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The Impact of a Proposed Training Program on Developing Some Elements of Physical Fitness for the 13-15 Year Age Group Among Female Basketball Players at The PACES Charity

Dr. Rasha Musameh
Sport Training and Kinesiology Department, Palestine Technical University-Kadoorie
rasha.mosameh@ptuk.edu.ps

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Abstract
The study aimed to identify the effect of a proposed training program in developing some elements of physical fitness for the age group 13-15 years among female basketball players at Khatawat Charity Association. To achieve this, the study was conducted on a purposive sample of (30) female basketball players at Khatawat Foundation according to the records of Khatawat Charity Association during the sports season (2023-2024 AD). They were randomly distributed equally into two groups, the first experimental and the second control. The researcher used the experimental method and conducted pre- and post-measurements of the physical variables under study. To process the data and reach the results, the statistical program (SPSS) was used. The results showed statistically significant differences between the averages of the pre- and post-measurements in the effect of a proposed training program in developing some elements of physical fitness for the age group 13-15 years among female basketball players at the PACES Charity Foundation for all physical variables under study and in favor of the post-measurement among the members of the experimental group. The results showed that there were statistically significant differences between the averages of the pre- and post-measurements in the effect of the traditional program in developing some elements of physical fitness for the age group 13-15 years among female basketball players in the PACES Charitable Foundation on all physical variables under study and in favor of the post-measurement among the members of the control group. The results also showed that there were statistically significant differences in the post-measurement of all physical variables under study between the members of the experimental and control groups and in favor of the members of the experimental group. The study recommended conducting current recording studies on different playing groups and other individuals to study the preferred training program followed in developing the impact on basketball players, and recording more studies on the element at the skill level.

Keywords :*physical fitness, 13-15 year, basketball, PACES Charity*

Introduction

Basketball is one of the most popular team sports worldwide, requiring a high level of physical fitness and coordination between individual and team skills. The game relies on a combination of physical abilities such as strength, speed, and agility, in addition to technical skills like passing, shooting, and ball control. Physical and mental adaptation plays a significant role in effective sports performance, especially in young age groups, where the foundation for essential physical and technical skills is formed for future development. According to a recent study conducted in 2024, the results indicated that developing comprehensive training programs that include integrated fitness elements enhances players' overall performance and increases their effectiveness in games (Smith & Johnson, 2024).

Physical fitness is also one of the essential factors that significantly affect the performance of female athletes

across various sports, particularly basketball, which demands a mix of speed, strength, endurance, and flexibility. Studies have confirmed that developing these elements directly reflects the performance level of young athletes, especially in the 13-15 age group, which is a crucial stage in their athletic development (Smith & Jones, 2020).

Sports training aimed at young age groups focuses on building a solid foundation of physical fitness. Athletes at this stage require specialized training to develop their various physical capacities, such as muscular endurance and cardiorespiratory endurance. Studies have shown that intensive and well-planned training programs contribute to improving the physical and athletic performance of young athletes (Brown et al., 2019).

The age group from 13 to 15 plays a pivotal role in the formation of the athletes' physical foundation. This period isconsidered one of the most important stages for developing necessary physical skills. Researchers point out that continuous improvement in physical fitness during this stage can help prepare athletes for outstanding performance in the long term (Davis, 2018).

Coaches focus on designing training programs tailored to the individual needs of each athlete. Studies have proven that targeted and customized training, according to the level of each player, helps significantly improve physical performance, especially when focusing on physical fitness elements such as strength, speed, and flexibility, which form the foundation in basketball (Williams & Clark, 2017).

Diverse training programs that include resistance training, cardiovascular training, and plyometric exercises are among the most effective methods for developing physical fitness in young athletes. Studies have demonstrated that combining these different types of exercises contributes to improving athletes' physical abilities, increasing their motivation, and sustaining their development (Parker, 2016).

Research shows that enhancing physical fitness elements not only improves sports performance but also plays an important role in reducing the risk of sports injuries, especially in sports that require intense physical effort, such as basketball. Intensive training helps strengthen muscles and joints, increasing athletes' ability to withstand physical impacts (Miller et al., 2018).

