Designing a psychological recovery program to reduce psychological stress and some functional variables among female handball players

Diseño de un programa de recuperación psicológica para reducir el estrés psicológico y algunas variables funcionales en jugadoras de balonmano

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Abstract

Objective: To achieve the ultimate goal of this study, to determine the influence of a recovery program on reducing levels of psychological stress in female handball players, and to determine the positive influence of a recovery program on functional variables in female handball players.
Methodology: The researcher used the experimental method because it would give the capabilities needed to study this problem. The researcher selected the research sample of 14 young female players aged 15-17 who were part of the Baghdad Rusafa II Education Handball Team in the 2023-2024 season, representing the original community.
Results: There were statistically significant differences in the pre- and post-measurements, with a significant difference in favour of the post-measurement. This means treatment effectively reduced the intensity of psychological stress and some functional variables, which benefited athletic performance in competitions.
Conclusion: The research findings on the means and predicted mean for the research sample were different, as were the findings on the means of scale items.

Keywords

Psychological recovery program, psychological stress, and handball.

Resumen

Objetivo: Identificar el impacto de un programa de recuperación psicológica en la reducción del estrés psicológico en jugadoras de balonmano, así como su impacto positivo en las variables funcionales de dichas jugadoras.
Metodología de la investigación: El investigador utilizó el método experimental por su adecuación a la naturaleza del problema a medir. La muestra de investigación se seleccionó por 14 jugadoras jóvenes de 15 a 17 años, representantes del Equipo de Balonmano Educativo Bagdad Rusafa II para el año 2023-2024, pertenecientes a la comunidad de origen.
Resultado: Se observaron diferencias estadísticamente significativas entre la medición previa y posterior, a favor de esta última, lo que indica la eficacia del programador en la reducción del estrés psicológico y de algunas variables funcionales, lo que se reflejó positivamente en el rendimiento deportivo durante las competiciones. Conclusiones: Hubo diferencias entre los resultados de la investigación en las medias aritméticas y la media hipotética para la muestra de investigación, y hubo diferencias entre los resultados de la investigación en las medias aritméticas, a favor de los ítems de la escala para la muestra de investigación.

Palabras clave

Programa de recuperación psicológica; estrés psicológico; balonmano.

Introduction

This research is considered an essential study in sports because it focuses on excessive psychological stress, one of the most prominent factors negatively affecting female players' performance, especially in team sports such as handball, which require high concentration and precise emotional control during play. The program also offers practical approaches to psychological recovery. (Fadhil et al., 2025) This research provides an applied psychological program based on scientific methods such as relaxation, deep breathing, and mental imagery, enabling female players to cope with psychological pressure and improve their performance on the field. This program helps develop the players' ability to maintain attention and focus during competitive situations, raising individual and group performance and some functional variables. The research also focuses on female handball players, thus supporting women's sports by providing coaching staff with modern psychological tools to improve psychological well-being. The psychological aspect is often neglected in training programs. This research aims to fill this gap by highlighting the impact of recovery on field performance.

Research Problem

Psychological pressure and stress are among the most prominent challenges facing female players during competitive matches, as this directly affects their ability to concentrate, make sound decisions, and control their emotions during play. Despite the significant focus on physical and skill aspects of training, the psychological element still suffers from neglect in many training programs. Field observations of female handball players' matches revealed that some players suffer from distraction and high levels of stress, leading to decreased performance and emotional instability in critical situations. This raised questions about the possibility of employing psychological recovery programs as an effective tool to reduce psychological stress and some functional variables, and improve concentration during play.

Research Objectives

- To determine the effects of a psychological recovery program on the reduction of psychological stress levels of female handball players.
- To determine the positive effects of a psychological recovery program on functional variables of female handball players.

Research Hypotheses

- The impact of the psychological recovery program on lowering psychological stress in female handball players is not significantly different between the pre- and post-tests.
- The beneficial effects of the psychological recovery program on functional measures among female handball players are not significantly different between the pre- and post-tests.

