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THE EFFECT OF COMPETITIVE EXERCISES ON DEVELOPING CERTAIN MOTOR, SKILL, AND FUNCTIONAL VARIABLES AMONG FEMALE FOOTBALL PLAYERS

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Abstract
The researchers' goal is to create competitive activities that will help female football players in the Northern Oil Club for Women improve their motor, skill, and functional abilities. The study also aims to investigate how these workouts affect the improvement of motor, skill, and functional factors in female football players competing in the 2022–2023 Iraqi Women's Championship.
The experimental approach was chosen by the researchers because it was appropriate for the type of study. Twenty-six football players from Kirkuk's Northern Oil Club were purposefully chosen to make up the sample for the 2022–2023 season. Twenty players, or 76.9% of the population, made up the research sample. They were split into two groups, the experimental and control, each of which had ten players. Twenty-four training units made up the program, which was run for eight weeks at a rate of three sessions per week.

Keywords: Competitive exercises, motor abilities, skill abilities, functional abilities.

Introduction

People of various ages and demographics are interested in football, which is one of the most popular sports in the world. Speed of performance has become a defining characteristic of modern football, requiring players to be extremely physically fit in order to keep up with the game's tempo.
Football players must possess superior motor capabilities like agility, speed, and coordination in addition to skill-based abilities like shooting, passing, and dribbling, among other crucial qualities.

- **Agility** involves the ability to change body positions effectively, enabling players to maneuver and deceive opponents smoothly and skillfully.
- **Movement speed**, a critical motor variable, refers to the rapid contraction of one or more muscles when performing single or composite movements, such as kicking or receiving and shooting the ball.

The significance of these physical and skill-related traits emphasizes the need for training plans that assist football players in developing these abilities, especially in competitive environments.[1].

Relying on contemporary exercises made to efficiently build motor, skill, and functional factors is crucial for football success. These drills ought to replicate actual match conditions, including the presence of rivals during practice. Therefore, the use of competitive activities to enhance particular motor, skill, and functional variables among female football players in the Northern Oil Club is what makes this study significant.

1.2 Research Problem:

As former football players and current coaches of university and school teams, the researchers' knowledge of the game allowed them to spot problems during Northern Oil Club games in the Iraqi Women's Open Field Football League in 2022–2023. These problems included deficiencies in skill performance, functional capacities, and motor variables (e.g., coordination, agility, and speed of movement). Players' performance was lacking, as evidenced by their weak dribbling, bad shooting, and frequent incorrect passes.

This raised the research problem in the form of a question:

- Do competitive exercises influence the development of motor, skill, and functional variables in female football players at the Northern Oil Club?

1.3 Research Objectives:

1. To design competitive exercises aimed at developing specific motor, skill, and functional variables in female football players.
2. To examine the impact of competitive exercises on developing these variables.
3. to determine how the control and experimental groups' motor, skill, and functional factors differed before and after the assessments.
4. to determine whether the experimental and control groups' post-test results differed with respect to the factors under study.

1.4 Research Hypotheses:

1. Regarding the motor, skill, and functional factors among female football players, there are statistically significant variations between the pre- and post-test results for both the experimental and control groups.
2. For these factors, the post-test results for the experimental and control groups differ statistically significantly.

1.5 Research Scope:

1.5.1 Human Scope: Female football players from the Northern Oil Club during the 2022/2023 season in Kirkuk.

[1] Kamal Jamil Al-Rabadi, *Sports Training for the 21st Century* (Jordan: Al-Jami'a, 2001), p. 59.

1.5.2 Time Scope: from 17 June 2023 until 20 August 2023.
1.5.3 Spatial Scope: The Northern Oil Club stadium in Kirkuk.

3. Research Methodology and Field Procedures:

3.1 Research Methodology:

The researchers adopted the experimental method due to its suitability for the research problem and objectives.

3.2 Research Population and Sample:

The Northern Oil Club (28 players) and Northern Gas Club (24 players) were the two clubs represented by the fifty-two female football players in Kirkuk who played at an advanced level. The research sample was purposefully provided by the Northern Oil Club, which participated in the 2022–2023 season of the Iraqi Women's Championship.

The research sample consisted of twenty of the twenty-eight players, who were equally divided into two groups, experimental and control, each consisting of ten players. Eight athletes were disqualified for their injuries and participation in pilot trials. Table (1) displays these specifics.

Table (1): The Research Population, Sample, and Percentages

Category	Number	Percentage (%)
Main Research Sample	28	53.84%
Injured Players	3	5.76%
Pilot Study Sample	5	9.61%
Research Sample	20	38.46%

3.3 Experimental Design:

The experimental design that the researchers employed was called the "Randomized Equivalent Groups Design with Pre- and Post-Testing." A trustworthy comparison of the intervention's effects is made possible by this design, which guarantees that the groups are equal at the beginning of the trial.[2].

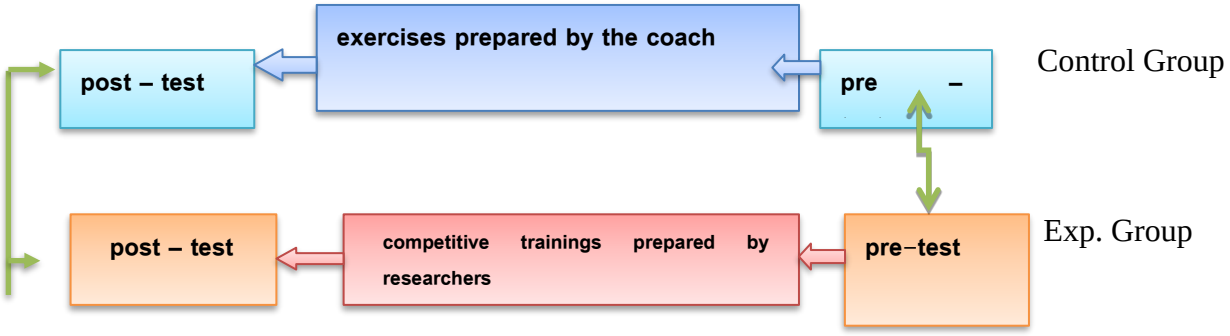

Figure (1) illustrates the experimental design for the two groups.