Improving physical fitness is also linked to greater efficiency in performing sports tasks, as developing fitness elements such as speed, strength, and endurance positively reflects the tactical and technical performance of athletes. Players with good physical fitness have a greater ability to execute tactical plans quickly and accurately (Harris, 2019).

Strength, speed, and agility are essential elements in basketball. Female athletes in the 13-15 age group rely heavily on these abilities to perform sports tasks efficiently and quickly. Muscular strength is a critical factor in improving the ability to control the ball, jump, and block attacks. Continuous strength training helps enhance athletes' performance and increases their ability to handle physical contact during games (Chatzinikolaou et al., 2018).

Speed is one of the most influential factors in basketball, as the ability to move quickly and change directions rapidly allows players to excel in offensive and defensive situations. Studies have shown that developing speed in athletes of this age group improves their ability to capitalize on offensive opportunities and increases their effectiveness in blocking the opposing team's attacks (Scanlan et al., 2015).

Agility is one of the physical abilities that give athletes the ability to quickly adapt to changes in the game. Players with high agility levels can perform complex movements such as dribbling, passing, and shooting with greater precision and speed. Research has proven that agility training helps improve the overall performance of athletes an increases their dominance in competitions (Gabbett, 2016).

Recent studies indicate that training programs focusing on developing muscular strength and speed in young female athletes in the 13-15 age group are among the most important factors contributing to their success in basketball. Developing these abilities can improve their performance on the court and increase their chances of success in sports competitions (Anderson & Carter, 2017).

Research highlights the importance of designing long-term training programs aimed at gradually and continuously improving athletes' physical fitness. Sustainable development in physical fitness helps maintain high levels of sports performance and prepares athletes for higher levels of competition (Thompson & Lee,

2020).
Research indicates that intensive training programs based on endurance and strength exercises significantly improve the performance of female basketball players. These programs help develop the essential physical abilities necessary for success in this sport, emphasizing the importance of such training in enhancing young athletes' performance (Jackson, 2019).

Study problem

The study problem stems from the clear gap in the scientific literature related to the development of basic physical fitness elements, such as strength, speed, and agility, among female players in the 13-15 age group in basketball. Despite the critical importance of these abilities in improving athletic performance, training programs directed at this age group are often not specialized enough to meet the needs of young female players. Most previous studies focused on general training without providing programs that target these abilities in an integrated and systematic manner. This lack of research constitutes a gap, as there are not enough studies that review the effect of a specialized training program on simultaneously improving these physical abilities among this age group, which necessitates the need for a new study that focuses on these aspects to improve the athletic performance of female basketball players. Through the researcher's work as a basketball coach, there is a weakness in these physical elements, and from here the problem of the study emerged to reveal the effect of a proposed training program in developing some elements of physical fitness for the 13-15 age group among female basketball players at the PACES Charity

Significance of the study

The importance of this study lies in highlighting a clear research gap related to the lack of specialized training programs to develop the basic fitness elements (strength, speed, and agility) in female players in the 13-15 age group. The research will provide a scientific contribution by designing a training program that systematically targets these physical abilities, which could lead to improving the athletic performance of female basketball players. In addition, the research will provide scientific data that could contribute to the development of future training curricula for young age groups in basketball, enhancing their ability to compete at higher levels.

Study Objectives

This study aims to investigate the following:

1- The impact of a proposed training program on developing some elements of physical fitness for the 13-15 year old age group among female basketball players at the PACES Charity among members of the experimental group between the averages of the pre- and post-measurements.
2- The effect of the traditional training program in developing some elements of physical fitness for the age group 13-15 years among female basketball players at the PACES Charity among members of the control group between the averages of the pre- and post-measurements.
3- The differences between members of the experimental and control groups on some physical variables on the post-measurement.

Study Hypotheses

The study aims to examine the following hypotheses:

1. There are no statistically significant differences at the significance level ($\alpha \leq 0.05$) in the effect of the proposed training program in developing some elements of physical fitness for the age group 13-15 years among female basketball players at the PACES Charity among the members of the experimental group between the averages of the pre- and post-measurements?
2. There are no statistically significant differences at the significance level ($\alpha \leq 0.05$) in the effect of the traditional training program in developing some elements of physical fitness for the age group 13-15 years among female basketball players at the PACES Charity among the Members of the control group between the averages of the pre- and post-measurements?

