



Effect of (S.A.Q) exercises to development the motor response time and the group fast break of basketball players


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Abstract:


The problem for this research centered on the presence of weakness in the level of performance of the collective quick attack and the speed of transition from the defense mode to the attack by not paying attention and focusing on exercises with modern and codified training methods according to the level and capabilities of the basketball players, which need a high level of strength, speed and agility in combination with the performance of basketball skills During a single exercise, the aim of the research is to prepare (S.A.Q) exercises in the development of kinetic response time and rapid collective attack in basketball for youth. The researcher used the experimental method with a pre- and post-test for the two equal groups, and the research community was identified with the young basketball players of Al-Hilla Sports Club aged (16-17) years for the sports season (2020-2021), and their number is (12) players. The sample was randomly divided into two groups (experimental and control) with (6) players for each group. The exercises prepared by the researcher were applied to the experimental group in a repetitive and intense training manner (90%). As for the best conclusions reached by



the researcher, they are that the Sakyo (S.A.Q) exercises prepared by the researcher had a significant and effective impact on the development of the kinetic response time and the quick collective attack in basketball for young players aged (16-17) years.

Introduction:

The world is witnessing great development in various fields, including the sports field, which is characterized by the diversity of methods of learning and training in all sports, and the process of sports training is an integrative process in which all physical attributes, motor skills, tactical abilities and psychological skills are developed, and an attempt to employ them to reach the athlete to the highest levels of sports in practicing sports, the researcher believes that the player cannot learn and master the performance of skills unless he possesses the necessary physical abilities, as the development and development of biomotor abilities is positively reflected on the learning process and mastering the performance of basic single and compound skills in the game of basketball, and (S.A.Q) exercises are among the modern nervous system exercises with intensity the high, which is one of the qualitative exercises that requires a relatively large effort more precisely, in order to reach the muscular adaptation to the skillful performance to bring about positive effects and develop the target abilities, which are represented by the biomotor abilities prevailing in the basketball game, It is mentioned) by Mario Jovanovic and others (Mario Jovanovic, et al. 2011 , 25(5)1285–1292) “The term (S.A.Q) is derived from the initial letters of both speed, agility and quickness”. And the ability to perform perfectly, quickly and accurately throughout the match period and achieve victory because basketball at the present time has become a game of speed, strength and accuracy, and this is confirmed by the continuous change in the laws of



the game and the number of referees. (S.A.Q) exercises, which the researcher believes have a positive role in developing the variables targeted in the research.

Research problem:


Through the researcher's experience in the game of basketball as a former player, and from watching many basketball matches, he noticed a weakness in the performance level of the group fast break and the speed of transition from the defense mode to the attack, especially in the last times of the match, for many reasons, including poor timing and lack of the player's speed in taking the appropriate place to receive the ball and delivery and the performance of a group fast break, which, in turn, is reflected in the team's performance and the loss of the opportunity to perform the group fast break in achieving a successful shot before the opposing team is able to return to the defense and thwart the process of group fast break. Therefore, the researcher decided to go into this study and prepare the (S.A.Q) exercises in order to contribute to the development of the kinetic response time and the group fast break in basketball.

Research Objectives:

- Preparing (S.A.Q) exercises of basketball for youth aged (16-17) years.
- Identifying the effect of (S.A.Q) exercises in developing the motor response time and the quick collective attack in basketball for youth aged (16-17) years.

Research hypotheses:

- There are statistically significant differences between the tribal and remote measurements in the time of the motor response and the group fast break in basketball for the experimental group in favor of the post test.



➤ There are statistically significant differences between the two post-test in the time of kinetic response and group fast break in basketball for the two groups (experimental and control) and in favor of the experimental group.

Research fields:

The human field: Youth of Al-Ahla Basketball Club, aged (16-17) years for the sports season 2020-2021.

Time field: from 9-5-2021 to 30-6-2021.

Spatial field: Hall of 1000 spectators for the Sports Talent Care Center in Babylon Governorate.

Research methodology and field procedures:

Research Methodology:

The researcher used the experimental method for its suitability to the nature of the research and the experimental design with a pre and post-test for the two equal groups (experimental and control).

