

The relationship between some harmonic abilities and the level of skill performance among elite volleyball players in Palestine

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ABSTRACT

The aim of this study was to identify the relationship between some harmonic abilities and the level of skill performance of elite volleyball players in Palestine. The study used the descriptive analytical approach. The sample consisted of 12 volleyball players of the Singel Club Champions of Palestine. The Statistical Program for the Social Sciences (SPSS) was used for data analysis. The results showed that there is a positive and statistically significant correlation between overall harmonic abilities and the level of skill performance ($p < 0.05$). The results also showed that most harmonic abilities (rhythmic ability, ability to adapt to changing situations, and ability to link movement) have an impact on the skill performance of the offensive blocking of positions 2, 3 and 4 ($p < 0.05$). The authors recommend the use of harmonic abilities due to their positive impact on skill performance in volleyball. Furthermore, encouraging coaches and those in charge of the training process to use and develop harmonic abilities exercises is crucial, as they are an important, effective, and influential part in improving and developing the skill performance of volleyball players.

KEYWORDS

Harmonic Abilities; Skill Performance; Volleyball

1. INTRODUCTION

The world is witnessing development in all areas of life, and sport has its share in this development. Perhaps, championships and the individual and global records are conclusive evidence of the extent of the sports development which has reached high levels. As a result, everyone who wants to catch up with this development, has to make a high effort to become an important figure in

global sports. The athlete has become focused on all the details of training, no matter how small. Winning requires attention to all these details, no matter how subtle.

Fawzi & El-Din (2001) mentioned that sports training aims to interact with performance, no matter how complicated or complex, and improves control, harmony, and coordination in movements, which is reflected on motor, skill, and tactical performance as a proper coordination. Therefore, continuous training leads the player to mastering the skill in the least time possible with a high degree of excellence.

Sankota (2019) mentions that the physical and physiological aspects are among the most important requirements for the development of performance in modern volleyball, and are considered some of the many factors that help in earning points in matches, especially when the teams are almost identical in the skill and tactical levels. This because physical and physiological fitness is the fundamental aspect in performing volleyball skills effectively.

Monson et al. (2018) believe that sports in general and volleyball in particular require the use of physical aspects effectively to produce strength and employ it in skills, and that volleyball depends on the need to provide a high level of strength, performance endurance, and flexibility. This is done by working with weight training, muscle strength training, running in water, using a treadmill and a stationary training wheel, and sprinting for short distances.

Al-Dalami & Sabah (2013) mentioned that the game of volleyball is a group game characterized by a multitude of main motor skills, and these skills share coherence and sequence as a dominant feature. Physical abilities are one of the most important ways that employ the individual and tactical skills of volleyball players, in which that any weakness in any physical ability leads to tangible and obvious weakness in defensive and offensive skill performance in volleyball.

Al-Dhaif (2015) emphasized that harmonic abilities are characterized by their close and permanent connection with the conditions of sports achievement such as skill ability and physical ability. In addition to their connection, harmonic abilities benefit in the formation of movement from partial movements in a coordinated manner, which is a condition of the player's achievement level and its importance lies in that it reflects the improvement and development of players on these aspects.

Bishara, Omar & Ibrahim (2020) indicated that volleyball is characterized by the presence of many distinctive skills that players must possess for this game to be professional. For example, this game must have players with high skills in the skills of serving, receiving, preparing, attacking, blocking and defencing.

Since the game of volleyball is a sport that requires abilities (physical, skill, planning, mental, etc.), the team, or the player personally, aim to employ these abilities to reach the sports achievement in the game; consequently, the improvement and development of the level of harmonic abilities leads to the possession of mastery of motor skills. Abdul-Maqsoud (1995) indicates that the quantity and quality of the harmonic abilities and motor skills of volleyball players contribute in the formation of the harmonic foundations to achieve the required extent of the implementation of performance or motor requirement.

Attention to the development of harmonic abilities leads to improvement in the quality and level of motor performance, the speed with which learning takes place, and the ability to adapt to changing conditions. Therefore, the movements become effective, elegant, and smooth (Abdul-Khaleq, 2005).

