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The impact of skill exercises on enhancing the speed and precision of handball handling abilities among advanced players at Al-Salman club

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Abstract

The current research aims to develop and implement skill exercises for Al-Salman Club handball this study aimed to evaluate how specific exercises influence the speed and precision of handball handling among players. To accomplish this, the researcher adopted an experimental method, dividing the participants into two comparable groups: a control group and an experimental group. The study sample included 12 advanced players from Al-Salman Club, evenly split between the two groups, with six players in each. Initially, pre-tests were conducted to gather baseline data. Subsequently, homogeneity and equivalence tests were applied to confirm no significant differences existed between the groups. The researcher then implemented tailored skill exercises over an eight-week period, delivering three training units per week for a total of 24 units. Following the training phase, post-tests were carried out to assess improvements. The results were statistically analyzed using SPSS, allowing the researcher to conclude that the designed skill exercises were instrumental in enhancing both the speed and accuracy of handball handling performance.

Keywords: Skill exercises, speed and accuracy of handball handling skills

1. Introduction

1.1 Introduction to the Research and its Importance

Training is one of the most important ancient sports sciences, dating back to the beginning of time. While previously occurring without prior organization or planning, it was spontaneous, determined by the necessities of life. Over the ages, training began to grow and develop, taking on forms and patterns that were compatible with the demands of the times, until it reached the present day and the knowledge explosion that has occurred in all fields, particularly in sports training, which has now become one of the most important requirements of life in general and sports in particular. This is due to its connection to various sports sciences such as physiology, sports medicine, nutrition, and others.

Handball is an exciting and popular game for all age groups due to its speed, importance, and excitement, resulting from the physical, skill, and tactical development of players. This has led specialists to call it the game of multiple talents, as it requires mastery of individual skills on the one hand and mastery of teamwork on the other, and the interconnection of the two. The most important factors that a handball player needs and that coaches should focus on at an early age are offensive skills because they are the most important skill and one of the most important reasons for a player's progress to reach the professional stage, and because offensive skills are many and varied in handball.

Handball stands as one of the world's most popular team sports, celebrated for its numerous educational, physical, skill-based, and mental benefits. It offers unique aspects like excitement, dynamic technical execution, and enjoyment for players and spectators alike. Given its widespread appeal, careful planning and effective implementation of training programs are critical for optimizing performance in the sport. Handball demands specific physical and skill attributes, including consistent muscular strength—both static and dynamic—which play a vital role in enhancing players' overall physical abilities and skills.

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The variety of muscle contractions involved in the sport contributes significantly to building muscular strength. As a result, thorough preparation across all dimensions is crucial, particularly in the development of offensive skills during training sessions, with handling being an essential focus. Strength plays a key role in refining these abilities when training methods are tailored scientifically to suit individual players' needs and capacities. This underscores the importance of research aimed at utilizing specialized training techniques to enhance the speed and precision of handling in handball. Such targeted training is invaluable for advancing technical proficiency and helping players achieve peak performance levels.

1.2 Research Problem

This research aims to answer the following question:
Do skill exercises influence the speed and accuracy of handball handling among players of Al-Salman Club?

1.3 Research Objectives

1. Design targeted skill-building exercises and integrate them into the training routines of handball players at Salman Club.
2. Evaluate the impact of these exercises on improving the speed and accuracy of passing among advanced handball players at Salman Club.

1.4 Research hypothesis

Skill exercises contribute significantly to improving both the speed and accuracy of handling among Al-Salman Club handball players.

1.5 Research Areas

1.5.1 Human Area: Salman Sports Club Youth Handball Players

1.5.2 Temporal Area: From 20/4/2025 to 29/8/2025.

1.5.3 Spatial Area: The closed hall of the Western Youth Forum in Salman Governorate.

2. Research Methodology and Field Procedures

2.1 Research Methodology

The researcher applied the experimental method and utilized a two-equivalent-groups design to align with the requirements of the current research problem.