Research community and sample:

The research community was identified with the young basketball players of Al-Hilla Sports Club aged (16-17) years for the sports season 2020-2021, and their number is (12) players. The sample was randomly divided into two groups (experimental and control) with (6) players for each group.

Homogeneity of the sample and the equivalence of the two groups:

To adjust the variables that affect the accuracy of the research results and to complete the requirements of the experimental design, the researcher resorted to verifying the homogeneity of the research sample with regard to morphological measurements (length, mass, chronological

age, training age) and the investigated variables, as the researcher used the Levene's Test as shown in the table (1).

Table (1) It shows the homogeneity of the research sample and the equivalence of the two groups (control and experimental), the arithmetic means, standard deviations, the calculated (t) value, Levin's test, and the significance of the differences in the examined tests in the pre-test.

Variables	Measuring unit	Control		Experimental		Leven test		t	sig
		Mean	Std. deviation	Mean	Std. deviation	F	sig		
Age	Year	16.820	1.67	16.23	1.82	1.364	0.322	1.110	0.355
Training age	Year	5.111	0.897	4.988	0.67	0.398	0.429	1.698	0.061
Mass	Kg	69.112	2.861	70.21	1.54	0.188	0.871	0.576	0.442
Length	Cm	178.60	9.186	181.16	9.33	1.170	0.320	0.431	0.241
Motor response time	Second	3.465	0.216	3.520	0.191	0.110	0.747	0.466	0.651
Group Fast break	Degree	5.975	0.113	5.993	0.138	0.631	0.264	0.251	0.807

Significant at the significance level (0.05) if the error level is less than (0.05).

From Table (1) it is clear the random differences between the control and experimental research groups in the variables under investigation at the significance level (0.05) and at the degree of freedom (12), as all levels of error (Sig) appeared greater than (0.05), which indicates homogeneity and equivalence My search group.

Devices, tools and means used in the research:

Means of data collection:

- Note.
- Scientific references and sources.
- Tests and measurements.
- A form for registering and unloading the results of the research tests.

Tools and devices used:

- 1 legal basketball court.



- Legal 6 basketballs.
- FOX whistle number 4.
- A device for measuring height and weight.
- Leather tape measure 20 meters.
- Figures number 7.
- A moving ground escalator number 1.
- Electronic stopwatch number 2.
- 1 HP laptop..

Determining of the tests used in the research:

Motor response test: a 10-meter run test for a sequential stimulus. (Ali, Mateen Salman Saleh. 2004, p. 72.)

The purpose of the test: To measure the motor response time by sequential stimuli.

Used equipments:

- One (1) electronic stopwatch.
- A running range of 5m, at the end of which is another 5m distance to the right and the same to the left.
- A light device that points to the right and another to the left is controlled by an absolute.
- Flagpoled stake.

Performance description: The laboratory stands from the high starting position at the starting line until the launcher blows the start whistle and the laboratory runs fast until it reaches a distance of (3) m installed along the semantics, and then the absolute controls the optical device to indicate with an arrow to the right or left and when the laboratory reaches a distance (5) m, i.e. after crossing another (2) m and until

reaching the intersection of the two lines, he goes towards the arrow indicated by the optical device and completes the remaining (5) m distance from the test as shown in the drawing (Figure).

Registration: The laboratory records the time it takes to run when the whistle is sounded at the starting line until it crosses the finish line for the indicated direction.

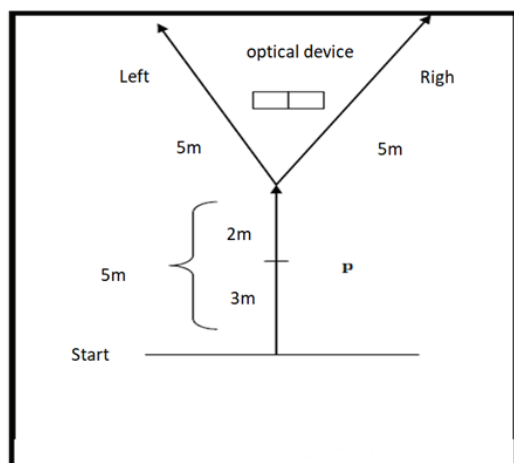


Figure (1)

The group fast break test: (Abdullah, Falah Hassan. 2010)

Test name: Mass fast break Test.

