



The effect of flexibility training using the Ki-Hara method on some specific physical abilities and performance the basic skills of the players of the Al-Karkh Second Education Directorate handball team

Raad Khanjar Hamdan ¹

¹ University of Baghdad, College of Physical Education and sport sciences.

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Abstract

Countries around the world have directed all their resources, expertise, and sciences towards achieving advanced levels in various sports. The aim of sports training is to prepare players well and the research aims to develop flexibility exercises using the Ki-Hara method for handball players. The research aims to identify the impact of Ki-Hara flexibility training on specific physical abilities of the Al-Karkh Second Education Directorate handball team players. Identifying the impact of Ki-Hara flexibility training on the performance of basic handball skills. The researcher used the experimental method with pre-test and post-test for a single group, and the research sample included 14 players aged 14-17 years. Physical and skill tests were used to collect the research data. Among the most important findings: the exercises prepared by the researcher have a positive impact on developing the specific physical abilities of the players of the Al-Karkh Second Education Directorate handball team, and the exercises prepared by the researcher have a positive impact on developing the basic handball skills. The researcher recommends the necessity of using the training prepared by the researcher in developing basic handball skills.

Keywords: flexibility, ki-hara, physical abilities, handball.

¹ University of Baghdad, College of Physical Education and sport sciences.
raad.hamdan@cope.uobaghdad.edu.iq.



Introduction

Achieving good sports results at a high level has become the hallmark of our current era, and this did not come out of nowhere but rather as a result of utilizing various knowledge and sciences, modern training devices, as well as scientific research in the field of sports training. Therefore, it has become essential to follow the correct scientific methods in structuring the sports training process.

Given that handball is a team sport requiring both physical and skill-related demands from players, all scientific research has concentrated on identifying effective solutions and methods to enhance players' physical capabilities and complex skill performance by innovating new techniques and utilizing advanced equipment to achieve optimal levels and results. Physical capabilities are an important requirement for the success of the skill aspect and achieving better accomplishments.

The importance of the research lies in the necessity of using modern training methods, including flexibility exercises using the Ki-Hara method, which forces the athlete to break the usual line in developing performance skills for handball players and brings about tangible changes in the field of training. It involves using modern training methods and techniques, moving away from everything familiar, including flexibility exercises, and distancing from all that is conventional in sports training (Marzouk, & Shabib. 2023).

The research problem lies in the field experience of the researcher and his observation of the training sessions of the players of the Al-Karkh Second Education Directorate handball team, where a clear weakness in physical abilities was noted. It is essential to address these weaknesses in order to achieve better performance.

The aim of the research

-The task involves preparing flexibility exercises using the Ki-Hara method for handball players, understanding the impact of Ki-Hara flexibility exercises on certain physical abilities of the Al-Karkh Second Education Directorate handball team, and understanding the impact of Ki-Hara flexibility exercises on the performance of basic handball skills.

-Research hypothesis: There are no statistically significant differences between the pre-test and post-test of physical abilities among the players of the Al-Karkh Second Education Team.

-There are no statistically significant differences between the pre-test and post-test in the performance of basic skills among the players of the Al-Karkh Second Education Handball Team.

Methodology

The researcher used the experimental method with pre-test and post-test for a single group due to its suitability and the nature of the research problem, as the experimental method provides real results.

Research sample

The research community was defined as the players of the Al-Karkh Education Directorate's handball team, totaling 17 players, excluding goalkeepers, aged between 14 and 16 years. The research sample consisted of 14 players, representing 82.35% of the community. To determine the homogeneity of the sample members, the researcher used height, weight, and age measurements on Thursday, January 26, 2023, to conduct the homogeneity test. The skewness coefficient value ranged between (-+3), indicating that the sample is homogeneous, as shown in Table (1). One of the crucial tasks for the researcher is to accurately select a sample that precisely represents the original community (Idan, el at.1988)

Table 1. *shows the arithmetic means, standard deviation, and skewers coefficient for the sample homogeneity.*

No	Variables	Unit of measurement	arithmetic mean	mediator	Standard deviation	Twist coefficient
1	Chronological age	year	15.87	16.00	0.80	0.42
2	Height	Centimeter	1.70	1.70	0.57	0.02
3	Weight	KG	67.25	67.50	3.56	0.21

By reviewing sources, references, and previous studies in handball and sports training, the researcher identified physical abilities and basic skill tests in handball (as they are scientific, precise, and standardized tests characterized by scientific foundations of validity, reliability, and objectivity as applied in similar research) (Morad, H., & Shbeeb. 2023). Flexibility stretching

exercises were prepared, and the researcher conducted pre-tests on the research group on Monday, 7/2/2023, at 10:00 AM in the second Al-Karkh Sports Hall for physical abilities (explosive strength of the arms, speed strength of the arms and legs, and basic handball skills) (Darwish. 2000: Hussain. 1998: Abdul Razzaq. 2017).

The experiment was conducted on the experimental group in the main section of the training unit over a period of 8 weeks, with 3 training units per week, totaling 24 training units. After completing the training program, post-tests were conducted for the experimental group, taking into account the same spatial and temporal conditions as the pre-tests. The researcher used statistical software to analyze the data and extract the results.