Research fields

- Human field: Junior female handball players in the General Directorate of Education, Baghdad, Rusafa II.
- Time field: (20/10/2024) to (*25*/11/2024)
- Spatial field: The Sports and Scouting Activities Hall in the General Directorate of Education, Baghdad, Rusafa II

Method

Research Methodology

The experimental method is the only method that can truly test hypotheses of cause-and-effect relationships. It also represents the closest and most reliable way to solve many problems scientifically and theoretically, in addition to its contributions to presenting scientific research in the humanities, including sports sciences (Alawi & Rateb, 1999). Therefore, the researcher used the experimental method because it is suitable for measuring the nature of the problem.

Research Community and Sample

The research sample represents the original community. It is a case study of a specific part or percentage of the original community, and then the results are generalized to the entire community. (Anana & Al-Za'ani, 2008). The researcher selected the research sample, which consisted of 14 young female players from the age groups (15-17) representing the Baghdad Rusafa II Education Handball Team for 2023-2024.

Devices, Tools, and Methods for Data Collection

- References and Arabic Sources
- The Internet
- Psychological Stress Scale (Appendix 1-2)
- Psychological Recovery Program (3-4)
- Pulse Oximeter (Smart Watch)
- Names of the experts in the recovery program (Appendix 5)
- Supporting Team (Appendix 6)
- Tests Used in Research
- Psychological Stress Measurement Test (Rateb, 1997).
- Test Objective: To measure the level of stress experienced by players.
- Test Tool: Stress Measurement Form.
- Test Explanation: The scale consists of 33 statements. Players respond to each statement using a three-choice scale, with 3 representing "rarely," 2 "sometimes," and 1 "always." The scale's score ranges from 33 to 99 points, and a higher score reflects the intensity of stress and arousal.

Heart Rate Test

- Test Objective: To measure the efficiency of the cardiovascular system.
- Test Measuring Tool: Heart Rate Monitor (smartwatch)
- Test Explanation: The subject is placed in a supine position on the floor.

The resting heart rate for adults is measured, ranging from 100 to 60 beats per minute, and is calculated based on the participant's age, i.e., the maximum = 220 - age and target = 50% to 85% of the maximum. During the exercise, moderate to vigorous exercise for 3-5 minutes (brisk walking or light jogging). After the exercise (recovery), if the heart rate drops by more than 12 beats during the first minute, this is good. A decrease in exercise below 12 indicates less fitness or may require medical advice.

Respiratory Rate Test (Ali, 2007)

- Test Objective: To determine the extent of development in the research sample's respiratory response to the proposed training program.
- Test measurement tool: The researcher used the palm of her hand to measure the number of times the rib cage rose and fell during breathing within one minute.
- Test explanation: The respiratory rate was measured by placing the palm of the researcher's hand on the rib cage of each player in a resting position before and after the test. The number of times the rib cage rose and fell within one minute was counted, with each exhalation and inhalation counted as one. The lower the rate, the better the measurement. Typically, it is set between 10 and 12 times per minute.

Field Research Procedures

Experimental Research

The exploratory experiment was conducted on Sunday, October 13, 2024, and was repeated on October 18, 2024, in the Sports and Scouting Department hall. The number of female handball players included in the experimental study was 4. Note that the exploratory experiment players did not participate in the main experiment. After the exploratory experiment, the researcher identified all the obstacles that accompanied the exploratory experiment, avoiding and controlling them during the program's implementation.

Scientific Foundations of the Test

The researcher conducted procedures to extract the scientific foundations for the test.

- Test Validity: Validity is one of the attributes that must be considered when constructing tests. Test validity is "the extent to which the test measures what it was supposed to measure or the trait to be measured" (Radwan, 2006). To determine the validity of the measure and test, the researcher had the questionnaire validated by a group of experts for apparent validity.
- Test Reliability: Test reliability means (the extent to which a test measures the phenomena meant to be measured) (Farhan, 2001). In determining the reliability coefficient, the researcher calculated the Pearson correlation coefficient between the results of the first and second tests of the two variables. The researcher then calculated the significance value of the correlation by using the t-test for the significance of the correlation. The researcher could verify that all the tests certified were significant, meaning a high reliability coefficient, as the calculated correlation coefficient t-values had a degree of freedom of 3 and calculated t-values significance level at 0.05, as illustrated in Table 1.
- The Objectivity of Tests: This refers to the amount of influence the examining judge is free from subjective aspects. The researcher has relied on the judges' (Farhan, 2001) values to identify the objectivity of the tests. The simple correlation coefficient (Pearson) was calculated between the scores of the first and second judges for the physical variables of the test-retest values, and the results are extended in (Table 1) The results were considered to be objective since the t-values calculated were all greater than the tabular t-values at (18.3) for (3) degrees of freedom and (0.05) level of significance as presented in Table 1.