The purpose of the test: to measure the group's rapid attack (three players).

Necessary tools: (Legal basketball court, basketball, stopwatch, sign, whistle).

Performance description: Three players (1, 2, 3) stand as shown in the figure below, the ball is with player (2) and when the start whistle is heard, the player makes a defensive follow-up and handles the ball to player (3) and the player runs quickly from behind the marks on the field, and at the same time Player (1) runs quickly diagonally to receive a tackle from player (3) who runs quickly towards the opponent's basket

and then player (1) hands the ball to player (2) who hands the ball to player (3) to make a peaceful scoring, and the testers are given three attempts. The graphic below illustrates this.

Test conditions:

- All three players move at the same time after the start whistle is heard.
- Running is according to the marks on the playing field.
- When there is incorrect handling, the test is repeated again after a sufficient rest period.
- Ending the fast break by lay out shooting.

Registration: Record the time from the start whistle until the end of the lay out shooting for three attempts.

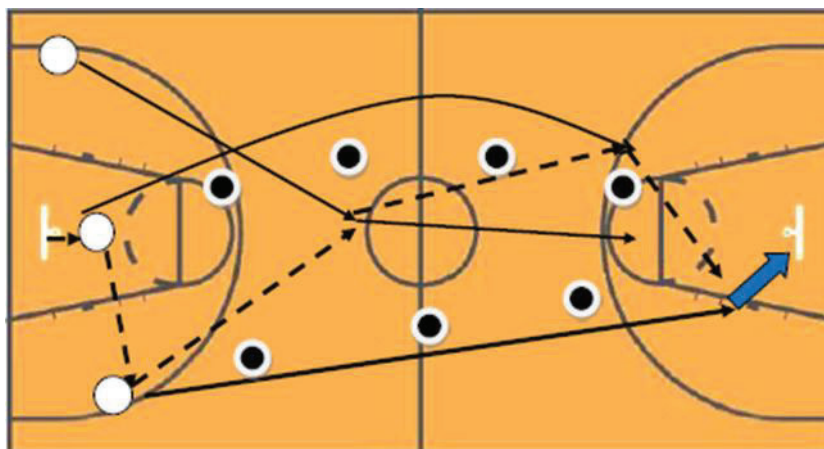



Figure (2)

Group Fast break

Exploratory experience:

The researcher conducted the exploratory experiment on all the players of the research sample consisting of (12) players at four o'clock in the afternoon of Tuesday 4/5/2021 in the hall of 1000 spectators of the Sports Talent Care Center in Babylon Governorate. The exploratory experiment informed the researcher to identify the following points:

- The validity of the devices and tools used in the research.

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- The validity of the exercises for the experimental group.
 - Determining the time taken for the exercises prepared on the experimental group.
 - The time taken to conduct the tests.
 - Determining the difficulties and obstacles that may encounter the research.

Pre-test:

The researcher relied on the results of the exploratory experiment tests after treating them statistically and it was concluded that they are characterized by scientific foundations, as pre-tests for this research.

Main Experiment (Suggested S.A.Q Exercises):

- Implementation of the proposed exercises began on 9/5/2021.
- The duration of the exercises set in weeks: (8) weeks.
- Total number of units: (16).
- Number of units per week: (2).
- Weekly training days: (Sunday - Wednesday).
- Total training unit time: (120) minutes.
- The time of the main section in the training unit: (90) minutes.
- Time of exercises from the main section of the training unit: (30-35) minutes.
- The training method used: repetitive training.
- Training intensity (90%) .

Post-test:

The post tests were conducted on Sunday 4/7/2021 at 4:00 pm, and the researcher took into account the provision of all conditions similar to the tribal tests in terms of (time, place, tools used and the method of conducting the tests).

