

The Impact of Special Exercises According to the Mental Biorhythm Cycle in Developing Some Mental Abilities and Volleyball Transmission Skill from Sitting

Aseel Tabina Abbas

College of Physical Education and Sports Sciences, University of Thi-Qar, Thi-Qar, 64001, Iraq, iu846445@gmail.com

Rashad Tariq Youssef

College of Physical Education and Sports Sciences, University of Thi-Qar, Thi-Qar, 64001, Iraq, royalrashad31@utq.edu.iq

Abstract

The research aimed to prepare special exercises to develop some mental abilities and volleyball transmission skill from sitting, as well as to identify the impact of those exercises, the researchers used the experimental approach to suit the nature of the research problem, the research community was represented by the players of the Paralympic Volleyball Committee from sitting in Dhi Qar Governorate for the 2021-2022 season, which numbered 16 players, they were divided into two control and experimental groups with (8) players for each group, the two researchers conducted homogeneity and equivalence in the research variables, the training modules are applied by the team trainer for the control and experimental groups, the duration of the educational curriculum reached (9) weeks for the period from Saturday, 21/1/2023 until Monday, 27/3/2023. Where the curriculum included (27) training units and three training units per week, the researchers concluded that the experimental group that relied on the exercise (physical - mental) accompanying the mental biorhythm cycle showed a clear superiority in the post-test of some mental abilities and volleyball transmission skill from sitting on the control group.

Keywords: *Mental Biorhythm Cycle, Mental Abilities, Sitting Volleyball.*

INTRODUCTION

Many scientific concepts and terms have been introduced into human life, which have changed the course of living among his society towards continuous progress and advancement and elevating him to the highest levels of progress and prosperity and crowning with success, which led him to search tirelessly for everything that is new and modern for the purpose of perpetuating the wheel of success by moving forward, and perhaps one of the most important of these concepts, which has changed the reality of human life, is the

biorhythm of life, which is one of the ancient and modern sciences at the same time, it has become the subject of interest of scientists and their continuous attempts to make the most of its cycles, which are called biorhythm cycles, and at all levels and fields that are closely related to human life, the sports aspect is one of the most important of these fields, which invested these cycles in a scientific manner, especially the mental cycle, which lasts (33 days), which the coaches took advantage of and organized their educational and training work and invested effort and time in obtaining advanced results in performance, as the player

shows in it and during the positive stage, including a high ability to think, creativity, mental clarity and a high ability to focus and receive information and thus employ it well to achieve the desired purpose in all sports events without exception.

The game of volleyball from sitting is one of the important team games that are of wide interest to various countries of the world, it is one of the games that I love because of its excitement, suspense and fun when practicing or watching it, which called on those interested in this game, including coaches and educators, to introduce everything new that would develop the capabilities of players, and upgrade the game and players together through serious attempts to develop and acquire basic motor skills, since transmission is one of the most important of these skills and what can add to the performance style of the players in terms of aesthetic performance, through which a point can be obtained and thus the difference can be made in the result of the match if it is well mastered, through the development of the educational and training process, which made the performance of the players during the competition characterized by speed, which gave great importance to mental training, and made it an important and essential aspect in the educational and training process, as the player needs to think about the skill mentally, as is the case with the performance of the skill physically, because it has an effective role in the process of mastering the skill, especially during the stages of acquiring it, because the mental feeling makes the player imagine and think about the line of movement and its different stages and imagine how to perform that he will present so that he can get his own partial image and translate it into movement, also, the performance is clearly affected and the specifications of the movement become more

accurate and perfect, hence the importance of research through the preparation of special exercises according to the mental biorhythm cycle in developing some mental abilities and the skill of transmission volleyball from sitting.

And through the researchers' observation of most of the training units supervised by many coaches that these units take place at the same pace throughout the daily and weekly exercise times and do not indicate individual differences and the condition of the player and his readiness to receive physical, motor and mental exercises, while there are natural influences of physical, psychological and mental variables that affect the internal and external environment of the individual, these influences increase their effectiveness clearly during the positive stages of the biorhythm, as well as not giving the mental cycle in particular sufficient importance while learning and developing basic skills, especially the skill of transmission, which is one of the skills that need a high ability of thinking and perception of the skill, which is evident through the fluctuation of the level of performance of the players despite the good preparation, therefore, the researchers decided to study this problem by controlling the training process and improving performance in the light of the psychotropic effects of the positive and negative stage of each individual by controlling the size of the repetitions and increasing it in the positive stage of the mental biorhythm cycle as it is characterized by activity and vitality and a desire and demand for thinking, visualization and creativity, and reducing it during the negative stage.

