Relationship explosive power and motor speed of the upper limbs for some attacking skills in Badminton for Iraq's youth team

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ABSTRACT

Attacking skills in badminton physically depend on two fundamental requirements are explosive power and motor speed, the literatures of sports training today are when increasing the level of physical and motor abilities of the player contribute to raise the level of technical performance of skills and particularly attacking skills because they require the speed and the power of performance to resolve the results and earn points, so it is clear and natural that there would be a correlation between those skills and physical requirements such as (explosive power and motor speed), through the experience of the researcher because he is a player and coach felt that he must attempt seriously and scientifically to stand on the nature of the relationship between explosive power and motor speed of the upper limbs and level of the technical performance of the attacking skills. Study aimed to identify the level of explosive power and motor speed and the level of technical performance for front smash skill and smash skill over the head of young badminton players as well as understand the relationship between the explosive power and motor speed and the level of technical performance for front smash skill and smash skill over the head of young badminton players. Study community included Iraq's youth Badminton team and has been selected a sample by intentional way totaling (6) the researcher used the descriptive approach to suitability of the nature of the goals of the study, conclusions of the study confirmed the existence of a correlation between the level of technical performance of attacking skills (the explosive power and motor speed).

Keywords: **Explosive power, motor speed, upper limbs, attacking skills, badminton.**

1. Introduction

The great development in the level of athletic performance is primarily the result of concerted efforts and integrated which is constructed on accurate scientific grounds represented by studies and searches and practical trials that carried out by specialists in order to achieve progress in the training process and solve the problems that hinder the march

towards progress and development in raising the level of sporting achievement, this comes through the application of all that is new proposals and ideas supply the training process, such as placing new training methods or the use of different methods in training and assistance instruments to raise the level of sports and the economy at the time and effort.

The badminton is one of the individual games which is one of the loved games sending in the minds of practitioners spirit of fun and competition for it is practiced in a small space and by all ages as well as characterized by excitement and thrill of those who watched it and the reason is due to the nature of the fast performance in the competition, as it is also one of the fastest racket games where speed of shuttle cocks through smash reached to 200 miles/ hour (Amin, 2001).

Identify the nature of the relationship between the explosive power and motor speed especially for the upper limbs and which of these capabilities more closely related to the skills of attacking, and that can help in the development of training process through focusing on them in training units and raise their levels to serve the skill and raise the level of technical performance for the game, Hence the importance of this study to find the relationship between explosive power and motor speed of the upper limbs and the performance of some of the attacking skills of badminton.

Attacking skills in badminton physically depend on two fundamental requirements are explosive power and motor speed, the literature of sports training today are when increasing the level of physical and motor abilities of the player contribute to raise the level of technical performance of skills and particularly attacking skills because they require the speed and the power of performance to resolve the results and earn points, so it is clear and natural that there would be a correlation between those skills and physical requirements such as (explosive power and motor speed), through the experience of the researcher because he is a player and coach felt that he must attempt seriously and scientifically to stand on the nature of the relationship between explosive power and motor speed of the upper limbs and level of the technical performance of the attacking skills.

Study aimed to identify the level of explosive power and motor speed and the level of technical performance for front smash skill and smash skill over the head of young badminton players as well as understand the relationship between the explosive power and motor speed and the level of technical performance for front smash skill and smash skill over the head of young badminton players.

2. Methodology

The researcher used the descriptive approach because it is fit to the nature of the study problem, so the researcher has used this approach in particular correlation style.

2.1 Subject

Study community included Iraq's youth Badminton team and has been selected a sample by intentional way totaling (6) the researcher used the descriptive approach to suitability of the nature of the goals of the study, the tests were conducted at physical education college hall- Babylon University and training center hall of the Iraq's badminton federation (Al Athory club hall), the tests and training units started on December 13, 2011 to February 13, 2012.

2.2 Study Tests:

2.2.1 Throw the ball medical test (Mohamad Hassan and Mohamad Naser., 1994).

- The aim of the test: Measurement of explosive power in the regions of the arms and shoulders.

- Tools: Medical ball weight (2) kg, measurements tap, and chair with fasten belt of the trunk and textured.