[2] Mohammad Khalil et al., *Introduction to Research Methodology in Education and Psychology*, 4th ed. (Amman: Dar Al-Maseerah for Publishing, 2002), p. 192.

3-4 Homogeneity and Equivalence of the Research Groups:

3-4-1 Homogeneity of the Research Sample:

In terms of the variables (mass, height, chronological age, and training age), the research sample was homogeneous.

Table (2) shows the homogeneity of the research sample.

Variables	Unit of Measurement	Mean	Standard Deviation	Mode	Skewness Coefficient
Chronological Age	Month	18.02	1.83	17	0.557
Height	cm	165.7	5.57	167	-0.233
Mass	kg	60.6	4.30	60	0.139
Training Age	Month	21	1.55	20	0.645

3-4-2 Equivalence of the Research Sample:

The means, standard deviations, computed t-value, sig value, and significance of the difference between the experimental and control study groups are displayed in Table (3).

Variables		Unit	Control group		Experimental group		T – Value	Sig Level	Sig
			M	SD	M	SD			
Kinetic	Kinetic Speed	**Rep**	26,500	1,95	29,5	2,18	0,451	0,175	Un-Sig
	Agility	**Sec**	9,45	0,49	9,67	0,46	0,480	0,155	Un-Sig
	Coordination	**Sec**	8,191	1,40	7,85	0,85	0,415	0,142	Un-Sig
Skill-Based	Rolling	**Sec**	16,3	1,101	16,2	1,19	0,333	0,501	Un-Sig
	Passing	**Deg.**	10,4	0,82	10,6	1,04	0,283	0,620	Un-Sig
	Shooting	**Deg**	4,5	1,849	4,6	1,24	0,178	0,798	Un-Sig
Functional	Pulse	**N\M**	72,3	2,11	74	1,04	1,78	1,173	Un-Sig
	Breathing Rate	**Rep**	17,8	1,22	18,00	1,12	1,97	1,143	Un-Sig
	Oxygen Percentage	**ml**	98,7	0,48	96,9	0,73	1,75	0,178	Un-Sig
	Systolic Blood Pressure	**ml**	12,3	0,123	12,3	1,23	1,83	0,166	Un-Sig
	Diastolic Blood Pressure	**ml**	8.2	0,09	8,1	0,30	1,81	0,168	Un-Sig

3-5 Means, Devices, and Tools Used:

3-5-1 Means Used in the Research:

The researchers obtained the information through:

- Arabic and foreign sources.
- Tests and measurements.
- Observation.
- The internet.
- Data collection forms.

3-5-2 Devices and Tools Used in the Research:

- Laptop (DELL).
- Pulse and blood pressure measurement device, made in Germany.
- Oxygen measurement device, made in Germany.
- Mass measurement device.
- Four stopwatches.
- Standard football field.
- Standard footballs.
- Measuring tape.
- Twenty-four cones.
- Multiple circles.
- Burk.
- Assistant referee flags.
- Whistle.

3-6 Identification of Kinetic, Skill, and Functional Variables:

After reviewing the content of Arabic and foreign sources, the researchers selected the kinematic, skill, and functional factors and their assessments.

3-6-1 Kinetic Variables and Their Tests:

3-6-1-1 Test of Horizontal Running Speed of the Leg[3]:

- **Test Goal:** To measure the speed of the subject's leg in moving it closer and further away in a horizontal plane.
- **Tools Used:** The stopwatch is a gadget that consists of a chair without armrests and a wooden board with a vertical bar fixed in the middle of a beam (40.64 cm in length and 15.24 cm in height).
- **Test Specifications:** The foot is on the right side of the device while the subject sits facing it. The subject cycles from moving its foot to the left side over the beam to moving it back to the right side after hearing the start signal.
- **Recording:** The number of cycles completed within 20 seconds is counted, with two attempts made and the best attempt recorded.

3-6-1-2 Agility Test:

- **Test Name:** Running between cones over a 20-meter distance[4].
- **Test Goal:** To measure agility.
- **Tools Used:** Measuring tape, ten cones, stopwatch, whistle.
- **Method of Performance:** The starting line, two meters from the first cone, is where the player begins. The participant goes through ten cones, each two meters apart, over a twenty-

[3] Mohamed Sobhi Hassanain; *Measurement and Evaluation in Physical Education*, 6th edition (Cairo, Dar Al-Fikr Al-Arabi, 2000), p. 295.
[4] Risan Khreibat; *Encyclopedia of Tests in Physical Education and Sports*, (Basra, Physical Education), p. 155.

meter course when the whistle sounds. Cones are crucial for executing the zigzag movement when the player maneuvers through them.

- **Recording Method:** The timer records the amount of time that passes between the player's start and the last cone being passed. The time is rounded to the nearest 0.001 second, and each player receives one try.

Figure (2) illustrates the agility test.

3-6-1-3 Coordination:

Test Name: Numbered Circles Test[5].

Test Goal: To measure the coordination between the legs and eyes.

Tools Used: Stopwatch, drawing (8) circles on the ground, each with a diameter of 60 cm, whistle.

Performance Description: The subject stands in circle number (1), and upon hearing the whistle, they jump with both feet together to circle number (2) and then alternately to circle number (8), doing so at the fastest possible speed.

Recording: The time taken by the subject to move through all eight circles is recorded. **Figure (2)**.

