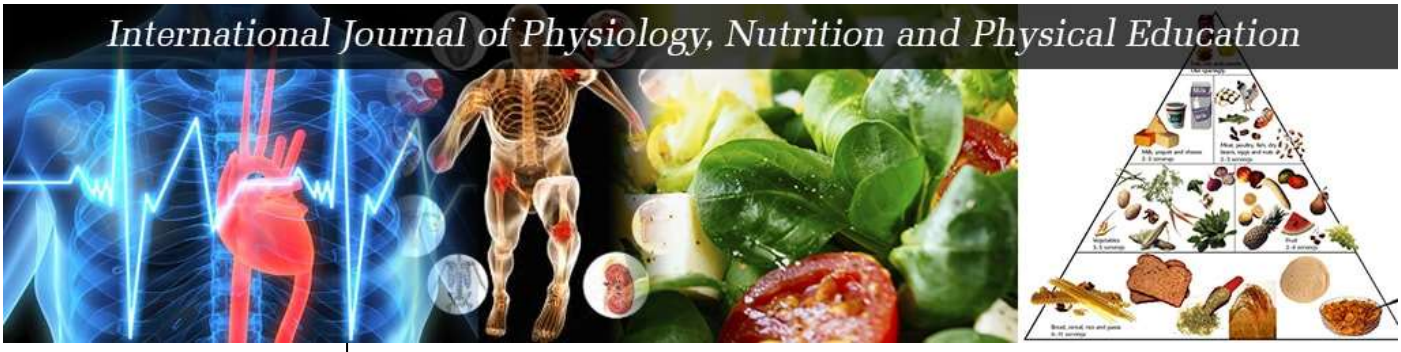

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The impact of dynamic flexibility exercises on developing explosive strength and some fundamental skills in youth handball

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Abstract
The importance of the research came from the interest in flexibility exercises that precede muscular strength exercises in order to achieve achievements at the level of skill performance related to strength characterized by speed, in addition to delivering information to our coaches about the importance of dynamic flexibility in developing strength distinguished by speed and its role in raising the level of offensive skill performance in handball for young people. Choosing the experimental approach with the design of the control and experimental groups, in addition to the research sample, who are the Maysan Sports Club handball players? The research aimed to identify the effect of dynamic flexibility exercises in developing the strength distinguished by speed and some basic handball skills for youth, and to identify the results of the differences between the pre- and post-tests. For the control and experimental groups in developing strength characterized by speed and some basic handball skills for youth, as well as identifying the results of the differences in the post-tests between the control and experimental groups in developing strength characterized by speed and some basic handball skills for youth.
As for the most important conclusions, it is the selection of appropriate exercises in training, especially dynamic flexibility exercises, which are based on scientific foundations and applying them with appropriate load affects the development of strength distinguished by speed and offensive skill performance in handball for youth, for young people.

Keywords: Exercises, flexibility, dynamism, handball, youth

Introduction
Life flourishes and progresses for the better as a result of scientific research presented by scientists and researchers to address the problems facing the progress of any field that human needs, whether social, political, economic, commercial, or even sports.
On the sports side, we find the progress of sports games and the achievement of achievements as a result of sports scientific research presented by sports scientists and in various individual or team sports, as research has been conducted that advances the training side and what the player needs in terms of appropriate training that improves his physical, technical and tactical level. The game of basketball is one of Team sports have their practitioners and fans, especially when the level of the competing teams is at the peak of achievement and the competition is high, as achieving results requires presenting what is best and acquired from a training standpoint. Therefore, there must be scientifically researched and studied training and exercises that help the player advance towards the best and achieve the achievement of basic skills. Easily, with high accuracy, and without fatigue. Among these important qualities is strength, speed and flexibility, which are considered important physical qualities and upon which most of the basic skills in handball depend, as (the process of developing the necessary physical qualities is closely linked to the process of developing motor skills, as the individual athlete will not be able to master Basic motor skills for the type of sporting activity in which he specializes in the event that he lacks the physical characteristics necessary for this particular type of sporting activity) (4: 109). Hence the importance of research on raising strength characterized by speed by paying attention to flexibility exercises that precede muscular strength exercises in order to achieve achievements. The level of skill performance related to this characteristic, in addition to delivering information to our coaches about the importance of

dynamic flexibility in developing strength characterized by speed and its role in raising the level of offensive skill performance in handball for young people.

