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# *The Effect of Special Training Using the Soma Application on Photographing Some Physical Abilities of Young Handball Players*

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## *ABSTRACT*

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**Keywords**:
***Young***

***Handball***

***Special***

***Training***

The Effect of Special Training Using the Soma Application on Photographing Some Physical Abilities of Young Handball Players

The study aimed to identify the effect of special training using the Soma application in imaging some of the physical abilities of young handball players, the importance of the research lies in the tests and physical measurements that reflect the level of adaptation that can be caused by the training curriculum that the handball players underwent under study, which enables coaches to discover the abilities to achieve the desired goals of the training curriculum, hence the importance of using the Soma application in depicting some physical abilities For young handball players, what are the research objectives:

- Develop a special training curriculum using the Soma app to develop some physical abilities in young handball players.
- Identify the effect of the special training curriculum to develop some physical abilities in young handball players.

The research areas were:

- 1-5-1 Human field: Youth players of Baquba Sporting Club in handball.
- 1.5.2 Spatial Domain: The indoor Katoon Forum Hall in Baquba.
- 1.5.3 Temporal Domain: For the period from 1/6/2025 to 1/8/2025

The most important conclusions were:

- The use of the Soma application is a performance to improve the players' ability to endure speed because of the similarity of this style to the nature of the kinetic performance of the game of handball.
- The development of speed prolongation had a great impact on improving the players' ability to improve their ability to resist fatigue and continue to perform efficiently.

## 1 - Introduction to the Research:

### 1-1 Introduction and Importance of the Research:

In recent years, sports have tended to achieve results and convergence in levels

This is because it has athletes with high physical and skill characteristics, one of the team games that attract the attention of a large number of athletes and those concerned with sports in various parts of the world, handball is one of them, as this event needs specifications and vocabulary that achieve the pleasure of practicing and watching because of its effects and speed in performance, the results of handball matches are also converging in levels by developing the physical, skillful and planning abilities of the players, it was not a coincidence that this convergence in levels was not born It is a result of the nature of accumulated experiences and the use of aids that players get as a result of the intensity of the competitions they play, in addition to their exposure to many training stimuli in their previous stages, and to impose the economy of effort exerted by the players, the coaches in this aspect have tended to improve the art of kinetic performance to develop some physical abilities by working on the development of aerobic ability, which is the basis on which the development of the rest of the other training aspects depends. It is defined as a modern digital tool used in the sports and mental field, the purpose of which is to train the brain and improve its mental and cognitive performance, especially under physical or mental pressure, or both. The SOMA application integrates physical and mental effort through what is known as "training under double burden, where the athlete is required to carry out cognitive tasks during or after physical performance, and the training process is an organized educational process that is subject to the scientific method and adopts scientific laws and aims to prepare the athlete fully in all aspects in order to reach the high level, that the concept of modern sports training is the processes that depend on the educational and scientific foundations and that aim to lead, prepare and develop abilities. The importance of the research lies in the tests and physical measurements that the research deals with that reflect the level of adaptation that can be brought about by the training curriculum that the handball players underwent under study, which enables the coaches to discover the abilities to achieve the desired goals of the training curriculum, hence the importance of using the SOMA application in depicting some of the physical abilities of young handball players

1.2 Research Problem

Despite the rapid development in the use of aids in sports training, on the other hand, research and studies in the field of sports training have not been limited to the use of applications in the development and special physical abilities that arise from practicing sports training in different

atmospheres, because of their great impact on physiological processes, especially on the league system, which is considered one of the most important functional devices, which reflects the extent of development or adaptation, which is the main source that constitutes the essence of this performance. One of them is the development of physical abilities in handball players. During the researcher's follow-up of the game of handball, his practice in it, his specialized study, as well as the use of modern scientific sources, all factors that helped him to move towards this approach to solve the problem are modern techniques whose purpose is to reduce the negatives and develop physical abilities through the use of the Soma application to develop these physical and mental abilities of the youth group.

1.3 Research Objectives

1- Developing a special training curriculum using the Soma application to develop some physical abilities in young handball players.

2- Identifying the effect of the special training curriculum to develop some physical abilities in young handball players.

1-4 Research Hypotheses

There are statistically significant differences between the pre- and post-tests of the experimental group in some physical abilities of the young group.

1-5 Research Areas :

1-5-1 Human field: Youth players of Baquba Sporting Club in handball.

1.5.2 Spatial Domain: The indoor Katoon Forum Hall in Baquba.

1.5.3 Temporal Domain: For the period from 1/6/2025 to 1/8/2025

3-1 Research Methodology:

The researcher used the experimental method (a one-group system with a pre- and post-test to carry out his research in order to suit the nature of the problem to be studied, "the only research method that can truly test the hypotheses of cause-and-effect relationships" (Allawi & Rateb, 1987, 377).

