

The Effect of Water Training for Lepro Players on Some Physical and Skill Abilities in Volleyball

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Abstract: This study aimed to identify the effect of water training for lepro players on some physical and skill abilities in volleyball. There were three weekly training sessions in which the researcher used the water medium to apply physical and skill training to improve the performance of the volleyball player, which included rapid movement to the sides, front, and back, and the exercises were individual and free with the ball. The searcher uses the application on the same group with previous and subsequent measurements to reach the target search. The researcher used several physical and skill tests to obtain the research results, which were statistically analyzed using mean, standard deviation, correlation coefficient, and the calculation of the effect size for Cohen and multiple linear regression to reach valuable results: the existence of a statistically significant difference between the pre- and post-measurements at the $\alpha \geq 0.05$ level for the efficient training the Lepro player in the water on some physical abilities (transitional speed, agility, the legs muscle capacity, stadium defense skill) among the lepro players for the benefit of the subsequent measurement in which training in the water was applied also the existence of a statistical effect at the level of significance $\alpha \geq 0.05$ between the level of physical abilities and the stadium defense skill. The researcher recommended that the training should be applied to all volleyball players because it is effective in developing physical abilities and applying water training to lepro players but with other physical abilities other than those targeted in this study.

Keywords: lepro, water training, physical abilities, volleyball.

麻風運動員水上訓練對排球運動部分體能和技術能力的影響

摘要：本研究旨在確定麻風運動員的水上訓練對排球某些身體和技能能力的影響。每週訓練三期，研究者利用水介質進行身體和技能訓練，以提高排球運動員的表現，包括快速移動到兩側、前部和後部，練習是個人的和自由的球。搜索者使用與先前和後續測量相同的組上的應用程序來達到目標搜索。研究人員使用多項身體和技能測試獲得研究結果，使用均值、標準差、相關係數、科恩效應量計算和多元線性回歸進行統計分析，得出有價值的結果：統計上存在在 $\alpha \geq 0.05$ 的水平上，麻風球員在水中的某些身體能力（過渡速度、敏捷性、腿部肌肉能力、體育場防禦技能）的有效訓練之間的前後測量之間存在顯著差異。應用水中訓練的後續測量的好處還存在顯著性水平 $\alpha \geq 0.05$ 的體能水平和體育場防禦技能之間的統計效果。研究人員建議該訓練適用於所有排球運動員，因為它可以有效地發展身體能力並將水上訓練應用於麻風 o 運動員，但具有本研究目標之外的其他身體能力。

关键词：麻風病、水上訓練、體能、排球。

1. Introduction

The world is currently witnessing progress in all

fields and at all levels. As for the sports field, it has received abundant attention by the concerned organizations, as sport is considered a basic

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recreational activity in the world, and an applied science that is not insignificant, so there must be professional trainers specialized for each sports activity, in addition to the use of modern techniques and methods in training young people to reach the highest levels of efficiency and proficiency. Volleyball is a sport activity that needs skilled coaches to raise the level of the player.

Volleyball is classified as an activity through which learning is carried out according to the principles of kinetic learning, as its skills vary between easy, difficult, simple and complex. Volleyball skills depend on each other, in addition to the educational method that affects the success of the training process. The positive method contributes effectively to the advancement of the performance rapid level.

Recently, the game of volleyball has witnessed many changes and developments in its rules, one of which is the free player system, which provided great support in enhancing defensive skills because of the increase in offensive skills, which created a balance between defensive and offensive skills, as this achieved integration in terms of developing the level of skills in the ball game [17, 21, 22].

Physical abilities are the constant basis for mastering motor skills, as they are one of the basic requirements for good performance in volleyball, as volleyball is a game that requires distinctive and unique physical abilities for players in general and for the free player (lepto) in particular, there is a direct relationship between physical abilities and movement control. Emotions during critical situations gracefully, smoothly and lightly, therefore, the optimal scientific method and modern and modern training methods must be followed to achieve this high level of physical ability and speed in performance in all circumstances and situations.

If the physical, kinetic, technical, psychological and tactical abilities of the player combine to make him reach a high level of performance efficiency of the basic skills as well as the sub-skills in offensive and defensive volleyball, the basic rule on which this interaction depends is the physical abilities, as the motor side depends on the physical competence, the technical side depends on the physical and motor competences, and the tactical side depends on the physical and motor competence.

Given the many benefits of water in several areas, the water medium can be used during training to train speed and muscular strength. One of the advantages of water exercises is the high intensity, we may resort to training inside the water to reduce the time needed by the trainer to teach skilled and correct performance by increasing abilities Performance-related kinetics, such as speed, explosive power, and performance power [12].

The authors of [1] indicate that a characteristic of training in an aquatic environment is that the water works carries the weight of the player's body, so the

pressure on him decreases. On this resistance, and thus increase the strength.

Based on the foregoing and in view of the importance of physical abilities and their impact on the level of skill performance for various sports in general and for volleyball in particular, the researcher decided to conduct this study to identify the effect of training the free players in a new medium, which is the water medium, on some physical and skill abilities in volleyball.

1.1. The Study Problem

Through the researcher's experience in the field of training, he noticed a decrease in the physical abilities of volleyball players; Therefore, the researcher decided to study this problem as a problem that players suffer from by resorting to the application of special exercises using a new medium, which is (aquatic medium), which differs from the usual (ground) medium; This is to develop the physical abilities of the free player, and thus this research can solve some problems that may help develop the level of the volleyball game.

