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The relationship of some physical characteristics to the accuracy of the offensive performance of the compound handball

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Abstract
The nature of handball performance, which is represented by changing direction or deception and trying to get rid of the defender to aim at the goal, and thus this change requires agility in movements in order to achieve good performance, and accordingly, the employment of physical qualities in skillful performance is one of the important factors in handball performance. The importance of research lies in the identification On the role of physical attributes in some compound offensive skills in handball, and is there a good correlation between them. There is a fluctuation in the level of performance in some of the compound offensive skills represented in handling, clapping, and shooting, as well as clapping, deception, shooting, and other complex skills: As well as losing the ball during these skills and the failure of shooting, and its reasons may be the weakness of the relationship between some physical characteristics and the complex offensive skills of the students of the fourth stage in handball. As for the objectives of the research, to identify the relationship between the physical characteristics and the accuracy of the offensive performance of the fourth stage students in handball. Research hypotheses. The research community and a sample are fourth-stage female students in the College of Physical Education and Sports Sciences for Girls, University of Karbala, who number (28). There is a positive relationship between some physical attributes and the accuracy of the offensive compound performance in handball, The most important recommendations, Emphasis on the interest in developing physical attributes for their role in developing all offensive skills in handball.

Keywords: physical characteristics, accuracy of the offensive performance, compound handball

Introduction
Handball is a team game that occupies a good place in the lessons of faculties and departments of physical education and sports sciences. These institutions have increased their interest in developing their cadres of graduates by providing them with physical and skill competencies and good scientific knowledge, as well as using effective methods appropriate to the level of the learner in order to speed up the process. Learning to create a good base in handball.

And since the handball game is one of the games that is characterized by variable motor performance, long time of the match, and the difficulty of its requirements, it requires physical and motor ability to ensure a rapid transition from defense to attack and vice versa, in addition to that it requires a level of agility, compatibility, and speed of all kinds, which appear in different playing situations, and therefore it needs The player must make continuous effort and work during training and competition And the physical characteristics that range within the physical requirements of the handball game, which distinguishes the game of handball by the game's character with sharp and varied performance in overcoming various resistances during the performance, which includes the player having special physical characteristics that make his performance of the various skills during the time of the match effective and achieve its goal. The nature of handball performance, represented by changing direction or deception and trying to get rid of the defender to aim at the goal, and thus this change requires agility in movement in order to achieve good performance. Accordingly, the application of physical characteristics in the skill performance is one of the important factors in the effectiveness of handball performance. Through the foregoing, the importance of the research can be identified in identifying the role of some physical characteristics in the accuracy of the offensive performance compound in handball.

Research problem
Handball is one of the collective games that occupy a space in the lessons of the faculties and departments of physical education, as the learner or learner in the school years relies on acquiring the physical and skillful aspect of the game for the purpose of learning and mastering it, And through the researchers' observation that they are specialists in this game, they noticed that there is fluctuation in the performance of the compound offensive skills represented by handling and clapping or handling and clapping and shooting as well as clapping, deception, shooting and other complex skills, as well as the loss of hate during these skills and the failure of shooting, and the reasons for this may be the weakness of the relationship between Physical attributes and compound offensive skills of the research sample.

Research Objectives
To identify the relationship between some physical attributes (explosive power, speed-distinguished power, strength endurance) of the two legs and the throwing arm and the accuracy of the compound offensive performance of the fourth stage handball students

Imposing research
There is a statistically significant correlation between the results of physical traits tests (explosive power, speed-

distinguishing force, force endurance) for the two legs and the throwing arm and the accuracy of the compound offensive performance of the research sample

Areas of research

1. **human domain**

Fourth-stage students in the College of Physical Education and Sports Sciences - University of Karbala - for the academic year 2022-2023 AD

2. temporal domain

The period is from 1/10/2022 to 5/1/2023

3. Spatial domain

The inner hall of the College of Physical Education and Sports Sciences / University of Karbala

Theoretical studies

1. The concept of special strength and its importance in sports effectiveness

The special muscle strength is a component of the specialized physical performance, and it is considered one of the motor performance requirements for the sporting events, including the game of handball. Developing strength with basic motor qualities at the same time so that it fits the type of sports game [1]

And Mufti Ibrahim Hammad (2001) points out that "the special muscle strength aims to develop the amount of muscle strength of the muscles that work mainly in the specialized sport of the individual [2].