3-2 Research Sample:

The research sample was selected from the players of Diyala Sports Club youth category and their number reached (8 players) with 90% of the original research community after conducting the homogenization process and the researcher used the method of continuous training

on the experimental group and the researcher conducted the homogenization process for the members of the research sample and Table No. (1)

Table (1)

Between the arithmetic mean, standard deviation, and mean of the research sample

| Torsion coefficient | Broker | Standard deviation | Arithmetic mean | Variables |
|---|---|---|---|---|
| 1.73 | 16 | 6,34 | 16 | Age |
| 0.08 | 177 | 47.08 | 175.5 | Length |
| 0.12P67 | 72 | 21.74 | 72.22 | Weight |

3.3 Research Tools and Devices Used:

Research tools (are the means by which the researcher can collect data and solve a problem to achieve the research objectives, regardless of those tools, including data, samples, devices... (Wajih Mahjoub, 1988, 133) The researcher used the following tools that helped him reach the results of the research:

a. Arab and foreign references and appendices.

B. Soma Application

C. Italian-made Height and Weight Measurement Device (SECA)

h. Three hours of time.

C. Tray-made TAKSUN type handheld calculator .

Personal interviews. Appendix No. (2)

Assistant Team. Appendix No. (2)

SOMA application can be defined as a modern digital tool used in the sports and mental field, the purpose of which is to train the brain and improve its mental and cognitive performance, especially under physical or mental pressure or both. SOMA NPT = Neuro Performance Training

**Explanation of the mechanism of SOMA Application**: It is an electronic application (available on mobile phones and tablets) that uses interactive cognitive tasks to stimulate the brain, and increase the athlete's ability to concentrate and mental endurance during training or competition. NPT SOMA is an abbreviation for Training Performance Neuro , which is a modern interactive electronic tool used in the sports field that aims to enhance the cognitive and mental abilities of athletes, such as reaction speed, attention focus, decision-making under pressure, and hand-eye coordination, based on the performance of cognitive tasks. Designed to stimulate the brain and develop its response in conditions of mental and physical stress, such as workout fatigue or competitive situations, SOMA integrates physical and mental exertion through what is known as "Task Training" (Dual), where an athlete is asked to perform cognitive tasks during or after physical performance.

The most important benefits and training effects of using the Soma application in the game of handball :

1. It contributes to strengthening cognitive performance in realistic competition conditions.

2. Improved concentration and attention.

3. Significantly increase the speed of mental processing.

4. Raising the efficiency and speed of decision-making under pressure.

5. Training the brain to work in conditions of exhaustion and physical fatigue.

6. Increase in the percentage of passing accuracy and good positioning.

7. Developing what is known as "mental endurance." ) Endurance Mental . (

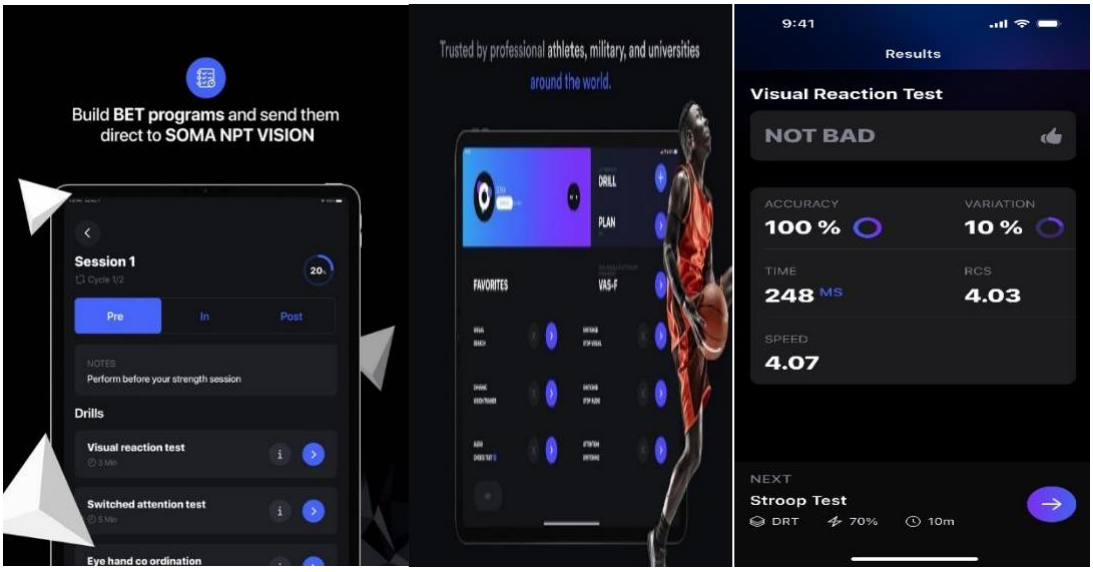
How to apply the SOMA application on the ground: These exercises are displayed on a screen and the player must respond to them quickly and accurately, what stimulates the brain before stress to stimulate the brain is used with athletes in several sports such as football, handball, boxing, swimming, and cycling, and the duration of the player's performance on the application ranges between 10 (20-minutes) by 3-4 times a week for a period of 4-8 Weeks on electronic boards and mobile phones according to age and sports level, and here the researcher used the SOMA application on the players of the experimental group only, where the training unit started with the work of public and private warm-up, and immediately after the end of the warm-up period, mental endurance exercises and exercises were done for 10-12 minutes, to know its

