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Balance and motor compatibility abilities and their relationship to the accuracy of the performance of the volleyball block wall skill

Dr. Ahmed Hassan Saber Al Kaabi

Ministry of Education - Open Educational College

Ahmedhasan19650@gmail.com

Abstract

Volleyball   is a team game that has a popular base and is practiced by all groups in open and closed arenas. It is characterized by speed, agility and kinetic flexibility. Therefore, the player must have good motor abilities in performing its basic skills, including the ability of kinetic anticipation that helps in developing and improving the mental abilities of players. Therefore, attention must bepaid to educational programs and methods   that help in using the anticipation strategy of the volleyball block wall player well , as it is an important and necessary element in the success of the player participating in forming a defensive wall against the attacker .

Kinetic abilities have an important role in the performance of basic skills in volleyball as the player needs them in technical performance when implementing the three sections of movement, so the player must have the ability to balance and kinetic compatibility in the case of defense when doing the duty of forming the blocking wall with the volleyball. Good kinetic ability of the player during the opposing wall means preventing the attacking player from carrying out the crushing strike easily and passing it to the field of the team's defense lines and achieving a point for him . Therefore, the abilities of balance and compatibility have the essential role in mastering the performance of the skill properly and correctly away from making mistakes when doing the block wall with the fellow player. The ability to balance means that the player has the physical ability to complete the motor task correctly without error as a result of the harmony between the organs involved in skill performance. Therefore, the ability of motor compatibility is involved in the implementation of the performance of the block wall skill in a way that ensures the application of the team's players to the block wall and prevent the attacker from passing the ball over the net and by finding gaps in the defense of the block wall.

1-1 Introduction and importance of research :

Volleyball   is a team game that has a popular base and is practiced by all groups in open and closed arenas. It is characterized by speed, agility and kinetic flexibility. Therefore, the player must have good motor abilities in performing its basic skills, including the ability of kinetic anticipation that helps in developing and improving the mental abilities of players. Therefore, attention must bepaid to educational programs and methods   that help in using the anticipation strategy of the volleyball block wall player well , as it is an important and necessary element in the success of the player participating in forming a defensive wall against the attacker .

Kinetic abilities have an important role in the performance of basic skills in volleyball as the player needs them in technical performance when implementing the three sections of movement, so the player must have the ability to balance and kinetic compatibility in the case of defense when doing the duty of forming the blocking wall with the volleyball. Good kinetic ability of the player during the opposing wall means preventing the attacking player from carrying out the crushing strike easily and passing it to the field of the team's defense lines and achieving a point for him . Therefore, the abilities of balance and compatibility have the essential role in mastering the performance of the skill properly and correctly away from making mistakes when doing the block wall with the fellow player. The ability to balance means that the player has the physical ability to complete the motor task correctly without error as a result of the harmony between the organs involved in skill performance. Therefore, the ability of motor compatibility is involved in the implementation of the performance of the block wall skill in a way that ensures the application of the team's players to the block wall and prevent the attacker from passing the ball over the net and by finding gaps in the defense of the block wall.

The player's possession of these two abilities is a good indicator of his ability to perform a wall skill well and in his other defensive skills, so the ability of balance and motor compatibility is needed by the players when forming the blocking wall to outperform the attacking player when doing the duty of defending the blocking wall. The player who has the ability to balance and compatibility can control the balls and prevent them from crossing the team's stadium without danger to the team's defense line, because the player is in a better defensive position as a result of choosing the right place and time to move and repel the ball , As a result of the correct move to confront the opposing player who performs the crushing blow of all kinds , high and fast , as the opposing player sometimes makes many and complex movements in order to give the wrong expectation to the player of the block wall because he has the ability to defend through the network. Monitoring the movement of the attacking players and identifying the   strengths and weaknesses and the   ability to hit the ball across the network , These abilities depend on several factors that help in the success of the kinetic expectation in the stage of performing the skill of forming a wall in front of the opposing striker of the team with volleyball. The good defensive numbers of the block wall are one of the most important

elements that he does The coach of the team in the planning priorities to manage the game , which is based on the ability of the defending player to quickly analyze the expected cases and choose the appropriate defensive response as soon as possible.

