

**"Developing Some Special Physical Abilities Using a Set of Tactical Sentences to Overcome Numerical Deficiency and Excess Situations and Negative Play in Attack in
"Handball**

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introduction and Research Problem: An

The sports field, particularly handball, has witnessed tremendous development recently, attributed to scientific advancements and significant progress in various life sciences, especially sports training science. These advancements can be utilized to benefit the sports field, contributing to players' superiority and achievements. Special physical abilities are crucial factors in achieving skillful performance and winning in handball. Numerous references and previous studies indicate that the skill level of players largely depends on the coach's attention to their physical abilities and proper development, which aids in achieving high levels of performance.

Achieving high athletic levels among players is one of the primary goals of well-planned sports training based on scientific principles. Performance level in handball relies on precise planning of the training process to develop and improve performance and reach the highest sports levels.

Handball is a technical sport requiring a high level of strength, speed, and endurance (2:16).

"Khaled Al-Hajj" (2017) states that training is an organized process aimed at improving and raising the athlete's fitness level for the specific event or activity. Training programs focus on exercises and drills necessary to develop the specific requirements of the competition (3:2).

"Fathi Hadi" (2010) indicates that sports training is an educational process subjected to scientific and educational principles, aiming to prepare the athlete comprehensively to achieve the highest possible athletic level and improve all physical and skill attributes (66:8).

"Raed Al-Mashhadi, Nabil Al-Jubouri" (2014) Handball is one of the relatively modern games in Arab countries, with Egypt being the first Arab country to practice and develop it, organizing the first local handball championship in 1957 and establishing the first Egyptian Handball Federation in the same year (4:3). Handball is a competitive activity characterized by a direct opponent trying to thwart the player's goals and benefit the team. This competition occurs between two teams under specific rules allowing significant physical contact to achieve the clear objective of scoring goals in the opponent's net while preventing them from scoring. The relatively small court size and game rules requiring quick ball disposal to a teammate or the opponent's goal keep players in continuous movement, whether in attack or defense (55:10).

The International Handball Federation strives to elevate the game level and add excitement by introducing game law amendments. This includes the goalkeeper rule amendment: "If a team plays without a goalkeeper, it is allowed to have a maximum of seven players on the court simultaneously," meaning the player replacing the goalkeeper wears the same jersey but is not allowed to enter the goalkeeper's area (27:17).

This amendment helps coaches avoid numerical offensive deficiency as much as possible by utilizing a substitute player for the goalkeeper, making the number of offensive players equal to the defensive players. Sometimes, the offensive team has seven attackers against six defenders. Observing global handball matches, researchers noted teams using the law amendment to replace the goalkeeper with an attacker. Scientific

observation of the matches between Norway & Denmark and Germany & France in the World Championship in Germany and Denmark (2019) showed that teams used the law amendment in 38 out of 210 attacks (18%), scoring 17 goals during the goalkeeper substitution (18.3%). This highlights the importance of studying goalkeeper substitution and the defense strategies implemented for the most successful methods.

Researchers observed that national teams extensively use the law amendment and its updates to change play patterns by replacing the goalkeeper with an attacker. This constantly puts the defensive team in an equal number situation, even during the attacking team's numerical deficiency. Substituting the goalkeeper compensates for the deficiency and sometimes, teams with high levels replace the goalkeeper during numerical equality to put the defense under pressure with more attackers and no goalkeeper. This forces the defensive team to change defense plans to counter the numerical increase, avoid conceding goals, create new ball possession opportunities, and score in the empty goal. Analyzing training reality and through the researchers' experience as former players and working as youth sector coaches at Minya Sports Club, along with assisting in teaching handball at the college and following many handball matches, they realized the urgent training need to benefit from new law amendments, including numerical increase and decrease for teams. Researchers found minimal use of law amendments, especially among first and premier division teams. Thus, researchers concluded the importance of conducting this study to design a training program for specific tactical situations considering the new law updates and examining its impact on some physical and skill variables in handball.