Therefore, the researcher developed the study problem with the following main question:

What is the effect of freestyle training in the water on some physical and skill abilities in volleyball? From the main question, the following sub-questions emerge:

1. What is the effect of training a freestyle player in the water on the transitional velocity?
2. What is the effect of freestyle training in the water on agility?
3. What is the effect of freestyle training in the water on the strength of the leg muscle capacity?
4. What is the effect of training a freestyle player in the water on the skill of defending the field?
5. Is there a statistically significant relationship between the level of physical abilities and the skill of defending the field?

1.2. Objectives of This Study

The researcher conducted a six-week experimental study with three weekly exercises in which the water medium was used in the application of physical and skill exercises directed to improve the performance of the free player in volleyball, which included the rapid movement of the sides, forward and backward, and the exercises were individual and pair free and using the ball, and the researcher used the application On the same group in both tribal and remote measurements, to reach the goal of the research, which is to identify the effect of free player training in the water on some physical and skill abilities in volleyball, such as: transitional speed, agility, strength of the the legs muscle capacity, and the skill of defending the field.

1.3. This Study Importance

The importance of this study is reflected in the following points:

1. Feeling the importance of the topic, as the sport of volleyball requires high physical and skill skills from the players.

2. A lack of studies – within the limits of the researcher's knowledge on this subject.

3. Identifying the effect of training the freestyle player in the water on some of his physical and skill abilities in volleyball paves the way for a training program to raise the level of the players' physical and skill abilities.

4. The current study will benefit the specialized trainers who work in the field of developing the performance of volleyball players by building training programs to develop their physical abilities.

5. Researchers in the field of sports, especially volleyball, benefit from the current study, using the tools that will be designed for the purposes of the current study.

1.4. Study Hypotheses

This study seeks to verify the validity of the following hypotheses:

1. A significant correlation exists between the level of physical abilities and the skill of defending the field of the free player.

2. Statistically significant differences exist between the two measurements before and after at the level of $\alpha \geq 0.05$ for the effect of training the free player inside the water on the transitional speed of the young lepro players (the experimental group) and in favor of the post measurement.

3. Statistically significant differences exist between the two measurements before and after at the level of $\alpha \geq 0.05$ for the effect of training the freestyle player inside the water on the agility of the junior lepro players (the experimental group) in favor of the post measurement.

4. Statistically significant differences exist between the two measurements, tribal and remote, at the level of $\alpha \geq 0.05$ for the effect of training the free player inside the water on the skill of defending the playing field among the junior lepro players (the experimental group) and in favor of the post measurement.

1.5. Limitations of This Study

- *Objective limit:* The effect of freestyle training in the water on some physical and skill abilities in volleyball.

- *The human limit:* The young lepro players in North Gaza clubs (born in 2005) and they are 17 years old, and their number is (8) players.

- *Spatial limit:* Namaa Sports Club swimming pool located in Gaza City – Al-Nasr.

- *Time limit:* From the beginning of June 2022 until the mid of August 2022.

1.6. Terminology

1.6.1. Volleyball

It is a set of offensive and defensive movements sequential to each other, which are based on legal principles that the player applies from different positions to prevent the ball from falling on the ground, and is played between two teams on a court divided by a net, and the goal of the game It is sending the ball over the net to drop it on the opponent's court and to prevent the same attempt by the opponent. The team has three hits to return the ball in addition to the blocking touch.

1.6.2. Free Player

[24] defined the free player (lepro) as a special defensive player, characterized by special defensive skills such as receiving serve, defending the field and covering the attack to create a balance between the level of offensive and defensive skills, and he must possess a physical fitness specific to the defensive movements that provide great support. In enhancing defensive skills.

1.6.3. Physical and Skill Abilities

[8] defines it as the ability or efficiency to accomplish a specific work that requires mental effort in line with the physical characteristics that include the explosive power of the upper and lower extremities, flexibility, reaction speed, agility and muscular endurance. [27] also defines it as the ability to work that is the set of functional capabilities required to perform special work that requires exerting muscular effort with attention to the individual doing the work and the work performed in quantity and quality. The researcher defines it as all that an individual possesses of innate and acquired capabilities and components that make him able to engage in sports activity easily and conveniently.

1.7. Aquatic Training and Physical Abilities

Training is an essential activity for developing the competencies and skills of human cadres, increasing productivity and keeping pace with technological development. It also plays a prominent and critical role in preparing the athlete and advancing his level. Good training is based on the development of the elements of physical fitness and kinetic capabilities of the target sports activity. If the training occurs in an unusual medium, which is the water medium, it is of great importance to have a professional coach who can train the players, control critical situations during training and finally assess the extent to which the player benefits from these exercises.

Where the special development of physical qualities or abilities is necessary for the type of sports activity in which the individual specializes and works to develop it continuously [9, 10], and in the late twentieth

century, developed countries developed special programs for sports activities that will be studied in schools, universities and sports federations, provided that are based on codified and agreed upon scientific foundations; this is to reach advanced levels, and among these activities is the game of volleyball. [11] indicates that training earns the individual self-confidence and gives him new experiences that qualify him to rise and assume greater responsibilities, and perhaps leadership responsibilities.