Table 1. Shows that the calculated t-values were all greater than the tabular t-value

No.	Test	Stability coefficient	Calculated value/t	Statistical significance	Objectivity factor	Calculated value/t	Type Sig
1	Psychological stress	0.941	3.94	sig	0.935	3.73	sig
2	Heart rate	0.956	4.58	sig	0.947	4.15	sig
3	Respiratory rate	0.923	3.38	sig	0.951	4.34	sig

Main Experiment

Pre-test

The pretest was conducted on the research sample, which consisted of 14 female handball players, on Sunday, October 21, 2024, at ten o'clock in the morning.

The test continued until eleven o'clock in the morning in the hall of the Sports and Scouting Activities Department at the General Directorate of Education in Baghdad, Rusafa II, to distribute a questionnaire to measure psychological stress.

Psychological Recovery Program

A psychological recovery program was developed using basic techniques. The program was designed to reduce psychological stress and improve mental focus for female handball players. It included four weekly sessions, each lasting 45-60 minutes. The program utilized four main techniques in each session: deep breathing, progressive muscle relaxation, mindfulness meditation, and positive visualization related to matches. The program began with moderate intensity for the first week and gradually pro-

gressed over the four weeks to enhance the players' ability to control psychological stress. The agreement rate on the program was 80%, and overall, this program included gradual development within the psychological recovery process.

Post-Test

The researcher conducted the post-test under the same spatial and temporal conditions as the pre-test. The test began at 9:00 AM on Thursday, November 21, 2024, and continued until 12:00 PM.

Statistical Methods

The ready-made program for this method was used within the SPSS program.

Findings

Presentation and Analysis of the Pre--- and Post-Stress Test Results for the Research Sample

The tabulated (t) value at (9) degrees of freedom and an error probability of (0.05) = (1.83)

The results in Table 2 show variations in the arithmetic means and standard deviation values for the experimental group pre-test and post-test. The value for the arithmetic mean in the pre-test was 52.6 with a standard deviation of 10.7, while the arithmetic mean for the post-test was 44.3 with a standard deviation of 3.8. To examine the hypothesis regarding the significance of the differences between the pre-test and post-test arithmetic means, the (t) test for correlated samples was used. It was found that the value for the arithmetic mean for the differences between the pre-test. Post-test arithmetic means (psychological stress test) were (9.1) with a standard deviation of (5.8), and the calculated t value was (4.25), while the t value was (3.22) at (9) degrees of freedom and an error probability of (0.05). Since the calculated t-value was greater than its tabulated value, the difference is significant and favors the post-test. This indicates the development of the research sample members in the psychological stress test.

Table 2. Show statistical Parameters for the Research Sample Between the pre--- and Post-Stress Tests

Tests	Pre-test		Post-test		The arithmetic mean of the difference	Standard deviation of differences	Calculated value of t	Type sig
	Mean	Standard deviation	Mean	Standard deviation				
Psychological stress	52.6	10.7	44.3	3.8	9.1	5.8	4.25	Sig

Presentation and analysis of the results of the psychological stress test and the development rates of the research sample members

Table 3 shows that the pre-test mean for the research sample members in the psychological stress test was 52.7, while the post-test mean was 44.3. The difference between the two means was (9.1). The development rate was 0.16, with a development percentage of 16.7%. According to the development standard, the research sample members achieved average development in the psychological stress test.

Table 3. Show the statistical parameters of the research sample members between the pre- and post-tests for the psychological stress test.

