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Combinational abilities exercises and their effect on the performance of some basic motor skills in handball « JSBM U17 class players »

تمرينات القدرات التو افقية وتأثيرها في أداء بعض المهارات الحركية الأساسية في كرة اليد

بحث تجريبي على لاعبي JSBM فئة U 17

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Abstract:

the researcher tried to take advantage of harmonic exercises as an educational - training method in acquiring some skills in a ball for young sports players of the municipality of Meskiana of a smaller class, and the study aimed to know the effect of harmonic abilities on some basic skills in a ball The hand of U17 players, to achieve this, the study was conducted on an intentional sample of 20 U17 players, and the researcher used the experimental method. In addition to statistical methods; the results showed that the proposed exercises for the harmonic abilities that the experimental group was exposed to had an effective effect on developing the motor capabilities; the researcher recommends the need to pay attention to the development and acquisition of harmonic abilities.

Keywords: Coordination Exercises, Basic motor skills, Handbal.

ملخص:

حاول الباحث الاستفادة من التمارين التوافقية كأسلوب تعليمي - تدريبي في اكتساب بعض المهارات في كرة اليد الشباب من فئة أصاغر، ولتحقيق ذلك أجريت الدراسة على عينة مقصودة من 20 لاعباً تحت 17سنة، واستخدم الباحث الأسلوب التجريبي، أظهرت النتائج أن التمارين المقترحة للقدرات التوافقية التي تعرضت لها المجموعة التجريبية كان لها تأثير فعال في تنمية القدرات الحركية، يوصي الباحث بضرورة الاهتمام بتنمية واكتساب القدرات التوافقية.

الكلمات المفتاحية: التمرينات التوافقية، المهارات الحركية الاساسية، كرة اليد.

1. INTRODUCTION

The harmonic abilities occupy a special place, as they are linked with other physical and motor abilities in addition to the strong relationship that links them to motor performance, where the individual gains the ability to motor flow, the ability to relax and the proper sense of performance of directions and distances, all of which are essential factors for sports performance, whatever the type of sports activity.

The researcher decided to use harmonic exercises as a modern scientific method, which aims to involve all players in the performance by moving from one exercise to another, and each exercise contains more than one skill at the same time, and to find out whether these exercises have an effect on raising the skill level of handball for the players.

Abdel-Maksoud (1998) asserts that development in the level of harmonic abilities can play an important role when learning and acquiring motor skills, as the availability of an appropriate level for many harmonic abilities is often important for learning motor skills, and this is reflected in the development of the role of abilities. The harmonic in the result achieved in the competition whenever the sport or activity is characterized by higher requirements for achievement in terms of muscular compatibility of the nerve, and the harmonic abilities do not appear as individual abilities, but are always related to others..

2. Research problem:

The harmonic abilities are considered the basis for the success of learning processes and the improvement of the skill performance, and the development of the level of the combinational abilities plays an important role in learning and acquiring the motor skill, in addition to that it has proven its effectiveness in reducing the time required to learn the motor skill.

Walf, D. 2008 : The harmonic abilities have an important role in learning and mastering the motor skills. In the event that the beginner lacks the harmonic abilities, we find that he cannot perform the skill properly and the presence of many technical errors.

Also, the harmonic abilities exercises, if compared to the traditional exercises, we see that they have an important role in the speed of learning the motor skills, such as the skill of correction, passing and zigzag jogging with the ball that needs a high degree of compatibility between its parts. (Walf droge, 2002, P47)

The compatibility between the nervous system and skeletal muscles on the one hand and between the nerve center and internal organs on the other hand plays a distinct role in the success of athletic achievement, as each movement has a special aptitude and special movement capabilities, and with the diversity of the life goals of individuals, the capabilities also differed to the point that the basic function of the individual is Adaptation first and how much each movement needs for the components of the physical fitness component of it Second, and this means the mutual harmony of each of the physical characteristics, motor characteristics and internal body systems, and from this point of view we ask the main question: Does harmonic abilities exercises affect the performance of some motor skills of handball players?