2.2 Research community and sample

The researcher identified the Al-Salman Handball Club players, comprising a total of 15 members, as his research community. Using a lottery system, he divided them into two groups: a control group and an experimental group, with each consisting of 6 players.

2.3 Data Collection Methods

The researcher used the handball accuracy and speed test to collect data for the current research.

2.3.2 Tools and Equipment Used in the Research

- Stopwatch.
- Measuring tape.
- Indicators.
- Adhesive tape.

- Handballs (10).

2.4 Research Test Description

- Measuring coordination and passing speed over a wall for 30 seconds.
- **Test objective:** Measuring handling and receiving.
- **Equipment:** Handball, flat wall, stopwatch.
- Performance specifications: The tester stands 3 meters from the wall and passes the ball as many times as possible in 30 seconds.
- **Recording:** The number of passes in the specified time is calculated by counting the number of times the ball is received.
- **Instructions:** A scorer and a referee must be present.

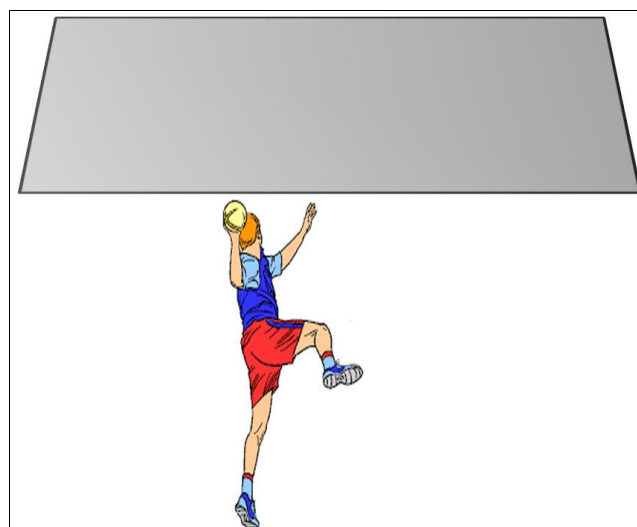


Fig 1: Illustrates the handball handling skill test

2.5 Exploratory Experiment

The researcher carried out a survey involving two members of the Salman Club handball team. The study took place on March 11, 2025, at 4:30 PM in the closed hall of the Western Forum. Its primary aim was to confirm the reliability of the equipment used, and the experiment successfully fulfilled its objectives.

2.6 Main Experiment

2.6.1 Pre-tests

The researcher carried out the tests following the preparation of the necessary research materials, tools, and support team. The assessments involved twelve players and took place in the enclosed hall of the Western Youth Forum at 4:30 PM on March 15, 2025. These tests were designed to measure handball accuracy and speed. All variables related to the tests, including location, timing, and implementation methods, were meticulously documented by the researcher.

2.6.2 Homogeneity and Equivalence

To minimize the impact of individual differences among students on the research results, the researcher aimed to establish a uniform and consistent level across the sample for the studied variables deemed influential in the experiment. This was achieved through the application of homogeneity and equivalence tests, as detailed in Tables (1).

Table 1: Homogeneity and equivalence between the two research groups

Variables	Control group		Experimental group		Levene	Sig	t-test	sig
	M	S	M	S				
Hand passing accuracy and speed	15.923	1.570	15.844	1.378	0.247	0.881	0.633	0.724

2.6.3 Special Trainings Prepared by the Researcher

The researcher implemented skill-based exercises designed specifically for the experimental group, which consisted of six players. The training sessions ran from March 26, 2025, to April 20, 2025, spanning a total of eight weeks. During this period, three training units were conducted per week, resulting in a total of 24 training sessions. The exercises were scheduled on Saturdays, Mondays, and Wednesdays each week.

2.6.4 Post-test

Following the completion of the designated exercises, the researcher proceeded to conduct post-tests on twelve players. These tests were carried out during the Western Youth Forum

at 4:30 PM on May 21, 2025, focusing on strength assessments defined by speed.