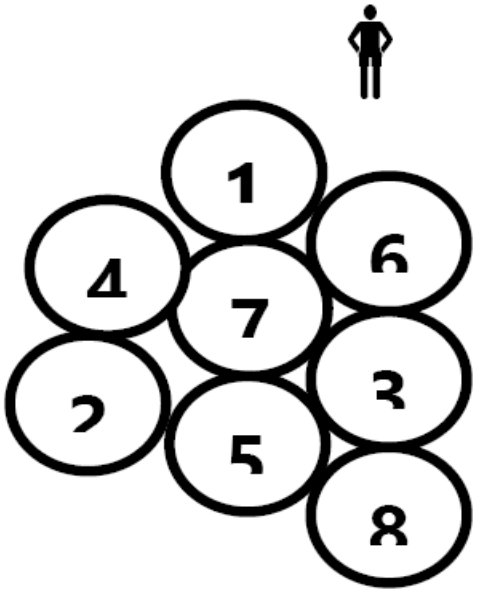

Figure (3) illustrates the numbered circles test.

[5] Ali Sum Jawad; *Tests, Measurement, and Statistics in the Sports Field*, (Al-Qadisiyah University, 2004), p. 149.

3-6-2 Skill Variables and Their Tests:

3-6-2-1 Rolling Test:

Test Name: Ball Rolling Test in a Zigzag Line Between Cones[6].

Test Purpose: To measure the player's ability to control the ball while rolling it between the cones.

Tools Used: 10 cones, football, stopwatch.

Performance Description: The player stands with the ball at the beginning line after ten cones have been placed in a straight line on the field, with one meter separating each cone and one meter separating the starting line from the first cone (as seen in Figure 3). The player dribbles the ball in a zigzag path between the cones until they reach the last one, then turns around and starts over (i.e., the distance traveled from the starting line to the return point at the starting line) after receiving the starting signal.

Recording Method: The player's time is recorded in seconds, rounded to the nearest fraction of a second, from the moment the starting signal is given until the player returns to the starting line.

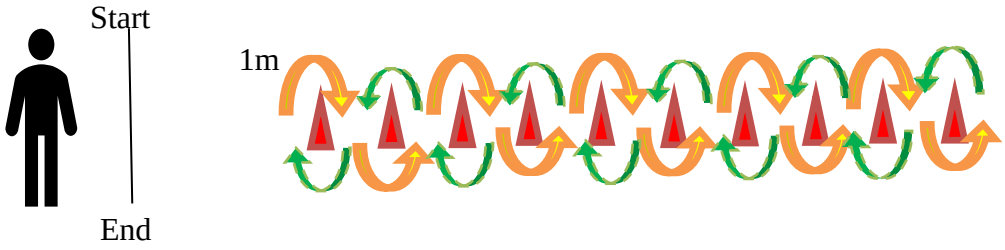

Figure (4) illustrates the cone dribbling test over a 20-meter distance.

3-6-2-2 Passing Test:

Test Name: Ball Passing Accuracy Test Around Concentric Circles on the Ground[7].

Test Purpose: To measure passing accuracy.

Tools Used: Chalk for drawing circles, measuring tape, footballs.

Test Procedures:

- Three concentric circles are drawn, with diameters of three meters, five meters, and seven meters.
- The starting line is marked fifteen meters away from the center, with a length of five meters from the side.
- The player stands behind the starting line and passes five balls consecutively into the air, attempting to land them in the smallest circle.
- The player has two attempts.
- If the ball touches any common line, it is counted for the larger circle. Each attempt consists of five balls.

[6] **Mufti Ibrahim; The New in Skill and Tactical Preparation for Football Players** (Cairo, Dar Al-Fikr Al-Arabi, 1994) p. 261.
[7] Zohair Al-Khashab; *Design and Standardization of Tests to Measure Some Motor Skills in Football* (Published Research, Sixth Conference of Colleges of Physical Education, Ministry of Higher Education, 1990), p. 8.

Recording Method:

- The smallest circle is worth three points, the second circle two points, the third circle one point, and zero points for outside the circles. The best attempt is counted.

Unit of measurement: Points.

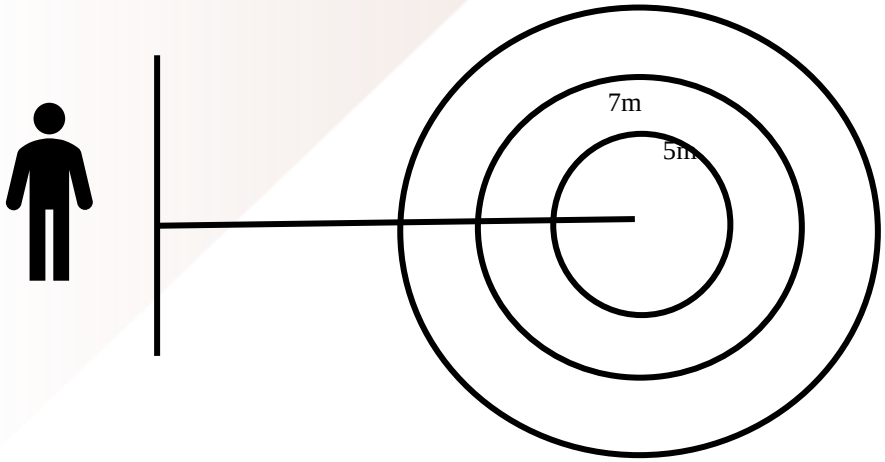

Figure (5) illustrates the ball passing accuracy test around overlapping circles on the ground.

3-6-2-3 **Shooting Test: Test Name**: Shooting with a stationary ball from eighteen yards at a goal designed in the center.

Test Purpose: To measure the accuracy of long-distance shooting[8].

Tools Used: ten footballs, official football goal, colored tape.