effect on the physical, mental, physiological and skill aspects, which is symbolized by (BET I) mental endurance training.

Field Procedures: (8) Experimental Group, (8) players, after the end of the warm-up, each player was given approximately 12 minutes on the Soma application using (8) Samsung iPads , and after all the players performed the Soma mental endurance exercises, the players return to engage in the daily training unit.The mental endurance training on the application of Soma continued throughout the period of (18) training units , with (3) training units per week.

Figure (4)

The SOMA application on mobile phones and tablets shows.




3-4 Tests used:

3.4.1 Speed Test 30 m (Suleiman Ali Hassan, et al., 1993, 372)

Test objective: Measurement of transition velocity.

Tools used: handball court, stopwatch, whistle.

Performance Description: The test is administered by two people.

The first is to stand behind the starting line and be responsible for the start.

Second: Pay attention to the signal of the center arm by starting the stopwatch, and then stop it after the player crosses the finish line.

Rules: The time between the center signal to start and the player crosses the finish line is recorded.

Recording: The time is recorded in seconds to the nearest tenths of a second.

3.4.2 Speed Prolongation Test

Test Name: Running in front and back with a speed of 252 m (Nouf Mahmoud Mahmoud Al-Hayali, 1999, 35)

Tools used: stopwatch, handball court, whistle.

Method of Performance: The player stands at the starting line on the 6m line when the start signal is fired, the player runs from the 6m line to the 9m line, then returns to run backwards to the 6m line again, then the player starts to the midfield line, then backs back to the 9m line, then the player starts to the 9m line for the other goal, then backs back to the middle of the field, then starts to the 6m line. Then it starts to the 9 m and then returns to the 6 m line at the back, so that the player has performed the test once and for a distance of 84 m and repeats this work three times in a row.

Rules: The player must skip every line reached by one foot

- The player is given a single attempt

- Retry if performance error

Registration: The total time of the three courses is recorded.

3.4.3 Test of bending and stretching of arms from inclined supine position in 10 seconds (Qais Naji, Bastoisi Ahmed, 1984, 289)

Purpose of the test: Measure the characteristic force of speed of the muscles of the arms.

Capabilities and devices: Mate to calculate the number of times of bending and stretching, stopwatch, whistle.

Performance Description: From the inclined position noting that the body is taking a good and correct position, touching the chest while fully bending the arms and then extending the arms completely.

Calculating scores: The number of times you bend and stretch in ten seconds is an indicator of the muscular capacity of the arms.

3.4.4 Medical ball push test (3 kg) with one hand. (Fayez Bashir Hamoudat and Muayyad Abdullah Jassim, 1987, 177.)

Objective of the test: to measure the explosive force of the shooting arm.

Devices and tools used: Indoor games hall with medical balls weighing one (3 kg) and tape

Measurement and an appropriate number of distance marking instruments, delineating an approximate area with two parallel lines (4.50 m).

Method of Test: The tester stands in the approach area between the two lines, facing the side of the throwing area, placing the medical ball on one hand and the other hand supporting the ball, the tester moves with side steps and when he reaches the throwing line, he pushes the ball from the side, as in throwing weight, so that it does not cross the throwing line.

Exam Conditions:

1- The ball must be held with only one hand and the possibility of assisting with the other hand holding the ball from the top only.

2- The player must not cross the throwing line.

3- The ball should be pushed, not thrown.

Registration: The laboratory is given three attempts and the best is counted.

3.5 Exploratory Experiment:

Therefore, the researcher conducted a reconnaissance experiment on (28/5/2025) between five o'clock in the afternoon, where he measured the height, weight, and other variables in the Katoon forum in Diyala governorate, and the researcher excluded this sample, which numbered 4 players from the total research community.