The subject of the study is one of the main pillars of the team 's volleyball defense lines and their relationship to some kinetic capabilities . Most of the studies that dealt with the skill of the block wall in volleyball did not address the role played by this ability, which is balance and motor compatibility, as the study came in order to shed light on the important role played by the attacking line player in addition to his role in the team as a striker , he contributes to the formation of the block wall while participating in the formation of a defensive line that fights, which prompted the researcher to conduct his research study on this problem by finding appropriate solutions to develop the skill levels of players, due to the correlation between the balance and motor compatibility capabilities in the accuracy of the performance of the block wall skill of young volleyball players. Hefound that there is a clear weakness among most of the players of the participating teams , which was evident in their level of performance in the block wall skill while defending the ball to prevent the attacking player from achieving a point in his favor from carrying out the crushing strike.

1-3 Research Objectives:

1- Identifying the relationship of the ability of motor equilibrium with the accuracy of the performance of the block wall skill with the volleyball .

2 Identifying the relationship of the kinetic compatibility with the accuracy of the performance of the block wall skill with the volleyball .

3- Identifying the level of relationship between the abilities of balance and motor compatibility and the accuracy of the performance of the volleyball block wall skill.

1-4 Research Hypotheses:

1- There is a statistically significant significant correlation between the degree of kinetic balance and the accuracy of the performance of the block wall skill among volleyball players .

2- There is a statistically significant relationship between the ability of kinetic compatibility and the accuracy of the performance of the block wall skill among volleyball players .

3 There is a statistically significant significant correlation between the equilibrium and motor compatibility abilities and the accuracy of the performance of the block wall skill of volleyball players .

5-1 Areas of Research :

1.5.1 **Humanfield**: Maysan youth   volleyball players for the year (2023)

1.5.2 **Temporal scope**: For the period from (21/2/202 4 to 28/4/202 4).

1.5.3 **Spatial scope**: **The** closed sports hall of the specialized school in Maysan Governorate.

1-6 Opening speeches:

- Motor **balance**: It is the preservation of the balance of the body in the correct manner and the distribution of its parts within a certain direction and for a limited distance and this is done when mastering movement.

 Motor Compatibility: It is the ability that allows to stay in a fixed position or the ability to maintain the stability of the body without falling or vibrating when performing motor performance.

- The accuracy of the performance of the blocking wall in volleyball 1. 1998.p83) ("The blocking line players should have a sufficient amount of strength distinguished by the speed and explosive power of the legs and arms, their correct choice of blocking sites, the speed of forming the blocking wall, the timing of jumping and reaching higher than the height of the network level."

Young volleyball players: aged between (17-21) years old, who are the batting players participating in the game league for the year (2023).

2- **Research procedures** : The researcher chose the descriptive approach because it represents the most appropriate tool through which goals can be achieved , according to the

scientific scale that fits with the nature of the study problem andin the method of correlational relations to extract results for it .

2-1 Research sample : -

2-1 The research community and the research sample : The research community was represented by the players of the clubs of the province of Maysan in the volleyball of the youth participating in the game league for the year (2023), which numbered (40) players between the ages of (17-21) years. The research sample was chosen in a deliberate manner from the 30 striking players. The researcher also selected two players to perform the exploratory experiment from the research community, so the percentage of the research sample may be (75%), and then the homogeneity in the study variables was carried out for the members of the research sample and as shown in Table (1) .