The philosophy behind teaching volleyball as an introduction to “regular” volleyball, is derived from the answer to the question of “how do we make volleyball more accessible?”. The simple answer is: “by adapting the game and teaching to young people’s abilities, not the other way around”, which is a new approach to teaching volleyball from 6 years old up to 14 years old (Al-Dhaif, 2015).

In order to reach positive results in the development of the player skillfully and physically, education and training since childhood must be based on sound scientific foundations and away from randomness and improvisation. The most prominent of which is the training of harmonic abilities because of its importance in building the player for the future skillfully, physically, and kinesically, so that the player can overcome situations that require quick action and with correct performance (Al-Maghazi, 2020).

In the following, we present some studies aimed at identifying the most important harmonic abilities of the aforementioned activities, as well as the impact of developing these abilities on the level of motor performance of these skills.

A study by Mustafa (1998) showed that there are four factors extracted for the components of harmonic abilities: the speed of the complex motor response, the muscular kinetic sensation, the kinetic linkage, and the kinetic sense of distance. According to a study by Youssef (2001), a positive effect for the development of the harmonic abilities elements on the level of performance of the compound attack was identified, and it concluded that the most important harmonic abilities were: performance accuracy, muscular kinetic sensation, muscular ability, the speed of motor response, ability to balance, movement control and ability to change direction. Furthermore, Nabih (2004) conducted a study aimed at determining the effect of developing some special harmonic abilities to

raise the level of artistic performance on the balance beam in female gymnasts under 8 years old. The most important result from this study was the effectiveness of the proposed program to develop the harmonic capabilities of the experimental group in raised the level of technical abilities (static and kinetic balance ability and motor linking ability) on the balance beam for girls under 8 years old. A study by Zaidah (2007) aimed to determine the effect of a program of specific exercises to develop harmonic abilities on some aspects of attention and the level of technical performance of judo young athletes, with a sample consisting of 173 judo young athletes, found the most important harmonic abilities in the field of judo, which are: motor linking ability, the ability of adapting to changing situations, the ability of balancing movement, the ability of quick motor response and flexibility, the ability of distinguishing the muscle sense of distance. There are more studies which confirm that the level of skill performance of the players (both skillful and tactical) depends on the level of development of harmonic abilities Zak & Duda (2003) and that the use of exercises proposed in a specific program for harmonic abilities improves the level of performance of the motor skills (Mahmoud, 2004).

Whoever observes the state of world volleyball will notice the tremendous development that the game has taken, both technically and physically, and this has been evident at the World Championships and the Olympics, both at the level of offensive and defensive skills alike. Volleyball skills are characterized by being interconnected and progressive, one after the other, which makes raising the skill level of great importance in training and in all ways and methods.

The researcher noticed, within the limits of the researcher's knowledge, that there is a shortage in studies that examine the effect of harmonic abilities on the accuracy of skill performance of volleyball players. Through the researcher's work as a volleyball coach and an international player, he has participated in many local and international tournaments in various governorates and age groups in Singel Club. In addition, through the researcher's close and direct contact with volleyball coaches and players in Palestine, he also noticed that there is a weakness in the understanding and application of harmonic abilities training and its impact on the skill performance of players. This led the researcher to cryscome up with the question from which the study problem emerged: What is the relationship between some harmonic abilities and the level of skill performance of elite volleyball players in Palestine?

This research provides a model for some qualitative tests and some harmonic abilities that are applied in training programs that will be a reference for coaches when knowing the importance of harmonic abilities on some volleyball skills. The objectives of this study were: 1. To identify the relationship between the harmonic abilities and the level of skill performance of volleyball players. 2.

To identify the differences in the effect of some harmonic abilities on the level of skill performance of volleyball players. 3. To find which harmonic abilities are more contributing to the level of performance of some skills of volleyball players.