Research Aim:

This research aims to develop some special physical abilities using a set of tactical sentences to overcome numerical deficiency and excess situations and negative play in handball attack

Research Hypotheses:

In light of the research aim, the researchers propose the following hypotheses:

1-There are statistically significant differences between the pre- and post-measurements of the control group in some physical abilities of handball players, in favor of the post-measurement.

2-There are statistically significant differences between the pre- and post-measurements of the experimental group in some physical abilities of handball players, in favor of the post-measurement.

3-There are statistically significant differences between the post-measurements of the control and experimental groups in some physical abilities of handball players, in favor of the experimental group.

Research Terminology:*** Tactical Situations:**

The strategy set by the coach during preparation periods, enabling players to execute various match plans confidentially and effectively (64:4).

*** Numerical Change:**

A state of numerical deficiency or excess for the team due to a player or official being penalized with a two-minute suspension for violating international game rules or substituting the goalkeeper with an additional field player, increasing attackers over defenders (**procedural definition**).

*** Negative Play:**

The attacking team plays in a manner contrary to the ideology of handball, leading to a concept that encourages the attacking team to change their playstyle before being penalized by losing the ball and attack (**procedural definition**).

Research Methodology:

Researchers used the experimental method, suitable for the current research, with an experimental design involving two groups: one experimental and one control, using pre- and post-measurements for both groups.

Research Population:

The research population included registered handball players at Minya and Malawy Sports Clubs for the 2023/2024 sports season.

Research Sample:

Researchers selected the sample intentionally, comprising 30 players divided equally into two groups: an experimental group of 15 players (35.71%) and a control group of 15 players (35.71%). An additional exploratory sample of 10 players (23.81%) was selected from the research population but outside the main sample. Two players were excluded due to irregular training.

Table (1)

Statistical Description of the Research Population and Sample (N = 42)

Percentage	Number	Sample
%35.71	15	Control Group
%35.71	15	Experimental Group (for the proposed training program)
23.81%	10	Exploratory Sample (for scientific transactions of the tests under study)
4.76%	2	Excluded
100%	42	Total

Researchers selected the previous sample for several reasons, primarily:

- Availability of the required sample for research procedures regarding level.
- Approval from officials to implement the proposed program.
- Regularity in training.

Distribution of the Research Sample Members:

Researchers calculated the normal distribution of the basic research sample members for the control and experimental groups in growth rates (chronological age, height, weight) and some physical variables (muscular power, speed, agility, endurance), as shown in Table 2.

Table (2)

Statistical Description of Growth Rates and Some Physical Variables for Both Research Groups (N1 = N2 = 15)

Control Group (N = 15)				Experimental Group (N = 15)				Unit	Variables	
Skewness	Std. Dev.	Median	Mean	Skewness	Std. Dev.	Median	Mean			
0.92	1.96	23.00	23.60	-0.28	2.18	25.00	24.80	Year	Age	
-0.43	6.06	181.0	180.13	0.10	5.92	181.0	181.20	cm	Height	
0.69	6.38	81.00	82.47	0.54	6.30	78.00	79.13	kg	Weight	
0.06	0.44	7.22	7.23	0.41	0.27	7.00	7.04	M	Throwing a medicine ball for the longest distance	Power
-0.33	4.87	64.00	63.47	-0.97	4.12	64.00	62.67	cm	Vertical jump from a standstill	
0.34	0.23	4.87	4.90	-0.45	0.34	4.87	4.82	sec	Running 30 meters from a high start	Speed
-0.61	0.16	1.59	1.56	-0.34	0.19	1.53	1.50	sec	Nelson test	
0.43	1.30	23.55	23.73	0.19	1.12	23.87	23.94	sec	Agility running	Jump
0.02	6.10	76.00	76.07	-0.03	5.78	77.00	76.93	sec	1500-meter running	Nelson

It is clear from Table (2) that:

The skewness coefficients for growth rates and some physical variables of the control group players ranged between (0.54 : -0.97), while for the experimental group they ranged between (0.92 : -0.61). All values lie within the range of (± 3), indicating a normal distribution of the research sample individuals in these variables.