Research problem

Flexibility is an important physical requirement, through which the player can perform appropriate exercises that help advance other physical requirements, including strength characterized by speed and technical skill performance. Through the researcher's modest experience as a player, coach, and academic specializing in the science of sports training and handball, and his knowledge of the level of training of youth club players. Here, there was a clear weakness in strength characterized by speed and skill performance, despite the correct and appropriate training performance, but it lacks flexibility exercises that precede strength building, in addition to not knowing the extent of their importance in developing offensive skill performance. Therefore, the researcher decided to study this problem by developing dynamic flexibility exercises that precede strength exercises. It is characterized by speed and knowledge of its impact on it and on basic offensive skills.

Research aims

- Preparing dynamic flexibility exercises to develop strength characterized by speed and some basic handball skills for youth.
- Identifying the effect of dynamic flexibility exercises in developing strength characterized by speed and some basic handball skills for youth.
- Identify the results of the differences between the pre and post-tests of the control and experimental groups in the development of strength characterized by speed and some basic handball skills for youth.
- Identifying the results of the differences in post-tests between the control and experimental groups in developing strength characterized by speed and some basic handball skills for young people.

Research Hypotheses

1. There are significant differences between the results of the pre- and post-tests, for the control and experimental groups, and in favor of the post-tests in developing strength characterized by speed and some basic handball skills for young people.
2. There are significant differences in the results of the post-tests between the control and experimental groups and in favor of the experimental group in developing the strength distinguished by speed and some basic handball skills for youth.

Research areas

The human field: Players of the Naft Maysan Sports Club team, youth category, handball.

The spatial field: a hall Martyr Wissam Oreibi Olympic in Maysan.

Time range: the period from 18/5/2022 to 25/8/2022.

Research methodology and field procedures

Research Methodology

The nature of the research problem is what determines the appropriate approach that the researcher relies on to achieve his goals, so the researcher used the experimental approach in the manner of two equal groups with two pre and post tests for its suitability to the nature of the research problem.

The research community and its sample

The research community, which is represented by the players of the Maysan Youth Sports Club for the sports season (2021-2022) and the participant in the youth league, was selected, and their number reached (15 players), and (5) players who were not included in the main squad were excluded, and for this reason the research sample became (10) players, constituting a ratio of (66.67). % of the original population and they were randomly divided (lottery) into two groups, control and experimental, and the number of each group was (5) players.

The two samples were homogenized and equivalence as shown in Table (1) using the coefficient of variation for homogeneity and using the (T) test for samples that are not correlated in equivalence.

Schedule (1)

It shows the homogeneity and equivalence of the control and experimental groups in the measurements and tests used Measurements and Tests Measurement Control group Experimental group Calculated (T) value Level of significance

Table 1: It shows the homogeneity and equivalence of the control and experimental groups

T	S	A	Coefficient of difference	S	A	Coefficient of difference	Calculated (v) value	Significance level
Training age is one year	0.2	4.33	4,728	0.2	4,618	0.709	0.057	Insignificant
Length cm	174.6	1.64	0.939	174.7	1.58	0.904	0.087	Insignificant
Weight kg	69.28	1.75	2.525	69.32	1.64	2.365	0.063	Insignificant
The force characteristic of the velocity of the arm is a number	11.418	0.55	4.816	11.44	0.55	4.807	0.056	Insignificant
The power characteristic of the speed of the two men is a number	22.64	0.898	3.966	22.56	0.894	3.962	0.126	Insignificant
Flexibility is a number	48. 66	2.065	3.106	74. 66	2.067	3.097	0.178	Insignificant
Handling the ball again	6.4	0.353	5.515	6.55	0.352	5.374	0.602	non-moral
Aiming to jump high score	5,583	0.9	16.12	5,587	0.8	14.318	0.066	5,583
Plump number	17.5	1.081	6.177	17.9	1.084	6.055	0.522	Insignificant

The tabular value of (t) at a degree of freedom (8) and under the probability of error (0.05) is (2.306).

