

THE EFFECT OF UNBALANCED STRENGTH TRAINING IN DEVELOPING THE KINEMATIC SPEED AND ACCURACY OF PERFORMING THE STRAIGHT FRONT STROKE OF TABLE TENNIS FOR THE SPECIALIZED SCHOOL PLAYERS

Asst. Inst. Iman Benjamin Joseph
Prof.Dr. Fatima Abdel Malah

University of Baghdad / College of Physical Education and Sports Science for Girls

ABSTRACT:

The game requires table tennis to move fast forward and backward and sides with a bend in the knee joint and these moves should be based on high strength and balance during movement in the lower limbs during training and competitions. The speed of kinetic movement plays an important role in motor performance and accuracy through a sense of muscular effort or sense of resistance. In addition, all table tennis skills require the motor speed of the upper and lower limbs, and the development of motor speed helps the player to make the right decision to respond appropriately to the positions Playing in the different areas of the table and the area in which the player moves during the game.

The aim of the study was to identify the effect of unbalanced power training on motor speed and the accuracy of the performance of the straight forward strike of specialized table tennis players under 16 years of age.

The experimental experimental method was used to design the experimental and control groups of pre-and post-test samples on the sample of the age of 16 years of the 12 players.

After the preparation of the unbalanced power exercises, which included movements (standing on one man and both men on a half-ball inverted and movements of jump and hurdle and jump on one man and on both men and on points or drawings specific time and time without tools and tools). After the tests were carried out tribal and then apply exercises over two months and then the tests of dimension, and after the statistical treatments concluded that the exercises of the unbalanced power developed the motor speed of the upper and lower limbs and the accuracy of the straight forward strike in the table tennis game in the experimental group better than the control group.

In the light of the conclusion, it is recommended to adopt the unbalanced power exercises in the development of the motor exercises of the upper and lower limbs and the accuracy of the straight forward strike in the table tennis game.

Keywords: Sports Training.

INTRODUCTION

Table tennis is a game that has spread widely around the world. It is an easy-to-play game that is inexpensive and does not require vast space for leisure, fun and entertainment. It is also easy to play and helps spread and exercise, as well as giving fitness to its practitioners. Its motion requires a great deal of strength and the ability of the arms of the arm, legs and trunk to move quickly and forcefully during play. Thus, the table tennis player has to be characterized by speed of motor and speed of reaction and the ability to understand the competitor in his strength and weakness and speed in the perception of positions to make the right decision at the right time and place of activity.

The ping-pong game requires quick moves forward, backward and sides with a bend in the knee joint. These moves must be based on high strength and balance during movement in the lower limbs during training and competitions. The speed of kinetic movement plays an important role in motor performance and accuracy through a sense of muscular effort or sense of resistance. In addition, all table tennis skills require the motor speed of the upper and lower limbs, and the development of motor speed helps the player to make the right decision to respond appropriately to the positions. Playing in the different areas of the table and the area in which the player moves during the game.

A straight-forward strike is an important offensive skill that requires a ping pong player to train and master it along with other skills to contribute to the player's technical level and to distinguish him from his competitors in their training and competition.

The importance of the research is that it represents a scientific attempt to prepare new training in which the researcher seeks to pay attention to the motor speed of the upper and lower limbs, which gives stability in strength and balance and speed of performance. This is reflected in the accuracy of the professional performance of the straight forward strike in table tennis. Unbalanced power that stimulates muscle fiber adaptation to produce strength, balance, and speed to accurately measure the performance of front-end ping pong.

RESEARCH PROBLEM

The problem of the research is that there is a weakness in the accuracy of the performance of the front straight strike and was diagnosed through field tests, attributed to the weakness in motor speed and strength, especially the imbalance of force on the feet during the move forward or back or sides in the game of table tennis, and this affects On the speed and accuracy of steering the ping pong. The game of ping pong requires during the performance in the training and competitions flexing the knees and move in front and back and side, and this makes the force placed on the feet uneven, causing pressure on the outside or inside the foot or on the combs or foot heel, and thus occurs the imbalance of force on the ankle of the foot , And this leads to the weakness of a part or a certain aspect at the expense of part or other side of the lower limbs, and thus a weakness in the speed and accuracy of motor skill performance. Therefore, the researchers sought to prepare the unbalanced power training for the upper and lower limbs of table tennis to address the research problem.

