

The Effect of using S.A.Q exercises on the skills performance level for the egyption national volleyball players

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-Introduction and research problem:

Physical fitness in volleyball is one of the most important requirements of modern volleyball. This is due to the fact that it is the decisive factor in winning matches, especially when the skill level of the teams is equal. It plays a big role in determining the level of performance in many volleyball skills. Clear in the ability of players to jump in most positions of the game and save balance or control the body. (11 : 19) (6 : 166)

Physical fitness and its components are the most important thing a player tries to possess in order to be able to provide his talent in all sports activities, The training of S.A.Q is one of the main objectives of any training program for this class, which means improving performance and increasing efficiency in physical activity. (4 :134)

Physical preparation in developed countries is at the top of other preparation periods, because the athlete's sports industry and the other technical goals (skill and planning) must be prepared for the sports teams in the different activities within the physical abilities of the players. (12 :220)

This is confirmed by **Hassan Abu Abdo** 2010 that the physical and functional preparation of the player, which is through the development of physical and motor skills necessary for competitive performance enables the player to carry out the technical and planning tasks during the game where building exercises and functional is the means of physical preparation for the players. (7: 2)

Therefore, the trainer must use modern training methods that are very compatible with the requirements of the sports activity and take into consideration in the planning of training, and the exercises that have become recently used by athletes in the exercises S.A.Q where practiced by beginners and high-level.

Where it **mentions Mario Jovanovic et al.** 2011 states that S.A.Q is derived from the initial characters of both speed, agility, and Quickness. (8: 128)

Vilmurugan & Palanisamy 2012 adds that the S.A.Q training system A discussion that results in the integrated effects of many physical abilities within a single training program and that the studies that dealt with the physical and physiological effects on young and old players differed in their results, regardless of the way they are dealt with in the sports field. (14: 432)

Remco Polman et al. 2009 also notes that S.A.Q exercises are an integrated training system designed to improve eye and hand acceleration and compatibility, explosive capability, and response speed. (13: 494)

And basic skills are the backbone of various sports activities and mastery of the most important factors of access to players to a high level in these activities in this regard, **Mohamed Abdel-Dayem** and **Mohamed Hassanein** 2000 m that mastering the performance of basic skills of sports activities is one of the most essential

foundations for the success of the player as well as the team and achieve the win.

(10:43)

Mohammed Ibrahim et al. 2006 also notes that basic offensive and defensive skills are the only way to win against the opposing team and perform well to contribute to the joy of the viewers and to carry out an effective attack to achieve a goal. The higher the level of proficiency of the players of the basic offensive skills individual reflected positively on the performance of the team as a whole . (9: 2)

through the work of the **researcher** as a head coach of the Egyptian team for people with special needs was found during the National Games 2017 the weakness of the physical level of this category and the problems of mobility and compatibility, as confirmed by many previous studies with increased attention to the skill aspect more than what prompted the researcher to design a training program to develop The element of speed, agility and speed of motor response through the use of SAQ exercises to determine their impact on the level of performance of some offensive and defensive skills in the volleyball of players before participating in the regional championship in Abu Dhabi, UAE in March 2018.

- Research aims:-

1 - This research aims to design a training program using the exercises S.A.Q and identify the impact on: -

A- Develop some special physical abilities.

B - the level of performance of some offensive and defensive skills.

2 - Identify the percentages of improvement in the physical and skill tests of 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 post measurement.

2. There are significant differences between the averages of indices (pre- post) of the sample in the develop the level of performance of some offensive and defensive skills for the post measurement.

Terms used:

- Training (S.A.Q): -

Is " an integrated training form in which the rotation between the training of the speed and exercise agility and Quickness in the unit's lack of training". (2: 158)

previous studies:

- Research **Vikram Singh 2008 (15)** heading " Effects of S.A.Q Training Performance Level on Volleyball " The aim of the study was to identify the effect of the S.A.Q training on the skill level, It has been used experimental method, the sample 50 player from the Delhi Sports Club, 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. The most significant results were statistically significant differences in physical variables (speed, flexibility,

agility, power muscular of the two men) and skill level (attack, block).