Statistical methods used: The researcher used the statistical bag (spss) to analyze the research results, including:

- Mean
- Std. Deviation
- Test (t) for independent samples.
- Test (t) for interconnected samples.
- Levine test.

Presentation, analysis and discussion of the results:

Presentation and analysis of the results:

Presentation of the results of the pre and post-tests of the control group for the variables investigated:

Table (2) It shows the arithmetic means, standard deviations, the (t) value calculated for the correlated samples, the level of the test significance, and the significance of the difference for the pre and post-tests of the control group for the studied variables.

Variables	Measuring unit	Pre-test		Post-test		t	Sig level	Sig type
		Mean	Std. deviation	Mean	Std. deviation			
Motor response time	Second	3.465	0.216	3.068	0.078	5.419	0.003	Sig
Group Fast break	Degree	5.975	0.113	5.678	0.097	5.874	0.002	Sig

Presentation of the results of the pre and post-tests of the experimental group for the variables investigated:

Table(3) It shows the arithmetic means, standard deviations, the (t) value calculated for the interconnected samples, the level of test

significance, and the significance of the difference for the pre and post-tests of the experimental group for the variables investigated.


Variables	Measuring unit	Pre-test		Post-test		t	Sig level	Sig type
		Mean	Std. deviation	Mean	Std. deviation			
Motor response time	Second	3.520	0.191	2.911	0.068	8.488	0.000	Sig
Group Fast break	Degree	5.993	0.138	5.465	0.135	6.843	0.001	Sig

Presentation of the results of the tests (post-test) for the two experimental and control groups for the variables investigated:

Variables	Measuring unit	Control		Experimental		t	Sig level	Sig type
		Mean	Std. deviation	Mean	Std. deviation			
Motor response time	Second	3.068	0.087	2.911	0.068	3.447	0.007	Sig
Group Fast break	Degree	5.678	0.791	5.465	0.135	3.323	0.010	Sig

Discussing the results:

The results of the motor response time test shown in Tables (2) (3) (4) show the variation in the values of the arithmetic circles between the pre and post-tests. The results showed the extent to which the motor response time of the experimental group improved through the statistical function compared to between the pre-test and the post-test, in addition to the statistical function of the moral difference in the post-tests and in favor of the experimental group, the researcher attributes that the reason for this development that took place in the experimental group in the post-test is due to the effectiveness of the (S.A.Q) exercises prepared by the researcher, which was the integration and overlap between physical

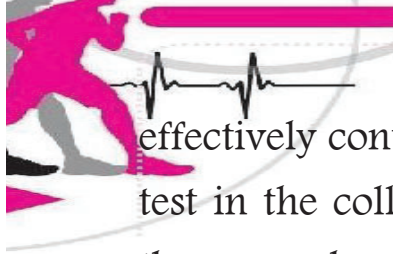


and skill exercises, provided that these exercises are similar to the performance of basic and complex skills with basketball, starting with motor skills without ball and ending with motor skills with the ball, “Exercise is a necessary and auxiliary factor in the interaction between the learner and the motor skill, controlling his movements, and achieving consistency between the component parts of the motor skill in proper successive performance at an appropriate time”(Abd Zaid & Abdel Hadi, 2018, pg. 99), and also emphasizing that some of these exercises are under the influence of time to develop the time of motor response for the players. This was confirmed by (schmdit) "that the players who practice several variations in the exercise will have the idea of generating different values and various new principles, and thus the return of all of this will be positive on the reaction" (schmdit and wrisbrege,2004, P.267), and Schmidt (2000) also confirms that “organizing the exercise in a diversified or variable manner and using stimuli or means is more effective in learning, and the large number of repetitive attempts constitutes a clear development in learning” (Schmidt,A Richard,1999.p.211), in addition to the fact that the player adapts to skill performance through Repetition and its diversity, which in turn leads to a speedy decision-making, as “the programs resulting from the experiences and experiences of the players can serve the athlete in the correct prediction that reduces response time as well as good skill performance and all special physical abilities” (Adrian cojocariu . cezarhonceriu, p 16-18).