:Research Objectives

- Preparation of unbalanced power training for students of the school specialized in table tennis under 16 years.
- Identify the effect of unbalanced power training in motor speed and accuracy of the performance of straight forward strike of the students of the table tennis specialist under 16 years.
- Identify the differences between the experimental group and control in the tests of the dimension of speed of motor and accuracy of the performance of the front straight strike of the players of the school table tennis specialist without 16 years.

:Research hypotheses

- There are significant differences between the tribal and remote tests of the experimental and control groups in the speed of motor and accuracy of the performance of the front straight strike of the players of the school table tennis specialist without 16 years and in favor of remote tests.
- There are significant differences between the experimental group and control in the tests of the dimension of speed of motor and accuracy of the performance of the front straight strike of the players

of the school table tennis specialist without 16 years and for the benefit of the experimental group.

:Research Areas

- The human field: A sample of the 16-year-old table tennis players of the age group of 16.

:The Armenian domain: the period from 2-2-2019 to 6-4-2019

Sphere: National Gymnasium Hall Table Tennis - Youth City - Youth Ministry.

MATERIALS AND METHODS:

Research Methodology:

Use the experimental approach with tight control to design experimental and control groups with pre-test and post-match to the nature of the problem to be studied.

Search community and sample:

The research community selected 45 players from the specialized table tennis school in a deliberate manner. The sample was selected from the age of 16, and the 12 players were selected. Their percentage was 26.6%.

Means of gathering information, tools and devices used in research:

Arab and foreign sources and references. -

International Internet Network. -

.Observation and experimentation -

.Unbalanced power exercises -

Note: The highest score is (20) points when the ten balls succeed.

Table tables + nets + balls + table tennis rackets. -

- Round wooden plank and unbalanced rectangle + scooter + shoe with moving frames.

.Tape measure + adhesive tape -

.Standard size and color card -

.Electronic stopwatch -

- Tabletop launcher.

Field research procedures:

:Search Tests

Motor velocity test of the table spindle (Abeer et al., 2019: p. 112)

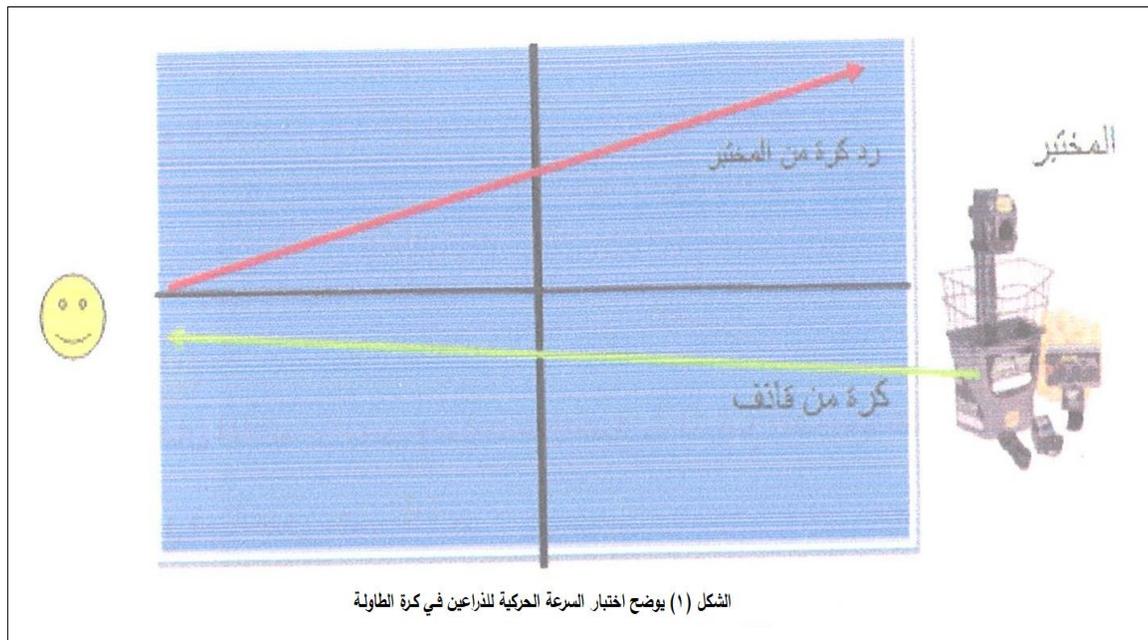
Performance description: The tabletop launcher is open to the laboratory where the speed is set at 6 m / s. Note that the ten balls are finished within 10 seconds, ie, there is a 1 second interval between ball and ball. Backgammon The striker areas are preset and are the same for all testers on the lab that the ball is returned to the opponent's table and in any area.