- Performance characteristics: The player sits on the chair and medical ball is hold by hands above the head and torso adjacent to the edge of the chair, put the belt around the trunk of the player and catch the back by an arbitrator for the purpose of preventing the player of movement forward while throwing the ball by arms only without the use of the trunk. Each player has three attempts and recording to him the best one.

- Method of recording: Calculates the distance between the front edge of the chair and the nearest point put the ball on the ground.

2.2.2 Test the speed of movement of the arms in the horizontal direction (Mohamad, 2001).

- The aim of the test: Measure the speed of the individual to bring and dimension of the arm in the horizontal level.

- Tools: Stopwatch, device which consists of two circles of wood covering by leather and place horizontally, the distance between them is (61.44 cm), the device is placed on a table with appropriate height, and chair.

- Performance characteristics: The player sits in front of the device farness (20.48 cm), and when player hears the start signal, he is touching the right flat (circle) in fingertips and then touch the left flat in the same hand (cycle), repeat this action as many times as possible in twenty (20) second.

- Method of recording: Calculates the number of cycles carried out by the player during the twenty (20) seconds.

2.2.3 Test of front and side smash from above of the head (Ray and Patrick., 1978).

- Purpose of the test: Measure the degree of achievement in the front straight and intersecting smash over the head.

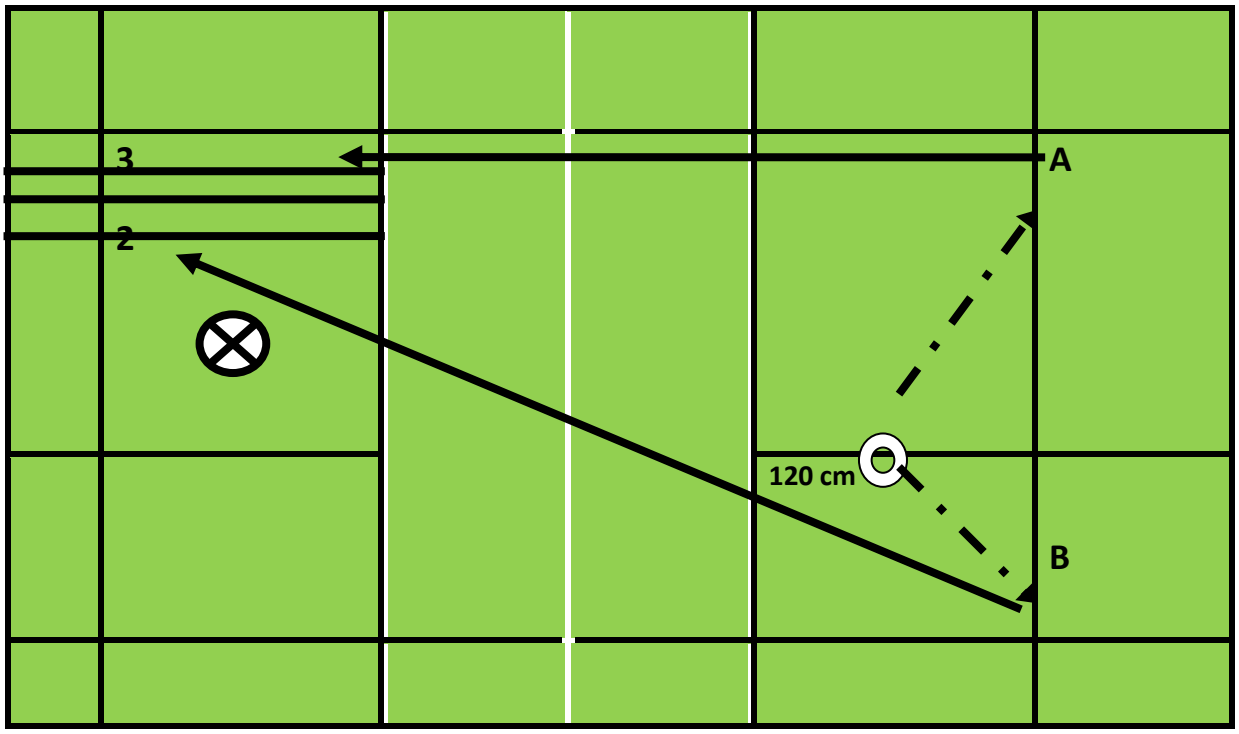
- Test applying: The test is applied on group of students.