It is also evident from what was presented in Tables (2) (3) (4) of the results of the collective rapid attack test, we find a remarkable development in favor of the post test, and the researcher attributes this development to the (S.A.Q) exercises prepared by the researcher, as the



exercises used in this method has positively affected the development of the group fast break, because it is characterized by diversity and change, and it was focused on developing the performances of this complex skill, which depends on speed and the ability to match the skillful performance represented in the good timing of jumping the moment the ball bounces from the basket board, follow-up, possession of the ball, long handling and speed to take the right place, this was also indicated by (Schmidt 2000) from "The diversification in the method of exercise helps to organize the motor program of the game with a high mechanism, so the learner is ready to receive playing problems and solve them in an easy way" (Schmidt, A Richard, 1991, p.68) The results of development in the skill performance test confirm the appropriateness of the quality of (S.A.Q) exercises in improving the abilities of the group fast break through the motor interdependence represented by the overlap and integration between speed as a physical attribute and the speed of motor performance with the ball or without the ball as a skill attribute, this was confirmed by Qassem Hassan Hussein, when he said, "We must focus on training coordination and motor coherence and put it in the training program. Using motor coordination for a long period and continuous repetition will lead to getting used to the framework of the ideal motor and temporal path" (Hussein, Qasim Hassan, 1991, p. 47). The researcher stressed that the SAQ exercises should simulate the actual reality of the group fast break skill by harnessing speed and agility according to the kinetic path of performance, as (Muhannad Hassan Al-Bishtawi points out that "the exercises aim to raise the physical ability of the athlete using skills and a motor direction close to the type of specialization and similar to the sport required.(Al-Bishtawi & Al-Khawaja, 2010, p. 325). And according to what was mentioned, this confirms that (S.A.Q) exercises



effectively contributed to showing significant results in favor of the post-test in the collective quick attack test, and thus the researcher achieved the research goal in developing the group fast break.

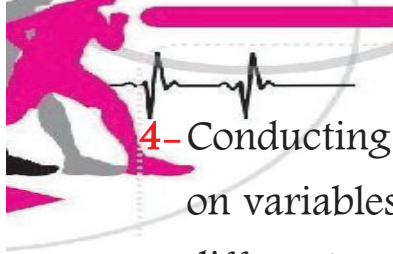
Conclusions and recommendations:

Conclusions:

- 1-(S.A.Q) exercises have a significant impact on the development of response time and quick collective attack in basketball for young players aged (16-17) years.
- 2-The development of response time was positively reflected on the development of the collective rapid attack of the research sample.
- 3-The results showed a noticeable superiority between the pre and post-tests in the investigated variables for the players of the experimental group on which (S.A.Q) exercises were applied in favor of the post-test.
- 4-The experimental group, on which (S.A.Q) exercises were applied, outperformed the control group in the post-test of the variables investigated and in favor of the experimental group.

Recommendations:

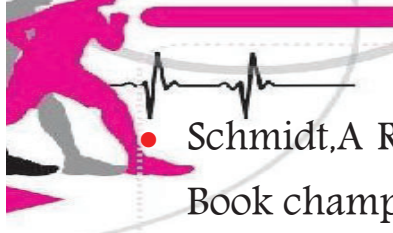
- 1-The necessity of benefiting from the use of (S.A.Q) exercises by basketball coaches, and in all sports in order to save effort and time.
- 2-Adopting specialized (S.A.Q) exercises in a manner similar to skill performance and according to the motor path of skills in various games to achieve specific goals according to codified scientific foundations.
- 3-The necessity of adopting (S.A.Q) exercises to develop the capabilities and skills that are characterized by speed.



4- Conducting studies and research by preparing other (S.A.Q) exercises on variables other than the variables investigated in this study and for different age groups in basketball.