[15] defines modern sports training as educational and developmental educational processes that aim to nurture and prepare players/players and sports teams through practical field planning and leadership, with the aim of achieving the highest possible level and results in specialized sports and maintaining them for the longest possible period.

1.8. Importance of Sports Training

Training is one of the most important sources of preparing human staff, developing their competencies, developing job performance, and increasing production and productivity – develop and develop their latent abilities, which improves performance [14].

[34] explains that training makes managers and workers familiar with and knowledge of topics such as work teams, how take note of quality, decision-making, communication skills, and change the behavior and skills of individuals through specialized trainers in training centers.

The researcher believes that sports training is a continuous process that must be based on organized planning based on modern scientific foundations and depends on the personality of the coach and his leadership role and in the personal characteristics of the trainee in terms of age, gender, level, and technical abilities; Therefore, the coach must identify the physical and psychological aspects of the trainee before and during the training process to develop his physical and technical abilities. In short, sports training has the affects on the physical abilities of the players.

1.9. Basic Skills in Volleyball

The nature of performance in volleyball requires accuracy and speed, and this requires the player's readiness and readiness for critical situations; Therefore, he must have technical and physical abilities appropriate to the situation, and [43] indicates that the basic skills in volleyball are classified into offensive skills and include passing, serving, setting, crushing, offensive blocking, and defensive skills, including receiving serve, wall defensive blocking, field defense.

It is worth mentioning that the researcher focused in this study on studying the effect of training the freestyle players inside the water on the skill of defending the field of the young lepro players.

1.10. Defending the Stadium

[7] indicated that defending the stadium means saving the hit or rebounding ball from the opposing team against the blocking wall and passing it or handling it with the arms or one arm from the bottom or top, and this skill requires the use of the great strength of the legs, kinetic speed, and the body's ability to respond for sudden movements, and the speed of using the movements of the two men to take the appropriate positions in the field, it is considered one of the most difficult skills in volleyball

The International Volleyball Federation has recently made amendments, including the allocation of a free defender player (lepro), and in the last amendment that occurred to the game, it was allowed to have two lepro players, one of whom is basic and the other as a reserve, where the performance of the free defender is limited to the back line and is not allowed Executing any offensive strike, and his duties are purely defensive, which is receiving him to serve, defending the stadium, and he wears a different uniform from his colleagues. Therefore, the free player must possess high physical, skill and kinetic abilities that qualify him to play his role in the game such as strength, agility, speed of reaction and focus for a long time [30].

1.11. Physical Abilities

Physical abilities are the mainstay of mastering motor skills and practicing any sports activity that an individual does, and it is one of the basic requirements for good performance in sports, especially volleyball, so a good coach must guide the player to develop his physical abilities to reach the highest level of achievement because the player's arrival To a high level of performance depends on the extent to which he possesses the physical and mental capabilities appropriate to the type of activity he is practicing.

[18, 19] point out that the physical abilities of volleyball mean the body's ability to adapt to intense exercises, and its ability to return to its normal state quickly, as they are important factors in the development and progress of a volleyball player, and working to improve the skill and planning level with extreme accuracy at the player.

1.12. Importance of Physical Abilities

Most of the researchers' opinions have unanimously agreed that physical abilities are the basic foundation upon which the components necessary to reach the highest levels of performance of any activity are built. To the importance of physical abilities in volleyball, endurance is very necessary because the match may last for more than two hours, and speed, agility and accuracy are required in performance because it is necessary for the player to move from attack to defense and vice versa.

The researcher believes that undergoing structured training based on scientific foundations, in addition to

the availability of the components of physical fitness, is a path that paves the way for general physical and psychological health what fitness programs do.

1.13. Components of Physical Abilities

There have been many scientific references that talked about the components of physical abilities, and scholars have differed about their components according to the different school to which each of them belongs [25].

[20] indicated that the components of physical abilities can be classified into two groups, the first group includes speed, muscular ability, balance, agility, reaction speed, and compatibility, where this group represents abilities related to skill, and the second group includes flexibility, strength Muscular, muscular skin, respiratory skin, and the difference between the two groups is that the elements of the first group are genetic, but can be improved and developed, while the elements of the second group are related to health, that is, they increase the health of the individual.

[16] showed that when the physical components that are an aspect of overall fitness were surveyed, they consisted of muscular strength, muscular endurance, disease resistance, agility, speed, muscular ability, respiratory cyclic endurance, accuracy, balance, and compatibility .

Many authors and researchers have been interested in identifying the most important components of physical abilities that the athlete should achieve progress at his general level, and they have limited the most important of these components as follows: (endurance, ability, speed, compatibility, agility, flexibility, balance, muscular strength), and this indicates However, the previous physical abilities are of great importance in raising the level of the athlete [6].

Below we review the components of physical abilities under study.

1.13.1. Speed

[20] defined it as the individual's ability to perform repetitive movements of one kind in the shortest possible time, whether this is accompanied by the movement of the body or not.

The researcher defines it as the player making every effort to launch in the least possible time to evade the opponent and not give him any opportunity to fill the gaps in the field.

It is worth noting that there are several types of speed, including transitional speed, kinetic speed, and reaction speed. In this study, the researcher will study the effect of training the free player inside the water on the transitional speed, and from here we provide a simple explanation for each type of speed.

1. *Transitional speed*: It is the attempt to move and move from one place to another with the maximum speed and in the least possible time.