The aim of the exploratory experiment was:

1- Know the extent of students' tolerance to the device while wearing a mask.

2- Know the suitability of the tests set for the sample as well as the method of continuous training.

3- Identify the obstacles facing conducting the experiment and the suitability of the tools used for the sample members in terms of their desire to use these tools.

3-7 Main Experiment: The main experiment was conducted on 30/5/2025 at 5 pm in the hall of the Al-Katoon Sports Forum, and the physical tests of the research sample were conducted for the experimental group with the assistant of the assistant work team.

3-7 Training Curriculum:

The researcher prepared the training modules using the Soma application, and after the completion of the warm-up, the players use the Soma application for a period of 12 minutes through three training units per week for days (Saturday, Monday, Wednesday) and the physical and skill aspect was designed based on the foundations of training in the special preparation period, where the application of the curriculum started on 1/6/2025 until 15/7/2025 and the intensity of the exercises was determined from 60%-80%, as most of the sources confirmed that the intensity with which the youth group trains varies between 50-70 minutes. As well as knowing the return of the pulse to its normal during the rest time to reach a level that allows the player to repeat again and with the same efficiency or before reaching full recovery and according to the qualities he was trained on and according to the purpose of the training unit, where the rest time was calculated through the pulse where it ranged between (120 to 130) beats / minute. After determining the time and distance of each plan, the researcher prepared his methodology based on the volumes that the researcher took into account several important points in the sports training process that contributed to the success of the training method, namely:

1- Individual differences between players.
2- Pregnancy and adjustment according to the age level.
3- Exerting efforts to provide the best tools and supplies.

Presentation of the plans used on the ground one day before the training so that the presentation does not take away

8.3 Post-tests:

The post-test was conducted on the research sample, after the completion of the implementation of the training program, in order to determine the level of physical variables that the research sample reached on 18/7/2025 and in the same context used in the pre-test.

3-9 Statistical Methods: The researcher used the most appropriate statistical methods for the research that achieve the objectives and assumptions of the research, through the use of the statistical package (SPSS).

4 - Present, analyze and discuss the results

After emptying the data obtained by the researcher, and to verify the validity of the hypothesis and the purpose of the research, the data were analyzed statistically using the appropriate statistical methods.

4Presentation and discussion of the results

4.1.1 Presentation and analysis of physical characteristics results between the pre- and post-tests of the experimental group

- Table (2)

Represents the statistical parameters and the values of (T) between the pre- and post-tests of the physical characteristics of the experimental group

| Significance | Calculated value (v) | Post-testing | | Pre-test | | Tests |
|---|---|---|---|---|---|---|
| | | on | Going to | on | Going to | |
| Insignificant | 0.87 | 0.23 | 4.12 | 0.67 | 4.54 | Speed Test 30m |
| Moral | 0.220 | 417 | 38.30 | 4.96 | 37.60 | Speed Extension Test |
| Moral | 5.28 | 2.15 | 11.60 | 2.43 | 9.70 | Test flexion and extension of arms from inclined supine position in 10 seconds |
| Moral | 4.65 | 1.32 | 9.44 | 1.004 | 8.64 | Medical Ball Push (3 Kg) with One Hand |

- 4.-2 Discussion of the results

- Table (2) shows that the experimental group has improved significantly, as the exercises used in the SOMA application indicate a significant improvement in the maximum speed of the group members.

The maximum depends mainly on the repetition of high-frequency movements and neuromuscular loading, as Al-Suwaidi, 2020, page 58 confirms that the improvement in speed requires the use of various techniques such as high repetitions, light resistance training, and the researcher agrees with what was mentioned. , 2016, 75) indicates that speed is a complex trait that requires the activation of the central nervous system and specialized training including acceleration and maximum speed. , and obstacle or short jump exercises, and this is supported by what Bompa & Buzzichelli (2018) and Baechle Earle (2018) suggest that speed develops when skill training and neural adaptation are combined through chronologically and mechanically programmed programs.