Devices and tools used in the research:

The researcher used a set of devices and tools, as follows:

- Arabic and foreign sources.
- Tests and measurements used in the research.
- Handball court
- Handball number (10).
- Iron bar with weights (2).
- Indicators number (5).
- repelling wall
- Dumbbells (4).

- Contraindications number (4).
- Terrace number (3).

Field Research Procedures

Determining the research variables: The research variables were determined according to the following researcher's point of view:

1. The strength characteristic of the speed of the arms.
2. The strength distinguished by the speed of the two legs.
3. Dynamic flexibility.
4. Scroll and receive from the top.
5. Aiming by jumping forward.
6. Zigzag planning.

Tests specifications

Testing the speed-distinguishing strength of the arms: flexion and extension of the arms from the inclined forward support position in (10) seconds, (6: 286).

Testing the speed-distinguishing strength of the two legs: bending and extending the knees in (20) seconds, (6: 287).

Flexibility test: the bottom and side touches within (30) seconds, (7: 335).

Quick pass test: Calculating the time to perform ten successful passes on the blocking wall (4: 217).

Test of shooting from jumping in front: Calculating the number of successful shots from (10) attempts (4: 223).

Tap test: Counting the number of cases of correct performance of the ball touching the basketball goal board within (30) seconds (4: 237).

Exploratory Experience

The researcher conducted an exploratory experiment on 5/30/2022 on some players of the original research sample (Naft Maysan Club for handball players) for the following purposes:

Rationalizing the exercises used and finding the appropriate training load in terms of intensity, volume and comfort.

Identification of the appropriateness of the exercises, their difficulty and the degree of their suitability.

Adaptation of registration forms.

The main experience

Pre-tests

Pre-tests were conducted on the two research groups (experimental and control) before starting the implementation of the training units, in order to determine the skill and physical level of football in the research sample. The tests were conducted on 4/6/2022 in the Mughal Sports Hall in Maysan Governorate.

Training units

The dynamic flexibility exercises for handball players (Appendix No. 1) have been placed in the main section of the training units for the coach. The training included (24) training units divided into three units per week for a period of two months. The intensity, volume and rest times were distributed during the training stages, as in Table No. (2). The implementation of the actual program began on 6/5/2022 and ended on 8/6/2022.

Table 2: It shows the distribution of intensity, volume, rest and training performance time during the proposed training program

	Weeks			
load components	**The first and the second**	**Third and fourth**	**Fifth and sixth**	**Seventh and eighth**
Distress	80%	85%	90%	85%
The size	It ranges from 12-16 repetitions with increasing intensity			
Rest between exercises			45 seconds	
Time to perform the exercise	1 minute			
Repeat one set	2-3 times			
load components	Rest between sets			

Posttests

The post-tests were applied, as the researcher took care to ensure that they were at the same time and place as the pre-tests, to ensure obtaining correct scientific results, on 8/8/2022.

Statistical Methods

The researcher used the statistical package (17 SPSS. Ver) on the electronic computer to process the results to achieve the research objectives and hypotheses.

Presentation, analysis and discussion of results

Presentation and analysis of the results of the pre and post-tests of the control group in the research variables:

After emptying the data of the pre and post-tests of the control group from the researcher, and processing them statistically, it is shown as in Table (3)

Table 3: It shows the arithmetic mean and the calculated and tabulated (t) values for the pre and post physical variables of the control group

Physical exams	Measuring unit	Arithmetic mean	Standard error	Calculated (v) value	Significance level
	Tribal	After me			
The strength and speed of the arms	11.418	12.41	0.311	3.189	moral
The power characteristic of the speed of the two men is a number	22.64	23.23	0.256	2,304	moral
Flexibility is a number	48. 66	68.85	0.778	3,038	moral
Passing and receiving from the top again	6.4	5.44	0.356	2,696	moral
Aiming by jumping forward a degree	5,583	7.52	0.688	2,815	moral
Schiffing squiggly number	17.5	18.6	0.445	2,471	moral

The tabular value of (t) has a degree of freedom (4) and under the probability of error (0.05) it is = 2.132

Presentation and analysis of the results of the experimental group

Table 4: It shows the arithmetic mean and the calculated and tabulated (t) values for the pre and post physical variables of the experimental group