Equivalence of Research Groups:

The researchers established equivalence between the control and experimental groups regarding the variables under investigation. Table (3) illustrates this:

Table (3)

Significance of Differences between the Pre-test Means of the Control and Experimental Groups in the Variables under Investigation (n1 = n2 = 15)

Significance Level	t-value	Experimental Group (n = 15)		Control Group (n = 15)		Measurement Unit	Variables	
		الانحراف المعياري	المتوسط الحسابي	الانحراف المعياري	المتوسط الحسابي			
Not significant	1.58	1.96	23.60	2.18	24.80	Years	Age	Growth Rates
Not significant	0.49	6.06	180.13	5.92	181.20	cm	Height	
Not significant	1.44	6.38	82.47	6.30	79.13	kg	Weight	
Not significant	1.40	0.44	7.23	0.27	7.04	m	Medicine Ball for Distance	Vertical Jump from Standing
Not significant	0.47	4.87	63.47	4.12	62.67	cm	Vertical Jump from Standing	
Not significant	0.73	0.23	4.90	0.34	4.82	s	30 m Sprint from High Start	Speed
Not significant	0.94	0.16	1.56	0.19	1.50	s	Nelson Test	
Not significant	0.46	1.30	23.73	1.12	23.94	s	Zigzag Run	Agility
Not significant	0.40	6.10	76.07	5.78	76.93	s	1500 m Run	Speed Endurance

The t-value table at a degree of freedom (28) and significance level 0.05 =1.701

From Table (3), it is clear that :

- There are no statistically significant differences between the pre-test means of the control and experimental groups in the variables under investigation, indicating the equivalence of the groups in these variables as the tabulated t-value is greater than the calculated t-value .

Data Collection Tools:

The researchers used the following data collection tools due to their suitability for the nature of the research:

First: Instruments and Devices Used:

1. Rostameter for measuring height and weight.
2. Cones.
3. Measuring tape.
4. Stopwatch.
5. Handballs.
6. 3kg Medicine Ball.

Second: Data Collection Forms:

1. Personal data registration form for the research sample (Appendix).
2. Registration form for physical test measurements under investigation.
3. Expert opinion survey form on the most suitable tests for measuring physical fitness components.

Third: Physical Tests Under Investigation:

The researchers reviewed numerous references and previous studies to identify the key physical variables specific to handball players under investigation and to determine the tests that measure these components. These components and physical tests were listed in an opinion survey form and presented to a group of experts in training, especially handball training (Appendix 1). The components and physical tests that received more than 70% of expert opinions were selected and are as follows:

- **Power:** Throwing a 3kg medicine ball for distance (measured in meters), vertical jump from standing (measured in cm).
- **Speed:** 30m sprint from a high start (measured in seconds), Nelson test (measured in seconds).
- **Agility:** Zigzag run for agility (measured in seconds).
- **Speed Endurance:** 1500m run (measured in seconds).

Scientific Transactions of Physical Tests Under Investigation:

The researchers calculated the scientific transactions of the physical tests under investigation in terms of validity and reliability as follows:

A. Validity:

The validity of the physical tests under investigation was calculated using the discriminant validity method on a pilot sample similar to the research community but outside the main research sample, consisting of (10) players. The sample was divided according to physical performance level into two groups, one with high physical performance (5 players) and the other with lower physical performance (5 players). The significance of the differences between the two groups was then calculated as shown in Table (4).