2. *Motor speed*: It is the ability to perform a specific movement for one or more times for the maximum number of repetitions, that is, to perform repetitive movements of one type in the least possible time.

3. *Reaction speed*: The player's ability to make quick responses in response to a particular stimulus in the least possible time.

1.13.2. Fitness

[4] defines it as the speed of controlling the performance of a new movement, and the correct and rapid adjustment of motor work, and [3] defines it as the ability to master complex movements, the speed of mastering and learning sports skills, and modifying motor performance according to the situation.

[13] stressed the importance of the availability of the element of agility, as it is an important characteristic in mastering the technique, where maximum agility is called reaction movements, such as what occurs when the athlete's movements are disturbed and a quick reaction returns to a position of equilibrium.

The researcher defines it as the ability to perform the technical movements of a sports activity accurately and smoothly.

1.13.3. Muscular Strength

[15] defines it as the maximum strength that a muscle or muscle group can produce through voluntary contraction, and mentioned that it contributes to the performance of any type of physical effort in all sports and contributes to the appreciation of other physical qualities such as speed, endurance and agility, so it is It occupies a large space in sports training programs, and is considered an important determinant in determining athletic excellence in most sports. He also showed that there are three types of muscular strength: (great muscular strength, muscular strength characterized by speed, endurance of strength), where the type of muscular contraction varies according to the requirements of performance in every sport.

Hence, the researchers provided a simple explanation for each type of muscle strength:

1. Great muscular strength: [39] defines it as the highest ability that an athlete can display during voluntary muscle contraction, and this appears in the amount of external resistance that he overcomes.

Examples of applied include weightlifting, bodybuilding, wrestling, and rowing.

2. Muscular strength characterized by speed: It is the player's ability to use the neuromuscular limit to overcome resistances that require a high degree of speed of muscle contractions.

It is considered a combination of strength and speed, so the distinctive force is called speed or fast power, and examples of it are applied: the high and long jump, the shot put, and gymnastics.

3. The endurance of force: [15] defines it as the

ability to continue to produce force for a long time in front of external resistances, such as running, swimming, rowing, cycling over medium and long distances, and team games.

In this study, the researchers investigated the effect of freestyle training in the water on the strength of the leg muscle capacity.

1.14. Water Exercises

In ancient times, humans were not satisfied with staying on the surface of the land, but went beyond that to discover the surrounding water medium, where love of swimming and playing in the water tempted them. The ancient Greeks built water baths in their homes, and ancient people used water exercises in treatment, such as treatment using hot water springs and [40] defined water exercises as the exercises that occur in a water medium and aim to take advantage of the properties of water in the application of exercise, such as the property of buoyancy and the possession of pressure on the body.

[31] indicated that the water exercise programs are nothing but accessories to the ground exercises programs, and they are distinguished in that they connect the lower and upper extremities in the exercise, and they are considered excellent exercises to enhance flexibility and strengthen the muscles as they are used in the treatment of muscle sagging of the player, as shown by [33] that there has become a modern view to develop the components of physical fitness related to achievement such as muscular strength, ability and speed in a water medium by using tools that increase water resistance, and asserts that water exercises that must be practiced at rapid rates, repetitions and different levels of difficulty to upgrade and improve The muscular capabilities of large muscle groups and aims to develop the muscular skin and respiratory system and improve body functions.

Training within the water medium has many physical and physiological benefits, and one of its physical benefits is the development and development of some special physical abilities such as (speed endurance, force endurance, maximum speed, periodic respiratory endurance), and among its benefits and physiological (lower heart rate, improved maximum oxygen consumption, improved functional efficiency of various body systems), as the study [29] showed that water exercise programs were designed to take advantage of water resistance in increasing the range of motion of the joints, and maintaining muscle strength. Developing the various components of physical abilities, increasing the efficiency of the work of the circulatory and respiratory systems, in addition to strengthening social relations, safety and psychological comfort.

[42] indicated that training in the water helps prevent injuries, as it relieves pressure on joints, ligaments, and muscles, which results from the floors

of stadiums and hard halls; This is because water reduces the weight of the body. Water resistance is higher than air resistance, and therefore there is no high pressure on the joints, ligaments and muscles. [36] mentioned that water exercises relieve pressure on bones, reduce the chances of injury and improve muscular strength, endurance and flexibility. and balance.

From here, the researcher stresses the importance of water exercises in the sports field to develop capabilities and functional skills, strengthen general muscles, enhance endurance and increase body flexibility, in addition to that it are considered a exercise that relieve the monotony of sports training, as it is a new medium and different from the medium that players are accustomed to ground medium, and there are two types of aquatic exercises, which are exercises in deep water using tools that help the body float and hang, and exercises in shallow water, and the two types share the use of the upper and lower extremities.

2. Research Methodology

In this study, the researcher used the experimental method with a single group design and conducted pre and post tests in the study sample, where he built a program based on training lepro players as an attempt to study the effect of their training in water in some physical and skill abilities in volleyball, namely, transitional speed, agility, the strength of the the legs muscle capacity, the skill of defending the field.

2.1. Study Community

Young lepro players in Gaza sports clubs.

2.2. The Study Sample

This study was conducted on an intentional sample of young lepro players of the "17" category in North Gaza clubs, and their number is (8) players. Tests and measurements were made on them, and it is worth noting that the small sample size is due to the scarcity of lepro players in the volleyball team.