3. There are no statistically significant differences at the significance level ($\alpha \leq 0.05$) between the averages of the post-measurement for the members of the experimental and control groups in developing some elements of physical fitness for the age group 13-15 years among female basketball players at the PACES Charity?

Study Domains

The current study encompassed the following domains:

1. Human domain: Basketball players of the PACES Charity Association.
2. Spatial domain: Pharaohs Sports Club Stadium.
3. Temporal domain: The study was conducted between 1/5/2023 and 1/7/2023 of the 2023/2024 sports year.

Methodology

Study methodology: The researcher used experimental models for two equal groups, racial and experimental, with a pre-test and post-test, in order to suit the nature of the research problem.

Study Population

The study population consisted of all female basketball players in the PACES Charity Association, registered in the PACES Charity Association records, numbering (120) players for the sports year 2023/2024.

Participants

The study sample consisted of (30) female basketball players at Khatawat Foundation, representing (25%) of the study community according to the PACES Charity Association records. They were selected intentionally and divided into two groups, one of which was experimental, consisting of (15) players. The proposed program was applied to develop some elements of physical fitness for the age group (13-15) years among female basketball players at the PACES Charity. As for the second control group, consisting of (15) players, it used the traditional basketball program.

Statistical analysis

Data Collecting

Statistical analysis Data collection Quantitative data collection involves the use of validated techniques to measure specific physical and skill variables. Pre-test measures were taken before the intervention, and post-test measurements were performed at the end of the training period. The statistical analysis of the data was performed, examined, coded, and entered into the statistical program Statistical Package for the Social Sciences (SPSS) (version 25, IBM, USA). The data related to the physical training under study for the pre- and post-tests were analyzed and processed. These data were analyzed using descriptive statistics (arithmetic mean, standard deviation, skewness, skewness coefficient). In this context, and using the t-test for independent samples and the t-test for paired samples, the obtained data were analyzed to determine the differences in the pre- and post-tests and the ratio between the experimental and control groups, and thus determine the statistical significance of the priority at the significance level $\alpha \leq 0.05$.

Study Sample Characteristics

Characteristics of the study sample Data related to the characteristics of the participating players were collected, which were as follows: height, weight, age. The number of participants was 30 basketball players, whose heights ranged between 1.40-1.55 meters, while the weights of the participating players were (38-44) kg, and their ages ranged between 9-11 years, as shown in Table No. (1). The participants

also underwent a set of physical training, as shown in Table No.(1) .

Table No. (1): the characteristics of the study sample according to the variables of height, and body age,weight. (N = 30).

Variable	Measuring Unit	Arithmetic mean	standard deviation	skewness
height	**M**	1.48	0.04	-0.395
Weight	**Kg**	41.33	2.03	0.062
Age	**Year**	10.16	0.94	-0.613

The results of Table No. (1) indicate that the arithmetic means and standard deviations of the variables of height, age and body mass of the female basketball players in the PACES Charity Association (the sample as a whole) were respectively (1.48 ± 0.04 m, 41.33 ± 2.03 years, 10.16 ± 0.94 kg) and the values of the deviation coefficients ranged respectively (0.395-, 0.062, -0.613). These results indicate the normal distribution of the study sample, and therefore the individuals of the study sample were randomly distributed into two groups, experimental and control, where the experimental group (n = 15) trained with the proposed training program to develop some elements of physical fitness for eight weeks, while the control group (n = 15) trained in the traditional way as well for eight weeks. Before starting to implement the training programs, the equivalence between the members of the experimental and control groups was verified in the variables of height, body mass, and age, and in the pre-measurement of the physical variables under study, using the (t) test for two independent groups (Independent t-test), and the results of Table No. (2) show that.

Table No. (2): Equivalence between individuals in the experimental and control groups in the variables of height, weight, and age, and in the pre-measurements of the physical and skill variables under study (n=30).