Table (4)

Significance of Differences Between the High-Performance and Low Performance Groups in Physical Tests Under Investigation Using the Mann-Whitney U Test ($n_1 = n_2 = 5$)

Error Probability	Z-value	Rank Mean	Low-Performance Group		High-Performance Group		Measurement Unit	Variables	
			SD	Mean	ξSD	Mean			
0.009	2.61	8.00 3.00	0.15	6.78	0.22	7.34	m	Medicine Ball for Distance	Power
0.046	1.99	3.00 8.00	2.99	59.20	2.15	66.60	cm	Vertical Jump from Standing	
0.046	1.99	3.00 8.00	0.21	5.08	0.10	4.73	S	30m Sprint from High Start	Speed
0.046	1.99	3.00 8.00	0.08	1.69	0.07	1.48	s	Nelson Test	
0.046	1.99	3.00 8.00	0.52	25.12	0.70	23.10	s	Zigzag Run	Agility
0.009	2.61	8.00 3.00	1.72	79.20	2.97	70.00	s	١٥٠٠m Run	Speed Endurance

From Table (4), it is clear that there are statistically significant differences between the high-performance and low-performance groups in the physical tests under investigation in favor of the high-performance group, as the error probability value is significant at the 0.05 level, indicating the validity of the tests under investigation and their ability to discriminate between groups.

B. Reliability:

To calculate the reliability of the physical tests under investigation, the researchers used the test-retest method on a sample of (10) players from the research community but outside the main sample, with a three-day interval between the test and retest. Table (5) shows the correlation coefficients between the test and retest.

Table (5)
Correlation Coefficients Between Test and Retest in Physical Tests Under Investigation (n = 10)

Correlation Coefficient	Retest		Test		Measurement Unit	Variables		
	SD	Mean	SD	Mean				
0.90	0.35	7.11	0.35	7.06	M	Medicine Ball for Distance	Power	Physical Variables
0.97	5.21	63.30	4.77	62.90	cm	Vertical Jump from Standing		
0.90	0.33	4.86	0.25	4.91	S	30m Sprint from High Start	Speed	
0.87	0.11	1.57	0.14	1.59	s	Nelson Test	Agility	
0.94	1.11	23.98	1.25	24.11	s	Zigzag Run	Speed	
0.93	7.02	73.70	5.48	74.60	s	1500m Run	Endurance	

The r-value table at a degree of freedom (8) and significance level (0.05) =0.632

From Table (5), it is clear that the correlation coefficients between the test and retest for the physical tests under investigation ranged between (0.87 : 0.97), all of which are statistically significant as the calculated r-values are greater than the tabulated r-value at the 0.05 significance level, indicating the reliability of these tests.

Fourth: Training Program :

The researchers reviewed numerous references and previous studies, both Arabic and foreign, to determine the elements of the proposed training program and presented them to the experts (Appendix 1) for their opinions. The experts' views on the program elements are as follows

- Program Goal:

The proposed training program aims to improve:

- Certain physical variables in the handball players under study.
- Certain skill variables in the handball players under study.

-Principles of Program Design:

The researchers considered several principles when designing the program, including:

- Suitability of the proposed training program contents to the age and skill level of the sample under study.
- Consideration of individual differences among the sample members when forming the load in the proposed training program.
- Gradual progression in exercises from easy to difficult and from simple to complex.
- Ensuring safety and security factors to guarantee the program's success.
- Applying the principle of gradual load progression in the training program.

-Timing and Number of Training Units:

The researchers consulted a group of handball training experts to determine the total duration of the program, the number of weekly training units, and the load intensity. The experts' opinions on the program's timing ranged from 90% to 100%, and the researchers accepted a 70% agreement rate for the program components. The following were determined:

- 1- Total duration of the program = 12 weeks.
- 2- Number of weekly training units = 3 units per week (Sunday, Tuesday, Thursday) .
- 3- Total number of training units during the program = 36 units.
- 4- The program weeks were divided into the preparation phase stages:
 - General preparation phase = 3 weeks.
 - Special preparation phase = 5 weeks.
 - Competition preparation phase = 4 weeks.