3. Research hypotheses:

1- There are statistically significant differences between the pre and post measurements in learning the correction skill in favor of the post measurement of the experimental group.

2- There are statistically significant differences between the pre and post measurements in learning the skill of dribbling in favor of the post measurement of the experimental group.

3- There are statistically significant differences between the pre and post measurements in learning the skill of slalom running with the ball in favor of the post measurement of the experimental group.
4- There are statistically significant differences between the two dimensional measures of the experimental and control groups in learning some basic skills and in favor of the experimental group.

4. Research objective:

The research aims to learn some basic motor skills in handball (aiming, passing, slalom running with the ball) by developing exercises using the harmonic abilities.

5. Research importance:

The importance of the study is reflected in the researcher's attempt to convey the importance of the harmonic abilities of coaches and the effective role they play in some motor skills because of their repercussions on the skillful performance, especially the skill of correction, passing and zigzag jogging with the ball and highlighting the harmonic abilities of handball players.

6. Search terms:

Harmonic capabilities: The learner’s ability to quickly and efficiently learn basic skills and then use them optimally with the least amount of effort and at the appropriate speed at the correct time and place with the possibility of linking those skills. (Yasser Mahfouz El-Gohary, 2008, p. 4)
They are general motor and psychological conditions that enable the athlete to control the motor performance and include: the ability to assess the situation, the ability to connect motor, the ability to exert appropriate effort, the ability to balance, the ability to appropriate movement rhythm, the ability to respond quickly, the ability to adapt With the changing situations).

6. Previous studies:

1. Ibrahim Muhannad Mahmoud Omar's study (2014) entitled "The effect of using combinational abilities on some physical and skill variables among footballers in Palestine", with the aim of identifying the effect of using harmonic abilities on some physical and skill variables among footballers in Palestine. To achieve this, the study was conducted On a sample consisting of (24) soccer players from the origins of the Steps Foundation, and the researcher used the experimental method, and the most important findings of the researcher is that the proposed training program affected all the variables under study and a statistical significance between the pre and post measurements and in favor of the post measurement, and the results showed differences Statistical significance in all variables of the study between the experimental group and the control group and in favor of the experimental group.

2. Tariq Muhammad Khalil Al-Gammal's study (2008): "The effect of special harmonic abilities on the level of skill performance of field hockey juniors" is unpublished, Menoufia University, Arab Republic of Egypt, and aimed at identifying the harmonic abilities of hockey, and it came up with the following questions: Are there harmonic abilities Especially for hockey? Are there statistically significant differences between the tribal and dimensional measures of each region separately and between all regions of the Republic? Are there statistically significant differences between the special consensus capabilities in each region separately and between all regions of the Arab Republic of Egypt of the individuals of the research sample?.

3. What are the prediction equations for the level of skill performance in terms of the particular consensual capabilities under consideration for each region separately and the regions of the Republic combined? The researcher used the experimental

method due to its suitability to the nature of the study and the research sample was chosen by the intentional method, and the research sample included (397) beginners who are players of the national project for births of 95 hockey juniors, and the researcher used the tests: a compatibility test / skill level test and the study concluded, reaching equations The prediction through which it is possible to select juniors in the age group (9.12 years) in the regions of the Republic, and among the recommendations is that the aim of education and training in the field of hockey is based on the special consensus capabilities to raise the level of effectiveness of performance for beginners and consider it a basic goal that recruits training energies and methods to keep pace with the global levels of our national team. Training is a means to an end, not an end in itself.

4. The study of Heba Abdel-Azim Hassan (2005): entitled "The effect of a proposed educational program for a body that exhibits balance on the harmonic abilities and skill level of students of the Faculty of Physical Education" with the aim of identifying the impact of a proposed educational program for the balance beam apparatus on the harmonic abilities and level of skill performance, on a sample of 30 A student from the second division of the Faculty of Physical Education, Assiut University, and he used the experimental method, and the most important results were that there was a positive effect of combinational abilities on improving the level of skill performance.