2.3. Study Variables

1. *Independent variables*: The periodic training program that was applied in the current study.

2. *Dependent variables*:

- Run (10 m × 3) from a standing position to measure speed;
- Agility;
- Muscular strength of the legs;
- The leg muscle capacity;
- Stadium defense skill.

2.4. Measuring Tools

Table 1 shows the elements of physical abilities under study, the required test for each elementand, the tools that were used in that test.

Table 1 The elements of physical abilities under study, the required test for each element and the tools that were used in that test

Elements of fitness	Required test of fitness	Pretest						
		Mean	standard deviation	Kolmogorov-Smirnov test	sig	Shapiro-Wilk test	Sig	Normal Distribution Condition
Transition speed	Run (10m × 3) from standing position	9.18	0.85	0.259	0.193	0.915	0.495	Follow
Agility	T Agility Test	13.42	0.58	0.175	0.200	0.940	0.607	Follow
	Hexagon Agility Test	22.04	0.66	0.162	0.200	0.972	0.913	Follow
The legs muscle capacity	Long jump of stability for Sargit	223	6.63	0.150	0.200	0.935	0.567	Follow
	Leg Lift Strength Test	66.75	4.71	0.130	0.200	0.974	0.927	Follow
Stadium Defense Skill	Accuracy of the Defending of stadium Center No. (6)	18.88	2.53	0.230	0.200	0.903	0.306	Follow

2.5. Moderation of Data Distribution

Before starting the statistical analysis of data, it must be ensured that they follow a normal distribution, and treat the data that do not follow a normal distribution. Therefore, the Klmogrov-Smirnov test and Shapiro-Wilk test were performed as shown in Tables 2 and 3. This is to ensure the moderation of the data distribution.

Table 2 Mean, standard deviation, Kolmogorov-Smirnov test, Shapiro-Wilk test, and the significance level of the pretest physical requirements

Elements of fitness	Required test of fitness	Equipment used
Transitio n speed	Run (10m × 3) from standing position	A level stadium with a distance of 10 m along the lines of start and finish , stopwatch , whistle , pillars
Agility	T Agility Test	Volleyball pitch floor, cones , whistle , registration form
	Hexagon Agility Test	A stadium floor with a hexagonal shape the length of its sides (2) feet, and its internal angles (120 degrees)
The legs muscle capacity	Long jump of stability for Sargit	flat area with high pressure mattresses to prevent slipping Fixed measurement tape on mattresses Planning the jump's location with parallel lines in centimeters.
	Leg Lift Strength Test	Dynamometer
Stadium Defense Skill	Accuracy of the Defending of stadium Center No. (6)	Ball launcher device, the volleyball field is drawn on the target area, Ball launcher device.

Table 3 Mean, standard deviation, Kolmogorov-Smirnov test, Shapiro-Wilk test, and the significance level of the post-test of physical requirements

Elements of fitness	Required test of fitness	post-test						
		Mean	standard deviation	Kolmogorov-Smirnov test	sig	Shapiro-Wilk test	Sig	Normal Distribution Condition
Transition speed	Run (10m × 3) from standing position	7.60	0.63	0.123	0.200	0.984	0.987	Follow
Agility	T Agility Test	12.30	0.39	0.213	0.200	0.905	0.323	Follow
	Hexagon Agility Test	20.81	0.52	0.166	0.200	0.926	0.480	Follow
The legs muscle capacity	Long jump of stability for Sargit	235.38	7.62	0.183	0.200	0.947	0.679	Follow
	Leg Lift Strength Test	75	3.67	0.159	0.200	0.939	0.600	Follow
Stadium Defense Skill	Accuracy of the Defending of stadium Center No. (6)	25.75	2.71	0.178	0.200	0.930	0.512	Follow

It is clear from Table 2 and Table 3 that the significance levels of all elements of physical abilities of the pre- and post-measurements were greater than 0.05 and this indicates that the data all follow the normal distribution, so parametric tests can be used to determine if there are statistically significant differences between the pre- and post-measurements and in favor of any of them.

2.6. Statistical Methods

In this study, the researchers used the following statistical methods: mean, standard deviation, correlation coefficient, multiple regression analysis, paired sample t-test, Kolmogorov-Smirnov test, Shapiro-Wilk test and Cohen's d test.

3. Results and Discussion

Considering the statistical treatments and research procedures associated with the current study; the researcher will present, analyze and discuss the results of his study, to prove the validity of the procedures and answer all questions to reach the general and main objective of the study.

The effect size (ES) of the related sample under study was calculated using Cohen's equation [32], which is considered the main measure of the size of the difference in the process of the statistical difference or the relationship between the variables, and if the difference is large, medium, or small, and the equation is calculated as follows.

Cohen Equation is $d = (\mu_1 - \mu_2) / \sigma$ and in another way is

$$d = T / (\sqrt{n}) \quad (1)$$

where $(\mu_1 - \mu_2)$ is the difference between the average measurements before and after;

σ - standard deviation;

T - the value of the T-test for the difference between the average measurements before and after;

n - sample size.

Table 4 The standard used to explain Cohen's effect size (ES)

(Cohen's d)	Small	Medium	Large
Effect size (ES)	0.2 to less than 0.5	0.5 to less	0.8 and above

Table 5 shows the effect size of the considered physical abilities. The T-test was applied to the paired samples and the correlation value was calculated between the previous and later measurements, as shown in Table 5.

