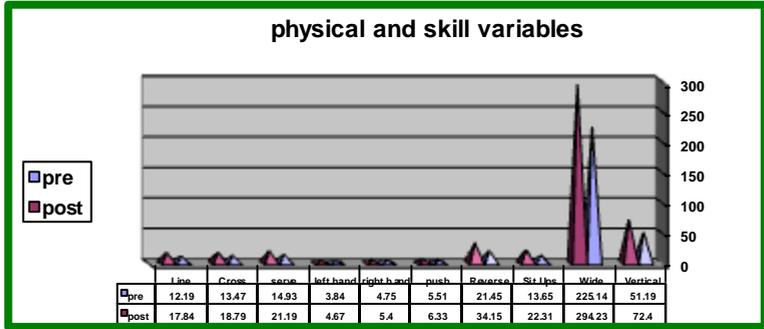
**Table (6)  
Significance of differences between the mean of two measurements ( pre- post ) In physical and skill tests N = 10**

variables	Measure unit	pre measurement		post measurement		Means difference	Calculated 'T' value	Improvement ascriptions
		mean	s.d	mean	s.d			
Vertical jump of run	cm	51.19	5.40	72.40	3.65	21.21	9.76	41.43
Wide jump of stability	cm	225.14	0.86	294.23	0.35	69.09	2.23	30.67
Sit Ups (Bent Knees)	rote	13.65	1.43	22.31	1.35	8.66	13.21	63.44
Reverse Sit Ups	rote	21.45	1.37	34.15	0.76	12.7	12.16	59.21
push the Medical ball handed	cm	5.51	1.95	6.33	1.36	0.82	2.07	14.88
push the Medical ball of the right hand	cm	4.75	0.23	5.40	0.34	0.65	4.75	13.68
push the Medical ball of the left hand	cm	3.84	0.12	4.67	0.25	0.83	8.98	21.62
Spike serve	points	14.93	1.94	21.19	0.89	6.26	8.80	41.93
Cross spike	points	13.47	1.41	18.79	0.73	5.32	5.42	39.50
Line spike	points	12.19	1.67	17.84	0.91	5.65	5.77	46.35

The value of "P" Driven at the level (0.05) = (1.83)

Seen from the table There are significant differences where the value of (t) calculated

higher than the values of (T) Driven at the level of significance (0.05).



**Figure (1)**  
**Physical and skill tests**

**Second, discuss the results: -**

Researcher discusses the findings of the reality of the research group and statistical data processors Statistical the Reference and previous studies framework as follows:

**Discuss the results of the first hypothesis:**

It is clear from the table that increase in the average rates of improvement in the vertical jump test of the movement where it is clear in the pro measurement was (51.19) arrived (72.40) in the dimensional measurement, while in the test broad jump of stability has been in the before measurement (225.14) in the after measurement has arrived (294.23).

The **researcher** believes that this progress incident in ability of muscle due to the impact of the proposed program using exercises core stability converge this result with the results of each of the **Venu Akuthota and others (8)** where these reached that the exercises core stability affect the muscle groups of the trunk and they effective to develop ability of muscle as one of the most important pillars of the kinetic activities.

It is clear from the table also that the average rate of change in the ability of muscle of the trunk which include test Sit Ups (Bent Knees) (15) second in the before

measurement was (13.65) In the after measurement has reached (22.31) as well as for testing Reverse Sit Ups (15) second have increased averages gradually also has been in the before measurement (21.45) while in the after measurement to (34.15).

As for the ability of the muscle of the arms is clear from the table (7) that the average ability muscular of the arms by test push the medical ball handed came by (5.51) has become in the after measurement (6.33).

### **Discuss the results of the second hypothesis:**

Indicates where the table that the spike serve accuracy in the pro measurement (14.93) has gradually increased over the implementation of the program and the end of the program arrived the serve accuracy to a higher level, bringing in the post measurement to (21.19), while the cross spike in the pro measurement (13.47) in the post measurement became accuracy (18.79) while arrived results the line spike in the pro

measurement (12.19) in the post measurement became accuracy (17.84), due to the effect of core stability exercise physical of the ability of the muscle of the two legs and the trunk and arms development variables and find that the skills in question depends on the two legs in the performance of vertical jump, broad jump of movement and access to the highest point to hit the ball and thus easily routed to the most difficult place of the stadium as well as increased muscle capacity of the trunk, which increases the strength of hitting the ball.

And thus have achieved the first and second hypothesis in the physical and skill variables under consideration in favor of the post measurement.

### **First - conclusions: -**

In light of the nature of this study and the sample and the methodology used and the results of the statistical analysis in the scope of this research researcher reached the following conclusions:

-The impact of the training program in the development of

the physical requirements for a moment the muscles of the trunk.

-there is a strong correlation between the development of the physical demands and the level of performance skills, the more increased physical demands increased improvement in the skill level of performance.

**Recommendations: -**

the researcher was able to identify recommendations that benefit the work in the field of training for volleyball players is as follows:

1. The need for the training program in volleyball includes the many different models for training core stability because of its significant impact in the progress of the skills difference levels.
2. Carry out similar studies on different skills in the sport of volleyball.

**References:**

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