5. The study of Chow, J 2007: entitled "The effect of harmonic abilities on the amount of improvement in skill level" in order to identify the effect of harmonic abilities on improving the level of hitting for a volleyball beginner in Singapore and used the experimental method on his sample of 5 beginners, and the most important results were there is a clear effect of harmonic abilities on improving the level Skillful performance of hitting volleyball.

1. Theoretical studies:

The harmonic abilities are one of the most important factors necessary to raise the level of technical performance of the players, as they stem from the specific loading of the specialized sporting activity, and therefore their development and development greatly serve the technical and technical side, as the harmonic abilities are one of the means of controlling the control of the various motor performances and then the availability of these capabilities With players, they can reach the best degrees of compatibility with the performance required to achieve any movement performance.

2. Determination of harmonic capabilities:

The process of selecting and determining the harmonic abilities is the basis for the success of the learning or training process for the handball game under study, and through the researcher's acquaintance with most of the scientific sources and references that touched on the topic of harmonic abilities and previous studies, especially in the hand game, the harmonic abilities were chosen which were agreed upon by most of the sources In order to develop exercises that represent these capabilities, namely:

1- The ability to connect motor
2- The ability to distinguish and select kinematic.
3- Capability of motor balance.
4- Direction ability and sense of place.
5- Capability of rhythm and kinetic weight.
6- Reactivity.

3. A harmonic ability exercises:

The process of alignment is associated with the capabilities of the motor apparatus to organize internal forces with influencing external forces, and the strength differs according to the movement's action and individual past experiences, but the central system remains the basis for the reconciliation process. (Maher Mahmoud Awwad Al-Ameri, 2014, p. 121)

The use of harmonic exercises requires tools or without tools, and that these exercises have the primary purpose of developing physical and skill properly and balanced, and each part of the body has special exercises that can be chosen and varied in it and among them is what is easy and suitable for beginners, including complex and difficult suitable for trainees and its purpose is the comprehensive growth of the body And the mind in order to promote the neuro-bone connection. (Abbas Ahmad Salih, 1981, p. 39)

(Turki) indicates that, "The higher the degree of skill performance, the higher the level of compatibility between muscles, and the better the temporal and dynamic distribution of performance." (Majid Turki and others, 2002, p.70)

Accordingly, the motor compatibility is part of the high kinetic achievement of sports activity, and its meaning is the one that organizes the motor parts and everything that goes deep in order to reach the learning of movements in a high manner. (Majid Ali Musa, 2009, p.77)

4. Search procedures:

Exploratory study: It is the research that aims to explore the circumstances surrounding the phenomenon that the researcher wishes to study and to identify the most important hypotheses that can be made and subjected to scientific research in a precise formulation that goes in depth in its research at a later stage, and its purpose is:

1- Identify the problems and obstacles that the researcher may face during the implementation of the main experiment, including it.
2- The safety of the tools used as well as their locations and dimensions.
3- Knowing when to perform each exercise.
4- The safety of the implanted tools as well as their location and dimensions.
5- How to plan and divide the tests.

5. Research Methodology:

The researcher used the experimental method due to its suitability to the nature of the research, using one of the experimental designs, which is the experimental design of two groups, one experimental and the other a control.

6. Research community:

Handball players (Team JSBM) U17 junior, numbering 30 players active in the amateur section - the State League of Oum Bouaghi.

7. Research sample:

A number of (20) players were deliberately chosen from among the handball players and from the research community as a basic sample, where they were divided into two groups, one experimental (10) players and the other controlling of (10) players, and (10) players were chosen as a survey sample, and the researcher made sure of Distribution of the research sample in (weight - age - height), as shown in Table No. (1).