Physical exams	Measuring unit	Arithmetic mean	Standard error	Calculated (v) value	Significance level
	Tribal	after me			
The force characteristic of the speed of the arms is a number	11.44	14.48	0.995	3,055	moral
The power characteristic of the speed of the two men is a number	22.56	25.27	0.986	2,748	moral
Flexibility is a number	74. 66	69.99	1,022	3.18	moral
Passing and receiving from the top again	6.55	4.64	0.661	2,889	moral
Aiming by jumping forward a degree	5,587	9.59	0.889	4,184	moral
Schiffing squiggly number	17.9	19.66	0.554	3,176	moral

The value of the tabular T has a degree of freedom of 4 and a probability of error of 0.05 = 2.132.

Presentation and analysis of the results of the post-tests for the control and experimental groups**.**

Table 5: It shows the arithmetic mean and the calculated and tabulated (t) values of the dimensional physical variables between the control and experimental groups

physical exams	The control group		Experimental group		Calculated t-value	Significance level
	Q remote	A	Q remote	A		
The force characterized by the speed of the arms is a number	12.41	0.623	14.48	0.554	4,975	moral
The strength distinguished by the speed of the two men is a number	23.23	0.674	25.27	0.712	4,163	moral
Flexibility is a number	68.85	0.332	69.99	0.345	4.769	moral
Passing and receiving from the top second	5.44	0.221	4.64	0.235	4,968	moral
Shooting by jumping in front of a step	7.52	0.742	9.59	0.361	5,024	moral
Zigzag number	18.6	0.336	19.66	0.373	4,223	moral
The force characterized by the speed of the arms is a number	12.41	0.623	14.48	0.554	4,975	moral

The value of (T) at the degree of freedom (8) and under a probability of error (0.05) is (1.860)

Discussing test Results

Discussing the results of the pre- and post-tests for the control group

Through table (3), we note that there is a development of the control group, which the researcher believes is due to proper planning according to an appropriate pre-planned method, which clearly helped the physical development according to the above table, and this is confirmed by (Hanafi Muhammad Mukhtar, 1989) who mentioned "Proper planning and selection of appropriate exercises enables the coach to develop the physical attribute at the same time that the player masters the basic skills" (1: 96).

Also, the interest of the sample in organizing the training work and continuing the training without interruption led to the preservation of the physical level and its development in the way that we see, and this is confirmed by (Mahdi Najm and others, 1999) that "continuous repetition of exercises, whether it is physical or skillful, it raises the ability of the level (10:338).

Discussing the results of the pre- and post-tests for the experimental group

We note from Table (4) that the experimental group was the reason for its development due to the exercises and the training method used, which was prepared by the researcher and in proportion to the specificity of the handball game in a scientific way, according to the sources and references that are applied on a regular basis, and this achieves the goal of sports training. Al-Yasiri 2010) "The goal of the sports training process is to reach the individual athlete to the highest level of athletic achievement in the event or activity in which the player specializes" (9: 22).

Discussing the results of the pre and post tests for the control and experimental groups

By observing table (5), it is clear that the experimental group is more developed than the control group, and this is due, as the researcher sees, to the dynamic flexibility exercises used and their impact on the strength distinguished by speed and offensive skills under study. Muhammad Adel Rushdi mentions (Flexibility exercises are linked to strength exercises, which works on the comprehensive development of the motor system of the entire body) (8: 239).

The characteristic of flexibility of the torso according to the selected exercises works to reach the appropriate motor range according to what is needed to perform the basic offensive skills in hand reel (during the development of flexibility, it requires reaching the limits of the anatomical range of the joint so that it matches the requirements of movement, and the development of flexibility takes place to the level through which it can perform the movement Or the skill with complete accuracy, without difficulty, and with the required repetition (5: 182).

The development of flexibility in exercises also came to mix strength with flexibility in a large and correct way, because strength exercises are of great importance in developing the locomotive system, especially the joints, and thus work to increase the range of motion for them and extend them to the muscles, which leads to increased flexibility, and this is what Hara indicated (it should Organizing special exercises for the special ability (flexibility) with strength exercises, and this is often the athlete is unable to reach the large range of movement due to the lack of strength ability of the muscles responsible for movement) (11: 222).