Based on the objectives of the study, we will answer the following questions:

- Is there a relationship between the harmonic abilities and the level of skill performance of volleyball players?
- What are the differences in the effect of some harmonic abilities on the level of skill performance of volleyball players?
- Which harmonic abilities are more contributing to the level of performance of some skills of volleyball players?

2. METHODS

2.1. Study Design and Participants

The descriptive analytical method was used due to its relevance to the nature and goals of the study. The study community consisted of all volleyball players in Palestine, during the year 2021/2022 while the study sample was chosen in a simple random way and consisted of 12 volleyball players from Singel Palestine Champions Club in 2022.

2.2. Study tests

The tests were used to reveal the relationship between harmonic abilities and the level of skill performance of elite volleyball players in Palestine. The researcher referenced previous studies (Ziadeh, 2007) and theoretical literature related to the harmonic abilities and skill performance of volleyball players. The harmonic abilities that were measured are described in Table 1.

Table 1. The studied harmonic abilities and the purpose of each ability

No.	Ability type	Purpose
1	The ability to exert effort	Measuring the ability to exert effort to serve
2	The ability to exert effort	Measuring the ability to exert effort by the muscles of the legs in the offensive blocking wall
3	Rhythmic ability	Measuring the hitter's rhythmic ability during attempts to hit on the court
4	Adapting to changing situations	The hitter's adaptation to the different hitting situations on the field
5	The motor	Measuring the motor linking ability to parts of the

linking ability skill in the jump serve

Here, we present the tests designed for the studied harmonic abilities:

2.2.1. The ability to exert effort (muscular effort) to serve

- Test name: measuring the muscular effort of the arm leading to the jump serve.
- Purpose of the test: measuring the ability to exert effort for the serve.
- Age level: 16 years and over.
- Tools: a volley ball, a ruler and a tape measure, a chalk, a whistle, a volleyball court, a net.
Procedures: the player stands ready to serve behind the finish line. He holds the ball with both hands or with the non-serving arm. He must be facing the net with his gaze distributed between the ball and the court. The playing court in which the ball falls is divided into graduated spaces (6 spaces) and each distance is 1.5 m wide.
- Performance description: when the signal is given by the referee, the player performs the serve once with the maximum force in the other court (100%), taking into account that the serve does not exceed the end of the field and adhere to the legal limits of the court (9 m). Then the player is required to make an appropriate muscular effort to obtain 25%, 50%, 75% of the maximum force that he made on the first attempt, in which he exerted 100%. He is given three attempts to perform each of the three intensity ratios.
- Calculation of results or scores: the referee calculates the arithmetic mean of the achieved distance in centimeters (positive or negative deviation) for the three attempts in each percentage (25%, 50%, 75%). 25% represents 10.5 m, 50% represents 12 m, 75% represents 16.5 m.

2.2.2. Effort test (for the offensive blocking wall)

- Test name: the offensive blocking wall muscular effort test.
- Age level: 16 years and over.
- Tools: an inscribed wall, a ruler and a tape measure, a chalk and a whistle.
- Procedures: the player stands in the standby position of the blocking wall, facing the wall and clearing an area of 1 cm approximately. He must not move until after hearing the signal from the arbitrator or coach.
- Performance description: when the signal is given by the referee, the player performs the skill of the blocking wall with the maximum force possible for him, and he touches the wall with both hands to determine the location of the maximum that he reached on the inscribed wall

(100%). Then the referee requests an appropriate muscular effort to obtain 25%, 50%, 75% of the maximum of what the player has done in the first attempt, in which he exerted 100%. He is given three attempts to perform each of the three intensity ratios.

- Calculation of results or scores: the referee calculates the arithmetic mean of the three attempts for the height of the achieved distance in centimeters (positive or negative deviation) in each ratio. Only correct attempts are counted provided that he only touches the wall with his arms only, and any touching of any other part is considered a failure.