Performance Description: A colored tape is tied from the middle of the crossbar to split the goal into two equal half. The ball is positioned in front of the goal's center in the penalty area. In order to make sure the ball crosses the goal line while it is high above the ground, the tester begins by jogging 10 meters in the direction of the ball. Five shots are taken once the right foot is positioned toward the tester's left side. As indicated in the diagram, the tester then takes five shots while using the left foot to aim toward the tester's right side.

Recording Method: The number of successful attempts out of ten shots on target is counted.

Figure (5) illustrates the long-distance shooting accuracy test.

[8] Faisal Ayash Al-Dulaimi, Ahmed Abdul-Haq; *Football* (Algeria, B.T., 1997), p. 414.

3-6-3 Functional Tests:

3-6-3-1 Breathing Rate: While the player is seated in a chair, the breathing process is observed, and the rise and fall of the abdominal region is noted in order to determine the breathing rate. The measurement is meant to provide precise findings for evaluating the player's breathing rate, not to determine the precise number of breaths.[9].

3-6-3-2 Measurement of Blood Pressure and Heart Rate:

Blood pressure, heart rate, and blood oxygen levels were measured using the PREMAR electronic device[10].

3-7 Pilot Experiments:

A pilot experiment is a small-scale test or trial conducted by researchers to identify the positives and negatives that accompany the main experiment[11].

3-7-1 First Pilot Experiment:

The researchers conducted the first pilot experiment on Saturday, June 17, 2022, at 5:00 PM, involving five participants from the research sample who were excluded from the main experiment. The experiment was carried out with the assistance of a support team for the competitive exercises prepared by the researchers. The goals of the experiment were:

- To assess the suitability of the exercises prepared by the researchers for the sample.
- To check the readiness of the designated training areas and the equipment and tools for the exercises.
- To determine the training times.
- To assess the rest periods between exercises and sets.
- To evaluate the efficiency of the support team.

3-7-2 Second Pilot Experiment:

Five members of the research sample who were not included in the main trial participated in the second pilot experiment, which was carried out by the researchers on Sunday, June 18, 2022, at 5:00 PM. Tests of motor abilities were the main emphasis of the trial. The experiment's objectives were:

- To assess the required time for the tests.
- To verify the suitability of the tests for the research sample.
- To identify potential challenges and errors that might arise for the researchers.

[9] **Mohammad Samir; Physiology, 3rd edition** (Alexandria, Al-Ma'arif, 2000) p. 264.
[10] Mohamed Samir; Same source, p. 280.
[11] **Nuri Al-Shouk, Rafi' Al-Kubaisi; Research Guide for Writing Research in Physical Education, (Baghdad, B.M., 2004), p. 89.**
• Ali Abdul Karim (International Coach)
• Haitham Hafez (International Coach)
• Zuhair Ali Murad (International Coach)

3-7-3 Third Pilot Experiment:

On Monday, June 19, 2022, at 5:00 PM, the researchers, assisted by the supporting staff, carried out the third pilot experiment on the skill tests for five players from the sample who were not included in the main trial. The experiment's goal was:

- To assess the suitability of the tests for the research sample.
- To determine the time required for the tests.
- To identify obstacles and errors that occur in the tests.

3-8 Pre-Tests:

3-8-1 Motor, Skill, and Functional Variables:

The pre-tests were conducted on Wednesday, 21/6/2022, at 5:00 PM, and included the following variables:

1. **Motor Variables**: (Speed, Agility, Coordination)
2. **Skill Variables**: (Dribbling, Passing, Shooting)
3. **Functional Variables**: (Pulse rate, Respiratory rate, Oxygen percentage, Systolic blood pressure, Diastolic blood pressure)

3-9 Main Experiment:

The researchers created the competitive exercises (Appendix) after splitting the sample into control and experimental groups, each of which included ten participants. The experiment began on Saturday, June 24, 2022, and ran until Wednesday, August 20, 2022. With the assistance of the supporting staff, the researchers oversaw the experiment while taking the following into account:

- The exercises were implemented during the main part of the specific preparation period.
- Duration of exercises: 8 weeks.
- Number of training sessions per week: 3 days.
- Training days: Saturday, Monday, Wednesday.
- Total number of training units: twenty-four training units.
- Number of competitive exercises: twelve exercises (Appendix).
- High-intensity training method was used.
- The ideal performance intensity was followed.
- The researchers ensured adequate rest between exercises and sets.
- A variety of exercises was applied.
- The duration of the competitive exercises ranged from 27 to 30 minutes.

3-10 Post-Tests:

Following the completion of the primary experiment, the following variables were included in the post-tests that were carried out by the researchers at 5:00 PM on Thursday, August 21, 2022, with assistance from the supporting team:

1. **Motor Variables**: (Speed, Agility, Coordination)
2. **Skill Variables**: (Dribbling, Passing, Shooting)

3. **Functional Variables**: (Pulse rate, Respiratory rate, Oxygen percentage, Systolic blood pressure, Diastolic blood pressure)

3-11 Statistical Methods:

The researchers used the Statistical Package for Social Sciences (SPSS) for the following analyses:

- Mean.
- Standard deviation.
- Skewness coefficient.
- Percentage.
- T-test for dependent and independent samples.
- Pearson correlation coefficient.