Table (6)
Program Week Division During the Preparation Phase

Preparation Phase											Period	
Competition Prep				Special Prep					General Prep		Stage	
12	11	10	9	8	7	6	5	4	3	2	1	Weeks

The details of each phase are as follows:

-General Preparation Phase:

This phase lasts for 3 weeks, focusing on exercises aimed at generally improving some physical fitness elements and specifically preparing and enhancing the body's efficiency to complete the rest of the training unit effectively and energetically.

-Special Preparation Phase:

This phase lasts for 5 weeks, focusing on exercises that contribute to improving certain physical and skill variables in the handball players under study.

-Pre-Competition Phase:

This phase lasts for 4 weeks, aiming to develop technical and tactical skills, perfect competitive performance, and maintain acquired levels through various competition scenarios.

5-Determining Load Intensity:

Based on scientific references, the following load intensities were determined:

- Maximum load = 90% to 100% of the player's maximum capacity.
- High load = 75% to less than 90% of the player's maximum capacity.
- Medium load = 60% to less than 75% of the player's maximum capacity.

6. Determining the Training Unit Duration:

The researchers fixed the daily application time of the research experiment at 60 minutes during each daily training unit, distributed as follows: warm-up (5 minutes), main part (50 minutes), and cool-down (5 minutes).

7. Determining the Program Periods:

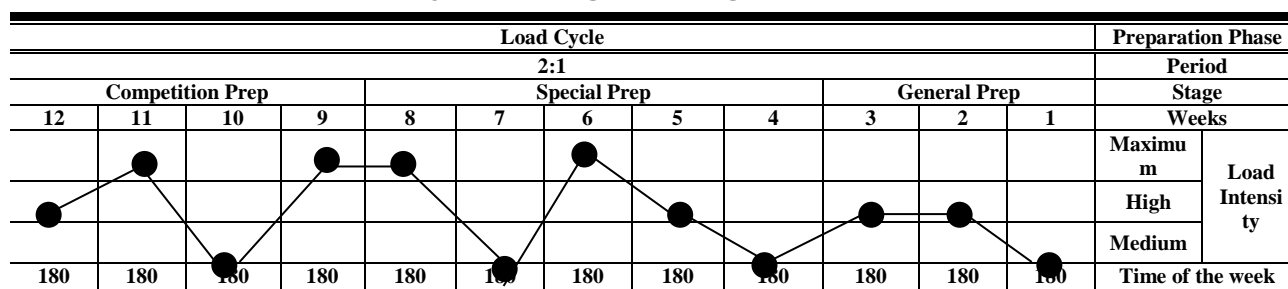
- Total time for general preparation (3 weeks \times 180 minutes) = 540 minutes.
- Total time for special preparation (5 weeks \times 180 minutes) = 900 minutes.
- Total time for competition preparation (2 weeks \times 180 minutes) = 360 minutes.
- Total duration of the proposed training program = 1800 minutes.

8. Determining the Load Cycle:

The load cycle for each program period is (2:1).

Figure(1)

Load Cycle During the Program and Phases



9- Determining Load Intensity Over Program Weeks :

- Maximum load weeks in the program: 4 weeks (6, 8, 9)
- High load weeks in the program: 4 weeks (2, 3, 5, 12)
- Medium load weeks in the program: 4 weeks (1, 4, 7, 10)

Research Implementation Steps :

-Pilot Study:

The researchers conducted a pilot study on 10 players from the same research community but outside the main research sample during the period from Thursday, 6/15/2023 AD until Thursday, 6/22/2023 objectives were to:

- Ensure the validity of the tools used for the program.
- Verify the scientific validity and reliability of the tests used.

- Pilot Study Results :

- The tools and devices used in the program were deemed valid.
- The reliability and validity of the tests used in the research were confirmed.