2.2.3. Rhythmic ability test

- Test name: rhythmic ability of offensive hitting.
- Purpose of the test: to measure the hitter's rhythmic ability during offensive hitting attempts.
- Age level: from 16 years old to the age of higher levels.
- Tools: a volleyball court, a legal net, a number of volley balls, a stopwatch, a whistle and an adhesive tape.
- Procedures: the tested player stands ready to strike from position (3) and behind the offensive line. The hitter holds the ball and waits for the signal to throw it to the prepared player on the net. The hitter must not move until the ball is out of the player's hand.
- Performance description: after hearing the signal from the referee, the hitter throws the ball prepared for him under the net. The hitter is in the position (3) and hits the ball prepared for him at a height of 50:75 cm. The hitter then goes back and then moves to the right to hit from position (2) and hits the ball prepared for him at a height of not less than 1.5-2 m. After that, the hitter goes back a distance of 3-4 m and moves to the left side to reach the middle of the back court to hit from position (6) and hits the ball from this position with a height of the ball prepared for him from 2-3 m. Then the player moves to the left of the court towards position (4) to hit the prepared ball with a height of 1.5-2 m and then stands in place after the end of the attempt.
- Calculation of results or scores: the total time for the test is calculated. The player has three attempts to test. The shortest time of the three attempts is chosen. In the event of an error or failure, the attempt is made again, and the hitting from all positions must be correct.

2.2.4. The ability to adapt to changing situations

- Test name: adaptation to the changing situations of offensive strike.
- Purpose of the test: the hitter's adaptation to the different hitting situations on the field

- Tools: a volleyball court, a net, volley balls, a stopwatch, a whistle and an adhesive tape.
- Procedures: the hitter stands behind the attacking line in position (4). The other player catches the ball in preparation for throwing it (passing) to the hitter. He must not move until after the signal is heard and the ball is out of the hand of the player who is prepared to move. Offensive hitting must only happen in the designated places for hitting within the other court. All hits are made by the hitter in position (4) after being prepared from position (3).
- Performance description: after hearing the signal, the hitting player in position (4) hits the ball sent to him by the other player, then he hits it in a linear manner in position (1) on the opposite court. Then he goes back to the attacking line to strike again from the same position but directs the ball deep into position (6) on the other court. The hitter returns a third time to the attacking line and hits the ball again in a long diagonal path in position (5) on the other court. Finally, the hitter returns a fourth time to the offensive line and receives the ball by the other player on the net to drop it instead of hitting it behind the blocking wall in position (2), which faces the hitter on the opposing court. The player stands in place after completing all four strikes.
- Calculation of results or scores: the hitter is given two attempts, and the one with the best time is considered. The attempt must be completely correct. If the attempt fails or the ball is hit in a different position, it should be attempted again. The total time of the attempt is calculated. The shortest time from the three attempts is the best. Five seconds must be added to the total time for each foul the player commits during his hitting attempts.

2.2.5. The motor linking ability

- Test name: motor linking test for the jump serve.
- The purpose of the test: measuring the motor linking ability between time and space.
- Tools: a volleyball court, a net, volley balls, a stopwatch, a whistle, an adhesive tape.
- Procedures: the tester stands behind the serve line (end of the court), holding the ball with one or both hands, depending on the player's convenience, and is ready to serve once the signal is given by the coach. The player must be behind the corner line with a special space so as not to make a legal error.
- Performance description: once the coach's signal is given, the tested player throws the ball up and forward, then performs the skill of the front jump serve. The referee calculates the performance time from the moment of the start to the end of the skill, that is, the skill is

calculated entirely from the start of the signal and is approximately between 4-5 seconds.

- Calculation of results: the total time of the tested skill is measured. It is calculated as points by calculating each stage separately as follows:

Calculate the relationship between the time period of the skill when it is completed and when it is intermittent. The time of the skill as a whole should be equal to the skill when it is intermittent. Total Skill Time = Intermittent Skill Time. Linking time should not be more than 8 seconds (as a rule). Linking Place = Service Area (Pitch End Line).

2.3. The practical transactions of the tests

2.3.1. Authenticity of tests

The researcher proved the content authenticity by presenting the study scale used to a number of experts and specialists in physical performance and harmonic skills of volleyball players. This was done to ensure that the assessment tool measures what it was designed for.