Table (1) shows the homogeneity of the research sample in the study variables for the sample members

S r	Variables	Unit of measure	Arithmetic Mean	Mediator	Standard Deviation	Modulus of torsion	Result
1	Length	cm	188	500	06	0.826	Assorted
2	cluster	kg	75	75,000	3.	466	Assorted
3	Chronological age	Year	19.	19.	1	392	Assorted
4	Training Age	Year	7	7	0.487	|||UNTRANSLATED_CONTENT_START|||0.616|||UNTRANSLATED_CONTENT_END|||	Assorted

2.2 Means and tools of data collection:

The researcher provided the necessary tools and supplies he needs with the assistant team in the application of tests and data collection and processing . A legal volleyball court, 12 legal volleyballs, a length measuring device (in centimeters), a measuring tape (meters), a stopwatch (Casio), survey forms for experts and specialists , and registration forms for the results of the physical and skill tests under study . A computer type (dell) .

2-3 Identification of research tests:

The main objective of conducting the tests under study is to measure the physical and skill level of the members of the research sample in order to assess their level according to the results achieved. Therefore, the researcher prepared a questionnaire for the purpose of presenting it, which included a set of physical and skill tests, which were presented to the experts and specialists in the field of tests, motor learning and volleyball to choose (10) *, to express their scientific opinions in determining the most important tests of the research for motor abilities (motor balance) and skill (bail wall) in order to sweat on their suitability for the level of the research sample and mention the valuable observations, if any. After completing the evaluation, the researcher adopted the set of tests that obtained an agreement rate (80%) by the experts. The researcher also extracted the value of the relative importance of the tests after sorting the results of the study variables

Table (2) shows the physical and skill tests of the study

Variables	Physical and Skills Tests	repair	"It can't w
Exams Physical	1- Bourne-NMOVE test (for attention)		√
	3- Neuromuscular compatibility test (throwing and receiving balls)	√	
	2- Testing the vertical jump from the constant		√
	4- Test of throwing the medical ball (3) kg		√
	5- Testing the octagonal shape in equilibrium	√	
	6- Fixed and Moving Balance		√
	7 Wilson's test of transitional motor response		√
	8- Testing the sense of the distance of the horizontal bounce		√
Exams Skill	The technical performance evaluation test of the bar		√
	2- Precision test of the block wall skill		√
	3- Testing the accuracy of the performance of the volleyball block wall.	√	

2-4 Determining the tests under study : After nominating the researcher the set of tests, he began the process of applying the test (physical , skill) by recording the data in the

special registration form prepared for this purpose , and then processing it statistically according to the requirements of the research .

First : Physical tests: Two samples were selected from the set of tests offered to apply the physical test of the study to the research sample.

1-5- Motor equilibrium **test: (Measuring equilibrium during and after movement**) 1987 p. 344.7) .

– Used tools : registration form , stopwatch , measuring tape , (11) marks .

Performance Description : The laboratory stands on the starting line with the right foot and then jumps from standing on the marker (1) with the comb of the left foot (it is noted that the marker is covered with the foot) . It holds in this position and then jumps to the marker (2) to stand on the comb of the right foot, and so on until it reaches the last marker (11) in the same manner in each jump, taking into account the correct performance of the laboratory's performance of the test .

Recording : The laboratory records the time from the beginning of each attempt to jump and hold until the end , because the more stable it is, the better its balance will be, and thus the result will be an indicator of balance , the more time the indicator will be positive .

2.2 Motor Compatibility Test : Throwing and Receiving Balls on the Wall: (2004,   p.   149. |||UNTRANSLATED_CONTENT_START|||6). |||UNTRANSLATED_CONTENT_END|||

– Used tools : a tennis ball , a wall , a line is drawn 5 meters from the wall

Performance Description : The laboratory stands in front of the wall and behind the line drawn on the ground where the test is carried out according to the following sequence :

– Throwing the tennis ball five times in a row with the right hand, provided that the laboratory receives the ball after bouncing off the wall with the same hand .