Table 1. shows the homogeneity of the research sample

coefficient	standard	arithmetic	Unit of	Variables

of torsion	déviation	mean	measure	
0.672	0.853	16.76	Age	Age years
-0.853	4,742	55.94	Kg	Weight
-0.724	3.246	166.92	Cm	Height

It is clear from Table No. (1) that the torsion coefficients of the research sample in age, height and weight are (± 3) indicating the homogeneity of the sample members in those variables, and the researcher has also made parity between the two groups (experimental and control) in light of the variables (height - age - weight), The correction test of stability and the pass test, the slalom running test with the ball, and the researcher made homogeneity for the study sample members in some basic skills in handball and reached:

Table 2. Statistical description of study sample data (experimental and control) in skill tests before the experiment (homogeneity)

Variables	experimental group		control group		coefficient of torsion
	x	s	X	s	
Correction of the second stability test	4.831	0.401	4.735	0.421	0.648
Passing test scores	3.68	1.39	3.66	1.37	- 0.879
Second Ball Slalom Run Test	8.825	0.419	8.885	0.324	- 0.589

The results of the homogeneity of the study sample data in the skill abilities tests before the experiment showed that the torsion coefficients ranged between (-0.648 and -0.589), indicating that the measurements extracted are close to moderation, as the values of the moderate torsion modulus ranged between ± 3.

Table 3. Equivalence of the Research Sample

Variables	experimental group		control group		Value (T) Calcul	Value (T) Tabular	The moral significance
	x	s	x	s			
Correction of the second stability test	27	2.56	28	2.79	0.80	1.87	insignificant
Passing test scores	30	1.39	31	1.89	0.67		insignificant
Second Ball Slalom Run Test	10.6	1.89	10.9	1.95	0.75		insignificant

It is evident from Table (3) that there are no statistically significant differences between the experimental and control groups in the variables under investigation, which indicates parity of the two groups.

8. Tools and Mean of data collection:

search tools: Arab and foreign sources, tests and measurements, statistical methods.

Table 3. Tools and devices used in research

stop Watch	**Hand balls**
Tape measure	**whistle**
wall	**Decameter**
	Evaluation and registration form Approval

9. The scientific foundations of the tests:

Validity of the test: The validity depends on the extent to which the test represents the characteristic for which it was developed and represents it in real terms. (Laila El-Sayed Farhan, 2005, p.

35). The researcher relied on self-validity by presenting a survey form to a group of experienced and competent people in the field of handball.

Stability of the test: The test means the stability of the test "that gives similar results or the same results, as it was re-applied more than once and in the same circumstances." (Muhammad Abd Al-Halim Hussein, 1989, p. 22). Two different days on (10) players from outside the research sample. The researcher extracted the correlation coefficient (Pearson) between the results of the first application and the second application.

Objectivity of the test: Objectivity is defined as "the two tests are not affected by the change of arbitrators, as the test gives the same results regardless of the arbitrator's results." (Muhammad Abdel Halim Hussein, 1989, p. 22), and the researcher found the objectivity coefficient by finding the correlation coefficient (Pearson) between the results Arbitrators and Table (4) shows that.

Table 4. shows the coefficients of stability and self-validity

Test name, reliability factor	reliability factor	self-validity	moral significance
Correction test from stability	0.789	0.888	D significant
Passing test	0.843	0.918	D significant
Slalom running test with the ball	0.892	0.944	D significant

* The tabular (R) value at a degree of spear (8) and below the level of significance (0.05) is (0.894)

Field research procedures:

The researcher determined the requirements of the main experiment by identifying the skill tests, and after conducting the exploratory experiment and making use of it in the organization of work and numbers for the main experiment, the researcher

gave an educational unit for each of the two research groups before conducting the pre-tests intended for the purpose of pre-teaching the student to identify the nature of the skill to be learned under research Then the researcher took the following actions:

Pre-tests: The pre-tests were conducted after all the conditions and requirements needed for the tests were met. The researcher worked in the boat with the assistant work team.

Dimensional tests: After completing the tests, the post tests were conducted and under the same conditions in which the pre-tests were conducted, with the help of the assistant work team.

Description of the tests under study:

1 / Slalom ball jogging test

Objective of the test: to measure specific agility.

Equipment used: handball, whistle, stopwatch, signs, handball court.

Performance description: The person is placed at a distance of (2) from the starting line and the distance between one person and another is (2 m) also and as shown in the figure, and the player stands with the ball behind the starting line and when the starting signal is given, the player runs the ball between the signs back and forth Figure No. (1) Each player is given two consecutive attempts.