2.3.2. Consistency of the test

The consistency of the study tool was verified by applying the measure of the relationship between some harmonic abilities and the measure of the skill performance level of elite volleyball players in Palestine and re-applying it to a sample of 10 volleyball players from outside the original study sample. The Kuder-Richardson test was applied to check the consistency of the application, and the results of the application of the Kuder-Richardson test were (0.79), (0.81), (0.77), which are acceptable for the application.

2.4. Devices used

The devices used in this study were a stadiometer for measuring height and weight, a stopwatch and a medical scale.

2.5. Statistical Analysis

The Statistical Program for the Social Sciences (SPSS) was used and the necessary statistical treatments were performed after data collection. The arithmetic means and standard deviations of the measurements were used for the results. The one-way analysis of variance test was used to compare the arithmetic means. Pearson's test was used to reveal the correlation between the harmonic abilities and skill performance of the study sample.

3. RESULTS

We begin the presentation of the results by showing whether there is a relationship between the harmonic abilities and the skill level of volleyball players (Table 2).

Table 2. The relationship between harmonic abilities and skill performance level

		The ability to exert effort	The ability to exert effort to the defensive wall	Rhythmic ability	The ability to adapt to situations	The motor linking ability
The stable serve	Pearson Correlation	229.	150.	- 324.	- 324.	- 324.
	Sig. (2-tailed)	473.	641.	305.	305.	305.
The jump serve	Pearson Correlation	- 119.	- 054.	107.	107.	107.
	Sig. (2-tailed)	713.	868.	740.	740.	740.
Offensive hitting test	Pearson Correlation	- 148.	280.	259.	259.	259.
	Sig. (2-tailed)	647.	378.	415.	415.	415.
Offensive blocking wall from positions 2, 3, 4	Pearson Correlation	- 063.	176.	- 117.	- 117.	- 117.
	Sig. (2-tailed)	846.	584.	718.	718.	718.

It is noticed from Table 2 that there is a positive, statistically significant correlation between the harmonic abilities and the level of skill performance ($p < 0.05$).

Table 3 shows whether there are differences in the effect of some harmonic abilities on the level of skill performance of volleyball players.

Table 3. The differences in the effect of some harmonic abilities on the stable serve

		Sum Squares	of df	Mean Square	F value	p value
The ability to exert effort to serve	Between groups	13.827	4	3.457	673.	632.
	Within groups	35.960	7	5.137		
	Total	49.787	11			
The ability to exert effort to the offensive blocking wall	Between groups	18.602	4	4.650	1.103	425.
	Within groups	29.500	7	4.214		
	Total	48.102	11			
Rhythmic ability	Between groups	630.	4	157.	283.	880.
	Within groups	3.889	7	556.		
	Total	4.519	11			
The ability to adapt to changing situations	Between groups	630.	4	157.	283.	880.
	Within groups	3.889	7	556.		
	Total	4.519	11			
The motor linking ability	Between groups	630.	4	157.	283.	880.
	Within groups	3.889	7	556.		

Total	4.519	11
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As we can see from Table 3, there are no statistically significant differences in the effect of the harmonic abilities on the stable serve ($p > 0.05$).

The following table (Table 4) shows whether there are differences in the effect of some harmonic abilities on the jump serve.

Table 4. The differences in the effect of some harmonic abilities on the jump serve

		Sum of Squares	df	Mean Square	F	p
The ability to exert effort to serve	Between groups	13.405	7	1.915	211.	964.
	Within groups	36.381	4	9.095		
	Total	49.787	11			
The ability to exert effort to the offensive blocking wall	Between groups	27.731	7	3.962	778.	639.
	Within groups	20.370	4	5.093		
	Total	48.102	11			
Rhythmic ability	Between groups	2.889	7	413.	1.013	527.
	Within groups	1.630	4	407.		
	Total	4.519	11			
The ability to adapt to changing situations	Between groups	2.889	7	413.	1.013	527.
	Within groups	1.630	4	407.		
	Total	4.519	11			
The motor linking ability	Between groups	2.889	7	413.	1.013	527.
	Within groups	1.630	4	407.		
	Total	4.519	11			

There are no statistically significant differences in the effect of the harmonic abilities on the jump serve ($p > 0.05$). As for the differences in the effect of harmonic abilities on the offensive hitting test from position 4, Table 5 shows that there are no statistically significant differences.