- Research **Zoran Milanovic 2012 (16)** heading " The effects of the S.A.Q training for a period of (12) weeks on the fitness ball and without a ball for the talents of football " The aim of the study Design a proposed training program and learn about its impact on football talent, It has been used experimental method Using two groups, one experimental and the other controlling, the sample 132 talents of football, The most important results were statistically significant differences between the post measurements of the experimental and control groups in the agility tests in a ball without a ball for the benefit of the experimental measurements of the experimental group.

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 using pre and post measurement.

Third: The research sample:

The sample of the research was chosen in a deliberate way by (12) players who are the research community and represent the players of the Egyptian team for people with special needs, and the participant in the 2018 regional games in Abu Dhabi and the number of exploratory sample (20) players (10) players from the research community and outside the basic sample,) Players from the youth center of the island to conduct scientific transactions (Believe - stability).

The homogeneity of the sample:

The researcher found the homogeneity of the sample of the research as a whole (32) players to make sure they fall under the normal curve in the variables (age - length - weight - Old training), as shown in Table (1).

The researcher also found a homogeneity of the sample of research in the physical and skill variables of the members of the research sample, as illustrated in Table (2).

Table (1) Statistical characterization of the sample individuals in the variables

"Age – Height - Weight - old training"

N = 32

Variables	measruing unit	means	Medium	Std Deviation	skewness
Age	Year	25.73	25.00	2.51	-0.07
Height	C.m	171.70	172.00	1.30	0.69
weight	K.g	71.10	70.00	3.90	0.84
Old training	Year	5.27	5.04	2.51	-0.47

Table (1) shows the homogeneity of the individuals in the research sample in the variables " age - height - weight - Old training ", since the values of the torsion coefficients of these variables are limited to (± 3), which means that the distribution of the individuals of the research sample in these variables is moderate.

Table (2) Statistical characterization of sample in the physical and skill tests

individuals N = 32

variables	Measure unit	means	Medium	Std Deviation	skewness
Sprint 18m	Sec	4.12	4.00	1.07	0.32
Throw a medical ball	c.m	14.75	13.00	1.67	0.78
Response time	Sec	7.95	7.02	3.02	-0.67
agility	Sec	7.21	6.50	2.44	1.32
serve	points	10.22	9.80	2.75	-0.81
pass	points	15.10	13.50	3.46	1.28
bagger	points	8.64	9.30	2.33	-0.33

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.
- (D) Identify and limit the exercises used in the training program.

2 - Interviews:

The researcher designed a survey questionnaire of experts in the field of volleyball and number (3) experts attachment (1) to determine:

- Physical and skill tests to suit the research sample. attachment (2)
- The contents of the training program. attachment (3)

3. Tools and devices used in research:

The following tools and devices were used:

- Electronic weight measuring, Regulator for measuring length, Volleyball court.
- Legal plane balls, medical balls, wall and chalk, stopwatch for measuring time.
- tape measure, wall mounted extender, cones.

4. Search Forms:

- Registration forms for research personnel:

The researcher designed forms to record the measurements of the research so as to have the simplicity and ease of registration for the collection and scheduling of data in order to be processed statistically as follows:

- Registration form for players' measurements in variables (age, height, weight, training age).
- Individual form to record the measurements of players in physical and skill tests.
- Collective form for recording the measurements of players in physical and skill tests. attachment (4)

5. Tests used:**(A) Physical tests:**

- Sprint 18 m.
- Throw a medical ball to the farthest distance from the hands.
- Four-way response time.
- agility test.

(B) skill tests:

- serve accuracy.
- pass test.
- bagger test. attachment (5)

Fourth: Scientific transactions used for the tests:**1. Believe physical and skill tests: -**

The believe of the physical and skill tests was calculated by calculating the accuracy of the distinction by applying them to two groups of 10 players. The first group represented the players who were excluded from the team after the preliminary qualifiers in the 2017 Egyptian National Team on Monday 4/12/2017 at Cairo Stadium.

While the second group represents a sample of the players of Al-Jazira Youth Center (the unclassified group) on Sunday 3/12/2017 at Al-Jazira Youth Center. The following table shows the difference between the two groups (distinctive and non-distinctive) in physical and skill tests.