Scoring method: Time is calculated to the nearest one percent per second, and for best attempt.

2 / Test measuring compatibility and scroll speed.

Objective of the test: To measure passing skill.

Equipment: handball, stopwatch, flat wall.

Performance description: The laboratory stands at a distance of (3 m) from the wall, and upon the signal it passes the ball to the wall and continues to pass as many as possible within a specified time.

Recording: counts the number of passes in the specified time.
3 / The aiming test of stability.
The aim of the test: to measure the speed of aiming at a wall.
Gadgets: handball, stopwatch, level wall.
Performance description: The laboratory stands at à distance of 3 meters from the wall. It handles the ball to the wall and continues as many as possible within a specified time of 30 ".
Scoring: counts the number of shootings in the specified time (the number of receiving the ball is calculated).
Statistical means:
1- The arithmetic mean.
2- Standard deviation.
3- Coefficient of torsion.
4- Law (T) for independent samples.
Presentation, analysis and discussion of results:
Presentation and analysis of the results of the pre and post tests for the skill (correction from stability - passing - slalom running with the ball) in the game of handball.
Presentation and analysis of the results of the pre and post tests of the skill (correction from stability - passing - slalom running with the ball) in the handball game for the experimental group.

Table 4. shows the value of the arithmetic means, the standard deviations, the value of (T) calculated and tabular, the pre and post tests of the experimental group.

Statistical processors Variables	pre-tests		post-tests		the significance of T		moral significance
	x	s	x	s	Calc	Tab	
Stability	29	0.78	31	1,23	2,64	1,87	Significant

correction test							
Passing test	27	0.64	28	0.74	1.94		Significant
Slalom ball test	10.67	1.53	10.34	1.76	2.79		Significant

* The value of (t) below the significance level (0.05) is (1.87)

Table (4) shows the results of the pre-test of the correction skill from the stability of the experimental group, where the arithmetic mean was (29) with a standard deviation (0.783). In the post test, the arithmetic mean was (31) and with a standard deviation (1,231). As for the calculated value of (t), it was (2.647) It is greater than the tabular value of (t) of (1,87). This indicates that there are significant differences in favor of the post test, according to what was stated in the first hypothesis.

As for the results of the pre-test for the passing skill of the experimental group, the arithmetic mean (27) and a standard deviation (0.643). In the post test, the arithmetic mean was (28) and a standard deviation (0.746). The calculated value of (t) was (1.942), which is greater than the value of (T (The tabular amount (1,87)), this indicates that there are significant differences in favor of the test for two dimensions.

As for the results of the pre-test for the skill of slalom running with the ball for the experimental group, the arithmetic mean was (10.67) and a standard deviation (1.532). In the post test, the arithmetic mean was (10.34) and a standard deviation (1.764). The calculated value of (t) was (2.794), which is greater than the value of (C) The tabular amount (1,87). This indicates that there are significant differences in favor of the post test.

Presentation and analysis of the results of the pre and post tests of the skill (correction from stability - passing - slalom running with the ball) with the control group's handball.

Table 5. shows the value of the arithmetic means, the standard deviations, the value of (T) calculated and tabular, the pre and post tests of the control group.

Statistical processors Variables	pre-tests		post-tests		the significance of T		moral significance
	x	s	x	s	Calc	Tab	
Stability correction test	26	0.52	27	0.64	2.35	1,87	Significant
Passing test	27	0.64	28	0.74	2.22		Significant
Slalom ball test	11.63	1.86	11.45	1,94	2.67		Significant

* The value of (t) below the significance level (0.05) is (1.87)

Table (5) shows the results of the pre-test of the correction skill from the stability of the control group, where the arithmetic mean was (26) and a standard deviation (0.525). In the post test, the arithmetic mean was (27) and with a standard deviation (0.643). As for the calculated value of (t), it was (2.353) It is greater than the tabular value (t) of (1,87), and this indicates that there are significant differences in favor of the post-test.