Table 5. The differences in the effect of some harmonic abilities on the offensive hitting test from position 4

		Sum of Squares	df	Mean Square	F	p
The ability to exert effort to serve	Between groups	9.380	5	1.876	279.	909.
	Within groups	40.407	6	6.734		
	Total	49.787	11			
The ability to exert effort to the offensive blocking wall	Between groups	10.130	5	2.026	320.	884.
	Within groups	37.972	6	6.329		
	Total	48.102	11			
Rhythmic ability	Between groups	3.602	5	720.	4.715	043.
	Within groups	917.	6	153.		
	Total	4.519	11			
The ability to adapt to changing situations	Between groups	3.602	5	720.	4.715	043.
	Within groups	917.	6	153.		
	Total	4.519	11			

	Between groups	3.602	5	720.	4.715	043.
The motor linking ability	Within groups	917.	6	153.		
	Total	4.519	11			

Regarding the differences in the effect of some harmonic abilities on the offensive blocking wall from positions 2, 3, and 4, Table 6 shows that we have no statistically significant differences.

Table 6. The differences in the effect of some harmonic abilities on the offensive blocking wall from positions 2, 3, and 4

		Sum of Squares	df	Mean Square	F	p
The ability to exert effort to serve	Between groups	36.667	7	5.238	1.597	341.
	Within groups	13.120	4	3.280		
	Total	49.787	11			
The ability to exert effort to the offensive blocking wall	Between groups	26.435	7	3.776	697.	683.
	Within groups	21.667	4	5.417		
	Total	48.102	11			
Rhythmic ability	Between groups	1.500	7	214.	284.	930.
	Within groups	3.019	4	755.		
	Total	4.519	11			
The ability to adapt to changing situations	Between groups	1.500	7	214.	284.	930.
	Within groups	3.019	4	755.		
	Total	4.519	11			
The motor linking ability	Between groups	1.500	7	214.	284.	930.
	Within groups	3.019	4	755.		
	Total	4.519	11			

The following table (Table 7) explains whether there are differences in the effect of some harmonic abilities on the offensive blocking wall from positions 2, 3, and 4. It is noted from Table 7 that most harmonic abilities (rhythmic ability, ability to adapt to changing situations, and ability to link movement) have an impact on the skill performance of the offensive blocking of positions 2, 3 and 4.

Table 7. The differences in the effect of some harmonic abilities on the offensive blocking wall from positions 2, 3 and 4.