Tests	Pre-test	Post-test	Difference	Amount of development	Percentage of development	Significance of evolution
	Mean	Mean				
Psychological stress	52.7	44.3	9.1	0.16	%16.7	Medium

Presentation and analysis of the results of the pre- and post-test (heart rate) for the research sample members

The tabulated t-test value at degrees of freedom of 9 and error probability 0.05 = 1.83. The differences between the values of the arithmetic means (M) and the values of the standard deviations (SD) of the pre- and post-tests for the experimental group can be seen in Table 4. The arithmetic mean (M) was 67.8 with a standard deviation (SD) of 2.7 in pre-test, while in post-test, the arithmetic mean (M) was 61.5

and the standard deviation (SD) was 1.6. The t-test was employed to test the hypothesis, which dealt with the significance of the differences between the arithmetic mean (M) of the pre- and post-test, in order to provide correlation. The arithmetic means (M) of the differences between the pre- and post-test (heart rate test) were (5.2), with a standard deviation (SD) of (1.3). The t-test produced a value of (13.3), while the p-test value was (3.24) of degrees of freedom (9) with a probability of error of (.05). The t-test value was greater than its table value. Thus, the difference was significant and in favour of the post-test. This indicates the improvement in the heart rate test of the members of the sample research group.

Table 4. Show statistical parameters for the research sample members between the pre- and post-tests in the heart rate test

Statistical parameters Tests	Pre-test		Post-test		The arithmetic mean of the difference	Standard deviation of differences	Calculated value of t	Type Sig
	Mean	Standard deviation	Mean	Standard deviation				
Heart rate	67.8	2.7	61.5	1.6	5.2	1.3	12.3	Sig

Presentation and analysis of the results of the heart rate test and the percentages of improvement for the research sample members

Table No. (5) Shows that the pre-test mean for the research sample members in the heart rate test was 68.8, while the post-test mean was 63.5. The difference between the two means was (5.2), while the development value was (0.06), with a development percentage of (7.55%). According to the development criterion, the research sample members achieved average development in the heart rate test.

Table 5. Shows the statistical parameters for the research sample members between the pre- and post-tests of the heart rate test.

Tests	Pre-test	Post-test	Difference	Amount of development	Percentage of development	Significance of evolution
	Mean	Mean				
Heart rate	68.8	63.5	5.2	0.06	%7.55	A little

Presentation and analysis of the pre- and post-respiratory rate test results for the research sample members

The tabular (t) value at a degree of freedom of (9) and a probability of error of 0.05 = (1.83) From the statistics in Table (6), there are differences between the values of the arithmetic means and the values of the standard deviations of the pre- and post-tests for the Experiment Group. The arithmetic mean value in the pre-test was 15.6 with a standard deviation of 0.93, while the arithmetic mean for the post-test was 13.3 with a standard deviation of 0.65. To test the hypothesis related to the significance of the differences between the pre- and post-test arithmetic means, the t-test was used for correlated samples. It was found that the arithmetic mean value of the differences between the pre- and post-test arithmetic means (respiratory rate test) was 2.4 with a standard deviation of 0.51. The calculated value of (t) was (3.24), while the value was (0.05) under the degree of freedom (9), with a probability of error of (0.05). Since the calculated t-value was greater than its table value, the difference is significant and favors the post-test. This indicates the improvement of the research sample members in the respiratory rate test.

Table 6. Shows statistical parameters for the research sample members between the pre- and post-tests in the respiration rate test.

Tests	Pre-test		Post-test		Arithmetic mean of the difference	Standard deviation of differences	Calculated value of t	Type Sig
	Mean	Standard deviation	Mean	Standard deviation				
Breaths/minute	15.6	0.93	13.3	0.65	2.4	0.51	14.6	Sig

Presentation and analysis of the results of the respiratory rate test and the percentages of improvement for the research sample members

Table 7 shows that the pre-average value of the research sample members in the respiratory rate test was 15.6, while the post-average value was 14.4. The difference between the two means was (2.3), while the development rate was (0.14), with a development percentage of (13.3%). According to the development criterion, the research sample members achieved average development in the respiratory rate test.