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		
Sprint 18m	Sec	3.28	0.98	4.52	1.33	1.24	1.94
Throw a medical ball	c.m	16.62	1.13	11.71	1.93	4.91	3.28
Response time	Sec	6.18	2.04	8.20	2.75	2.02	2.31
agility	Sec	5.78	2.17	7.44	2.91	1.66	2.04
serve	points	12.47	2.56	9.54	2.12	2.93	2.58
pass	points	19.52	2.39	14.67	3.22	4.85	3.07
bagger	points	14.80	1.74	8.17	2.06	6.63	4.35

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 (10) of the players of Al-Jazira Youth Center (the Undistinctive group). The researcher considered the test results for the validity of the Undistinctive group as the first application. He re-applied the tests under the same conditions and the same instructions after (7) days of the first application And on Sunday 10/12/2017 at the center of the youth of the island, and the following table shows the correlation coefficients between the applications first and second.

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

variables	Measuremen t unit	Implementation first		Implementation second		Means difference	Calculated 'T' value
		mean	s.d	mean	s.d		
Sprint 18m	Sec	4.52	1.33	4.01	1.42	0.51	0.79
Throw a medical ball	c.m	11.71	1.93	12.15	1.69	0.44	0.87
Response time	Sec	8.20	2.75	8.02	2.91	0.18	0.92
agility	Sec	7.44	2.91	6.98	2.78	0.46	0.91
serve	points	9.54	2.12	10.11	2.18	0.57	0.90
pass	points	14.67	3.22	15.46	2.85	0.79	0.88
bagger	points	8.17	2.06	11.21	1.97	3.04	0.64

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) Needs analysis.

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

(C) identify the basic variables for the program.

2. Basis of developing the program:

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

- The training load originates from general high-intensity S.A.Q exercises to high intensity exercise.
- Development of the same energy systems used in sports activity.
- 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.

- Program design:

In light of the references of scientific references and previous studies, the proposed program was designed according to the following steps:

A- Defining the objective of the proposed program:

- The proposed program aims to develop the special physical abilities of volleyball.

B. Program content:

The training program included:

- General warm-up exercises to prepare different muscles of the body to activate the blood circulation.
- Develop flexibility of the body joints with muscle lengthening.
- Thirty (30) S.A.Q special exercises, weight training for the development of the transition speed and the number of (20) exercise. attachment (6)

4- Organization of the training method: -

The researcher, after reading several references and previous studies, did the following steps to organize the program:

- A - The time of the training of the sadio within the training unit (40-55) minutes per day of the total time of the main part.
- B. Determine the maximum 30 repetitions for each exercise chosen.
- C - Determination of the degree and severity of pregnancy weekly.
- D - Determine the volume of training weekly and daily.
- E. The relative distribution of physical preparation during the program stages.

A. Breakdown of the preparation period into stages:

Phase 1: The general preparation period of 4 weeks began from Sunday 17/12/2017 to Thursday 11/1/2018.

Phase 2: the period of special preparation and duration of 5 weeks began from Sunday 14/1/2018 to Thursday 15/02/2018.

Phase 3: The period of preparation for the games and duration of 3 weeks began from Sunday 18/2/2018 to Thursday 8/3/2018.

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

The researcher used the way wavy 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	Maximum load (50% - 69%)	132.5 : 158.15 p/m	55%	139.25 p/m
2			60%	146 p/m
3			65%	152.75 p/m
4	Hefty load (70% - 84%)	159.5 : 178.4 p/m	70%	159.5 p/m
5			75%	166.25 p/m
6			80%	173 p/m
7	Medial load (85% - 95%)	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 Thursday, 14/12/2017 AD.

2. Implementation of the basic experience:

The researcher from the application of the training program on Sunday, 17/12/2017 AD-to-day Thursday, 8/3/2018 AD, and the duration (12) a week.

3. After measurements:

the researcher conducting the post measurements on Sunday, 11.3.2018 AD under the same conditions that were conducted in the befor 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 = 12

variables	Measu re unit	pre measurement		post measurement		Means difference	Calculated 'T' value	Improvemen t ascriptions
		mean	s.d	mean	s.d			
Sprint 18m	Sec	3.93	1.07	2.86	0.84	1.07	6.70	27.23
Throw a medical ball	c.m	14.86	1.52	20.84	2.03	5.98	6.30	40.24
Response time	Sec	7.32	2.16	5.07	1.89	2.25	4.18	30.74
agility	Sec	6.03	1.98	3.91	1.02	2.12	4.13	35.16
serve	points	10.59	1.88	18.23	2.16	7.64	7.17	72.14
pass	points	15.67	2.66	25.58	1.91	9.91	6.23	63.24
bagger	points	12.74	2.18	22.82	3.54	10.08	7.90	79.12

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).