Registration:

If the ball is correct, the opponent has reached the opposing table scoring (2) points for each ball.

If the ball is correctly untouched, the opponent's table ball registers (1) points per ball.

If no response is received and the attacking laboratory does not hit the ball, or the strike is incorrect, score (zero) for each ball, as shown in Figure (1)



Test the motor response speed of the two men. (Ali Salloum, 2004: p. 144)

Performance description: The test area is planned with three lines between each line and another 6,40 m and the length of each line is 1 m.

- The laboratory stands at the ends of the midline against the referee standing at the end of the other end of the line.
- The laboratory takes the standby position so that the midline between the feet and bends his body forward slightly.
- Hold the timer with one of the hands and raises it to the top and then quickly move his arm either left or right and at the same time is running the clock.
- The laboratory responds to the signal of the hand and tries to run as fast as possible in the specified direction to reach the line of the side that is away from the midline at a distance (6.40 m). When the laboratory cuts the correct side line, the referee stops the clock. As the laboratory runs in the wrong direction, the arbitrator continues to run the clock until the laboratory changes from its direction and reaches the correct side line.
- The laboratory is given 10 consecutive attempts between each attempt (20 th) and five attempts for each side.
- Choose the attempts on each side in a random way and to achieve this ten pieces of cardboard (cards)

uniform size and color and write on five of them left word and the other five word right then turn well and put in a bag, and pulls without looking.

- Registration: The time for each attempt is counted, and the laboratory score is the average of the ten attempts.
- Test the speed and accuracy of the front straight kick of the table roller. (Abeer and others, 2019: p. 68).

Performance Description:

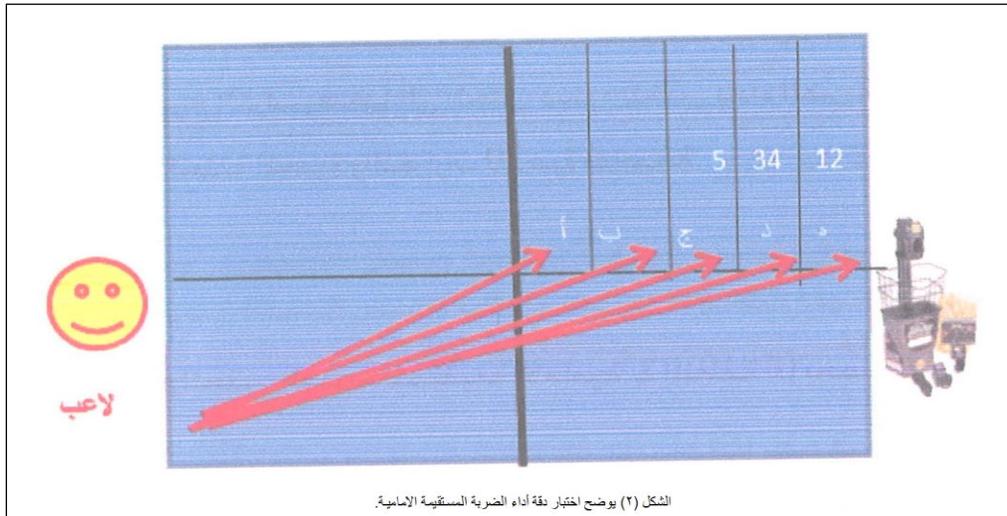
The laboratory stands in the right half of the table and when the tabletop kicker is turned on, the machine takes the balls out and dumps them into the laboratory. The laboratory performs the front straight strike in the specified area and repeats 20 times correctly.

Registration:

- If the laboratory strikes the front straight stroke in area (a) it gets (5) points. -
- If the laboratory directs the front straight stroke in region B, it gets 4 points. -
- If the laboratory strikes the front straight stroke in area (c) it gets (3) points. -
- If the laboratory directs the front straight stroke in region (d) it gets (2) points. -
- If the laboratory strikes the front straight stroke in zone (e) it gets (1) points. -
- The total score is calculated in 20 correct attempts. -

Note: The position of the ball can be changed by changing the direction of the balls' exit and path.

-Figure (2) illustrates this.



EXPLORATION EXPERIENCE

After the process of preparation and preparation of devices and tools and confirm the safety of its work and to identify the accuracy and accuracy of measurements and tests for research, and to know the difficulties and problems that may face the main procedures of the experiment. The exploratory experiment was conducted on (2-2-2019) at 10 am. (4) players from the research community and outside the main sample.