2. Explosive power

Explosive strength is an important physical ability that a handball player needs and is crucial to achieving success in handball. Having this ability, he can jump to shoot and make a block against shots towards the goal. A successful player must not only be able to "jump high" but also must To be able to "reach height quickly and this requires energy generation in a short time. It is defined (Abu El-Ela 2012) as the maximum voluntary muscle contraction that the muscle can direct [3].

3. The power that is distinguished by speed

The power that is distinguished by speed is the most obvious physical ability for handball players, and it is the motor component that results from linking and mixing accurately and effectively between strength and speed, And directing it in one outcome, and this is commensurate and compatible with the successful quick skillful performance to reach the championship. (Mohamed Abdel Hassan 2010) defines it as the athlete's ability to overcome resistance with rapid contractions [1]. As for (Ahmed Arabi 2011), he defines it as the ability of the nervous system to overcome resistances that require a high degree of speed of muscle contractions [2].

4. Agility and its importance in handball

Agility in its general and specific types is one of the necessary physical qualities as a handball player due to its importance in all defensive and offensive skills The basic movement pattern of handball requires the player to perform many different activities such as jogging, sprinting and jumping.

In this type of sport, the players are required to move according to the match variables in terms of increase or decrease or change direction, especially according to the movement of the competing player or the movement of the ball. Agility: is the ability to change direction quickly [3].

(Subhi Ahmed 2012) defines it as the individual's ability to change his position in the air [4]. And (Rajesh 2008) defines it as the ability to perform a series of rapid and repetitive movements correctly and in various directions [5].

Research methodology and field procedures

1. Research Methodology

The researchers used the descriptive approach in the manner of correlations appropriate to the nature of the research problem

2. The research community and its sample

The research community was determined by the students of the fourth stage in the College of Physical Education and Sports Sciences / University of Karbala, whose number is (85) students, and by 4 saturates (A, B, C, D). 20) students were excluded (3) non-absent students to be the final number (17) students table (5)

Table 1: Shows the characteristics of the research sample in terms of mass, length, and chronological age

Variants Statistical parameters	Arithmetic mean	standard deviation	Mediator	torsion modulus
Bloc	56.49	5,91	75,55	0,34
height	1,65	0,13	1,68	1,61
chronological age	23,57	1,89	22,9	1,06

The following table shows that the values of the torsion coefficient were less than (3), which indicates the presence of a colored table in the following table from the following table

3. Tables and tools for research

3.1 Collecting information

1. Other reference sources
2. Personal interviews
3. to the Internet
4. Observation
5. Tests and measurements

3.2 Equipment and tools used

1. Handballs (10)
2. 2- A tape measure of 5 meters
3. 3- A legal handball court
4. 4- An electronic stopwatch
5. 5- The questionnaire form

4. field research procedures

4.1 Determine the physical and skill tests

The researchers, after reviewing the sources, reviewing and previous studies, determined some physical tests and skill tests for the research, and then put them in an appendix questionnaire (3). Which was presented to the experts and specialists (□) in the field of testing and measurement, handball, sports training and motor learning to test the appropriate ones or add what they deem appropriate to the research. The following tests have been tested

Table 2: Shows the selected physical and skill tests and the percentage of expert agreement

variants	test name	target of workmanship	percentage
explosive power	The two men test Sargent's vertical jump	The explosive power of the two men	97
	The arms throw the ball in motion the farthest distance	The explosive strength of the arms	91
	Partridge test for the farthest distance with a right and left leg (10 seconds)	Characteristic strength as fast as two men	93

4.2 Description of the tests

4.3 Sargent's vertical jump test

The purpose of the test: measuring the explosive force of the two men

Tools: tape measure, wall, chalk

Description of performance

1. A measuring tape is fixed on the wall in order to measure the vertical jump distance between two marks.
2. The tester stands aside next to the wall with bare feet holding a piece of chalk in his hand next to the wall
3. He extends his hands as far as possible to make a mark on the wall with chalk
4. The tester bends the knees while keeping his arms above the head and back in one straight line
5. The tester starts jumping vertically up as far as he can to place a chalk mark at the highest point he reaches*.*

1. Throwing the ball as far as possible test [1]

The purpose of the test: to measure the shooting power

The tools used: two balls, a measuring tape - A flat area of land, the length of which is not less than 40 m