4- Presentation of Test Results:

4-1 Presentation of the Pre- and Post-Test Results for the Control Group on Motor and Skill Variables:

Table (4): Results of Pre- and Post-Tests for the Control Group on Motor and Skill Variables

Variables		Unit	Pre-test		Post-test		T-Value	Sig level	Sig
			M	SD	M	SD			
Kinetic	Motor Speed	Rep	26,500	1,95	29,5	2,28	4,384	0,001	Sig
	Agility	Sec	9,45	0,49	9,03	0,27	11,663	0,000	Sig
	Coordination	Sec	8,191	1,40	7,85	1,36	9,105	0,000	Sig
Skill	Dribbling	Sec	16,3	1,101	16,1	0,990	7,734	0,000	Sig
	Passing	Sec	10,4	0,82	12,55	0,825	11,483	0,000	Sig
	Scoring	Deg	4,5	1,849	6,20	1,250	8,874	0,000	Sig

4-2 Presentation of the Pre-test and Post-test Results for the Control Group on Functional Variables:

Table (5) Pre-test and Post-test Results for the Control Group on Functional Variables

Variables		Unit	Pre-test		Post-test		T-Value	Sig level	Sig
			M	SD	M	SD			
Pre-performance	Pulse	N\M	72,3	2,11	72,5	2,32	1,053	0,649	Unsig
	Respiratory rate	Rep	17,8	1,22	18	1,12	1,054	0,632	Unsig
	Oxygen percentage	ml	98,7	0,48	96,9	0,73	2,654	0,521	Unsig
	Systolic pressure	ml	12,3	0,123	12,2	0,73	6,456	0,646	Unsig
	Diastolic pressure	ml	8.2	0,09	8,1	0,30	7,435	0,729	Unsig
Post-performance	Pulse	N\M	167	5,88	166,9	5,64	5,938	0,218	Unsig
	Respiratory rate	Rep	49,0	1,43	49,5	1,44	6,225	0,140	Unsig
	Oxygen percentage	ml	96	1,56	96	1,59	4,674	0,996	Unsig
	Systolic pressure	ml	15,6	0,18	15,4	0,41	2,667	0,723	Unsig
	Diastolic pressure	ml	9,5	0,15	9	0,11	1,394	0,723	Unsig

Post-exercise	Pulse	**N\M**	77	1,65	73,5	2,32	2,443	0,064	Unsig
	Respiratory rate	**Rep**	21	0,94	18,3	1,41	5,932	0,092	Unsig
	Oxygen percentage	**ml**	96,7	1,25	98,6	0,51	3,767	0,107	Unsig
	Systolic pressure	**ml**	13	0,16	12,4	0,43	2,464	0,076	Unsig
	Diastolic pressure	**ml**	8,75	0,15	8,3	0,28	4,825	0,591	Unsig

4-3 Presentation and Discussion of the Pre- and Post-Test Results for the Experimental Group on Motor and Skill Variables:

Table (6): Pre- and Post-Test Results for the Experimental Group on Motor and Skill Variables

Variables		**Unit**	**Pre-test**		**Post-test**		**T-Value**	**Sig level**	**Sig**
			M	**SD**	**M**	**SD**			
Kinetic	**Motor Speed**	**Rep**	29,5	2,18	32,00	1,63	1,635	0,001	Sig
	Agility	**Sec**	9,67	0,46	8,3	0,29	16,532	0,000	Sig
	Coordination	**Sec**	7,85	0,85	6,81	0,875	7,553	0,000	Sig
Skill	**Dribbling**	**Sec**	16,2	1,19	14,31	4,31	2,480	0,004	Sig
	Passing	**Sec**	10,6	1,04	14,30	0,65	14,096	0,000	Sig
	Scoring	**Deg**	4,6	1,24	7,50	0,91	8,352	0,000	Sig

The table clearly shows improvement in the experimental group's pre- and post-test results for the motor variables (motor speed, agility, and coordination). The researchers believe that the workouts they created are what caused the experimental group's motor speed to increase from 29.5 to 32. These workouts combined high-intensity training methods with the ideas of sports training, including continuity, diversity, and progression. The experimental group's motor speed increased as a result of all these factors. Strength in the muscle groups used in the performance is also linked to this development because strength and motor speed are directly correlated. As a result, motor speed has increased because "motor speed cannot be developed independently from the development of strength, as both are closely related to each other."[12]

The gradual progression and variety in the training units with the chosen exercises during the training period, which significantly contributed to the development of agility among the players in the experimental group, are credited by the researchers with the improvement in agility from the pre-test result of 9.67 to the post-test result of 8.30. "One of the key pillars for guaranteeing the enhancement of athletic performance is the planning of sports training procedures. Enhancing the athlete's overall athletic level is the aim of the workout selection process.[13]

Table (6) shows that the researchers' workouts, which were appropriate for the players' skill level and took individual differences into consideration, are responsible for the experimental group's improved coordination. "Training programs should be designed according to the

[12] Kamal Jamil Al-Rubdi; *Sports Training for the 21st Century*, 1st ed. (Amman, National Library, 2004), p. 64.
[13] **Mohammed Hassan Alawi; Sports Training** (Cairo, Dar Al-Fikr Al-Arabi, 1986), p. 11.

players' abilities and should consider their preferences and desires in a structured and targeted way to develop their motor skills."[14]

The improvement in the experimental group's post-test scores for basic abilities (shooting, rolling, and passing) is displayed in table (6). In addition to the arrangement and progression of the drills, the researchers attribute this progress to the increasing frequency of these exercises in the training units and the significance of the abilities performed at this intensity. For athletes to improve their skill performance with more accuracy, training must be structured and repetitive. "It should be noted that repetition of skills by players effectively contributes to improving their ability in those skills."[15]

The goal of the duration, which is defined by regularity and consistency in executing the assigned exercises, is to raise the level of performance, particularly if these exercises are performed at a high intensity in accordance with the requirements of the particular pre-competition and preparation phase. "The duration of the training program or preparation phase, which lasts from 6 to 8 weeks or more, and includes specialized exercises for developing physical and skill abilities."[16]

4-4 Presentation and Discussion of the Pre- and Post-Test Results for the Experimental Group on Functional Variables:

Table (7) shows the results of the pre- and post-tests for the experimental group on functional variables.