Table 7 shows Statistical parameters for the research sample members between the pre- and post-tests in the respiratory rate test.

Statistical parameters	Pre-test	Post-test	Difference	Amount of development	Percentage of development	Significance of evolution
Tests	Mean	Mean				
Heart rate	15.6	14.4	2.3	0.14	%13.3	Middle

Discussion

Discussion of the results of the psychological stress test for the research sample members

During competition, it is indicated that the degree of arousal among athletes in high-intensity sports competition situations indicates intense tension and arousal, as well as a weak athlete's ability to exercise psychological control and control over their performance.)(Rateb, 2007)

Therefore, the researcher has two approaches: self-control by studying situations and the possibility of influencing functional systems to increase performance in a way that serves the athlete to achieve success during the tournament or competition. This involves self-control and functional systems by introducing a new scientific method that reduces stress, namely psychological relaxation exercises.

Discussion of the results of the heart rate test for the research sample members

(An athlete's effort causes physiological changes in the body's systems, such as increased heart size, slower breathing, increased blood volume, and improved breathing variables) (Alawi, & Fattah, 1984).

The researcher influenced the heart's function by reducing its heart rate through psychological recovery exercises, which was reflected in the level of differences, meaning that the post-test level for this variable was better than the pre-test level.

Discussion of the results of the respiratory rate test for the research sample members

The results showed differences in the respiratory rate between the arithmetic means in the pre- and post-tests for the research sample members. Therefore, the researcher attributes this to the effect of the relaxation exercises used on the respiratory centers (the rate of breathing varies depending on the level of functional adaptation of the body's functions, especially the lungs, as well as the type, characteristics, and features of the activity or game being practiced)(Muslim, 2008).

Conclusions

- Research findings displayed differences in the research sample's arithmetic and hypothetical means.
- Research findings displayed differences in the arithmetic means, in favor of the scale items for the research sample.
- Research findings displayed differences in the arithmetic means, favoring some functional variables (heart rate, respiratory rate) for the research sample.

Recommendations

- Regularly include psychological recovery programs in training plans for female handball players and other sports.
- Integrate psychological education into the team's general culture to teach players how to deal with stress and psychological pressures.
- Use the research results to develop integrated programs that combine psychological and physical aspects to achieve optimal athletic performance.

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Appendices

Appendix 1. Questionnaire

Greeting

The researcher aims to conduct her study in accordance with her designated research: ((Designing a psychological recovery program to reduce psychological stress and some functional variables among female handball players)).

Consequently, here is a questionnaire to study the state of psychological stress and its impact on achievement. From this, we can learn about stress and find solutions to raise the level of this game in the country. Therefore, please be honest and accurate when answering this questionnaire, noting that the information we present is limited to research purposes and may not be used for other purposes.

With thanks and appreciation for your cooperation.

Name:

Age:

Game:

No.	Manifestations of psychological stress	Repetition of stress adjectives		
		Always	Sometimes	Rarely
1	Facial grimacing			
2	Grinding of teeth			
3	General body discomfort			
4	Constant movement of certain body parts (feet, hands, knees)			
5	Headache			
6	Neck pain			
7	Back pain			
8	Diarrhea			
9	Constipation			
10	Irritable bowel syndrome			
11	Indigestion			
12	Fatigue			
13	Sleep disturbances			
14	Hand pain			
15	Legging pain			
16	Hair pulling (head, mustache, eyebrows, etc.)			
17	Sudden muscle pain (cramps, spasms, etc.).			
18	Increased awareness			
19	Cold hands/feet			
20	Nail biting			
21	Lip chewing			
22	Irritability or agitation			
23	Rapid leg palpitations			
24	Anger, aggression			
25	Hand tremors			
26	Not being able to breathe			
27	Uncontrollable thoughts			
28	Mind disturbance			
29	Forgetfulness			
30	Skin rash			
31	Loss of appetite			
32	Overeating			
33	Unreasonable fear			

Appendix 2. Psychological Stress Scale

Prepared by: Dorothy F. Harris, Translated by: Osama Kamel Rateb

The score ranges from 33 to 99, with a higher score reflecting increased stress and the need for more relaxation training methods.