- Test evaluation: The degree of test credibility is (0.87) and its objective (0.78).

- Tools: Badminton rackets, shuttlecocks, and assistant to send shuttlecocks.

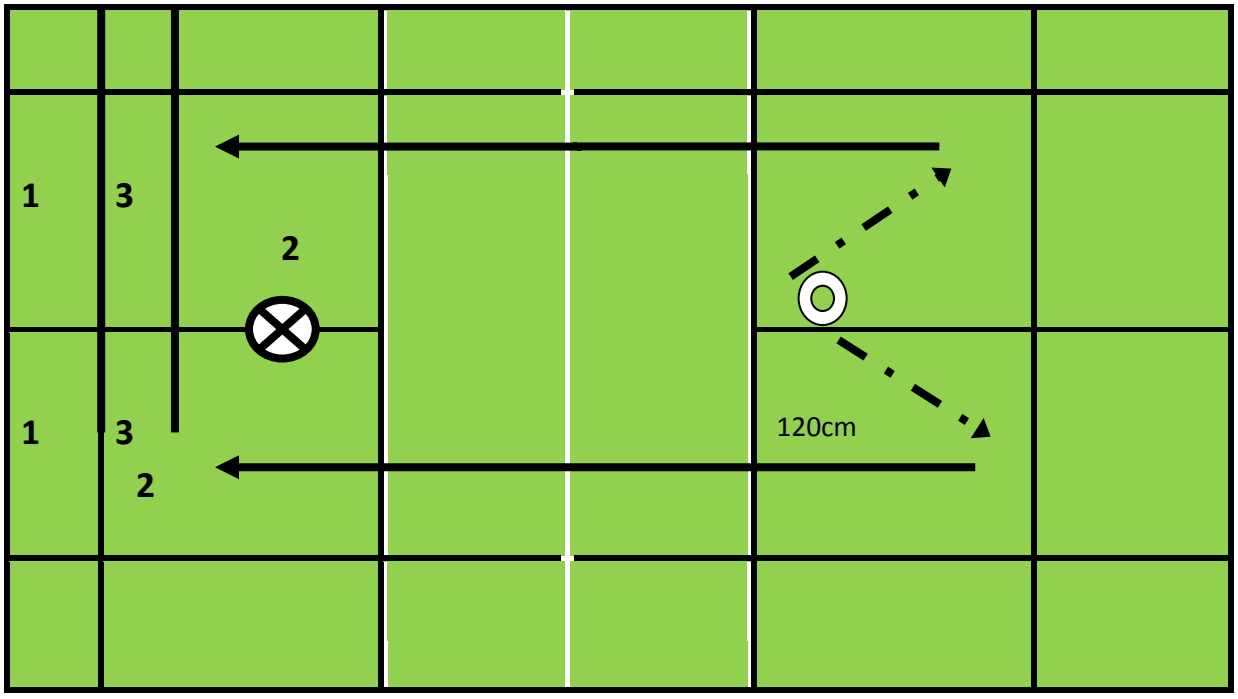
- Legal court lines as shown in the follow diagram.

Test of front side smash (A) and intersecting (B).



Measurement of regions 1 and 2 = 30.5 cm, and 3= 45.7 cm

Strait smash test



76.2 60

Coach, measurement of region 1 = 76.2 cm, Itinerary of shuttlecock hit,
Player, Region number 2= 60 cm, Line of player walking.

The dimension of the player is 120 cm from the front serving line where player is ready to perform the skill, and the opening between the feet is 60 cm, The coach sends the shuttlecocks to the area which wants to perform the skill and in a form which identifies the player in advance and status display and its performance by the player prior to the implementation of the test. The character of the area (A) represents the technical performance of the front side smash and the region B represents the technical performance of the intersecting smash, number of attempts is 5 and the total degree is (15) for each attempt is one degree from three (1,2,3) this paragraph includes all tests.