Table 5 Effect size (ES), the correlation value, paired sample t-test and the significance level between the average measurements before and after

Elements of fitness	Required test of fitness	measuring unit	Pre-test	post-test	difference between two means	ES	correlation	T value	sig	result
Transitions on speed	Run (10m × 3) from standing position	second	9.18	7.60	1.57	4.05	0.906	11.46	0.000	significant
Agility	T Agility Test	second	13.42	12.30	1.11	2.53	0.662	7.17	0.000	significant
	Hexagon Agility Test	second	22.04	20.81	1.23	3.58	0.855	10.13	0.000	significant
The legs muscle capacity	Long jump of stability for Sargent	Centimeter	223	235.38	12.38	3.49	0.885	9.88	0.000	significant
	Leg Lift Strength Test	kilogram	66.75	75	7.75	5.21	0.968	14.73	0.000	significant
Stadium Defense Skill	Accuracy of the Defending of stadium Center No. (6)	Points	18.88	25.75	6.88	1.85	-0.005	5.23	0.000	significant

It is clear from Table 5 when looking at the values of the effect size, we find it greater than 0.8 for the elements of the physical abilities under study, and this is a strong, real, and effective indicator.

A strong correlation exists between the average measurements before and after, the level of significance for the test is 0.000 for all elements of physical abilities and it is less than 0.05, so this leads to the following results.

1. A statistically significant difference exists between the pre- and post-measurements at the level of $\alpha \geq 0.05$ for the effect of freestyle training in the water on the transitional speed of emerging freestyle players, in favor of the post-measurement, where the average running time before the water training was 9.18 seconds, while after the water training it was average The running time is 7.60 seconds, that is, the transitional speed increased after the application of water training, and this result agrees with the study [26], which showed that water training had a significant effect on the development of physical abilities such as speed, and the study [37], which confirmed the existence of a difference Statistically, in the element of speed, and for the benefit of the experimental group that underwent aerobic training in the aquatic environment using resistance and weights, and the study [38], which confirmed the existence of a significant relationship between some elements of physical fitness (speed, explosive power, flexibility, agility) and the skill performance of the freestyle player in volleyball.

The researcher believes that the increase in speed that happened to the players in the current study; It came because of the resistance caused by the middle of the body to the body during the transitional speed exercises that were included in the training program, which gave the working muscle - and especially the leg

muscle capacity – greater strength and therefore completed the distance in less time.

2. Statistically significant differences exist between the pre and post measurements at the level $\alpha \geq 0.05$ for the effect of free player training in the water on agility among young lepro players in favor of the post measurement, where the mean of the tribal measurement in the T Agility Test was 13.42 seconds, and the mean The dimensional measurement was 12.30 seconds, meaning that the time consumed decreased after the application of water training. As for the hexagonal test, the average pre-measurement was 22.04 seconds, and the average post-measurement was 20.81 seconds, and this confirms the effectiveness of water training in increasing the agility of the lepro player, and this result agrees with the study of [22], which confirmed the existence of a significant relationship between some elements of physical fitness, including agility, and the skill performance of the freestyle players in volleyball.

3. Statistically significant differences exist between the pre- and post-measurements at the level of $\alpha \geq 0.05$ for the effect of freestyle training in the water on the strength of the legs muscle capacity of the young lepro players in favor of the post measurement, where the mean of the tribal measurement of the long jump test from stability for Sargent equals 223 centimeters, As for the average dimensional measurement, it was 235.38 centimeters, and this indicates the effectiveness of water training in influencing the strength of the legs muscle capacity, as well as for the Leg Lift Strength Test, the average pre-measurement was equal to 66.75 kg, and the average dimensional measurement was equal to 75 kg, and this confirms the effectiveness of the application of water training In increasing the strength of the legs muscle capacity, and this result is consistent with the study [23], which emphasizes the importance of using (ground and water) training for its positive impact on some variables (endurance, speed, flexibility, muscle strength, body mass index, and body fat mass). and, lean body mass, and body water mass) and the study [37], which revealed statistically significant differences in the variables (speed, endurance, and muscle strength), and in favor of the experimental group that underwent plyometric training in the water medium using resistances and weights, and [42], where the results of the study indicated that the experimental group (water exercise program) outperformed in muscular capacity, as they obtained effective results with regard to the strength of the legs muscle capacity (2.47-8.47%) and the study [44], which results showed that water exercises significantly improved statistically the flexibility of the knee, muscle strength and aerobic fitness, and did not exacerbate the condition of the joint or injury, and therefore it is characterized by its positive impact on the elements of physical fitness, and the study [41], which confirmed the effectiveness of the use of plyometric exercises in

improving and developing vertical jump and muscle strength more than the use of flexibility exercises and the traditional program of volleyball.

The researcher believes that the results of the muscular strength tests of the muscles of the lower extremities were acceptable in both tests due to the natural resistance to water, which helped in strengthening the muscles that move the legs, which gave better dimensional results.

4. Statistically significant differences exist between the pre- and post-measurements at the level of $\alpha \geq 0.05$ for the effect of freestyle training in the water on the skill of defending the stadium among the young lepro players, in favor of the post measurement, where the average tribal measurement of the skill of defending the stadium was equal to 18.88 points, while the average The dimensional measurement was 25.75 points, meaning that the number of points observed increased after applying the water training.