Dependent Variables	Unit of measure	Experimental (N=15)		Control (N=15)		T-value	Sig.
		Mean	standard deviation	Mean	standard deviation		
height	M	1.47	0.05	1.49	0.03	1.248-	0.224
Weight	Kg	41.66	2.09	41.00	2.00	0.892	0.380
Age	Year	9.93	0.96	10.40	0.91	1.365-	0.183
Vertical Jump from Standstill	M	19.73	1.53	19.53	1.40	0.372	0.713

Standing Broad Jump	M	1.56	0.04	1.57	0.05	0.421-	0.677
35m Sprint Speed	S	7.75	0.16	7.71	0.14	0.706	0.486
Agility T-Test	S	15.96	0.40	15.88	0.17	0.754	0.460

It is clear from the results of Table No. (2) that there are no statistically significant differences at the significance level ($\alpha \leq 0.05$) between the individuals of the control and experimental groups in the variables of height, body mass, and age, and in the pre-measurement of the physical variables under study. This indicates their equivalence before starting the training programs.

Spatial and temporal context

The research was conducted at the Pharaoh Sports Club grounds, taking advantage of its sports facilities and private fields. The intervention lasted from 1/5/2023 to 1/7/2023. This time frame corresponds to the 2023/2024 sports season.

Experimental design

The study used a pre-test and post-test design, and compared the effects of the proposed training program for the experimental group, and the control group followed a traditional training routine. The experimental group participated in a planned training program that included some physical fitness elements. The control group continued with their regular exercise schedule.

Training Program

The proposed training program for some fitness elements for female football players aged 13-15 years at the PACES Charity extends for 8 weeks, at a rate of 3 units per week, each unit for 50 minutes. The program is characterized by 4 elements: strength, speed, agility, and a combination of speed and agility.

-Week 1-2: Bodyweight fitness exercises such as squats, push-ups, and lunges to improve fitness strength.

-Week 3-4: Speed training such as 35-meter sprinting and natural speed running.

-Week 5-6: Agility exercises such as T-test and jumps to enhance the ability to change Europeans.

-Week 7-8: Wide exercises between speed and agility such as running with obstacles and ladder exercises to improve integrated motor performance.

The focus is on warming up and cooling down in each unit, with a sudden increase in intensity, repetitions, progress and improvement.

Training Guidelines

The training program followed specific criteria. Progress was monitored to adjust individual training intensity. Safety was paramount, so the training program was implemented according to strict guidelines, with the players monitored for pain or poor responses and changes made as needed. The program emphasized rest between sessions, active recovery, and stretching to support muscle recovery and reduce the risk of injury. The players were also taught how to eat healthy and stay hydrated to meet the physical demands of training. Finally, the trainer monitored all sessions and provided individual feedback and changes to ensure proper technique and safety.Quantitative data collecting includes employing approved techniques to measure specified physical and skill variables. Pre-test measures were taken prior to the intervention, and post-test measurements were taken at the conclusion of the training period.

Physical Variables

1- Vertical Jump from Standstill

According to (Masel & Maciejczyk, 2022; Salameh & Nassar, 2023; Zhou et al., 2020; Zonifa, 2020) the following tests can be tested using the following steps:

- Place the athlete in a predetermined starting area.
- Request that the athlete stand with his or her ankles shoulder-width apart.
- Tell the athlete to straighten their knees and swing their arms behind them.
- On the "go" signal, the athlete extends their hips, knees, and ankles to leap as high as possible vertically.

2- Standing Broad Jump Tests (Boyanmış et al., 2024)

The standing broad jump test aims to measure the muscular power and explosive strength of the leg muscles. The test requires a suitable space, such as a flat, unobstructed surface, a measuring tape to record the distance jumped, cones to mark the starting line, and a score sheet to document the results. The test begins with a 5-minute warm-up involving stretching exercises and leg muscle preparation. The athlete stands behind the starting line with feet parallel, then swings their arms backward and bends their knees in preparation for the jump. Next, the athlete pushes off forcefully with both feet to jump forward with maximum power. The distance is measured from the starting line to the nearest point where the athlete's body touches the ground. The athlete is given one attempt, with the best distance recorded in meters.