- Program Implementation:

After determining the main variables and tools, the researchers proceeded as follows:

- Pre-Test:

Conducted pre-testing From Wednesday, 6/28/2023 until Thursday, 6/29/2023 including measurements of age, height, weight, and the physical and skill variables under study.

- Program Execution:

The training program was implemented on the sample under study From Sunday, 7/2/2023 until Thursday, 9/21/2023 for 12 weeks, consisting of 36 training units (3 units per week).

- Post-Test:

Post-testing was conducted using the same tests and conditions as the pre-tests for all variables under study From Saturday, 9/23/2023 until Sunday, 9/24/2023 - **Statistical Methods Used:**

The researchers used the following statistical methods to calculate the research results:

- Arithmetic mean
- Median
- Standard deviation
- Skewness coefficient
- Pearson correlation coefficient
- Percentage change rates
- Mann-Whitney non-parametric test
- Paired sample t-test for one group
- Independent samples t-test for two groups

A significance level of 0.05 was accepted, and SPSS-V25 software was used to calculate some statistical parameters.

- Results Presentation, Interpretation, and Discussion:**- First: Presentation of Results:*****Result of the First Hypothesis:**

1. There are statistically significant differences between the pre-test and post-test mean scores of the control group in some physical abilities of handball players in favor of the post-test.

Table (7)
Significance of Differences Between Pre-Test and Post-Test Mean Scores
of the Control Group in Some Physical Abilities of Handball Players
(n = 15)

Percentage Change	t-Value	Mean Difference	Post-Test		Pre-Test		Unit of Measurement	Variables		Physical Variables
			SD	Mean	SD	Mean				
5.97%	5.79	0.42	0.38	7.46	0.27	7.04	M	Medicine Ball for Maximum Distance	Power	
5.31%	8.92	3.33	4.44	66.00	4.12	62.76	Cm	Vertical Jump		
7.26%	6.46	0.35	0.31	4.47	0.34	4.82	S	30m Sprint from a High Start	Speed	
2.00%	3.34	0.03	0.15	1.47	0.19	1.50	S	Nelson Test		
2.09%	3.00	0.50	1.46	23.44	1.12	23.94	S	Zigzag Run	Agility	
9.01%	7.39	6.93	6.06	70.00	5.78	76.93	S	1500m Run	Speed Endurance	

The tabulated t-value at 14 degrees of freedom and a significance level of $0.05 = 1.761$.

- shows significant differences between the pre-test and post-test mean scores of the control group in some physical abilities under study, favoring the post-test, as all calculated t-values are greater than the tabulated t-value at a significance level of 0.05. The percentage change rates for the variables under study ranged from 2.00% to 9.01%, indicating the positive effect of the traditional training method in improving the physical variables under study.

Second Hypothesis Results : which states :

- 1- There are statistically significant differences between the mean scores of the pre-test and post-test for the experimental group members in some of the physical abilities under investigation, in favor of the post-test.

Table (8)

Significance of differences between the mean scores of the pre-test and post-test for the experimental group members in some physical abilities under investigation (n = 15)

Percentage Change	t-Value	Mean Difference	Post-Test		Pre-Test		Unit of Measurement	Variables		Physical Variables
			SD	Mean	SD	Mean				
8.71%	4.96	0.63	0.27	7.86	0.44	7.23	M	Medicine Ball for Maximum Distance	Power	
9.97%	5.00	6.33	3.30	69.80	4.87	63.47	cm	Vertical Jump		
17.35%	6.63	0.85	0.44	4.05	0.23	4.90	s	30m Sprint from a High Start	Speed	
15.38%	6.46	0.24	0.11	1.32	0.16	1.56	s	Nelson Test		
7.50%	3.55	1.78	1.43	21.95	1.30	23.73	s	Zigzag Run	Agility	
14.72%	6.01	11.20	4.19	64.87	6.10	76.07	s	1500m Run	Speed Endurance	

The tabular t-value at a degree of freedom (14) and significance level of 0.05 = 1.761

It is evident from Table (8) that:

-There are statistically significant differences between the mean scores of the pre-test and post-test for the experimental group in some physical abilities under investigation, in favor of the post-test, as all calculated t-values are greater than the tabular t-value at a significance level of 0.05.