Variables		Unit	Pre-test		Post-test		T-Value	Sig level	Sig
			M	SD	M	SD			
Pre-performance	Pulse	N\M	74	1,04	72,00	2,22	5,193	0,000	Unsig
	Respiratory rate	Rep	18,00	1,11	19,00	1,57	3,568	0,001	Unsig
	Oxygen percentage	ml	98,5	0,52	96,9	0,73	5,853	0,000	Unsig
	Systolic pressure	ml	12,3	0,42	12,1	0,73	1,498	0,047	Unsig
	Diastolic pressure	ml	8,1	0,22	8	0,23	1,389	0,029	Unsig
Post-performance	Pulse	N\M	167,7	5,85	166,9	5,64	4,294	0,000	Unsig
	Respiratory rate	Rep	50,7	0,83	49,9	2,38	6,276	0,000	Unsig
	Oxygen percentage	ml	96	1,56	97	1,42	3,094	0,003	Unsig
	Systolic pressure	ml	15,9	0,42	15,2	0,43	4,243	0,000	Unsig
	Diastolic pressure	ml	9,2	0,17	9,1	0,13	2,847	0,012	Unsig
Post-exercise	Pulse	N\M	77,1	2,68	73,1	2,35	9,722	0,000	Unsig
	Respiratory rate	Rep	21,3	0,94	18,3	0,45	8,287	0,000	Unsig
	Oxygen percentage	ml	96,9	0,73	98,4	0,56	11,746	0,000	Unsig
	Systolic pressure	ml	12,8	0,09	12,2	0,48	5,822	0,000	Unsig
	Diastolic pressure	ml	8,7	0,09	8,1	0,38	4,256	0,000	Unsig

[14] Jamal Saleh Hassan; *Football Schools: Educational Programs for Ages 8-11,* 1st edition (Dubai, Al-Salam Printing, 2011), p. 42.
[15] Mufti Ibrahim Hamad; *Sports Training for Both Genders from Childhood to Adolescence* (Cairo, Dar Al-Fikr Al-Arabi, 1996) p. 174.
[16] Risan Khreibat; *Sports Training* (Mosul, Dar Al-Kutub, 1998) p. 96.

Table (7) makes clear that all of the functional variables (pulse, oxygen %, respiratory rate, systolic blood pressure, and diastolic blood pressure) improved in the post-test compared to the experimental group's pre-test findings. The exercises the researchers devised, the repetitions, and the emphasis on recovery times in between exercises are all credited by the researchers with this progress. Any coach must use specific functional indicators to help determine the daily training loads while creating their training program. This involves comprehending the nature of performance, which needs to be researched and its development principles taken into account while creating training plans for each day, week, and month of the sporting season.[17]

The researchers' competitive exercises, which resulted in the development of the functional variables, are responsible for the discrepancy between the experimental group's pre-test and post-test results. Furthermore, while indirectly, the skill exercises improved the functional variables as well.

In the experimental group of the research sample, the researchers feel that the positive link with the functional variables—heart rate, oxygen saturation, respiratory rate, systolic blood pressure, and diastolic blood pressure—indicates a functional adaptation of these indicators. The development of the motor and skill variables in the research sample was greatly aided by this adaptation.

4-5 Presentation and Discussion of Post-Test Results for the Control and Experimental Groups for Motor and Skill Variables:

Table (8) shows the post-test results for both the control and experimental groups for motor and physical variables.

Variables		Unit	Pre-test		Post-test		T-Value	Sig level	Sig
			M	SD	M	SD			
Kinetic	Motor Speed	Rep	29,5	2,28	32,00	1,63	7,426	0,000	Sig
	Agility	Sec	9,03	0,27	8,3	0,29	6,847	0,000	Sig
	Coordination	Sec	7,85	1,36	6,81	0,875	4,847	0,000	Sig
Skill	Dribbling	Sec	16,1	0,990	14,31	4,31	4,256	0,000	Sig
	Passing	Sec	12,55	0,825	14,30	0,65	7,390	0,000	Sig
	Scoring	Deg	6,20	1,250	7,50	0,91	4,304	0,000	Sig

It is clear from Table (8) that the experimental group performs better on the post-test for the motor variables (speed, agility, and coordination). The researchers credit the experimental group's improved motor variables to their consistent dedication to the activities they designed throughout the eight weeks of daily training sessions. The discrepancies in the two groups' growing motor skills were also significantly impacted by the researchers' employment of contemporary training techniques based on scientific theories about recommended loads that corresponded to the athletes' levels. Additionally, the experimental group's improvement in these motor variables was significantly influenced by the remaining time between workouts. According to the researchers, the experimental group's motor variables clearly developed as

[17] Ibrahim Shaalan, Abu Al-Ala Ahmed Abdel-Fattah; *Physiology of Sports Training* (Cairo, Dar Al-Fikr Al-Arabi, n.d.), p. 21.

a result of the controlled exercises it underwent, which caused a particular adaptation of the vital systems and their functions. "What is achieved in terms of physical and physiological adaptations is the result of an individual athlete following regular and prescribed training programs."[18]

Table (8) makes it clear that the experimental group performs better on the post-tests for the skill variables (rolling, passing, and shooting) than the control group. The skill exercises in the training units, which involved repetition of activities over an eight-week period, are credited by the researchers with improving the skill variables in the experimental group. The experimental group's ability levels significantly improved as a result of these workouts. The development of the skills was greatly aided by the researchers' use of high-intensity training techniques and adherence to the specificity principle when regulating rest and exercise times. "Skills are performed better when the athlete possesses a high level of physical qualities associated with the skills, as having physical qualities enables athletes to perform the skills better."[19]

4-6 Presentation and Discussion of the Post-Test Results for the Control and Experimental Groups on Functional Variables:

Variables		Unit	Pre-test		Post-test		T-Value	Sig level	Sig
			M	SD	M	SD			
Pre-performance	Pulse	N\M	72,5	2,32	72,00	2,22	5,193	0,002	Unsig
	Respiratory rate	Rep	18	1,12	19,00	1,57	3,568	0,000	Unsig
	Oxygen percentage	ml	96,9	0,73	96,9	0,73	1,853	0,046	Unsig
	Systolic pressure	ml	12,2	0,73	12,1	0,73	1,498	0,009	Unsig
	Diastolic pressure	ml	8,1	0,30	8	0,23	1,389	0,002	Unsig
Post-performance	Pulse	N\M	166,9	5,64	166,9	5,64	1,294	0,044	Unsig
	Respiratory rate	Rep	49,5	1,44	49,9	2,38	4,276	0,002	Unsig
	Oxygen percentage	ml	96	1,59	97	1,42	2,094	0,000	Unsig
	Systolic pressure	ml	15,4	0,41	15,2	0,43	2,243	0,001	Unsig
	Diastolic pressure	ml	9	0,11	9,1	0,13	1,847	0,010	Unsig
Post-exercise	Pulse	N\M	73,5	2,32	73,1	2,35	5,722	0,003	Unsig
	Respiratory rate	Rep	18,3	1,41	18,3	0,45	1,287	0,038	Unsig
	Oxygen percentage	ml	98,6	0,51	98,4	0,56	1,746	0,024	Unsig
	Systolic pressure	ml	12,4	0,43	12,2	0,48	3,822	0,011	Unsig
	Diastolic pressure	ml	8,3	0,28	8,1	0,38	2,256	0,005	Unsig

The post-test results for the functional variables of the experimental and control groups favor the experimental group, as shown in Table (9).

[18] Mohammed Ali Al-Qat; *Functions of Training Physiology* (Cairo, Dar Al-Fikr Al-Arabi, 1999) p. 512.
[19] Ali Zuhair Saleh; *The Effect of Different Work-to-Rest Ratios in Anaerobic Physical Training on Several Physical, Skill, and Functional Variables for Young Football Players* (Unpublished PhD Thesis, University of Mosul, College of Physical Education, 2009), p. 92.

The researchers believe that the competitive activities they created, which resembled match conditions, are what caused the improvement in the functional variables (pulse rate, oxygen levels, breathing rate, systolic blood pressure, and diastolic blood pressure). Another important factor was the researchers' emphasis on the rest periods in between sessions. The experimental group's functional variables improved as a result of all these factors.

"The training leads to adaptation of the heart and circulatory system, enabling the athlete to increase their heart rate capacity and improving their overall athletic performance." [20]

The researchers attribute the improvement in the post-test for the number of breaths after exertion to the experimental group's adaptation to the competitive workouts. "Regular training leads to positive functional changes, enhancing its capacity for expansion, which increases the volume of air inhaled and helps improve the oxygen exchange process between the blood and alveoli, making the breathing process more efficient."[21]

5- Conclusions and Recommendations:

5-1 Conclusions:

- The experimental group significantly improved their motor variables (coordination, agility, and movement speed) as a result of competitive workouts.
- Competitive exercises led to a significant improvement in the experimental group for skill variables (rolling, passing, shooting).
- Competitive exercises led to a significant improvement in the experimental group for functional variables (pulse rate, oxygen percentage, number of breaths, systolic and diastolic blood pressure).
- The motor, skill, and functional variables were all positively impacted by high-intensity training techniques.

5-2 Recommendations:

- It is necessary to use competitive exercises in training units.
- It is important to focus on the development and enhancement of functional variables, as they are crucial for female football players.
- Competitive exercises should be applied to other samples (youth, juniors).

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[20] Mufid Majid Salama; *Functional Preparation in Football*, 1st ed. (Amman, Dar Al-Fikr Al-Arabi, 2000), p. 25.
[21] Qasim Hassan Hussein; *Physiology – Its Principles and Applications in the Sports Field*: (Mosul, Dar Al-Hikma, 1990) p. 135.

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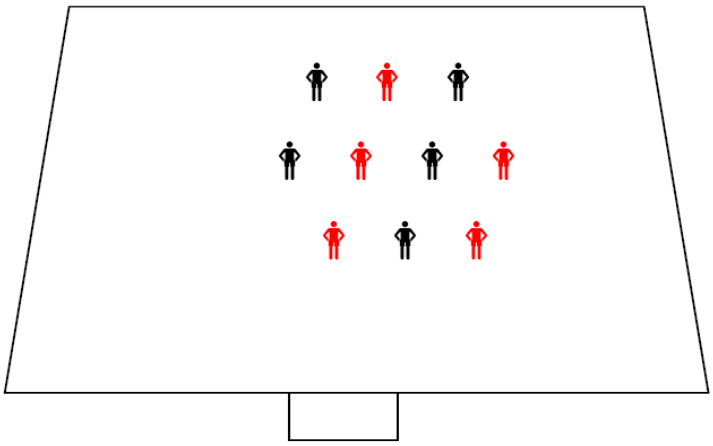
- **Appendix (1) Exercises Prepared by the Researchers**
- **Exercise (1)**

Objective: To develop agility, movement speed, oordination, rolling, passing, and shooting.
Equipment Used: Half football field, small goals.
Method of Execution: The players are divided into two teams (A and B), each consisting of five players. The players attempt to score goals using their right foot.



Exercise (2)
Objective: To develop agility, movement speed, coordination, rolling, passing, and shooting.
Equipment Used: Half football field, small goals.

Method of Execution: The players are divided into two teams (A and B), each consisting of five players. The players attempt to score goals using their left foot.

Exercise (3)

Objective: To develop agility, movement speed, coordination, rolling, passing, and shooting.
Equipment Used: Half football field, small goals.
Method of Execution: The players are divided into two teams (A and B), each consisting of five players. Goals are scored using the head only.

Exercise (4)
Objective: To develop agility, movement speed, coordination, rolling, passing, and shooting.
Equipment Used: Half football field, small goals.
Method of Execution: The players are divided into two teams, each consisting of five players. Goals can be scored after the eighth touch.