The research aimed to identify the mental biorhythm cycle of the research sample, and the preparation of special exercises to develop some mental abilities and the skill of

transmission volleyball from sitting, as well as to identify the impact of those exercises, as well as to identify the significance of the differences between the control and experimental groups.

The researchers assume that the special exercises according to the mental biorhythm cycle have a positive impact on the development of some mental abilities and the skill of transmission volleyball from sitting, as well as there are statistically significant differences between the control and experimental groups in the post-tests and in favor of the experimental group.

The human field was represented by the players of the Paralympic Volleyball Committee from sitting for the 2021/2022 season. As for the time range, it was for the period from 20/12/2023 to 5/4/2023. The spatial field is Nasiriyah Model Stadium of the Directorate of Youth and Sports in Dhi Qar Governorate.

Research methodology:

The researchers used the experimental approach with equivalent groups (control and experimental) to suit the nature of the research problem.

The research community and its sample: The research community was represented by the players of the Paralympic Volleyball Committee from sitting in Dhi Qar Governorate for the 2021-2022 season, which numbered 16 players, they were divided into two control and experimental groups with (8) players for each group, a control using the coach's method and an experimental group using the exercises prepared by the researchers according to the mental biorhythm cycle.

1 Homogeneity: The researchers conducted homogeneity in variables (age, training age, mass, trunk length and arm length), and they used the torsion coefficient to conduct homogeneity as shown in Table (1).

Table (1) shows the homogeneity of the members of the research sample in (age, mass and height)

S	Statistical Treatments Variables	Unit of measurement	Control group		Experimental group		T value	Value (sig)	significance level
			S	P	S	P			
1	Attention Sharpness	degree	19.628	1.866	19.087	1.068	0.712	0.488	Non-significant
2	Ball Sensation	degree	5.5	0.925	5.875	0.834	0.851	0.409	Non-significant
3	Responsiveness for the right hand	degree	3.25	0.707	3.375	0.517	0.403	0.693	Non-significant
4	Responsiveness for the left hand	degree	3.375	0.443	3.312	0.703	0.213	0.835	Non-significant
5	Transmitter skill	degree	7.625	1.187	7.875	0.834	0.25	0.634	Non-significant

Means, devices and tools used in the research:

Arab and foreign sources and references - Personal interviews - Questionnaire - Observation - Legal flying balls - Tennis - Manual calculator number (1) - HP laptop - Adhesive tape - Seating bench - Stopwatch number (2) electronic - Metal tape measure length (5) m - Sony type camera (1) - Medical balance number (1) - Whistle - Paper and pen.

Determining the tests:

The researchers prepared a questionnaire form to determine the most appropriate test for the skill of transmission volleyball from sitting, and the form was presented to a group of experts and specialists in sports education sciences, as the test with the highest percentage of the visa was nominated and Table (3) shows that.

Table (3) shows the percentages of tests nominated by experts and specialists

S	Capacity	Tests	Percentage
1	Attention	Attention-Modulating Borden Anfimov Test	81.81%
		Knowledge Network Testing	27.27%
2	Sensation	Ball Sensation (Ball Sensation Test)	90.90%
		Sense of time (time perception test)	9.09%
		Sensation of movement (time estimation test)	0%
3	Responsiveness	Nelson's response speed test	100%
		Speed measurement test to respond and move quickly and accurately according to the stimulus test	0%
4	Transmitter	Measuring the accuracy of the transmitter skill from the side region	0%
		Measuring the accuracy of the transmitter skill from the congenital region	100%

Tests used in research:

- Measuring the accuracy of the transmitter skill from the congenital region. (155:4).
- Attention-modulating Borden Anfimov test. (492:1)
- Ball sensation (ball sense test).

- Nelson's test to measure response speed. (264:1)

Exploratory experiment: The researchers conducted an exploratory experiment on Sunday, 12/25/2022 on a sample of 8 players from the research community, and the researchers and the team coach supervised that experiment, and the objective of the exploratory experiment was as follows:

- Knowing the obstacles to work that may hinder the work of the field experiment.
- Ensure the validity of the tools used in the test.
- How to extract biorhythm.
- Organizing an introductory training unit for the sample members according to the mental biorhythm cycle.