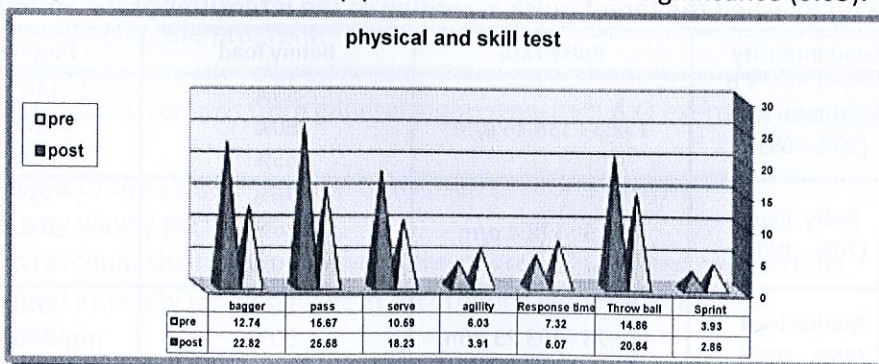


Figure (1) Physical and skill tests

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:

According to the results of the statistical research sample between the tribal and the remote measurement in the physical variables in the table, it is clear from Table (8) that there is a significant difference between the tribal and remote measurements of the experimental group, Table (883, 1) is less than the value of (t) calculated at a significant level (0.05) for the benefit of telemetry indicating that the training program has improved the variables under discussion.

It is clear from the table that the training of the sakio has been instrumental in the development of the element of speed transition, which will generate an involuntary muscle contraction, which works to stimulate other sensory organs, thus increasing the number of motor units in the muscles working on these joints, which are necessary to increase muscle strength.

This is confirmed by **Badea Abd Al-Samee** 2011 (4) and **Wilmorgan** and **Balanissami** 2012 (14) that the training of the sakio stimulates the spindles muscle, resulting in high tension in the units of motor freed and stimulate other receptors that increase the number of active motor units, which is why Increases the resulting power and thus contributes to an improvement in acceleration time, muscle capacity, agility and motor speed.

These results are consistent with **Amr Hamzah** 2010 (1) that the rubber reflex activity allows the excellent transfer of the characteristic strength to the same movements as the biomechanically similar movements which require high capacity of the trunk and legs.

The study showed that the training of the sakio included in the program had a positive effect on the rates of change as shown in Table (8). The percentage of change between the tribal and remote measurements in the physical tests in question was between (27.23 - 40.24) The highest change was in the test of throwing a medical ball to the farthest distance with the hands while the lowest percentage change in the sprint test 18 m.

Thus, the **researcher** has verified the validity of the first hypothesis, which states that there are statistically significant differences between the tribal and remote measurements of the research sample in the development of some special physical abilities in favor of post measurement.

Discuss the results of the second hypothesis:

Table (8) shows the differences between the mean and the remote indices. There are statistically significant differences between the pre and post test of the experimental group in the technical variables. The t value of the table (883) was less than the calculated value (05.0) for the benefit of the post-measurement. The results showed the development of the skill performance of the scroll skill from the top, scrolling from the bottom, the transmission as a result of the effectiveness of the proposed program where the program contains a set of exercises for all skills aimed

at development and development.

This is in line with what **Ashraf Mohamed** said in 2015 (3) that the planning of the special physical preparation program should focus on building and strengthening the muscle groups involved in the performance of the skills so that the skill can be performed in the correct technical manner and in harmony and smooth and with the least effort.

As shown in Table (8), the percentage of change rates between the tribal and remote measurements in the technical tests under study was limited between (63.24 - 79.12) and for the sake of telemetry where the highest change was in the passing test from the bottom while the lowest change in test Passing from the top The researcher attributed this improvement to the contents of the proposed training program of the training of the Sakio, which greatly affected the improvement of the level of skill performance after the development of the elements of fitness.

This is confirmed by **Essam Abdel-Khalek** 2005 (5) that the performance skill is linked to physical physical abilities closely related to the skill depends on the performance of skill development of the requirements of performance of physical and motor capabilities, especially the level of this skill is measured on the extent of the individual's acquisition of these qualities Physical and motor kinetics.