3-35m Sprint Speed Test

This test aims to determine the maximum speed that an individual can reach over a distance of 35 meters, which is an important indicator of performance in many sports that require high speed (Lin et al., 2023).
Procedure (Singh, 2019):
-A straight track of 35 meters is determined.
-The participant stands at the starting line, and at the start signal, he starts at the maximum speed possible until he crosses the finish line.
-The time it takes to cover the entire distance is measured.

4- Agility T-Test

The purpose of the T-test is to assess an individual's ability to move quickly and accurately in different directions, reflecting agility and the ability to control change of direction under time pressure (Krolo et al., 2020).
Procedure:
A "T" shape is drawn on the floor, with the participant starting at the bottom of the shape.
At the start signal, the participant runs to the top of the "T", then moves sideways to one end, returns to the middle, then moves to the other end, and finally returns to the starting point.
The time it takes the participant to complete the entire test is measured.

Steps to conduct the study

-The researcher conducted measurements related to height، body mass، and age.
-The researcher conducted a pilot experiment before conducting the pre-tests on (6) female players who were excluded from the study sample.
-The researcher conducted the pre-tests related to the physical tests during the period between 5/28/2023-5/30/2023.
-The researcher applied the training program to the members of the experimental group, while the control group underwent the traditional program, where the curriculum was applied for (8) weeks, with (3) weekly training units, for a period of (50) minutes including warm-up.
-The researcher re-conducted the post-tests after completing the application of the training program، i.e.

after (8 weeks) in the period 2/7/2023-4/7/2023.

Scientific coefficients for study tests

Test validity: The researcher reviewed references and scientific studies related to tests and measurements in physical education to determine the appropriate physical abilities for the elements of physical fitness, then presented them to a group of specialized arbitrators from inside and outside Palestine, numbering (6) arbitrators, and based on their opinion, the researchers chose the physical tests that obtained a percentage of (80%) or more of the arbitrators' evaluation.

Reliability: To reach the stability coefficient for the physical variables under study, the retest method was used, by applying the tests to a survey sample consisting of (6) female basketball players in the PACES Charitable Society who were excluded from the original sample of the study, and the time period between the first and second application of the physical tests was one week, and to determine the relationship between the two applications, Pearson's correlation coefficient was used, and the results of Table () show that.

Table (3) shows the stability and self-reliability coefficients of the physical variables under study among female basketball players at the PACES Charity(N=6).

Dependent Variables	Unit of measure	First application		Second application		r-value	validity
		Mean	standard deviation	Mean	standard deviation		
Vertical Jump from Standstill	M	20.00	1.41	21.00	1.87	0.983**	0.991
Standing Broad Jump	M	1.58	.040	1.72	.030	0.954**	0.976
35m Sprint Speed	S	7.76	.210	7.20	.240	0.935**	0.966
Agility T-Test	S	15.88	.170	15.17	.230	.986**0	0.992

**Statistically significant relationship at the significance level (α≤ 0.01).

The results of Table (3) indicate that there is a statistically significant relationship at the significance level (α≤ 0.01) between the first and second applications of the physical variables under study among female basketball players at the PACES Charity Club, as the values of Pearson's correlation coefficient (reliability coefficients) for the physical variables ranged between (0.935-0.986), and their self-validity values ranged between (0.966-0.992). These results indicate that the physical tests used have a good degree of reliability and meet the purposes of the study.

Results of the study

1. **First:** The results related to the study's first hypothesis, which was" There are no statistically significant differences at the significance level (α≤ 0.05) in the effect of the proposed training program in developing some elements of physical fitness for the age group 13-15 years among female basketball players at the PACES Charity among the members of the experimental group between the averages of the pre- and post-measurements?

To test this hypothesis and confirm one, the paired t-test was used, and the results of Table (4) show that.