Field Research Procedures:

Pre-tests: Pre-tests were conducted for the period from Wednesday, 4/1/2023 until Thursday, 19/1/2023, in the presence of the assistant work team, the reason why the pre-tests are so long is to take into account the mental biorhythm cycle, the control and experimental groups were tested in the reproductive phase of the biorhythm mental cycle.

Training units: The training units are applied by the team trainer for the control and experimental groups, as the duration of the educational curriculum reached (9) weeks for the period from Saturday, 21/1/2023 until Monday, 27/3/2023. Where the curriculum included (27) training units and by three educational units per week, the educational unit was divided into three sections as follows:

(Preparatory section: 20 minutes - Main section: 60 minutes - Final section: 10 minutes).

Control group: takes the educational curriculum prepared by the team coach for the skill of transmission volleyball from sitting, as

well as giving her mental training normally without relying on the mental biorhythm cycle, that is, according to the estimates of the trainer.

Experimental group: take its training units according to the exercises prepared by the researchers as well as give mental training at the end of the main section according to the mental biorhythm cycle, as in the positive stages of the course, the volume of mental training and the time allocated to it are increased so that it reaches (15 minutes) while in the negative stages, the volume of mental training and the time allocated to it is reduced to (5 minutes), due to the different period of reproductive and negative stages among the members of this group, the biorhythm depends on the date of birth, the researchers took into account the differences between these dates by dividing the members of this group into three groups (4 players) for each group to converge the stages of the mental biorhythm cycle.

Post-tests: After completing the curriculum, the post-tests were conducted for the period from Tuesday, 28/3/2023 until Monday, 10/4/2023, under the same conditions in which the pre-tests were conducted and with the help of the assistant team.

statistical means: The researchers relied on the statistical bag spss version 23 in the processing of results.

Presentation of results:

Presentation and analysis of the results of the pre- and post-tests of the research variables for the control and experimental groups.

Table (4) shows the arithmetic means, standard deviations, t-value and significance level for pre- and post-tests in the search variables of the control group

S	Statistical Treatments Variables	Unit of measurement	Control group		Experimental group		T value	value(sig)	significance level
			S	P	S	P			
1	Attention Sharpness	degree	19.628	1.866	21.05	1.439	5.066	0.001	Significant
2	Ball Sensation	degree	5.5	0.925	4.5	0.534	3.742	0.007	Significant
3	Responsiveness for the right hand	degree	3.25	0.707	3.937	0.417	4.254	0.004	Significant
4	Responsiveness for the left hand	degree	3.375	0.443	4.187	0.593	4.333	0.003	Significant
5	Transmitter skill	degree	7.625	1.187	8.625	0.744	3.742	0.007	Significant

Table (5) shows the arithmetic means, standard deviations, the value of (t) and the level of significance for the pre- and post-tests in the research variables of the experimental group

S	Statistical Treatments Variables	Unit of measurement	Control group		Experimental group		T value	Value (sig)	significance level
			S	P	S	P			
1	Attention Sharpness	degree	19.087	1.068	24.5	2.07	10.588	0.000	Significant
2	Ball Sensation	degree	5.875	0.834	3.375	0.517	9.354	0.000	Significant
3	Responsiveness for the right hand	degree	3.375	0.517	4.937	0.776	6.083	0.001	Significant
4	Responsiveness for the left hand	degree	3.312	0.703	4.812	0.458	6.481	0.000	Significant
5	Transmitter skill	degree	7.875	0.834	9.5	0.534	6.177	0.000	Significant

Discuss the results of the pre- and post-tests of the experimental and control groups.

Through the results of the two tables (4,5), we find that the value (sig) of all variables was smaller than the significance level of (0.05), and this means that the difference is significant and in favor of the post-tests of the two research groups according to what was stated in the first hypothesis of the research, and the researchers attribute this to several reasons, the most important of which are:

- The safety of the training units and containing selected exercises in a scientific manner and with correct and consistent repetitions consistent with the level and capabilities of the sample members and based on correct practice, training and practice on a

specific skill within a motor duty leads to increasing experience and developing mental and physical ability, as well as the practice is the most important variable in the learning process for complex and even simple skills. (56:5).

- One of the factors that helped in the development of performance among the members of the research sample is the impact of mental training, as both the experimental and control groups practiced mental training with skill performance, and this in itself has a positive and effective impact on the educational process, where strong positive results can be reached when using mental exercises during the intervals between exercise cycles. (192:6).