– Throwing the tennis ball five times in a row with the left hand, provided that the laboratory receives the ball after bouncing off the wall with the same hand .

– Throwing the tennis ball five times in a row with the right hand, provided that it is received by the laboratory after bouncing off the wall with the left hand .

Registration : For each correct attempt, a score is calculated for the laboratory and the final score is (15) marks.

Second: Skill Tests :

Test name Volleyball block wall: The aim of the test is the accuracy of the block wall.(1997 , p. 57. 2). – **Tools** : a sitting volleyball court, (5) balls,a net

. **Method of performance** : The field of the attacking player and the preparer is divided into (a) the offensive area and(b) the defensive area. The field of the tested player is divided into(c) the offensive area and(c) the defensive area. The coach or the preparer prepares the numbers for the attacking player by hitting the laboratory in the center No. (3), as shown in Figure (2) .

Registration : The laboratory has (5)attempts .

1– If the player blocks the ball and it falls in the area (A), the player shall be given (4).

2– If the player blocks the ball and it falls in Zone (B), the player shall be awarded (3).

3– If the player blocks the ball and it falls in Area (C), the player shall be awarded (2).

4– If the player blocks the ball and it falls in Zone (D), the player shall be awarded (1).

5– If the player does not achieve the above points according to the test rules, he shall be awarded (zero).

2-5 Exploratory experiment: -

It is the mini-experiment of the basic experiment carried out by the researcher to identify the most important technical stages that he uses in order to start the test steps on his research sample by following up and supervising the assistant technical support team in the application of the tests. Therefore, it must meet the same objective and stability conditions when conducting his main experiment. On this basis, the researcher conducted a reconnaissance experiment for the tests of balance and motor compatibility abilities and tested the accuracy of the performance of the volleyball block wall on the research reconnaissance sample, which numbered one of the players of the Maysan volleyball team on Sunday (27/2/2023) at (9) am in the closed Martyr Wissam Araibi Sports Hall in Maysan Governorate. The aim of the experiment was:

1-The suitability of the tests under study for the levels of the sample members .
2- The time taken to carry out the skill and mobility tests.
3- Identifying the mechanism of conducting tests by the assistant team *.

 Table (2) **shows** the **values of validity**, **stability and objectivity** of the **tests under study**

This service allows	Variables	Unit of measure	Honesty	Stability

customers to issue a permit				
1	Motor Balance Test (Measure balance during and after movement)	cm	100 %	0.93
2	Eye arm coordination test (Throwing and receiving balls on the wall)	cm	100 %	0.92
3	Volleyball blocking wall skill performance accuracy	cm	100 %	0.91

2.6 Key research experience:

The researcher conducted tests on the research sample of (30) players in the variables of the research, namely (vertical jump test from the stationary , strength test characterized by speed) and (volleyball block wall test) on Sunday (2/3/2023) at (3) pm in the Martyr Wissam Araibi closed sports hall in Maysan . The researcher, with the help of his assistant team, explained the mechanism of conducting the tests to the study sample represented by the group of young players, so the beginning was to warm up for the purpose of preparing the players physically and professionally, and with the help of the team in order to start conducting the tests and recording the results according to the scientific standards of the tests and for all members of the group for the purpose of recording the results in its own forms and installing the data to conduct statistical processing.

2-7 Statistical treatment: The researcher used the statistical program ((Spss **(27))** in the statistical treatments whose results were recorded through practical tests and in proportion to the nature of the research .

3- Presenting, analyzing and discussing the results:

3−1 Presentation and analysis of the results of the kinetic prediction tests and the accuracy of the flying ball block wall skill :

In order to extract the values of the kinetic prediction contribution ratios in the accuracy of the volleyball block wall skill, the researcher adopted the appropriate statistical parameters, Table (3) and the subsequent tables show this.