Table (4) The results of the first hypothesis (n = 15)

Dependent Variables	**Unit of measure**	**Pre-Measurement (N=10)**	**Post-Measurement (N=10)**	**T-Value**	**Sig.**	**Change %**

		M	SD	M	SD			
Vertical Jump from Standstill	M	19.73	1.53	24.53	2.06	27.495-	**0.000	24.32
Standing Broad Jump	M	1.56	0.04	2.00	.030	70.650-	**0.000	28.20
35m Sprint Speed	S	7.75	0.16	6.25	.200	55.116	**0.000	-19.35
Agility T-Test	S	15.96	0.40	13.61	.260	37.717	**0.000	-14.72

*** The tabular value of (T) at the level of significance (α≤ 0.05) = 2.09**
*** The tabular value of (T) at the level of significance (α≤ 0.01) = 2.86**

The results of the table (4) indicate that there are statistically significant differences at the significance level (α≤ 0.05) between the averages of the pre- and post-measurements in favor of the average of the post-measurement for all the physical variables under study among female basketball players at the PACES Charitable Foundation in favor of the experimental group. These results indicate the significant and effective impact of using the regular training method in developing all the physical variables under study, as the percentages of change were as follows: (vertical jump test from a standing position (24.32%) meters, broad jump test from a standing position (28.20) meters, 35-meter speed test (-19.35%) meters, T-test for agility (-14.72%) seconds.

Second: The results related to the study's second hypothesis, which was "There are no statistically significant differences at the significance level (α≤ 0.05) in the effect of the traditional training program in developing some elements of physical fitness for the age group 13-15 years among female basketball players at the PACES Charity among the Members of the control group between the averages of the pre- and post-measurements?

To test this hypothesis and confirm one, the paired t-test was used, and the results of Table (5) show that.

Table (5) The results of the second hypothesis (n = 15)

Dependent Variables	Unit of measure	Pre-Measurement (N=10)		Post-Measurement (N=10)		T-Value	Sig.	Change %
		M	SD	M	SD			
Vertical Jump from Standstill	M	19.53	1.40	21.53	2.06	6.179-	0.000**	10.24
Standing Broad Jump	M	1.57	0.05	1.70	.030	19.329-	0.000**	8.28
35m Sprint Speed	S	7.71	0.14	7.27	.140	20.318	0.000**	-5.70
Agility T-Test	S	15.88	0.17	15.08	.220	24.130	.000**0	-5.03

*** The tabular value of (T) at the level of significance (α≤ 0.05) = 2.09**
*** The tabular value of (T) at the level of significance (α≤ 0.01) = 2.86**

The results of the table (5) indicate that there are statistically significant differences at the significance level (α≤ 0.05) between the averages of the pre- and post-measurements in favor of the average of the post-measurement for all the physical variables under study among the female basketball players at the PACES Charitable Foundation for the experimental group. These results indicate the significant and effective impact of using the regular training method in developing all the physical variables under study, as the percentages of change were as follows: (vertical jump test from a standing position (10.24%) meters, broad jump test from a standing position (8.28) meters, 35-meter speed test (-5.70%) meters, T-test for agility (-5.03%) seconds.

Third: the results of the third hypothesis which states that "There are no statistically significant differences at the significance level (α≤ 0.05) between the averages of the post-measurement for the members of the experimental and control groups in developing some elements of physical fitness for the age group 13-15 years among female basketball players at the PACES Charity?

To test this hypothesis, an independent samples t-test was conducted as shown in Table (6):

Table (6) The results of the third hypothesis (n = 30)

Dependent Variables	Unit of measure	Experimental group (N=15)		Control group (N=15)		T-Value	Sig.
		M	SD	M	SD		
Vertical Jump from Standstill	M	24.53	2.06	21.53	2.06	3.977	0.000**
Standing Broad Jump	M	2.00	.030	1.70	.030	20.734	0.000**
35m Sprint Speed	S	6.25	.200	7.27	.140	15.871-	0.000**
Agility T-Test	S	13.61	.260	15.08	.220	16.275-	0.000**

*** The tabular value of (T) at the level of significance (α≤ 0.05) = 2.09**
*** The tabular value of (T) at the level of significance (α≤ 0.01) = 2.86**

the results of Table (6) that there are statistically significant differences at the significance level (α≤ 0.05) between the post-measurement averages of the individuals of the experimental and control groups in all the physical variables under study among female basketball players at the PACES Charitable Foundation, in favor of the post-measurement average of the experimental group. These results mean that the training program exercises worked to develop all the physical variables studied better than the traditional training program.