As for the results of the pre-test for passing skill for the control group, the arithmetic mean was (27) and a standard deviation (0.643). In the post test, the arithmetic mean was (28) with a standard deviation (0.746). (The tabular amount (1,87) and this indicates there are significant differences in favor of the test for two dimensions.

As for the results of the pre-test for the skill of slalom running with the ball for the control group, the arithmetic mean was (11,632) and a standard deviation (1.865). As for the post test, the arithmetic mean was (11,456) and a standard deviation (1,942). The calculated value of (t) was (2.673) which is greater

than the value (C) The tabular amount (1,87). This indicates that there are significant differences in favor of the post test.

Presentation and analysis of the results of the post tests of the experimental and control groups (correction from stability - passing - slalom running with the ball).

Table 6. shows the value of the arithmetic means, the standard deviations, and the calculated and tabular value (t) for the experimental and control groups for the post-tests of the research variables

Statistical processors Variables	pre-tests		post-tests		the significance of T		moral significance
	x	s	x	s	Calc	Tab	
Stability correction test	29	0.78	26	0.52	2.64	2.14	Significant
Passing test	31	1.23	27	0.64	2.53		Significant
Slalom ball test	10.65	1.38	11.65	1.89	3.53		Significant

* The value of (t) below the significance level (0.05) is (2.14)

Table (6) shows that the results of the post-test of correction skill from stability for the control and experimental groups were the arithmetic mean respectively (29-26) and a standard deviation respectively (0.783 - 0.525), and the value of (t) calculated between the two dimensions was (2.643), which is Greater than the tabular (t) value of (2.14), indicating that there are significant differences in favor of the experimental group.

As for the results of the post-test for passing skill for the control and experimental groups, the arithmetic mean was (31 and 27) and a standard deviation respectively (1.231 and 0.643), while the value of (t) calculated between the two dimensional tests was

(2.535), which is greater than the value of (t) tabular. The amount (2.14) indicates the presence of significant differences in favor of the experimental group.

As for the results of the post test of the skill of slalom running with the ball for the control and experimental groups, the arithmetic mean was respectively (10.656 and 11.655) and a standard deviation respectively (1.389 and 1.898), and the value of (t) computed between the two post tests was (3.532), which is greater than the value of (t Table (2.14), which indicates that there are significant differences in favor of the experimental group.

Discussing the results of the pre and post tests of the experimental and control groups for basic motor skills in handball: Through the results shown in tables (5,6), we find that the value of (t) calculated in all skill tests was greater than the value of (t) tabular, and this means that the significant difference In the interest of the post-tests of the two groups of research according to what was stated in the first hypothesis of the study, the researcher attributes this to several reasons, the most important of which are: The effectiveness of exercises and tests in a scientific manner and consistent with the level of the sample members and based on the basis of correct practice, so training and practice on a specific skill within a kinetic duty leads to an increase in experience To the effectiveness of the exercises prepared for the harmonic abilities, which had a large and positive effect for the members of the experimental group more than the control group members who applied the traditional approach.

Discussing the results of the post tests of the experimental and control groups for basic motor skills in handball: Through the results shown in Table (7), we find that the value of (t) calculated in all skill tests was greater than the value of (T)

tabular, and this means that the significant difference is in favor of the experimental group The researcher attributes this to several reasons, including: The researcher attributes the reason for the superiority of the experimental group over the control group is the use of mental perception that led to the learners acquiring the initial form of skill, and it must be noted that the skill exercises for the combinational abilities that the researcher followed in a scientifically codified manner and the emphasis on the correct technique And the movements of the players, which led to correcting the errors present during the performance and calendar, which affected the flow of performance by emphasizing in the training units the areas of high difficulty during the performance and choosing the exercises that are consistent with the nature of the performance with the general shape.

4. CONCLUSION

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

1- Combinational abilities exercises have an effective effect on the skill variables involved in the study for the members of the experimental group.

2- The experimental group outperformed the control group in performing some basic skills in handball.

Recommendations and future suggestions:

1- Conducting research and studies similar to the current study on other activities and games.

2- Using special exercises for harmonic abilities for different age groups.

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