Procedures The player stands on the starting line of the shooting range without touching the line and the feet at one level, holding the ball with both hands, and at the start signal, the tester moves the ball to the throwing arm and holds it with one hand (the same method as holding a handball) while taking a step with the opposite foot and throwing the ball to the farthest distance It is possible in the field of throwing, provided that the throw is aimed at a line of width 4 meters away from the player's fulcrum while performing the throw

Scoring calculation: The throwing distance is calculated to the nearest 10 cm, and the tester gives two attempts, the higher of which is calculated, provided that the ball falls within the specified range for throwing*.*

2. Partridge test for the maximum distance in (10 seconds) [1]

The aim of the test: measuring the strength characteristic of the speed of the muscles of the two legs Tools and facilities: playing field, tape measure, chalk, stopwatch

Description of the performance: Standing on one foot of the partridge for the maximum distance on a line drawn on the ground with any part of the body other than the foot of the partridge. The test is performed once on the right leg, then the left leg

For the evaluation: the distance in a time of (10) seconds, the test is repeated on the second foot, and the level is measured, the dimensions of the test twice, and the best attempt is counted

3. Choosing to throw and receive the ball on the wall in 30 seconds [3]

The aim of the test: measuring the compatibility of the arms and eyes. Tools: a handball, a stopwatch, and a flat wall.

Performance specifications

The player stands behind the line drawn on the ground at a distance of (X3) meters, so that he does not touch it during his performance of the test

The player passes a ball to the wall and receives it and continues to pass and receive as many times as possible in the specified time

Score Calculation: The number of passes and receptions within 30 seconds is counted

1. Jumping test from squatting in place for (45) seconds

The purpose of the selection / measurement of the force tolerance characteristic of the speed of the arms

Description of performance / From the supine position, bend the arms and extend them as many times as possible during 30 seconds

necessary tools

Stopwatch, whistle

the conditions

a. Take the body and show the correct oblique supination
b. The chest touching the ground during the bending of the arms and then extending them fully is taken into account. Calculation of grades / recording for the laboratory the number of times the bending and entrance performance is 30 seconds

2. Barrow's zigzag run test

The purpose of the test: to measure agility

Tools: A rectangle is drawn on the ground, its length is 4.75 m and its width is (3). We install four pillars on the ground in the four corners of the rectangle, and the fifth pillar is fixed in the middle, noting that the length of the pillar must not be less than (30) km, a stopwatch. The layout of the test area as shown in Figure (8)

Performance and measurement method

1. The tester stands behind the starting line in a ready position to start running from a standing position (universal starting position)
2. At the signal, the laboratory runs between the five lists until it completes the third cycle
3. The time it takes must be rounded to the nearest 1, 100 of a second

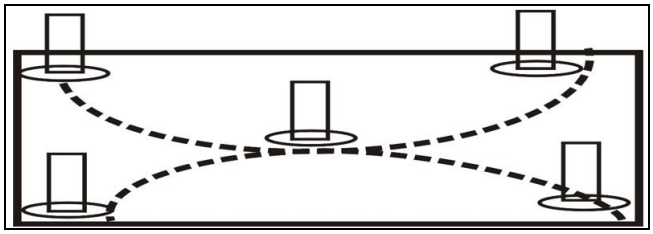

Fig 1: shows the zigzag run test using the Yarrow method

1. speed, plump and shooting test [1]

The aim of the test: to measure the accuracy of speed, plumpness and shooting for offensive performance.

Tools / handball court, within handball, high jump stand, stopwatch crossbar, performance description, the player stands in the middle of the field, five balls are placed on the ground, after the signal, the player runs between the balls until he reaches the crossbar in front of the goal at a height (0.50 cm) to perform the scoring by jumping over it, then returning to pick up the second ball until he finished with the five balls

Guidance and reverence/records the accuracy of the performance time from the moment of starting until the fifth ball is shot at the goal

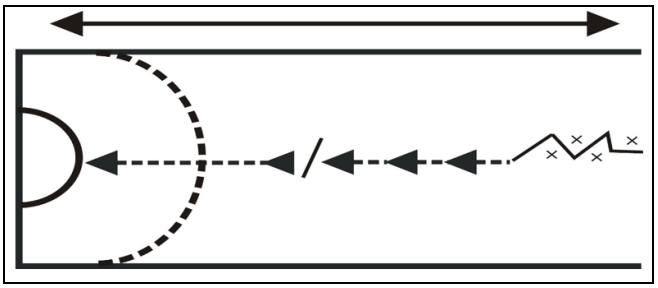

Fig 2

The conditions surrounding the phenomenon that researchers want to study and reveal