The basic in the game of handball such as the shooting power, the jumping power, the throwing power, the accuracy of passing, the level of performance, etc., along with the physical qualities through compound and joint exercises to show a high level of physical performance and collective skill during competitions, "Therefore, training for the development of physical qualities is also through training on basic skills and planning exercises, so the physical fitness of handball players is related to the skill and planning performance of the game" (Kamal Darwish (et al.), 1998, 22.), highlights the necessary importance of the quality of strength characterized by speed in the performance of the player's duties physically and skillfully through his participation with his colleagues, whether in the performance of a joint collective defensive duty or an individual defensive duty, offensive duties and what they require of individual or group tactics or a quick attack with one or two stages that are required to be completed and mastered by the player, and this level of physical and skill performance requires the player to move two strong and fast legs and for successive times during the game. For example, a handball player, when performing the aiming, jumping, and running movements, fall between enduring maximum force and enduring the speed of force, he trains to endure the speed of force like a 100 m swimmer, (Al-Sayed Abdel Maqsoud, 1996, 162-163). with the following points (Abdel Hamid Sharaf, 2000
55-56)

- Shortening time and accuracy of implementation.
- Proper Perception of Movement
- The suspense factor when performing
- Help focus on the skills to be implemented

The use of exercises that develop muscular strength

The researcher attributes the reason for the high rate of development in the members of the experimental group to the effectiveness of the training method within the application of drawings that contributed to the development of the muscles working of the arms, i.e., these muscles have developed as a result of the development of their distinctive strength at speed, because "weight-oriented training of certain muscle groups leads to the development of them" ( Saad Mohsen Ismail, 1996, 99).)

Note that the proposed training method had ascending intensities, and relatively variable repetitions that continued throughout the duration of the experiment, and this was agreed upon by the experts, who confirmed that if we want to develop strength, we must use training with progressive resistances, and the gradual increase in the weight of the weights used in the training was in order to obtain the muscular adaptation to the new weight, which allows the muscle to face the new weight, because it is not possible to benefit from any training without gaining weight. This is what Mohamed Othman confirms by saying that "the process of raising the level of strength characterized by speed requires working with weights." ( Muhammad Othman, 1990, 127.)

Bowes and Schröter point out that the ability to be characterized by speed and the ability to maximize strength are among the physical abilities that have a clear impact on achieving achievement in the jumping and jumping events, and this direct and certain relationship between raising the level of achievement in the jumping and jumping events is related to the ability to achieve the strength characterized by speed and the possibility of developing it. (Karl-Heinz Bauz & Kierdschrutter, 1988, 404.)

5.1 Conclusions

Through the results of the research, the following conclusions were reached:

1. The use of the Soma application is a performance to improve the players' ability to endure speed because of the similarity of this style to the nature of the kinetic performance of the game of handball.

2. The development of speed prolongation had a great impact on improving the players' ability to improve their ability to resist fatigue and continue to perform efficiently.

5.2 Recommendations

1. The necessity of using the Soma application in developing the ability of handball players in shooting accuracy.
2. Adopt a time of 10-20 minutes as the ideal time for sprint training at the end of the training modules during the preparation phase of competitions.

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## Appendices

### Appendix No. (1) Personal Interviews:

| Workplace | Name | t |
|---|---|---|
| Diyala University - Faculty of Physical Education and Sport Sciences | Prof. Dr. Alaa Khalaf Haidar | 1 |
| Diyala University - Faculty of Physical Education and Sport Sciences | Assoc. Prof. Dr. Oras Adnan Hatroush | 2 |
| University of Al-Qadisiyah - Faculty of Physical Education and Sport Sciences | Prof. Dr. Nawar Abdullah Al-Lami | 3 |
| Rafidain University - Faculty of Physical Education and Sport Sciences | Prof. Dr. Tahrir Alwan | 4 |

### Appendix No. (2) Assistant Team: The Assistant Working Group consists of:

| Workplace | Name | t |
|---|---|---|
| Diyala University - Faculty of Physical Education and Sport Sciences | Prof. Dr. Huda Naji Zeidan | 1 |

| | | |
|---|---|---|
| Diyala University - Faculty of Physical Education and Sport Sciences | Assoc. Prof. Dr. Alaa Kamel Abboud | 2 |
| Diyala University - Faculty of Physical Education and Sport Sciences | Eng. Dr. Nibras Adnan Hatroush | 3 |
| Ministry of Education | Master's student. Ahmed Mohammed Abbas | 4 |

Appendix No. (3) Training Unit Form

| Comfort between groups | Number of Totals | Rest between repetitions | Duplicates | Workout time | Hardship | Workout Code | t |
|---|---|---|---|---|---|---|---|
| B 10 | 3 | 60 S | 4 | 20 S | %90 | Knee Lift to Chest, Receive and Straighten) | 1 |
| B 10 | 3 | 90 S | 4 | 30 S | %90 | Receiving and running with the ball for 10 meters, then tricking and then shooting | 2 |
| 0 | 3 | 60 S | 4 | 20 S | %90 | Raise the knee to the chest, run the ball between the posts, then come a command of two different colors and the player shoots to a certain angle with a goal according to the type of color | 3 |