Exercise (5)
Objective: To develop agility, movement speed, coordination, rolling, passing, and shooting.
Equipment Used: Half football field, small goals.
Method of Execution: The players are divided into two teams (A and B), each consisting of five players. Goals can be scored after the seventh touch.

Exercise (6)
Objective: To develop agility, movement speed, coordination, rolling, passing, and shooting.
Equipment Used: Half football field, small goals.
Method of Execution: The players are divided into two teams (A and B), each consisting of five players. Goals can be scored after the sixth touch.

Exercise (7)
Objective: To develop agility, movement speed, coordination, rolling, passing, and shooting.
Equipment Used: Half football field, small goals.
Method of Execution: The players are divided into two teams (A and B), each consisting of five players. Goals can be scored after the fifth touch.

Exercise (8)
Objective: To develop agility, movement speed, coordination, rolling, passing, and shooting.
Equipment Used: Half football field, small goals.
Method of Execution: The players are divided into two teams (A and B), each consisting of five players. Goals can be scored after the fourth touch.

Exercise (9)
Objective: To develop agility, movement speed, coordination, rolling, passing, and shooting.
Equipment Used: Half football field, small goals.
Method of Execution: The players are divided into two teams (A and B), each consisting of five players. Goals are scored using the head after the sixth touch.

Exercise (10)
Objective: To develop agility, movement speed, coordination, rolling, passing, and shooting.
Equipment Used: Half football field, small goals.
Method of Execution: The players are divided into two teams (A and B), each consisting of five players. Goals are scored using the head after the fifth touch.

Exercise (11)
Objective: To develop agility, movement speed, coordination, rolling, passing, and shooting.
Equipment Used: Half football field, small goals.
Method of Execution: The players are divided into two teams (A and B), each consisting of five players. Goals are scored using the head after the fourth touch.

Exercise (12)
Objective: To develop agility, movement speed, coordination, rolling, passing, and shooting.
Equipment Used: Half football field, small goals.
Method of Execution: The players are divided into two teams (A and B), each consisting of five players. Goals are scored from a distance.

Appendix (2)
Examples from the First, Fifth, and Eighth Weeks of the Training Units
Training Unit (1, 2, 3)
Objective of the Training Unit

- **Duration of Training Unit One:** 27 minutes

Objective: To develop agility, movement speed, and coordination.

- **Duration of Training Unit Two:** 27 minutes

Objective: To develop rolling, passing, and shooting.

- **Duration of Training Unit Three:** 27 minutes

Objective: [Not specified]

Day	Exercise	Intensity	Exercise Duration	Group	Rest Between Groups and Exercise	Total Exercise Duration	Total Rest Duration	Total Duration (Exercise + Rest)
Saturday	1	Ideal Performance	300 sec	1	240 sec	900 sec	12 min (720 sec)	27 min (1620 sec)
	3		300 sec	1	240 sec			
	4		300 sec	1	240 sec			
Monday	8	Ideal Performance	300 sec	1	240 sec	900 sec	12 min (720 sec)	27 min (1620 sec)
	11		300 sec	1	240 sec			
	12		300 sec	1	240 sec			
Wednesday	1	Ideal Performance	300 sec	1	240 sec	900 sec	12 min (720 sec)	27 min (1620 sec)
	3		300 sec	1	240 sec			
	4		300 sec	1	240 sec			

Model from Week Five:
Training Unit (13, 14, 15)
Training Unit Duration (13): 28.30 minutes
Objective of Training Unit (13): Development of (agility, speed, coordination)
Training Unit Duration (14): 28.30 minutes
Objective of Training Unit (14): Development of (rolling, passing, shooting)
Training Unit Duration (15): 28.30 minutes
Objective of Training Unit (15): Development of (agility, speed, coordination)

Day	Exercise	Intensity	Exercise Duration	Group	Rest Between Groups and Exercise	Total Exercise Duration	Total Rest Duration	Total Duration (Exercise + Rest)
Saturday	1	Ideal Performance	300 sec	1	240 sec	990 sec	12 min (720 sec)	28.5 min (1710 sec)
	3		300 sec	1	240 sec			
	4		300 sec	1	240 sec			
Monday	2	Ideal Performance	300 sec	1	240 sec	990 sec	12 min (720 sec)	28.5 min (1710 sec)
	5		300 sec	1	240 sec			
	9		300 sec	1	240 sec			
Wednesday	6	Ideal Performance	300 sec	1	240 sec	990 sec	12 min (720 sec)	28.5 min (1710 sec)
	7		300 sec	1	240 sec			
	10		300 sec	1	240 sec			

Training Unit (22, 23, 24)
Training Unit Duration (22): 30 minutes
Objective of Training Unit (22): Development of (agility, speed, coordination)
Training Unit Duration (23): 30 minutes
Objective of Training Unit (23): Development of (rolling, passing, shooting)

Training Unit Duration (24): 30 minutes

Objective of Training Unit (24): Development of (agility, speed, coordination)

Day	Exercise	Intensity	Exercise Duration	Group	Rest Between Groups and Exercise	Total Exercise Duration	Total Rest Duration	Total Duration (Exercise + Rest)
Saturday	2	Ideal Performance	300 sec	1	240 sec	1080 sec	12 min (720 sec)	30 min (1800 sec)
	5		300 sec	1	240 sec			
	9		300 sec	1	240 sec			
Monday	6	Ideal Performance	300 sec	1	240 sec	1080 sec	12 min (720 sec)	30 min (1800 sec)
	7		300 sec	1	240 sec			
	10		300 sec	1	240 sec			
Wednesday	8	Ideal Performance	300 sec	1	240 sec	1080 sec	12 min (720 sec)	30 min (1800 sec)
	11		300 sec	1	240 sec			
	12		300 sec	1	240 sec			