2.7 Statistical Methods

- Arithmetic mean.
- Standard deviation.
- Levene test value.
- t-value for correlated samples.
- t-value for independent samples.

3. Presentation, analysis and discussion of results

3.1 Presentation, analysis, and discussion of the results of the control and experimental groups in the post-tests.

Table 2: Differences between the control and experimental groups in the post-tests.

Variables	control group		experimental group		t-test	sig
	M	S	M	S		
Hand passing accuracy and speed	19.896	1.222	22.172	0.881	7.336	0.000

The results of the table show that there are significant differences between the experimental and control groups in favor of the results of the post-tests because the significance level came with significant differences.

3.2 Discussion of Results

The results reveal significant differences between the control and experimental groups in the post-tests, favoring the experimental group. The researcher attributes this to the specially designed training program, which emphasized the development of speed-related strength. To achieve this, the researcher focused on incorporating physical skill-based exercises that players executed with precision and mastery, aiming to enhance their physical capacity through movements closely resembling their specific sport specialization. These exercises targeted.

The researcher highlighted the importance of integrating strength endurance training into the program using tools such as rubber resistance bands and medicine balls. These exercises were tailored to mimic offensive handball skills and involved movements like jumping and directional changes—forward, backward, and lateral—with resistance similar to in-game scenarios. Strength-focused elements were thoughtfully incorporated into the training program to ensure players performed motor skills comfortably and optimally. This approach positively influenced muscle development throughout the body, with particular emphasis on gradually increasing training intensity and refining muscle endurance in the arms and legs. Exercises such as hopscotch, various jumping techniques, and medicine ball drills were employed, leading to improved endurance in key muscle groups.

Additionally, maximum and submaximal intensity exercises played a crucial role in developing muscle strength endurance. These activities were designed to handle substantial load volumes similar to competition conditions while working under high resistance. The training program integrated these principles by maintaining a consistent exercise regimen over a defined period, allowing sufficient time for measurable improvements. These factors collectively resulted in positive outcomes during the experimental group's

post-test evaluations compared to the control group.

Modern training practices emphasize incorporating skill, speed, and strength exercises using a ball in all sessions. This method not only builds athletic condition but also refines technical proficiency, linking physical capabilities with handball-specific skills. Each player movement demands muscular effort at a certain speed, aiming to perform effectively over an extended period during matches. The integration of strength and skill training equips players with the ability to execute techniques under match conditions, including coordination with teammates and performing under defensive pressure. For instance, shooting accuracy drills with defensive barriers or performing footwork patterns reflect these modern approaches.

The researcher further utilized competitive exercises involving peers, where one acted defensively or offensively, enhancing activity effectiveness. Blocking combined with shooting accuracy drills, defensive footwork patterns, and game-like scenarios are foundational components in contemporary handball strategies. Inspired by Tadeusz's observations about "the opponent being central to training intensity," these methods adapt based on training duration and skill repetition levels. Although more suitable for seasoned athletes, they provide distinct benefits for physical and technical refinement in intermediate levels as well.

Ultimately, modern handball demands players who can consistently perform at high efficiency throughout a match due to advancements in individual and team defense strategies. By prioritizing strength, speed, and skill repetition under real-game pressures during training sessions, the researcher ensured optimal preparation for competitive scenarios, leading to measurable improvements in both individual and team performance attributes.

4. Conclusion and Recommendations

4.1 Conclusion

Among the findings of the study were the following conclusion;

The structured skill exercises played a significant role in enhancing both the precision and speed of handball handling

among Al-Salman Club players.

4.2 Recommendations

Based on the previous conclusions, the researcher recommends

1. The importance of incorporating skill training into practice sessions, considering its significant role in enhancing accuracy and speed in handball techniques.
2. Exploring additional research that focuses on implementing skill training exercises and evaluating their effects on handball proficiency—an area that the current study hasn't thoroughly covered.

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