MAIN EXPERIENCE :

Tribal Tests:

Tribal tests were conducted on the two research samples on 8-2-2019, after warm-up of the two research groups. All temporal and spatial conditions

Table (1) The statistical parameters between the two experimental groups show experimental and control in tribal tests for the purpose of homogeneity and equivalence

Significance of differences	sig	Calculate d value	Sig	Value of Levin	standard deviation	Arithmetic mean		the exams
Not significant	0.296	1.103	0.646	0.22	0.81	9.66	Experimental	Kinetic velocity of arms / degree
					0.75	9.16	Officer	
Not significant	0.253	0.21	0.74	0.1	0.11	3.88	Experimental	

					0.12	3.96	Officer	The motor velocity of the two men / tha
Not significant	0.223	1.3	0.274	1.34	1.16	46.16	Experimental	Front straight stroke / degree
					1.86	47.33	Officer	
At a significance level of $\geq (0.05)$								

Unbalanced Strength Exercises :

After the unbalanced force exercises were performed in Appendix 1, the movements included (standing on one man and both men on an inverted ball, jumping and jumping, jumping on one man, on both legs, and on specific points or drawings in time and time without tools or tools). The unbalanced power exercises aim to improve the motor speed and accuracy of the performance of the straight forward blow to the table roller.

Work has been started with the two groups on 9-2-2019 until 5/4-2019. With two units per week on Fridays and Saturdays each week, over a period of 8 weeks and two months. The total number of training units was (16) training units.

Unbalanced power exercises are performed at the beginning of the main section of the training unit immediately after warm-up and in 15 minutes, and by adopting the principle of gradation and spacing between exercises and between units and weeks of training, and exchange in the work of muscle groups between exercises and others. The researcher did not interfere in the rest of the units Training.

The researcher used the tools to carry out the exercises, including half plastic balls upside down, colored papers, terraces, hoops and agility.

.RESULT AND DISCUSSION:

The warm-up and the final section of the training unit were implemented together for the experimental and control groups.

The experimental group performs the unbalanced power exercises, while the control group performs regular exercises to improve physical, motor and skill performance. After the time, the two groups are combined to supplement the rest of the modules.

:Post-tests

After the completion of the main experiment, the remote tests were conducted on experimental and control samples on 6/4-2019 at 10 am after warm-up of the members of the two research groups. All temporal and spatial conditions were fixed for the purpose of standardization with tribal tests.

Statistical means

The results were processed statistically using the spss system and using the following laws:

- .Arithmetic mean -
- standard deviation -
- Percentage law -
- Levin test for homogeneity -
- Test (T) for uninsured mediators -
- Test (T) for two linked averages -

Table (2) shows the statistical parameters for finding differences between the tribal and remote tests in the experimental group								
Significance of differences	Error level	Calculate d value	P	Q	standard deviation	Arithmetic mean		the exams
moral	0.000	8.51	1.87	6.5	0.81	9.66	Tribal	Motor velocity of the arm / degree
					1.16	16.16	after me	
moral	0.001	6.847	0.17	0.5	0.11	3.88	Tribal	The motor velocity of the two men / tha
					0.07	3.38	after me	
moral	0.000	12.31	3.08	5.5	2.28	47	Tribal	

					1.87	62.5	after me	Front straight stroke / degree
At a significance level of $\geq (0.05)$								

Table (3) shows the statistical parameters for finding differences between the pre-test tests in the control group

Significance of differences	Error level	Calculated value	P	Q	standard deviation	Arithmetic mean		the exams
moral	0.005	4.78	1.36	2.66	0.76	9.16	Tribal	Kinetic velocity of arms / degree
					0.75	11.83	after me	
moral	0.003	5.5	0.14	0.23	0.12	3.96	Tribal	The motor velocity of the two men / tha
					0.05	3.73	after me	
moral	.034	2.9	2.94	3.5	1.96	47.66	Tribal	Front straight stroke / degree
					1.16	51.16	after me	
At a significance level of $\geq (0.05)$								

Table (2 + 3) shows that there are significant differences between the values of the arithmetic mean and the standard deviations of the experimental and control tests in the experimental and control groups. The calculated values of T were less than 0.05 for the search tests. And for the benefit of remote tests in the experimental and control research samples.