After the researcher calculated the percentage of improvement in the performance of the skill of defending the stadium. It was found that the skill level reached 85.83% after the players were exposed to the water training program, after it was 62.93% before the application of the program, i.e., an improvement rate of 22.9%. The level of the combined physical abilities, as well as the performance of defensive skill exercises in the presence of water resistance, on which the idea of the current study relied.

As for the fifth question of the study questions, which states "Is there a statistically significant relationship between the level of physical abilities and the skill of defending the stadium?"

To answer the previous question, the following hypothesis was formulated: There is no statistically significant relationship at $\alpha \geq 0.05$ for physical abilities and playing field defense skill.

To test this hypothesis, the researcher used multiple linear regression, and Table 6 illustrates this.

Table 6 The results of the multiple regression analysis reveal the existence of a relationship between the level of physical ability and the skill of defending the playing field

Independent variables	Regression coefficients	T value	Sig.
Constant	0.124	3.167	0.031
Transition speed	0.668	2.573	0.025
Agility	0.455	3.847	0.049
The legs muscle capacity	0.538	5.989	0.032
0.761 = correlation coefficient		=Adjusted R square	
		0.723	
		0.021 = Sig	

The correlation coefficient between the level of

possession of the mentioned physical abilities and the skills for defending the stadium is 0.761, and the significant value is 0.021, which means rejects the null hypothesis and accepts the existence of a statistically significant relationship between the level of physical abilities and the skills for defending the stadium.

The adjusted R square is equal to 0.723, which means that 72.3% of the change in the skill of defending the stadium can be explained through the linear relationship with the elements of physical abilities, and this means that there is a statistically significant effect between the level of physical abilities and the skill of defending the stadium, where The value of the total effect reached 72.3%, which is a good and statistically acceptable effect.

Based on the results of Table 6, the regression equation can be deduced as follows:

$$y = B_0 + B_1X_1 + B_2X_2 + B_3X_3 \dots\dots\dots (2)$$

where y is the dependent variable, which is the skill of defending the playing field;

X_1 is the transition speed;

X_2 is agility;

X_3 is the strength of the leg muscle capacity;

B_0 is constant = 0.124;

$B_1 = 0.168$. It is the coefficient of the regression line and represents the slope of the straight line representing the relationship between the transitional speed and the skill of defending the playing field;

$B_2 = 0.455$. It is the coefficient of the regression line representing the slope of the straight line representing the relationship between agility and the skill of defending the playing field;

$B_3 = 0.538$. It is the coefficient of the regression line representing the slope of the straight line representing the relationship between the strength of the leg muscle capacity and the skill of defending the field.

4. Conclusion

Looking at the calculated T values for the elements of physical abilities: transitional speed, agility, and strength of the corresponding leg muscle capacity; it turns out that these significant and influential in the level of professional competence, and here we conclude that there is a statistically significant effect at the level of significance $\alpha \geq 0.05$ between the level of physical abilities and the skill of defending the playing field. It affects the skill level of defending the stadium, and the researcher explains that the possession of the lepro of the mentioned physical abilities enables him to move smoothly, flexibly and strengthen his endurance, thus contributing to raising the level of his skill in defending the stadium, and this result agrees with the study [5], which confirms that the use of a water exercise program contributes to the development of strength endurance and the level of endurance and the improvement of some physical and physiological abilities.

According to the study results, the researcher

recommends the following:

1. The implementation of water training for all volleyball players because of its effectiveness in the development of physical abilities mentioned.
2. The application of water training for lepro players, but by targeting other physical abilities than those targeted in this study.

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Appendix

The first test addresses the first question of speed.

The test's name: Run (10 m × 3) from standing position.

Test target: Measuring the transition speed.

Tools used A level stadium with a distance of 10 m along the lines of start and finish; stopwatch, whistle, pillars.

The way of performance: The player stands behind the starting line of the standing position when the player is heard the starting signal, the player runs

forward as quickly as possible until he passes the finish line, as shown in the shape.

Running was repeated using side-right running.

Running is repeated using side running left.

Method of registration:

The player will record the time he runs 10 meters forward, 10 meters sideways to the right, 10 meters sideways to the left, and then the three times will be collected to record the maximum score in the player's transition speed.



Fig. 1 Run (10 m × 3) from standing position test

The test shows 10 meters running forward, sideways to the right, sideways to the left from standing position [35].

The second and third tests address the second question on agility.

The test's name: T agility test.

Test target: Measuring agility.

Tools used: Volleyball pitches floor, cones, whistle, and registration form.

The way of performance:

The player stands on the starting line, with the judgment whistle being heard, running forward to the first cone 10 m, then running sideways to the second cone on the 5 m right, then running sideways to the third cone on the 10 m left, then running the sideways third to the first cone again 5 m, then running back to the 10 m starting line, which also represents the finishing line as pictured.