Among the objectives of the pilot experiment are

1. Identify the time that the physical and skill tests will take
2. validity of the tools used in the test
3. the efficiency of the assistant work team
4. 4-The extent to which the research sample understood the physical and skill tests
5. A clear perception of the researchers about the testing procedures and fixing them for the purpose of avoiding errors in the main experiment

2. The main experiment

Tests are one of the important means to evaluate the level reached by the athlete. Research tests were conducted on a sample of (17) students from Division (B) of the fourth stage students

Tests were taken on Monday and Tuesday.

- All tests were conducted in the closed hall in the College of Physical Education and Sports Sciences / University of Karbala**.**
- Before starting the implementation of the tests, the researchers gave a detailed explanation of each test and clarified the importance of the tests and the need for the tested students to do their utmost, and to implement them as quickly and as forcefully as possible**.**

A warm-up was conducted for the testers by a handball teacher before starting the tests. The sequence of tests was as follows:

First: The physical tests were carried out, which are (the explosive strength of the legs and the throwing arm, the speed-distinguished strength test of the legs and arms, and the strength endurance of the arms and legs.)

Second: The agility and skill tests were conducted (the zigzag running test using the Barrow method, and the speed, plumpness and shooting test for the compound offensive performance.)

The data was recorded in special forms for the purpose of analysis to extract results.

Statistical means: The researchers used the statistical bag (spss) 3-7

Presentation, analysis and discussion of results**.**

1. Displaying the results of the arithmetic mean and standard deviations of the research variables

Table 3: The values of the arithmetic mean and standard deviations of the research variables

variants	Measuring unit	test name	Arithmetic mean	Standard deviation
explosive power	cm	Sargent's vertical jump test	26,4	7,66
	meter	Throw the ball in motion farthest distance	12,83	1,22
Distinctive strength with speed	meter	Partridge for the farthest distance with a right and left foot (10 seconds)	24,23	3,78
	number	Throw and receive the ball on the wall in 30 seconds	25,33	4,73
bear force	second	Jumping from squatting in the same place for (45) seconds	38,23	5,32
	second	Flexion and extension of the arms until the effort runs out	25,64	4,55
agility	second	Slalom jogging (2×15) back and forth	29,65	5,66
Composite offensive skills	second	Speed and plumpness Then aim	35,80	4,12

2. Presentation and analysis of the values of the correlation coefficients between the physical characteristics and the accuracy of the offensive performance compound in handball in the research sample and discussing them.

Table 4: Shows the correlation coefficient between the physical characteristics and the accuracy of the offensive performance compound in handball I have a research sample

Test scores Variants	Measruing unit	The value (t) calculated with the accuracy of the offensive performance	Tabular (t) value (*)	Statistical significance
Sargent's vertical jump test	cm	0,597	0,413	moral
Throw the ball in motion farthest distanc	number	0,676		moral
Partridge for the farthest distance with a right and left foot (10 seconds)	second	0,625		moral
Throw and receive the ball on the wall in 30 seconds	second	0,720		moral

Jumping from squatting in the same place for (45) seconds	second	0,585		moral
Flexion and extension of the arms until the effort runs out	second	0,690		moral
Running Squiggly (2×15) back and forth (agility	second	0,655	0,413	moral

(*)The tabular value of (t) at (15) degrees of freedom, with a level of significance ≤ (0.05) = 0.413

From Table (3), it is clear that In the variable explosive strength of the legs and arms, there is a significant correlation between the results of the test (Sargent's vertical jump) and (throwing the ball in the movement the farthest distance) and the accuracy of the offensive performance compound with handball. Especially in the skill of aiming by jumping high, as well as the development in the characteristic of the explosive strength of the muscles of the arms and the muscles of the aiming arm, resulting from the use of strength exercises The various exercises that had a positive effect on improving the level of the sample, as the exercises that the students took in the various practical lessons and in the handball lessons were various jumping exercises with and without a ball, as well as explosive force exercises for the throwing arm, whose movement paths were similar to the movement paths of the shooting skill in handball. It contributed to reducing the duration of muscle contraction and increasing the speed of performance, and then obtaining the maximum contraction and the highest strength, which appeared in the form of jumping up and throwing the medicine ball to the farthest distance. This agrees with what was indicated by (Muhammad Hassan Allawi and Abu Al-Ula Ahmed Abdel-Fattah) stated that "the shorter the periods of muscle contraction, the greater the strength, and on the contrary, the longer the period of muscle contraction, the amount of force does not remain constant, but rather changes" (1)

And in the variable of strength distinguished by the speed of the legs and arms, it was found that there is a significant correlation between the results of the test (partridge for the farthest distance with a right and left leg (10 seconds)) and (throwing and receiving the ball on the wall in 30 seconds) and the accuracy of the offensive performance combined with handball.