This development is attributed to the two groups of research to regular and continuous training and the adoption of the principle of repetition and repetition because the performance of any exercise and for a certain period of time will be adaptation and development in the capabilities of the individual, both motor and physical or skill. Any training curriculum or exercises performed in repetitions in general "is a set of physical and motor situations and movements that aim at different physical and motor abilities to reach the individual to the highest possible level of skill, motor and functional performance, based on the educational and scientific foundations and the correct motor movements of movement art (Fatimah and Marib, 2016: p26).

Table (4) shows the statistical parameters between the experimental group and the control in the remote tests

Significance of differences	Error level	Calculated value	standard deviation	Arithmetic mean		the exams
moral	0.000	7.63	1.16	16.16	Experimental	Kinetic velocity of arms / degree
			0.75	11.83	Officer	
moral	0.000	9.39	0.07	3.38	Experimental	The motor velocity of the two men / tha
			0.05	3.73	Officer	
moral	0.000	12.58	1.87	62.5	Experimental	Front straight stroke / degree
			1.16	51.16	Officer	
At a significance level of $\geq (0.05)$						

Table (4) shows that there are significant differences between the values of the arithmetic mean and the standard deviations between the control and experimental groups in the post-test. The values of (t) calculated the level of a line below the level of significance (0,05), meaning that there are significant differences for the benefit of the group Experimental tests in the dimension. The evolution of the experimental total in the speed of movement and accuracy of performance is attributed to the nature of the unbalanced power exercises that have been subjected to, which is characterized by speed and strength with a balance in one performance and similar to the kinetic pathways of the motor performance, thus enhancing the motor velocity and precision accuracy of the front Of the control group.

The nature of ping pong requires the performance of offensive and defensive skills with quick performance along with the motor skill and timing in performing each movement in order to achieve accuracy from its performance. The ping pong moves must be fast, accurate and compatible to achieve the correct points, (Mohammad Reza, 2011: p. 44), as well as their association with the ability to perform activities requiring the participation of the body as a whole, especially the large muscles, so the exercises of power is not balanced and characterized by linking the motor performance Almahari accuracy and compatibility and high speed one of the modern trends In methods To train.

The unbalanced strength exercises and the aids of one of the results of the scientific renaissance in a targeted training method have spread widely and rapidly throughout the world and have achieved a quantum leap in the sports field, because of the elements of comprehensiveness and recreation based on the movements of pleasure, which generates an atmosphere of comfort and pleasure in As well as their benefits in the development of physical and motor abilities, which are fundamental to the science of training. (Fatima and Akron, 2013: p. 43) These exercises are characterized by "dynamic work and enjoyable performance, fitness and mobility development with some challenge, fun, S neuromuscular, and the involvement of large muscle groups "(p26, 2015: Fatimah and Susan)

CONCLUSIONS AND ENDORSEMENT:

- After the statistical treatments, it was concluded that the unbalanced power exercises developed the motor velocity of the upper and lower limbs and the accuracy of the straight forward strike in the table tennis game in the experimental group was better than the control group.

- In the light of the conclusion, it is recommended to adopt the unbalanced power exercises in the development of the motor exercises of the upper and lower limbs and the accuracy of the straight forward strike in the table tennis game.

REFERENCES:

- Abeer in Hatem and others; table tennis - offensive and defensive skills tests. (Jordan, Arab Society Press, 2019) p. 112.
- Ali Salloum Jawad; tests and measurement in the field of sports. T 1: (Press of the spectrum, Najaf, 2004) p144.
- Fatima Abdel-Malih et al.; The effect of the use of rope net exercises on some of the motor abilities of the dueling players. (Research published in the journal International Journal of Advanced Sports Sciences Research-ASSR, Malaysia, Volume IV Volume I in March 2016) p43.
- Mohammed Reza Ibrahim; Field application of theories and methods of sports training. (Baghdad, Al-Fadhli Office, 2011) p44.
- Fatimah Abed Malih and Marib Jawad Kadhim ,Design and manufacture of the electronic device to measure the compatibility and speed of motor response lower limbs fencing. The Swedish Journal of Scientific Research, the Swedish Journal of Scientific Research • Vol. 3 • Issue 7 • July 2016. ISSN; 2001-9211, Website: <http://sjsr.se/https://sjsr.se/en/issue.php?issue=26>.
- 6-Fatimah Abed Malih, Susan Sadeq. DESIGNING AND MAKING DEVICE RUBBER ROPES TO DEVELOP THE SPECIAL STRENGTH FOR FENCING PLAYERS .The Swedish Journal of Scientific Research ISSN: 2001-9211.Vol. 2. Issue 7. July. 2015.p26.