-The values of the change rates for the variables under investigation ranged between (7.50% - 17.97%), indicating the positive impact of the proposed training program in improving the level of the physical abilities under investigation.

Third Hypothesis Results: Which states:

1-There are statistically significant differences between the mean scores of the post-test for the control and experimental groups in some physical abilities, in favor of the experimental group.

Table (9)

Significance of differences between the mean scores of the post-test for the control and experimental groups in some physical abilities under investigation (n1 = n2 = 15)

eta ² Values	t-value	Experimental Group	Experimental Group (n = 15)		Control Group (n = 15)		Unit of Measurement	Variables		Physical Variables
			SD	Mean	SD	Mean				
0.55	3.33	0.40	0.27	7.86	0.38	7.46	M	Medicine Ball for Maximum Distance	Power	
0.44	2.66	3.80	3.30	69.80	4.44	66.00	cm	Vertical Jump		
0.49	2.96	0.42	0.44	4.05	0.31	4.47	S	30m Sprint from a High Start	Speed	
0.59	3.12	0.15	0.11	1.32	0.15	1.47	S	Nelson Test		
0.47	2.81	1.49	1.43	21.95	1.46	23.44	S	Zigzag Run	Agility	
0.45	2.70	5.13	4.19	64.87	6.06	70.00	S	1500m Run	Speed Endurance	

The tabular t-value at a degree of freedom (28) and significance level of 0.05 = 1.701. It is evident from Table (9) that:

-There are statistically significant differences between the mean scores of the post-test for the control and experimental groups in some physical abilities under investigation, in favor of the experimental group, as all calculated t-values are greater than the tabular t-value at a significance level of 0.05.

-The values of eta² ranged between (0.44 - 0.55), indicating the positive impact of the proposed training program in improving the level of some physical abilities under investigation.

- Second: Interpretation and Discussion of the Results:

Referring to the results of Table (7), which indicates the arithmetic mean, standard deviation, and t-value between the pre-test and post-test in the physical abilities of the control group members under investigation, it is evident that there are statistically significant differences between the mean scores of the pre-test and post-test for the control group in the variables under investigation, in favor of the post-test. The researchers attribute this result to the use of the traditional training method represented by explanation and model performance, which has a positive

impact on the level of some physical abilities among the sample under investigation. Although the impact of this method is not as strong as modern training methods and techniques, it has still brought about some positive change towards those variables, which would positively reflect on the physical, skill, and tactical levels of the players under investigation.

The researchers also attribute the improvement in the level of physical abilities among the players under investigation to the complete reliance on the traditional training method in the training process, which involves the coach explaining the way to perform the physical exercises and providing information to the players in a way that suits the level and characteristics of the research sample. Additionally, providing guidance, dividing exercises into parts, making immediate corrections to exercise performance, and giving reinforcement to ensure the correct execution of all units of the traditional training program, all contributed to the improvement in the level of the control group in the variables under investigation.

This is consistent with what "Imad El-Din Abbas" and "Medhat Mahmoud" (2007) indicated, that organized and continuous training is the main means for developing physical aspects and offensive and defensive skills in handball. This is done through practical training, which is a resource for every coach and is used for a long time during the training session or throughout the sports season. Training means repeated performance and needs variation to maintain long-term stability without boredom, starting from easy to difficult, with repetition and variation aiming to solidify player performance and enable correct responses in various game situations (7: 57).

This result is consistent with the findings of studies by "Wael Ahmed Hussein" (2016) and "Valeryi Melnyk" (2016), which indicated that the traditional training method has a positive impact on the level of some physical abilities of handball players from various samples.