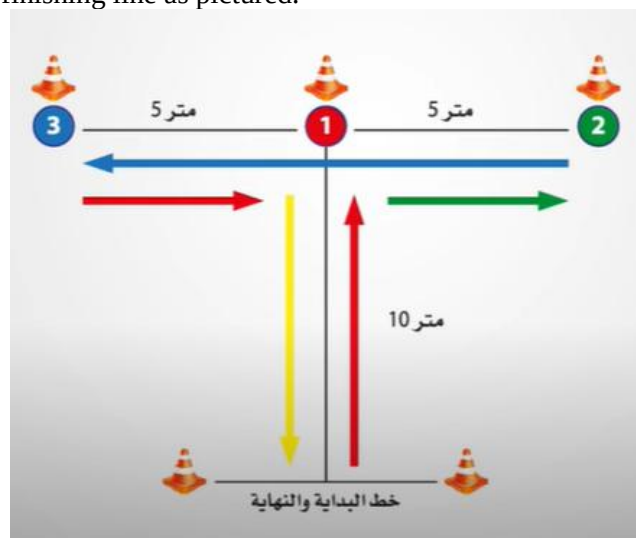


Fig. 2 T agility test

The test's name: Hexagon agility test.

Test target: Measuring agility.

Tools used – A stadium floor with a hexagonal shape the length of its sides (2) feet, and its internal angles (120 degrees), cones, whistle and registration form.

The way of performance:

- The player stands within the hexagonal form against the referee;
- The starting signal is given, so that the player starts jumping in the six directions in order and regularly;
- The movement in the jumping direction toward the clockwise circulation;
- The player must perform three rolls at full speed and less time with no body rotation;
- Each player is given three tries.

Registration: Record for the Player best Try time (Fig. 3).



Fig. 3 Hexagon agility test

The fourth and fifth tests address the third question on muscular strength.

The test's name: Long jump of stability for Sargit.

Test target: Measuring the leg muscle capacity.

Tools used are:

- Flat area with high pressure mattresses to prevent slipping;
- Fixed measurement tape on the mattresses;
- Planning the jump's location with parallel lines in centimeters.

The way of performance:

- The experimenter stands behind the starting line and his feet are close and parallel, the distance between them is 10 cm;
- The experimenter bends his knees and swings his arms behind, then jumps forward as far as possible.

Grade calculation: Measured from the starting line of the nearest part of the body touches the ground from the starting line direction.

The experimenter has three jumps, they calculate the best distance.

The test's name: Leg lift strength test.

Test target: Measuring extensor muscle strength of legs.

Tools used: Dynamometer.

The way of performance:

The dynamometer is fixed at the base, fixed with it from the top of the iron chain that ends with the iron bar.

A wide leather strap wraps around the center of the experimenter in a way that enables it to tie its ends at the end of the iron bar.

The experimenter takes the position of standing on the base, and then grips tight the iron bar with both hands so that the back of the hands is out.

The experimenter will bend his legs a little until he reaches the iron bar over the thighs so that the center belt is fixed with the iron bar while the experimenter is in this position.

When giving the start signal, the experimenter stretches his legs to take out the maximum possible force for once

Test instructions:

The experimenter must keep her back and arms straight and perpendicular on the ground.

Each player was given three tries.

The indicator must be returned to zero grade after each attempt.

Registration: Record for the Player Best Try.



Fig. 4 Comprehensive sports library: Leg lift strength test

The sixth test addresses the fourth question for the last dependent variable Stadium Defense Skill.

The test's name: Accuracy of the Defending of stadium Center No. 6.

Test target: Accuracy of the skills in defending the stadium.

Tools used:

- Ball launcher device;
- 9 balls for the volleyball.

The volleyball field is drawn on the target area as

follows:

1. Area (A) area (2×3 m) is drawn in the middle of the front area and specifically in the play center number (3) setting location;
2. Area (B) area (1×3 m) adjacent to area (A) of the right;
3. C area (1×3 m) adjacent to the A area from the left;
4. Area (D) area (1×3 m) adjacent to Area B from the right;
5. Area (E) with area (1×3 m) adjacent to area (C) from left.

The way of performance:

The balls are hit toward the experimenter player located in the center (6) on the other side of the stadium, who plays the role of defending the stadium that is to direct the balls to the areas indicated.

Three balls are shot from position number 2, and three balls from position number 4.

Registration: For experimenter 6 attempts if he defends the stadium and shoots the ball to the area (A) he gets (5) points.

If he defends the stadium and shoots the ball to the area (B) or (C) he gets (3) points.

If he defends the stadium and shoots the ball to the area (D) or (E) he gets (1) points.

Maximum test grade: (30) degrees.

Note: The the same test is repeated by hitting (6) other balls from the transmission area so that the ball launcher device is placed in the middle of the transmission line.

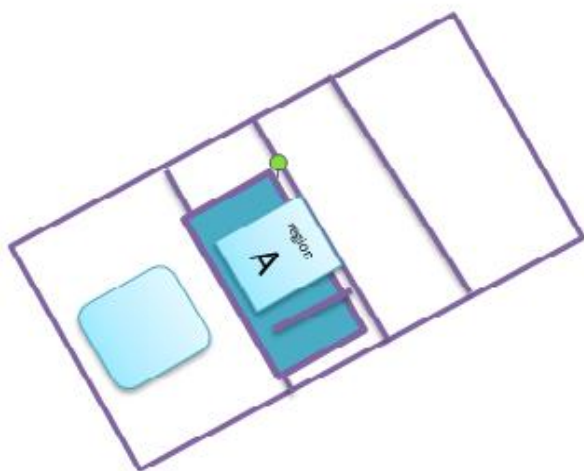


Fig. 5 Zone defence test from center No. (6)