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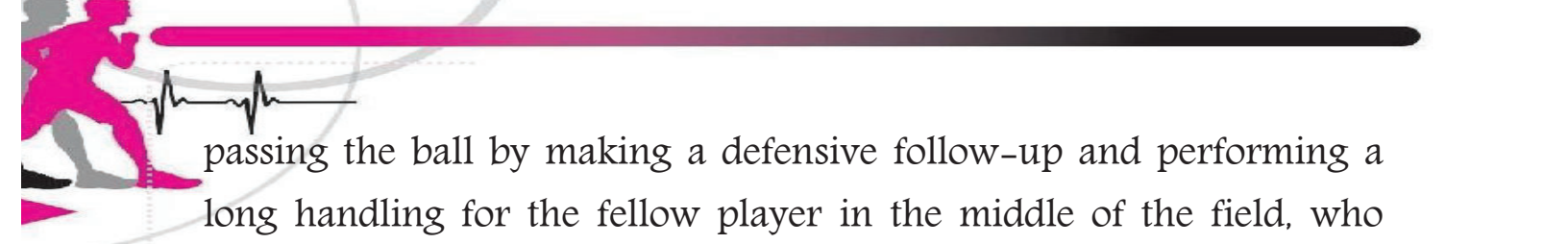
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Appendix (1)

(S.A.Q) exercises used in research

- 1- The player stands on the end line of the field and when he starts the exercise he pats the ball between the cones to the middle of the field and then turns from behind a person and then passes the ball to the player standing on the arc of the free throw, then the player runs towards the basket at full speed and receives a passing from the colleague to perform the lay-up shot.
- 2- The player stands on the three-point line and performs the jump by raising the legs up to the chest area and then runs at full speed to the other side to receive a passing from the colleague standing on the free-throw line and performs the lay-up shot.
- 3- The players stand in two groups on the final line, and when the whistle is heard, the first player jumps on the squares of the ground ladder and runs to the middle of the field, then turns from behind a person and quickly returns to the direction of the basket and receives a ball from the colleague standing on the free-throw line and performs the lay-up shot.
- 4- The players stand in the form of three groups in the middle of the field and when starting the exercise, the player pass the ball to the right side and starts to make a screen for the player on the left side to go forward and receive a passing from the player on the right side, then he plucks and performs the lay-up shot, and then the player who



passing the ball by making a defensive follow-up and performing a long handling for the fellow player in the middle of the field, who starts with the performance of the skill of the drum quickly and the performance of the lay-up shot.

- 5- The player runs fast and pats the ball to the middle of the field and then pass the ball to his teammate, who runs with him at the same time to the middle of the field then the player runs towards the basket to receive a passing from his colleague to perform the ball and perform the lay-up shot. Then the player who passing the ball makes a defensive follow-up and performs a long handling to the fellow player in the middle of the field, who starts by performing the skill of the plumb quickly and perform the lay-up shot.
- 6- The player stands in the middle of the field and jumps while receive the ball on the ladder with both legs. Then he works the drum and then passing the ball to the colleague at the free-throw area, receiving and lay-up shot at the basket. Then the player who passing the ball makes a defensive follow-up and performs a long passing for the fellow player at the middle of the field. The stadium, which starts with the performance of the skill of the drum quickly and the performance of the lay-up shot.
- 7- The players stand in the middle of the field and perform the clapping between the poles, then passing the ball to the teammate at the free-throw area and receive it then the lay-up shot, and then the player who passing the ball makes a defensive follow-up and performs a long pass to the fellow player in the middle of the field, who starts by performing the skill of the drum quickly and performs the lay-up shot.

8- The players stand in two groups on the final line, and when the whistle is heard, the first player jumps on a wooden platform (50 cm) high (5 times), then runs to the middle of the field, then turns from behind a person and quickly returns to the direction of the basket and receives a ball from the colleague standing on the line free throw and lay-up shot, then the player who passing the ball makes a defensive follow-up and performs a long passing to the fellow player in the middle of the field, who starts by performing the skill of the tap quickly and performs the lay-up shot.

Appendix (2)

Training unit

Exercise number	Intensity	Exercise time		Rest	
		Repetition time	Group	Between repetitions	Between groups
Exercise number 1	90%	10-30 second	3	30 second	1 min
Exercise number 5	90%	10-30 second	3	20 second	1 min
Exercise number 7	90%	10-30 second	3	30 second	1 min