Significant correlation of the variable of strength distinguished by speed (fast strength) of the muscles of the right and left legs to the type of exercises that are used within the educational curriculum and for various games, including handball, which were developed from the level of students, as the strength distinguished by speed is linked to skillful performance, so the more strength distinguished by the speed that students possess Their skillful performance was good, as they have this kind of ability

It is necessary in the game of handball and continuously in the movements of defense and attack, and for the skill of aiming from jumping high in particular, so we note that it occupies a large proportion of the time allocated for training, because it is related to the degree of mastery of skillful performance" (7), which was confirmed by (Khairiya Ibrahim, 1996) that this Ability has a special importance in the role it plays in performing the skill during the competition and during the acquisition of the skill (8), and the vertical and horizontal jump exercises, which were emphasized through the use of functional ability exercises strength

and balance) and rapidly, which included the training units that helped in this clear development, and this was confirmed by (Abu El-Ela Ahmed 1992) "that strength training needs high speed during exercises to obtain better motor performance during competitions (11). Table (3): There is a significant correlation between the test results (jumping from squatting in the same place for (45) seconds) and (bending and extending the arms until the effort runs out

And the accuracy of the compound offensive performance with handball, and the researchers attribute the moral correlation to the exercises that the students get in the various sports events, which gave them the endurance of the strength of the legs and the throwing arm, as well as the presence of suspense, excitement and enthusiasm in the shooting skill, because the main goal for each player, male and female, and team is to master all other basic skills without shooting. It becomes useless if you do not end up with a good shot at the goal, and this comes through good training on this important skill, and you must focus and take care of the strength and accuracy that work together in shooting. This is confirmed by Kamal Aref Thaher and Saad Mohsen, Ismail said, "Shooting is the final movement of all the skillful and tactical efforts that were used to reach a player in the shooting position. If he fails to score a goal, then all those efforts are in vain, in addition to the team losing the ball and shifting from attack to defense" (18)

And that there is a significant correlation between the choice of agility and the accuracy of the offensive performance compound in handball, and the researchers attribute the significant correlation to the harmony between the motor and physical abilities and the internal organs. Agility in the movements, whether offensive or not Defensive is one of the basic characteristics that plays a big role in moving the ball with a change of direction as well as shooting at the goal. Both (Sari Ahmed and Norma Abdel Razzak) indicated that agility has a close connection with the factors of speed, muscle strength and compatibility, and contributes greatly to the acquisition of skills. Movement and its mastery, the more agility the player or player increases, the more quickly he can improve his level.

(21) The movements of the feet are also among the basic skills in defense and attack. In defense, they must be trained and mastered so that the attacker can pass to the target or take the appropriate place. As for the attack, the player can use the movements of the feet to escape from the defender's control, reach the goal, and take the appropriate position for scoring or receiving and scoring, in addition to the importance of agility in movement in deception. As all maneuvers, changing running speed and changing direction, whether with or without the ball, are performed with the feet and contribute to deceiving the opponent. In the deception movements of the unfocused foot, a great role is played in concealing the movement. (20)

Conclusions and recommendations

1. conclusions

1. There is a positive relationship between the physical attributes variables (explosive power, power

distinguished by speed, power endurance, dexterity) of the two legs and the throwing arm, and the accuracy of the compound offensive performance of the students of the fourth stage in handball
2. The physical attributes have a positive role in improving the offensive motor performance of the shooting skill in the research sample, and this was shown by the moral correlations in the research.

2. Recommendations

In light of the results and within the limits of the sample, the researchers recommend the following

1. Emphasizing the importance of developing physical attributes for their role in developing all offensive skills in handball
2. Emphasizing the use of tests that approximate the conditions of play and competition when measuring the physical, motor and skill traits of handball players
3. Conducting research and studies similar to the rest of handball skills, including defensive skills.