Table (3) shows the descriptive statistical parameters and torsion coefficient of the research variables

Variables	Unit Analogy	Arithmetic Mean	Mediator	Standard Deviation	Modulus of torsion	Result
Motor Balance Test	sec	23	24	0.832	0.224	homogeneous, identical, similar
Eye arm coordination test	cm	12	13	689	0.211	homogeneous, identical, similar
Block Wall Skill	Degree	0.056*	15.000	873	116.	homogeneous, identical, similar

Table (3) shows the results of the tests for the arithmetic media, the median, the standard deviations, the value of the torsion coefficient in the equilibriumand kinetic compatibility test, and the accuracy of the performance of the volleyball block wall. The arithmeticmean in the kinetic equilibrium test was (23), the median was (24) with a standard deviation of (0.832) and the torsion coefficient was (0.224). The mean in the motor compatibility test was (12) and the median was (13) with a standard deviation of (1.689) and a torsion coefficient of (0.211).In the barricade wall skill test , the arithmeticmean was (15.056) and the median was (15.000) with a standard deviation of (0.873) and a torsion coefficient of (0.116). This indicates homogeneity in the results of the motor and skill tests under study

Table (4) shows the simple correlation coefficient, the percentage of contribution, the standard error of estimation, the value of (F) and its level of significance between the motor balance and the skill of the block wall in the research sample

Simple correlation	correlation	Standard Error	Degree of freedom	F	Significance level	Statistical significance
8.	0.899	.272	29	143	000	Significant

(*) Statistically significant at a significance level ≥ (0.05)

From our observation of Table (4), it is clear to us the value of the simple correlation of the block wall skill with the significance of the motor balance, as it reached (0.948) and a contribution rate of (0.899) with a standard error rate of (0.272), andit is clear to us that the independent variable (motor balance) has contributed to the performance of the (block wall) skill in the research sample through a significant value of (F), as it reached (143.103) with a degree of freedom of (29) and a level of significance of (0.000) .

Table (5) shows the **simple** correlation coefficient, the **percentage of contribution**, the **standard error of estimation**, the **value of (F) and its level of significance between motor compatibility and the skill of the block wall in the research sample**

Simple correlation	correlation	Standard Error	Degree of freedom	F	Significance level	Statistical significance
0.963	927	0.232	29	.538	0.00	Significant

(*) Statistically significant at a significance level ≥ (0.05)

From our observation of Table (5), it is clear to us the value of the simple correlation of the skill of the block wall with the significance of motor compatibility, as it reached (0.963) and a contribution rate of (0.927) with a standard error rate of (0.232), andit is clear to us that the independent variable (motor compatibility) has contributed to the performance of the skill of (block wall) in the research sample through a significant value of (F), as it reached (203.538) with a degree of freedom of (29) and a level of significance of (0.000) .

3-2 Discussion of the results of balance, motor compatibility and accuracy of the volleyball block wall skill:

Through the significance of the results between the balance and the kinetic compatibility of the performance of the block wall skill for volleyball players , the researcher attributes the reason for this to the existence of a positive moral correlation relationship to the kinetic balance on the accuracy of the performance of the block wall skill Volleyball is one of the important kinetic abilities in volleyball, as it is known (2001). P.48 .1) as "a mental work that occurs to initiate movement before the arrival of the alarm, reducing the kinetic response time, which is one of the components of kinetic ability that develops continuously as a result of new experiences and the availability of past