		Serve from position 1 (5)	Serve from position 1 (6)	Serve from position 1 (1)	Stable serve from position 6 (5)	Stable serve from position 6 (6)	Stable serve from position 6 (1)	Stable serve from position 5 (5)	Stable serve from position 5 (6)	Stable serve from position 5 (1)	Jump serve from position 1 (5)	Jump serve from position 1 (6)	Jump serve from position 1 (1)	Jump serve from position 5 (5)	Jump serve from position 5 (6)	Jump serve from position 5 (1)
Exerted effort to serve (25%)	R	203.	042.	321.	321.	042.	203.	321.	203.	042.	- 197.	213.	227.	595.*	- 119.	227.
	Sig	527.	898.	309.	309.	898.	527.	309.	527.	898.	540.	506.	479.	041.	713.	479.
Exerted effort to serve (50%)	R	066.	- 238.	105.	105.	- 238.	066.	105.	066.	- 238.	369.	- 018.	051.	- 366.	- 123.	051.
	Sig	838.	457.	746.	746.	457.	838.	746.	838.	457.	238.	957.	876.	242.	703.	876.
Exerted effort to serve (75%)	R	356.	- 318.	- 203.	- 203.	- 318.	356.	- 203.	356.	- 318.	314.	- 198.	- 121.	- 075.	- 144.	- 121.
	Sig	256.	313.	526.	526.	313.	256.	526.	256.	313.	320.	538.	708.	817.	656.	708.
Offensive blocking wall (25%)	R	- 265.	322.	126.	126.	322.	- 265.	126.	- 265.	322.	422.	- 029.	- 097.	093.	- 081.	- 097.
	Sig	404.	307.	697.	697.	307.	404.	697.	404.	307.	172.	929.	764.	773.	803.	764.
Offensive blocking wall (50%)	R	- 396.	456.	- 104.	- 104.	456.	- 396.	- 104.	- 396.	456.	- 140.	227.	- 320.	474.	- 297.	- 320.
	Sig	203.	137.	747.	747.	137.	203.	747.	203.	137.	664.	477.	311.	120.	348.	311.
Offensive blocking wall (75%)	R	- 484.	394.	290.	290.	394.	- 484.	290.	- 484.	394.	162.	108.	104.	169.	- 216.	104.
	Sig	111.	205.	360.	360.	205.	111.	360.	111.	205.	614.	738.	747.	599.	500.	747.
Rhythmic ability	R	- 220.	- 103.	566.	566.	- 103.	- 220.	566.	- 220.	- 103.	283.	028.	259.	281.	- 142.	259.
	Sig	491.	749.	055.	055.	749.	491.	055.	491.	749.	372.	930.	416.	377.	660.	416.
Adapting to changing situations	R	142.	313.	- 090.	- 090.	313.	142.	- 090.	142.	313.	- 526.	375.	361.	- 078.	451.	361.
	Sig	661.	322.	782.	782.	322.	661.	782.	661.	322.	079.	229.	248.	809.	142.	248.
The motor linking ability	R	410.	643.*	086.	086.	643.*	410.	086.	410.	643.*	- 145.	508.	- 175.	- 076.	290.	- 175.
	Sig	185.	024.	789.	789.	024.	185.	789.	185.	024.	653.	092.	587.	815.	360.	587.

4. DISCUSSION

Related to the first study question (is there a relationship between the harmonic abilities and the skill level of volleyball players?), the results showed that there is a positive, statistically significant correlation between overall harmonic abilities and the level of skill performance ($p < 0.05$).

This may be due to the fact that volleyball is one of the games that is characterized by a unique motor performance compared to other games, so it requires special harmonic abilities for the players, due to the speed of the players' performance in a relatively small court, in addition to placing the players under psychological pressure due to the speed of performance and changing the tasks of the players from attack to defense. Furthermore, it is one of the games that require each member of the team to perform general and other special motor and planning duties that are determined through the positions occupied by the players on the field (the free defender, the preparer, the receiver, the hitter, the blocker). The player often specializes in one of these positions from the start until reaching an elite level, and each of which requires a dynamic and tactical performance distinct from the others.

Muhajir & Muhammad (2010) confirmed that the harmonic abilities and skill performance play a major role in modern volleyball and achieve positive results for the team. Moreover, they directly affect the mastery and success of the way the team plays, which confuses the opponent and makes him unable to control the course of the game. Skill performance in volleyball aims to teach the basic skills that the player uses during matches and competitions, which aids him to master and implement these skills to achieve the highest levels.

This result was in agreement with the result of Mustafa (1998) study, which showed about four factors extracted from the components of harmonic abilities: the speed of the complex motor response, the muscular kinetic sensation, the kinetic linkage, and the kinetic sense of distance. It is also in agreement with the result of a study by Nabih (2004), which showed the effectiveness of the proposed program for developing the harmonic abilities of the experimental group in raising the level of technical performance (static and kinetic balance ability and motor linking ability) on the balance beam for girls under 8 years old.