Results

Table 2. shows the results of the pre- and post-tests for physical abilities and basic skills under study

Physical abilities	Pre-test		Post-test		F S	F A	The accountant	Error level
	S	±A	S	±A				
The explosive strength of the arms	6.53	0.18	7.62	0.74	1.08	0.53	5.80	0.00
Explosive strength of the legs	1.83	0.07	1.97	0.06	0.14	0.02	15.6	0.00
Special strength in arm speed	7.25	3.01	11.12	3.13	3.87	0.64	17.10	0.00
Special strength in leg speed	6.25	1.32	4.83	0.46	1.44	1.05	3.88	0.00

Significant at a significance level of < 0.05 and with 13 degrees of freedom.

Table 3. shows the results of the pre- and post-tests for the range of motion of the upper limbs in the research sample

The range of motion	Pre-test		Post-test		S-F	A F	T The Enforcer	Error level
	S-	A	S-	A				

Range of motion for upward bending	64,00	15,162	117,00	15,65	53,00	24,899	2,760	0,002
Range of motion Back extension	29,400	1,634	42,200	1,483	17,800	11,987	3,320	0,013
The range of motion extends outward.	71,000	5,472	105,00	11,180	34,00	15,572	4,881	0,000
The approximate inward range of motion	60,800	7,463	104,00	9,617	43,200	16,769	5,761	0,001

Table 4. shows the results of the pre-test and post-test for basic handball skills.

variables	Pre-test		Post-test		F S	F A	The Enforce r	Error level
	S	±A	S	±A				
Coverage	5.500	0.925	9.500	0.925	4.000	1.6903	6.693	0.000
The interview	2.125	0.640	4.750	0.707	2.6250	0.7440	9.979	0.000
Side movements	16.25	2.815	8.875	1.125	7.3750	1.9226	10.850	0.000

*Significant at a significance level of < 0.05 with 13 degrees of freedom

Discussion

It is evident from tables (2) and (3) that there are statistically significant differences between the pre-test and post-test for the research sample in the physical abilities under study (explosive strength of the arms, explosive strength of the legs, speed-strength of the arms, speed-strength of the legs), flexibility, and basic handball skills.



The researcher attributes these differences to the nature of the exercises that were prepared, which were characterized by variety and diversity, whether physical or skill-based, and their association with skills had a clear impact on developing physical abilities. It is a mistake to rely on the notion that the physical aspect develops in isolation from the skill aspect. Additionally, the use of Ki-Hara exercises, designed by the researcher, had a clear impact on developing physical abilities, including flexibility, which is important not only in the training aspect but also in health and functional aspects in the present time.

The specific exercises prepared by the researcher aim to develop the muscle groups involved in handball and, more importantly, to ensure the development and preparation of muscle groups with motor skills similar to those required in handball. This aligns with what Adel Abdel Basir mentioned, saying, "Those who think there is a separation between developing physical abilities and developing motor skills are mistaken." (Abdel Basir. 1999) And despite the advancement of modern technology and its integration into most aspects of life, what has increased interest is the use of modern devices and training methods that simulate the training reality and resemble the steps of the game. (Mubarak, Badawi, Abdul-Hussein. 2023). The researcher was keen on preparing exercises in multiple and varied directions because this will contribute to the player's ability to perform skills better. The prepared exercises have worked on improving the speed of motor transition by organizing the muscular work between contraction and relaxation of the working muscles, which helps in performing the movement in a regular and easy manner. This is because the requirements of handball include speed, variety, and changes in play from one skill to another, and to keep up with the developments in handball, which require the player to have a high degree of strength and speed in particular. In addition to the use of tools and equipment. Modern training methods have increased players' motivation to train and achieve their desired goals from the training process. (Badawi, 2020)

Moreover, the exercises prepared by the researcher had a clear impact on developing physical abilities and basic handball skills by incorporating variety and avoiding monotony in training. The study indicates the importance of sports training in fostering a spirit of cooperation, excitement, and thrill. This aligns with what Mohamed Sobhi Hassanien and Kamal Abdel Hamid mentioned, that "the true success of a player will be achieved by combining knowledge with practice of the activity and the necessity of being well-versed in the sports knowledge and information specific to the game they practice" (Hamid, Hassanein. 2002).

Exercises in general work on increasing muscle tension and recruiting as many motor units as possible in muscle work. Loaded stretching exercises, which cause contraction and elongation at the same time, do so by elongating a muscle group through its full range of motion during contraction. For this reason, (ki-hara) exercises are as much about strengthening muscle groups as

they are about elongating them. (BRAD WAIKER 2011, 24) This type of training directly works on the muscle coils; it is a form of stretching with two essential elements: resistance and movement. The resistance comes from muscle tension, and the movement comes from moving the limbs or the trunk, or both together in a specific manner for each stretch. Al-Badri and Hamza indicate that the term "flexibility" is related to the functioning of joints, while the term "stretching" is related to the functioning of muscles. In Western countries, the term "flexibility" is associated with muscle function because the movement of joints is considered the same in all humans, and the difference lies in the range of motion of the joints, which is related to muscle efficiency. Flexibility is not related to joints or muscles, but to the sheaths around muscle fibers.

Conclusions

Where the researcher concluded the following:

- The prepared exercises have a positive impact on developing the researched physical abilities (explosive strength of the arms, explosive strength of the legs, speed-strength of the arms, speed-strength of the legs, and flexibility).

- The prepared exercises and the Ki-Hara training method have a significant impact on developing the basic skills of the research sample.

Recommendations

- The exercises prepared by the researcher can be adopted in other team sports, such as basketball, football, and volleyball, while taking into account the uniqueness of each sport.

- We use training methods like ki-hara exercises to help people of all ages improve their skills in different games.

- The training process requires the adoption of modern training devices and methods, while also moving away from traditional training techniques and equipment.



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