Appendix 3. Expert Opinion Survey on the Validity of the Psychological Recovery Program Design in Reducing Psychological Stress and Some Functional Variables in Female Hand-ball Players

Dear Professor...

Greetings...

Below are a set of training sessions containing a set of psychological recovery exercises at the end of the training unit, over a period of one month, at four sessions per week.

So, please express your opinions regarding the validity of the exercises in terms of:

Their ability to serve the objectives.

The suitability of the exercises in terms of frequency and time used for the level of the sample.

The clarity of the spoken word for each exercise.

The sequence of exercises according to their difficulty.

Please also note your valuable comments and suggestions regarding the exercises that have an effective impact on developing, improving, and delivering them in an appropriate manner.

With deep gratitude and appreciation...

Name:

School Title:

Specialty:

University or College:

Appendix 4. Basic Exercises Used in Recovery Programs

- Deep Breathing: Focuses on slow, deep abdominal breathing, which helps calm the nervous system, reduce psychological stress, and increase oxygenation in the body. It is recommended to regulate inhalation and exhalation for a few seconds (e.g., inhalation for 4 seconds, exhalation for 6 seconds).
- Progressive Muscle Relaxation: In this exercise, the body's muscles are tense one group after another (e.g., feet, legs, abdomen, arms, shoulders), followed by complete relaxation. This exercise helps reduce psychological and physical stress and increase awareness of tense bodies.
- Mindfulness Meditation (Mind Focus): This is a short session in which the player focuses on the present, such as observing breathing or bodily sensations without judgment. This exercise enhances mental focus and reduces distracting thoughts.
- Positive visualization associated with competitions: Mentally visualizing a victory or positive moments on the field (such as executing a successful shot or receiving the ball with focus) helps boost self-confidence and strengthen a positive mental state before and during matches.

Monthly Program Schedule: The four weekly sessions, exercise components, and times are below. The following table shows the exercises for each session in the first week as an example, with some intervals gradually increasing in subsequent weeks:

Week One (Defining the Exercises and Repetition at a Moderate Level): The focus is on the players' understanding of each technique and ability to perform it at a relaxed pace.

Workout Sessions during the First Week

Exercise	First session	Second session	Session 3	Session four

Deep breathing	5 minutes	5 minutes	5 minutes	5 minutes
Progressive muscle relaxation	20 minutes	20 minutes	20 minutes	25 minutes
Mindfulness meditation	10 minutes	15 minutes	15 minutes	15 minutes
Positive visualization	5 minutes	5 minutes	10 minutes	10 minutes
Short break	5 minutes	5 minutes	5 minutes	5 minutes

During the first week, sessions focus on deep breathing and basic muscle relaxation exercises. For example, in the first session (45 minutes), devote 5 minutes to deep breathing, 20 minutes to muscle relaxation, 10 minutes to meditation, and 5 minutes to positive visualization, such as feeling warmth in the chest and feeling your heart beating slowly and regularly. A short break, increased by a few minutes in subsequent sessions (e.g., 15 minutes of meditation in the second and third sessions), increases the likelihood of getting used to it.

Week Two (Slight Increase in Duration and Focus)

In the second week, the duration of some exercises increases to enhance concentration. Additional sessions may include positional exercises or increased intensity of muscle relaxation.

Exercise Sessions During the Second Week

Exercise	First session	Second session	Session 3	Session four
Deep breathing	5 minutes	5 minutes	5 minutes	5 minutes
Progressive muscle relaxation	25 minutes	25 minutes	25 minutes	25 minutes
Mindfulness meditation	10 minutes	10 minutes	15 minutes	15 minutes
Positive visualization	5 minutes	10 minutes	10 minutes	10 minutes
Short break	5 minutes	5 minutes	5 minutes	5 minutes

Note that the muscle relaxation period is increased to 25 minutes to cover additional muscle groups, and meditation and visualization are gradually increased in some sessions. For example, session 5: 3 minutes of breathing, 25 minutes of muscle relaxation (e.g., a warmer, more relaxed feeling in the body's muscles while maintaining inhalation and exhalation), 15 minutes of meditation, and 10 minutes of visualization (55 minutes total). This helps the athlete deepen concentration and relaxation under slightly longer conditions.