Thus, the second hypothesis, which states that there are statistically significant differences between the tribal and remote measurements of the research sample, has been achieved in developing the level of performance of some offensive and defensive skills 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 on the development of physical abilities (speed - agility - Quickness) through the application of the program for a period of (12) weeks.
- The impact of the training program on the development of the skill performance of the skills in question through the application of the program for a period of (12) weeks.
- Based on the results of the research results, there is a strong correlation between the development of special physical abilities and the level of skill performance, the more physical capacity, the more improved the level of skill 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- To direct the results of this study and the training program used and the steps of its implementation to the workers in the field of training volleyball players to take advantage of these results.
- 2 - the use of the training of the Sakio for a higher rate of improvement and because of its significant impact in the advancement of skill levels skillfully.

References:

- 1- **Amr Hamza** : effect of functional strength training on oxidative stress and certain physical variables for athletes, 5th international scientific congress ' sport, stress, adaptation-olympic sport and sport for all, 2010.
- 2- **Aisha Mohamed Elfatih** : The Effect of the Use of S.A.Q Exercises on the Level of Psychological Flow and Some Harmonic Capabilities and Skill Performance in Fencing, Published Research, Journal of Sport Science and Arts, October, Part II, ISBN 1110-8460 / 107, Faculty of Physical Education Girls, Helwan University, 2017.
- 3- **Ashraf Mohamed Moussa** : Effect of the use of S.A.Q training on some special physical abilities and individual offensive skills of football originator, published research, Journal of Applications of Mathematical Sciences, Issue 83, Faculty of Physical Education Boys, Alexandria University, 2015.
- 4- **Badia Ali Abdel Samie** : Effectiveness of the S.A.Q training on the electrical separation of the protein and some physical variables and the digital level of the original 100 m hurdles, published research, Journal of Mathematical Sciences theories and applications, Faculty of Physical Education Boys, Zagazig University, 2011.
- 5- **Essam Abdul Khaliq** : Mathematical Training Theories and Applications, 12th Edition, Dar Al Ma'aref, Alexandria, 2005.
- 6- **Greg Moore** : training plyometric, Human kinetics, London, 2000.
- 7- **Hassan Alsayd Abu Abdu** : Recent trends in football planning and training, Artistic Radiation Press 10th edition, Alexandria, 2010.
- 8- **Mario jovanovic Goran sporis Darija omrcen Fredi fiorentini** : effect of speed, agility, quickness training method on power performance in elite soccer players, journal of strength and conditioning research 25/(5)/1285-1292, 2013.
- 9- **Mohammed Ibrahim Sultan Adel Ibrahim Ahmed Abdul Hakim Rizk Abdul Hakim** : Tactical Sukk and its relation to the performance of some basic offensive skills of the individual football and hand ball (a comparative study), Research publication, Journal of Physical Education Research, Issue 58 Volume 24, Faculty of Physical Education Girls, Zagazig University, 2006.

- 10- **Mohamed Mahmoud Abdel Dayem Mohamed Sobhy Hassanein** : Modern in Basketball The Scientific and Applied Foundations, Second Edition, Dar Al-Fikr Al-Arabi, Cairo, 2000
- 11- **Mohamed Sobhy Hassanein Hamdi Abdel Moneim** : Methods of analyzing the game in volleyball, Dar Al-Fikr Al-Arabi, Cairo, 1986
- 12- **Mohamed Tawfiq Al - Waili** :_Training Competitions, First Edition, GMS House, Cairo, 2000.
- 13- **Remco polman Jonathan bloomfield Andrew edwards** : effects of S.A.Q training and small – sided games on neuromuscular functioning in untrained subjects , international journal of sports physiology and performance (4)/494-505,2009.
- 14- **Velmurugan G, Palanisamy A.** : Effects of Saq training and plyometric training on speed among college men kabaddi players , indian of applied research , volume 3 Issue: 11,432, 2013.
- 15- **Vikram singh** : effects of S.A.Q drills on skills of volleyball players, athesis, Submitted to the lakshmibai national institute of physical education, Gwalior,2008.
- 16- **Zoran Milanovic , other** : effects of a 12week S.A.Q training programme on agility with and without the ball among young soccer players, journal of sports science and medicine, 12.97-103,2012.