Table (6) shows the arithmetic means, standard deviations, the value of (t) and the level of significance for the post-tests in the research variables for the control and experimental groups

S	Statistical Treatments Variables	Unit of measurement	Control group		Experimental group		T value	value(sig)	significance level
			S	P	S	P			
1	Attention Sharpness	degree	21.05	1.439	24.5	2.07	3.873	0.002	Significant
2	Ball Sensation	degree	4.5	0.534	3.375	0.517	4.277	0.001	Significant
3	Responsiveness for the right hand	degree	3.937	0.417	4.937	0.776	3.209	0.006	Significant
4	Responsiveness for the left hand	degree	4.187	0.593	4.812	0.458	2.357	0.03	Significant
5	Transmitter skill	degree	8.625	0.744	9.5	0.534	2.701	0.01	Significant

Discuss the results of the post-tests for the experimental and control groups.

Through the results of Table (6), we find that the value (sig) of all variables was smaller

than the significance level of (0.05), and this means that the difference is significant and in favor of the experimental group according to what was stated in the second hypothesis of

the research, and the researchers attribute this to several reasons, the most important of which are:

Taking into account the biorhythm of his mental cycle for each player, this group employed mental abilities during the positive stage, which is characterized by mental clarity, the ability to receive information and the speed of memorization during implementation, as the player needs such abilities in order to consolidate motor performance and work to link the movement parts with a series of mental and interconnected ideas and focus on the basic and essential points during the implementation of the volleyball transmission skill, as the player in the positive phase of the mental cycle is mentally prepared to accept an increase in the volume of repetitions of mental training in it to the amount of two-thirds in relation to the negative stage in which the repetitions are reduced to one-third, in the positive stage, the individual is at his best physically and mentally, as he is more willing to absorb, interpret, store and react quickly, as it is the most appropriate stage for study, logical and creative thinking, and the ability to absorb new information. (191:7).

The researchers also attribute the reason for the superiority of the experimental group is the use of mental perception, which led to the acquisition of the players the initial form of skill, and increase the clarity of their image, so the performance became almost free of motor errors, as well as the lack of excessive movements, as the motor path becomes more consistent and fluid than before, so they have a clear idea of the main aspects of the implementation of the skill, Nassif (1987) asserts quoting Minel (that the player at this stage develops the ability to take and digest information and that this development of digesting information appears to us in the form

of an accurate and improved kinetic feeling, as well as the assimilation of the largest amount of information derived from the presentation, as well as the understanding of clarification and correction that comes from the explanation and finally the clear and permanent perception of movement). (197:7) Also, the player executing the skill has a clear and integrated picture of it before the implementation process, and he only has to give the decision to implement, and this is confirmed by Qasim Lazam (2009) "In that the physical preparation, if combined with mental preparation, we can elevate the player and the team morally and bring him to the stage of stability and psychological balance" (76:8).

Conclusion

1- The educational curriculum prepared by the coach has a positive and effective impact in developing the skill of transmission volleyball from sitting.

2- The experimental group that relied on the exercise (physical - mental) accompanying the mental biorhythm cycle showed a clear superiority in the post-test in some mental abilities and volleyball transmission skill from sitting on the control group.

Recommendations:

1- Emphasizing the use of mental training associated with the two stages of the mental rhythm cycle when teaching the skill of transmission volleyball from sitting.

2- Conducting research and studies similar to the current study that integrate mental training with other biorhythm cycles when teaching basic volleyball skills from sitting.

Reference

Ahmed Al-Beik and others: Measurement in the sports field, Dar Al-Maaref, Egypt, 1998, p. 492.

Bassam Haroun (and others): Sports Health, 1st Edition, Amman, Al-Weam Foundation for Publishing and Distribution, 1995, pp. 31-32.

Laila El-Sayed Farhan: Measurement and Testing in Physical Education, Cairo, Book Center, 2005.

Marwan Abdel Majeed: volleyball for the physically handicapped - sitting, 1st edition, 2002, Al-Waraq Foundation for Publishing and Distribution.

Elham Ismail Mohammed Shalaby: Fundamentals of Public Health and Health Education for Athletes, Cairo, Helwan University, Faculty of Sports Education for Girls, 1999.

Ali Al-Beik and Sabri Omar: biorhythm and Sports Achievement, Alexandria, Knowledge Foundation 1994.

Abd Ali Nassif: Kinetic Learning, Mosul, Dar Al-Kutub for Printing and Publishing 87 19.

Qasim Lazam Sabr: Preparation Theory and Training of Specific Football Areas, Baghdad, University Press and Publishing, 2009.