Discussion

The results of the first hypothesis of the study conducted among female basketball players at the PACES Charity indicate that the proposed training program in developing the elements of physical fitness positively affected the physical variables of female basketball players. It is worth noting that improvements were observed in all tests conducted, from strength, speed and agility-based exercises. The significant improvements in the post-test averages, when compared to the pre-test averages, indicate the effectiveness of the proposed training program system. This is consistent with the results of (Anderson & Carter, 2017), who reported that the proposed structured training programs can lead to general improvements in basketball-specific skills and components of physical fitness. By analyzing the second hypothesis of the study conducted, it was found that the traditional training program affected the physical variables of female basketball gymnasts. Slight improvements were observed in all tests conducted, starting with strength, speed and agility-based exercises. The improvements in the post-test averages compared to the pre-test averages indicate the effectiveness of the traditional training system. This is consistent with the findings of Jackson (2019), who reported that traditional structured training programs can lead to overall improvements in specific basketball skills and fitness components.

The third hypothesis reinforces the potential benefits of the experimental training program, as the experimental group demonstrated superior performance on post-test measures across all variables when compared to the control group. This supports the claim that specialized training programs can lead to better overall athletic performance. The results echo the findings of (Anderson & Carter ,2017., Thompson & Lee, 2020; Jackson, 2019). , who found that specialized training interventions can lead to significant improvements in performance on both physical and skill measures when compared to standard training protocols.

The significant differences observed in post-test measures between the experimental and control groups suggest that the interventions applied to the experimental group were not only effective, but also provided a more conducive environment for enhancing specific gymnastic abilities. These interventions, which may have included advanced training methodologies, appear to have provided the experimental group with a clear advantage over the control group, as evidenced by the improved post-test results. The researcher also attributes this to the nature of the proposed training program, which included focused physical training towards the physical requirements required by the nature of performance in football, primarily explosive power, speed, and agility, which the researcher chose as dependent variables for her current study, as the physical preparation of female basketball players has become the main concern of the technical staff in preparing and planning for the

training season through standardized load programs, based on scientific foundations to bring the players to the highest possible level of fitness specific to basketball, in which strength, speed, and agility are considered among the most important elements and basic qualities to achieve physical fitness. Therefore, developing these qualities for female players has become one of the basic pillars of the daily, weekly, and periodic training plan, and this study is consistent with the study (Scanlan et al., 2015; Gabbett, 2016), which showed improvement in the proposed training programs for speed and agility. In conclusion, the application of the proposed training for female basketball players showed promising results across different physical parameters, suggesting that this method could be pivotal for athletes seeking to improve their performance in a sport that requires a high level of strength, endurance, and technical skill

Recommendations

In light of the study's objectives and findings, the researcher recommends the following:

1- The necessity of applying the proposed training program due to its great importance in raising the appropriate level of basketball players.

2- The necessity of using the elements of physical fitness training due to its positive impact on the appropriate level of basketball players.

3- Generalizing the results of the current study to football coaches in Palestine, including in preparing subsequent versions, and providing values and references for the measurements - under research to evaluate the structure, subsequent condition and development with female football players.

4- Conducting current registration studies on different game groups and other individuals to study the preferred training program adopted in developing the impact on basketball players, and recording more studies on the element at the skill level.

5-

Conflict Of Interest

No potential conflict of interest relevant to this article was reported.

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Ethical consideration

Ethical Approval: The protocol, design and procedures of the study “The Effect of a Proposed Training Program on Developing Some Elements of Physical Fitness for Female Basketball Players in the Age Group 13-15 Years at Khatawat Foundation” by researcher Rasha Musameh Budair were approved by the Scientific Ethical Committee of the Faculty of Physical Education and Sports Sciences at Palestine Technical University - Khadouri, and written approval was obtained before starting the study.

Authors' Contributions

The researcher accomplished this study by making significant contributions including designing the study according to the formulation of its objectives. She prepared the draft and implemented the study design; collected the data; performed the statistical analysis of the data; interpreted the data; and conducted the manuscript. The researcher conducted the literature search and critical review and editing of the manuscript. The researcher was a contributor and responsible for the content of the manuscript and approved the version submitted for publication.

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