Thus, the researchers have verified the validity of the first hypothesis, which states, "There are statistically significant differences between the

mean pre-test and post-test scores for the control group in some physical abilities of handball players in favor of the post-test".

Referring to the results of Table (8), which indicates the arithmetic mean, standard deviation, and t-value between the pre-test and post-test in the physical abilities of the experimental group members under investigation, it is evident that there are statistically significant differences between the mean scores of the pre-test and post-test for the experimental group in some physical abilities under investigation, in favor of the post-test.

The researchers also attribute this result to the variety and diversity of the training exercises implemented in light of the new rule changes, which have significantly contributed to improving many physical variables. This improvement positively reflected on the skill level of the players under study, as evidenced by the differences between the pre-test and post-test results for these variables.

This result is consistent with the findings of studies by "Tariq Mohamed" (2021), "Denko" (2018), "Wael Ahmed Hussein" (2016), and "Valeryi Melnyk" (2016), which indicated that the proposed training program has a positive effect on some physical abilities in various samples.

Therefore, the researchers confirmed the validity of the second hypothesis, which states, "There are statistically significant differences between the mean pre-test and post-test scores for the experimental group in some physical abilities of handball players, in favor of the post-test."

Referring to the results of Table (9), which indicates the arithmetic mean, standard deviation, and t-value between the post-test scores of the control and experimental groups in the physical abilities under investigation, it is evident that there are statistically significant differences between the mean scores of the post-test for the control and experimental groups in favor of the experimental group.

The researchers attribute this noticeable development in the physical abilities of the experimental group compared to the control group to the use of the proposed training program. This program includes many specific exercises related to tactical situations that were designed in light of the new handball rules. Additionally, these exercises were performed with varying intensity levels, including light, medium, and high intensity.

Furthermore, the program adhered to scientific principles related to training load regulation in a manner that suits the health, physical, skill, and tactical characteristics of the players under study.

The researchers also attribute this result to the proposed training program and the exercises performed using various tools and devices. Moreover, these exercises were methodically structured in terms of load, intensity, and rest periods. The consistent execution of the program's contents by the players under study also played a significant role, positively affecting the physical abilities of the handball players.

This result aligns with the findings of studies by "Tariq Mohamed" (2021), "Denko" (2018), "Wael Ahmed Hussein" (2016), and "Valeryi Melnyk" (2016), which indicated the superiority of the experimental group over the control group in the level of some physical abilities in various samples.

Thus, the researchers confirmed the validity of the third hypothesis, which states, "There are statistically significant differences between the mean post-test scores for the control and experimental groups in some physical abilities of handball players, in favor of the experimental group."

- Conclusions and Recommendations:

- First: Conclusions:

In light of the research results, the researchers reached the following conclusions:

1. Traditional training methods have a positive effect on some physical abilities of the handball players under study, as evidenced by the statistically significant differences between the mean pre-test and post-test scores for the control group in some physical abilities, in favor of the post-test.
2. The training program designed for specific tactical situations in light of the new rules has a positive effect on some physical abilities of the handball players under study, as evidenced by the statistically significant differences between the mean pre-test and post-test scores for the experimental group in some physical abilities, in favor of the post-test.

3. The experimental group outperformed the control group in the level of some physical abilities under study, as evidenced by the statistically significant differences between the mean post-test scores for the experimental and control groups in the variables under study.

- Second: Recommendations:

In light of the research results, the researchers recommend the following:

1. It is important to use training for specific tactical situations in light of the new handball rules to improve the physical and skill levels of handball players.
2. Handball coaches should stay updated with new rules and create training programs that align with the tactical situations corresponding to these updates.
3. Trainers in the field of handball should be encouraged to use modern training methods to enhance the physical, skill, and tactical aspects of players.
4. Further research should focus on using training for tactical situations in handball.
5. More studies and similar scientific research should be conducted on different samples and age groups.

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