As for the second study question (are there differences in the effect of some harmonic abilities on the level of skill performance of volleyball players?), the results showed that there is a positive, statistically significant correlation between the overall harmonic abilities and the overall level of skill performance ($p < 0.05$). The results related to this question showed that there were no differences for the effect of harmonic abilities on the stable serve ($p > 0.05$). It also showed no statistically significant differences in the effect of harmonic abilities on the jump serve, offensive hitting test of position 4 and on the offensive blocking wall of positions 2, 3 and 4 ($p > 0.05$).

This may be due to the fact that the players practiced this skill through the player serving in the correct way so that the knees are slightly bent and the player catches the ball with the left hand; however, it must be noted that the player catches the ball in front of the middle of the body, which led to the absence of differences in the harmonic abilities in particular or individually, as all these abilities work together to achieve the skill required of the player.

This may be attributed to the fact that the harmonic abilities are important factors in the development of the skill level of performance through their active contribution in increasing the player's comprehension of the skill, and controlling the motor level when performing it, especially that all of them require a high level of skill in order to ensure the achievement of optimal performance for them.

Any motor performance and motor behavior is linked to the explanation and clarification associated with the practical model, and the final result is learning the skill in a healthy manner. The linkage between the virtue of the previous factors, the use of systems and mental processes, and the personal appreciation of the varied motions by the player, which is considered one of the important pillars; in addition, the mental readiness of the learner or the player, that is, the task in training, represents his ability to learn the skill when he is provided with appropriate learning methods. The fact that readiness represents the elements of skill performance associated with imposing complex demands on kinetic processes, and thus achieving healthy performance, as kinetic guidance, which includes the technical method, is an important degree of performance development and progress, and is the basis and reference for all mental processes during other stages of kinetic control.

This result differed with the result of the study of Youssef (2001), which showed a positive effect for the development of the elements of harmonic abilities on the level of performance of the compound attack. It also concluded that the most important harmonic abilities were: performance accuracy, muscular kinetic sensation, muscular ability, speed of motor response, ability to balance, movement control, ability to change direction.

Regarding the final study question (which harmonic abilities contribute the most to the level of performance of some skills of volleyball players?), the results related to this question showed that the most harmonic abilities (rhythmic ability, ability to adapt to changing situations, and ability to link movement) have an impact on skill performance (on the offensive blocking wall of positions (2, 3, 4).

This may be due to the fact that volleyball is characterized by continuing to exert effort during training or during competition and reaching the highest technical and skill level. The task of the successful coach is to build a team whose members have the highest percentage of physical

fitness and its elements (harmonic abilities). As the most important problem that the coach encounters while preparing for training is poor physical fitness in volleyball competitions and tournaments. This causes the players to be unable to implement the training plan, which works on the player's possession of basic motor skills, and then win the competition, as the failure to reach development and mastery of these skills acts as a barrier to the development of motor skills that are used in games, since it is difficult for the player to develop successful motor performance in the sport.

This study agreed with the results of a study by Mahmoud (2004), which showed the effect of the proposed program on the development of harmonic abilities (the ability to balance - the ability to change direction - motor linking ability - the ability to respond quickly), and that the use of the exercises proposed by the program for the studied harmonic abilities has improved the level of performance of the studied motor skills.

It also agreed with the result of a study by Farid (2007), which showed the most important harmonic abilities in the field of judo, which are appropriate for the nature of the age group (10-12), namely; motor linking ability, the ability of adapting to changing situations, the ability of balancing movement, the ability of quick motor response and flexibility, the ability of distinguishing the muscle sense of distance).

5. CONCLUSIONS

There is a positive relationship between overall harmonic abilities and the level of skill performance. Most harmonic abilities (rhythmic ability, ability to adapt to changing situations, and ability to link movement) have an impact on the skill performance of the offensive blocking of positions 2, 3 and 4. In light of the results of the present study, we recommend:

- Using the harmonic abilities as they have a positive impact on skill performance in volleyball.
- Encouraging coaches and those in charge of the training process to use and develop harmonic abilities exercises, because they are an important, effective, and influential part in improving and developing the skillful performance of volleyball players.
- Conducting similar studies on different samples from different universities, different age groups, and with different training ages.

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CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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