Week 3 (Deepening the Experience Under Minor Stressors):

The exercise is deepened, and minor stimuli (such as playing calming music or light effects) may be added to simulate gradual stress. This increases mental focus and stress management time. Example times:

Exercise sessions during week 3

Exercise	First session	Second session	Session 3	Session four
Deep breathing	5 minutes	5 minutes	5 minutes	5 minutes
Progressive muscle relaxation	25 minutes	25 minutes	30 minutes	30 minutes
Mindfulness meditation	15 minutes	15 minutes	15 minutes	15 minutes
Positive visualization	5 minutes	10 minutes	5 minutes	5 minutes
Short break	5 minutes	5 minutes	5 minutes	5 minutes

This week, sessions focus on steady breathing, meditation, and maintaining breath control. Muscle relaxation time is increased to 30 minutes in sessions 3 and 4. During the second session, more details can be added to the positive visualization (such as visualizing a favorite color in each direction, the green field, your clothes, and everything else). Most sessions are approximately 60 minutes long, helping players develop patience and mental focus for extended periods.

Week 4 (Peak Training and Application: Complete Control)

Week 4 is the program's culmination, where players develop their ability to control stress fully. This week, all techniques are applied for the longest time, focusing on stimulating visualization of complete success in matches, such as appointments.

Practice sessions during week 4

Exercise	First session	Second session	Session 3	Session four
Deep breathing	5 minutes	5 minutes	5 minutes	5 minutes
Progressive muscle relaxation	30 minutes	30 minutes	30 minutes	30 minutes
Mindfulness meditation	5 minutes	15 minutes	15 minutes	15 minutes
Positive visualization	5 minutes	5 minutes	10 minutes	5 minutes
Short break	5 minutes	5 minutes	5 minutes	5 minutes

In this final week, all sessions last for 60 minutes. Breathing exercises focus on increasing the players' inhalation and exhalation volume, and muscle relaxation is a fixed 30-minute period. Mindfulness meditation is 15 minutes to stimulate deep concentration. At the end of each session, short, repeated positive visualizations (e.g., imagining a successful pass or a smashing kick) are encouraged to boost confidence.

This program includes a gradual progression from a simple introduction to techniques to sustained, advanced use. By the end of the month of regular application, the players are expected to demonstrate significant progress in their ability to manage stress and increase their focus during matches.

Note:

After a consultation session with the team coach, Dr. Ali Ibrahim, and his assistant, we decided to implement the program during 16 training units as part of the special preparation program, with four training units per week for a month, with a session duration of between 45 and 60 minutes.

Appendix 5. Names of experts and specialists on the validity of the psychological recovery program

No.	Name	Academic title	Specialization	Workplace
1	Ali hussein al-zamili	Assistant professor	Sports psychology	University of Al-Qadisiyah / college of physical education and sports sciences
2	Lamia Sami Elias	Assistant professor	Sports psychology - scouting methods	Ministry of education / General directorate of education, Baghdad / Rusafa II
3	Rahim Halou Ali	Assistant professor	Sports psychology	University of Maysan / college of physical education and sports sciences
4	Amer saeed al-khaikani	Assistant professor	Sports psychology	University of Babylon / college of physical education and sports sciences
5	Wissam Najib Salwa	Assistant professor	Sports training science - football	University of Baghdad / college of physical education and sports sciences

Appendix 6. Names of the support team

No.	Name	Job title	Workplace
1	Ali ibrahim hassan	Coaching/handball	General directorate of education, Baghdad / Rusafa II
2	Saad kazim	National coach	General directorate of education, Baghdad / Rusafa II
3	Doser abdul karim hassan	Assistant coach	General directorate of education, Baghdad / Rusafa II
4	Alaa abdul wahid ghali	Assistant coach	General directorate of education, Baghdad / Rusafa II

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