References

1. Abu El-Ela Ahmed Abdel-Fattah. Sports Training and Physiology Foundations, 1st Edition (Cairo, Dar Al-Fikr Al-Arabi), 1997.
2. Talha Hussein Hossam El-Din. Kinetic and Functional Foundations for Sports Training (Cairo, Dar Al-Fikr Al-Arabi), 1994.
3. Mufti Ibrahim Hammad. Modern Sports Training Planning, Implementation, Leadership (Cairo, Dar Al-Fikr Al-Arabi), 2001.
4. Muhammad Reda Ibrahim, Mahdi Kazem Ali. Foundations of Sports Training for Different Ages, 1st Edition. (Baghdad, Dar Al-Diyaa for Printing), 2013.
5. Mounir Gerges. Handball Everyone, 3rd edition (Cairo, Dar Al-Fikr Al-Arabi), 1990.
6. Abdullah Hussein Al-Lami: Sports Training for Students of the Faculties of Physical Education, 1st Edition (Najaf, Dar Al-Diyaa for Printing and Design), 2010.
7. Kamal Abdel-Hamid, Mohamed Sobhi Hassanein. Quartet Modern Handball, Part 1, Part 1 (Cairo, Amoun Press), 2001.
8. Abu Al-Ela Ahmed Abdel-Fattah. Contemporary Sports Training, 1st edition. (Cairo, Dar Al-Fikr Al-Arabi), 2012.
9. Saad Mohsen Ismail. The effect of training methods to develop the explosive power of the legs and arms in the long shot accuracy by jumping high in handball. PhD thesis, unpublished (University of Baghdad, College of Physical Education),1996:9:54.
10. Nagy Asaad Youssef. Plumometric training. (Cairo, No. 25), 1999, 30.
11. Mohammed Abdel Hassan. The Science of Sports Training 111, 1st edition. Baghdad, Zaki Office), 2010, 55.
12. Ahmed Arabi Odeh. Physical preparation in handball, 1st edition (Baghdad, Zaki's office),2011:9:85.
13. Abd Ali Nassif, Qassem Hassan Hussein. Strength Training, 1st edition (Baghdad, Dar Al-Arabiya for Printing),1978:9:81.
14. Ahmed Khater, Ali Al-Beik. Measurement in the Mathematical Field, 4th Edition (Cairo, Dar Al-Kitab Al-Jadeed), 1996, 176.
15. Qassem Hassan Mahdi Al-Mandalawi, Mahmoud Abdullah Al-Shati. Sports Training and Records. (Mosul, Dar Al-Kutub for Printing and Publishing), 1987, 53.
16. Sobhi Ahmed Kaplan. Handball (skills - training - training - injuries), 1st edition. (Amman, Arab Community Library for Publishing and Distribution), 2012, 83.
17. Muhammad Hassan Allawi, Muhammad Nasr al-Din Radwan. Skillful and psychological performance tests in the sports field, 1st edition (Cairo, Dar Al-Fikr Al-Arabi Press), 1987, 45-46.
18. Diaa Al-Khayyat, Nawfal Muhammad. Handball, (A methodological book for faculties and departments of physical education), 2001, 13-95.
19. Muhammad Tawfiq Al-Waili. Handball (education, training, technique), Cairo,1994:9:102.
20. Wajih Mahjoub. Fundamentals of Scientific Research, 2nd Edition (Dar Al-Manhaj, Amman), 2001, 269.
21. Ahmed Khamis, Jamil Qassem. World Handball Encyclopedia, 1st Edition (Dar Al-Kitab Al-Arabi, Al-Saffar Publications Foundation, Beirut, Lebanon), 2011, 281.
22. Kamal Abdel-Hamid Ismail, Muhammad Sobhi Hassanein. Quartet Modern Handball, Part 2 (Cairo, Al-Kitab Center for Publishing),2000:2:175-176.
23. Rajesh vaidhya. Ravinder a pal training coaching sports new Delhi, 2008, 357.
24. Farrowd *et al*. The development of a test of reactive agility for netball anew methodology in junior soccer players j strength, cond Res, 232241-2249, 2009, 122.
25. Souhail Hermassi *et al*. Relationship between agility T-test and physical fitness as indicators of performance in elite adolescent handball players, Icnopty,2011:5:125.