experiencesand experiences ." The performance of the team 's defensive block wall skill (2011 ص63. 4) It aims to prevent the attacker from the opportunity to succeed in hitting the ball from above the net to the team 's field of play and to earn one point from the implementation of the winning points of the game. It is in line with the modern playing strategy of the game in investing the energies of the players in the best way and in a way that achieves the objectives of the coach for what has been planned. Therefore, the player must have the ability to move quickly and gracefully in carrying out the skill duty during the game, which requires the front-line team players in particular, the ability to anticipate and focus continuously in the offensive preparation of the opposing team during play. Therefore, kinetic compatibility is an essential element when carrying out the duty of defending the field through the blocking wall of the volleyball player in particular, which is represented in the first line of defense in the first confrontation against the attacking player when performing the crushing strike against the blocking wall of the opposing team. Therefore, the defending team player must focus on the body of the attacker, the movement of his arms and the batting hand of the ball and the extent of his motor speed and determine the direction of the ball and the level of its height, in order to determine the appropriate rapid response so that he can predict properly as an appropriate reaction to the movement of the opposing player, (2007). p. 54 .5) The response and the correct reaction to choose the correct and appropriate timing for the player's movement accurately, leads to the establishment of superiority and defensive control among the players of the block wall in the face of the coming balls, makes the implementation of skill and linear duties and thwarting his attacking plans , as this is by surprising the players of the opposing team by moving quickly in the skill of the block wall to counter the attacks of the opposing team, which is characterized by the game of

volleyball, Singer defined it as " the time it takes to complete a complete movement and includes reaction time, action time and movement time."

 Motor balance   is one of the main factors in the game of volleyball, especially when it is intended to implement the skill of the block wall against the opponent when he performs the crushing blow. (2001 . ,87 p .3) The implementation of the skill needs to predict the movement path of the attacking player and choose a strong block wall to defend over the net in the face of the batting player when hitting the crushing ball, and the player needs the ability to predict the way he moves towards the net before and after the implementation of the ball , so the prelude stage of the movement is the first indicator of the way to perform the crushing blow by the player of the attacking line of the opposing team, so the attention and focus on the player's body, the movement of his arms, the batting hand of the ball , the speed and direction of the ball and its height, the rapid response to anticipate the movement of the opposing player can be observed through the team's application of the block wall skill , so the players of the block wall must have the correct awareness of the rapid and sudden situations and the rapid response commensurate with the playing situations, as well as the player must be characterized by speed and accuracy in the motor expectation to carry out the assigned defensive duty without hesitation or error in performance down to the mastery and linear. The player must have the ability to anticipate the movement of the colleague, his colleagues, or the players of the other team, in order to draw a plan for the appropriate motor behavior for this movement , so the block wall player must understand the correct position in order to make the right decision to confront the player when he tries to hit the ball and prevent him from hitting the ball and achieving his points in his favor . It returns to the appropriate choice to place the defense according to the correct kinetic expectation .

Finally, the researcher believes that balance and kinetic compatibility mainly affect the way the player performs when forming the players of the team a defensive blocking wall in the front area facing the attacker who carries out the crushing ball hitting to the opposite team's stadium, because the good defensive style depends on the ability of the defending player to balance and kinetic compatibility to carry out the defense duty of the strikes performed by the

attacking player when carrying out the crushing blow of the ball , in order to choose the type of defensive response to it and with the utmost speed in forming a blocking wall.

4-1 Conclusions: The researcher reached the following:

1- The results showed a significant correlation between motor balance, motor compatibility and the accuracy of the performance of the block wall skill among young volleyball players.

2The results showed that the motor abilities associated with balance and motor compatibility can be developed and used to develop the skills of the block wall among young volleyball players.

3- The results showed that both balance and motor compatibility are related to the same amount with the level of accuracy of the performance of the block wall skill among young volleyball players .

4-2 Recommendations : The researcher recommends the following :

1- Emphasizing the need to develop the abilities of balance and motor compatibility because they represent a key element in mastering the performance of the block wall skill of young volleyball players .

2- Emphasizing the need for trainers to use motor exercises to develop the abilities of balance and motor compatibility in educational units for their role in the skilled performance of young volleyball players.

3The need for the trainer to use modern educational methods in the application of exercises for the abilities of balance and motor compatibility within the educational units because they help to master the technical performance of the volleyball block wall skill.

4Conducting similar studies in tests of motor abilities and skill in the game of volleyball and working to apply the   results of the researcher .

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