Conclusions

1. Choosing appropriate exercises in training, especially dynamic flexibility exercises based on scientific foundations, and applying them with the appropriate load, affects the development of strength characterized by speed and offensive skill performance in handball for young people.
2. The success of handball skill performance depends on strength characterized by speed, and the success of strength characterized by speed depends on dynamic flexibility, and this series is important in training.

Recommendations

1. Adopting appropriate exercises in training, especially dynamic flexibility exercises, which are based on scientific foundations and applying them with appropriate load, because they affect the development of strength distinguished by speed and offensive skill performance in handball for youth.
2. The need to increase the number of training units for dynamic flexibility, because the success of skillful performance in handball depends on the strength that is distinguished by speed, and the success of the strength that is characterized by speed depends on dynamic flexibility, and this series is important in training.
3. Emphasizing the need to develop exercises similar to these exercises and knowing their impact on other physical abilities and other offensive skills that are not applied in this research.

References

1. Diaa Al-Khayyat, Qassem Abdul-Karim, Handball, Dar Al-Fikr Al-Kutub for Printing and Publishing, Mosul, Iraq; c1988.
2. Abdoun FA, Hathout Z. The Effect of a Program for Developing Some Psychological Skills on the Level of Skillful Performance in Handball for Second Grade Female Students at the Faculty of Physical Education in Zagazig, Journal of Theories and Applications; c2006.
3. Al-Mukhtar HM. For the Technical Director in Football: Al-Kitab Center for Publishing, Cairo; c1998. p. 96.
4. Hara: Fundamentals of Sports Training: Translated by Abd Ali Nassif, Higher Education Press, Mosul?, 2nd edition; c1990.
5. Ibrahim MAM, Al-Yasiri MJ. Modern trends in the science of sports training: 1st edition, Amman. Al-Warraq Publishing and Distribution; c2010.
6. Michaelissie: Muscle and Fit, Soviet sport; c1983.
7. Rushdi MA. Foundations of Sports Training, Publications of the General Establishment for Publishing, Distribution and Advertising, Tripoli, 2nd edition; c1982.
8. Hassanein MS. Evaluation and Measurement in Physical Education, Helwan University, Dar Al-Fikr Al-Arabi, Cairo, Part 1, Edition 2; c1987.
9. Abdul-Jabbar QN. Bastawisi Ahmed: Tests, measurement and principles of statistics in the mathematical field, Baghdad University Press; c1984.
10. Hussein QH, Al-Anbaki MJ. Physical fitness and ways to achieve it, Higher Education Press, Baghdad; c1988.
11. Quiu HBM. Bocnutahue Qujuzeky Kaqjec TB, Ytohcnop time Hob Qujkylle Typon, Mo; ba; c1974.
12. Majeed RK. Sports Training, Directorate of Dar Al-Kutub for Printing and Publishing, University of Mosul; c1987.
13. Al-Arabi SM, Ismail M. The Player and Mental Training, Al-Kateb Publishing Center, Cairo; c2001.
14. Al-Bazi Y, Najm M. Basic Principles in Basketball, Higher Education Press, Baghdad; c1988.

Supplements

Accessory (1)
(Sample of training modules)
Week: First Intensity: 80%
Training Unit (1) Training time: 40-43 minutes

Comforts		The size	Exercises and events	Time	Sections of the training unit
Between aggregates	Between iterations				
Pulse back 110-120 zd/min (3-5) minutes	Pulse back 120-130 zd/min (2-3) minutes	5×5	1- Standing open, holding a weight with both hands, leaning the torso to the sides.	2.3 d	Main section
		4×3	2- Putting a bar on the shoulders, bending and extending the knees (half bear).	3.2 d	
		10×2	3- Forward leaning, bending and extending the arms.	2.1 d	
		20×3	4- Perform continuous passes on the wall	2.2 d	
		3×3	5- Running between the pillars in the handball court	2.4 d	
		5×2	6- Shooting at the two targets back and forth.	3.2 d	
		10×3	7- Perform planning continuously.	2.5 d	
		10×3	8- Performing passes with a colleague after dribbling	2.2 d	