2.3 Statistical Analysis:

The researcher used the bag statistical (SPSS) for processing data that have been obtained from tests of a sample study:

- Mean
- Standard Deviation
- Coefficient of Correlation

3. Results and Discussion

Regarding the first objective which is looking for identify the restudy variables, the researcher found some descriptive statistics for the sample of study as shown in table (1).

Table (1)
Shows means and standard deviations for study variables

N	Variables	Mean	Standard Deviation
1	Explosive power	11.43	1.19
2	Motor Speed	20.30	1.78
3	Front Smash	30.66	2.16
4	Over head Smash	29.61	2

When observation table (1)find that the mean of the throwing medical ball test valued (11.43) and the standard deviation was (1.19), whereas mean of the motor speed test was (20.30) and standard deviation (1.78), while the achievement test for the front smash skill with a mean value (30.66) and the standard deviation of (2.16), as well as the achievement test for over the head smash with a mean value (29.61) and a standard deviation (2).

In order to achieve the second objective which is looking for identify the relationship between the variables of the study, the researcher extracted the correlation coefficient between the explosive power and motor speed of the upper limbs and achieve skills of front smash and over the head smash in badminton, as shown in table (2).

Table (2)
Shows results of correlation coefficient for study variables

N	Variables	Correlation Coefficient	Significant
1	Explosive power with performance level of front smash.	0.94	0.006
2	Motor speed with performance level of front smash.	0.97	0.001
3	Explosive power with performance level of over the head smash.	0.92	0.01
4	Motor speed with performance level of over the head smash	0٫97	0٫002

Note: each number in the field of significant equal or less to (0.05) means significant correlation.

Table 2 shows the correlation coefficient between the variables of the study, the researcher found that there is a positive correlation between the explosive power of the arms and the achievement of front smash with degree (0.94), in a significant of (0.006) which is less than (0.05) which shows that there is a significant correlation.

The researcher attributes this correlation to the role of the upper limbs muscles in the production of the highest explosive power to hit the shuttlecock at full power and speed for less time towards the competition court also explosive power helps in directing the shuttlecock to anywhere in the competition court so as to difficult for competition player to return the shuttlecock easily, and the reason for this is that whenever a player possessed greater capacity may enable this capability in keep balance, and therefore being able to achieve the optimal technical performance while executing the skill (Bastawisi Ahmed., 1996).

Return to the table (2), we find that the correlation coefficient between the two arms of the motor speed and the level of performance of the front smash was a degree (0.97) and in a significant of (0.001), which is more than (0.05), and this shows that there is a significant correlation.

The researcher attributes this significant correlation to the fact that motor speed considers the lonely motor speed such as ball serving toward specific goal or direct box to opponent, since the completion of the skill does not depend on the delivery of the tool to the desired goal only, without possessing the speed to enable the achievement of skill performance in order to say that skill is accomplished by player with a high degree, intended of that the player is not putting the tool in the desired goal only, but intended is that the player is able to employ all physical abilities in skill achievement and this of training of literatures, especially that the speed perform the skill in the shortest time or less time (Kamal Jamil., 2001).

Table (2) shows that the correlation coefficient between the two arms of the explosive power and the level of performance of the over the head smash was a degree (0.92) and in a significant of (0.01), which is more than (0.05), and this shows that there is a significant correlation.

In addition, table (2) shows there is a correlation coefficient between the two arms of the motor speed and the level of performance of the over the head smash was a degree (0.97) and in a significant of (0.002), which is more than (0.05), and this shows that there is a significant correlation.

The researcher attributes a significant correlation between explosive power of the arms and motor speed of the arms and the level of performance of the over the head smash skill to the same reasons as the above-mentioned and that explained by the researcher in the significant correlation of the explosive power and motor speed with front smash skill.

4. Conclusions

The researcher concluded that explosive power of the upper limbs is one of the important physical characteristics at the level of performance of the front and over the head smash skills in badminton, as well as showed a significant correlation between variables of the motor speed of the arms and the level of performance of the front and over the head smash skills in badminton.

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