Training program using "Battle Rope" and its effect on some physical variables And the effectiveness of straight punch " Moumnting"For Taekwondo players

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Abstract

The research aims to design a training program using "Battle Rope" exercises for Taekwondo players and to know its effect on Some physical variables of Taekwondo and The effectiveness of a straight punch with a fist (Moumnting) for taekwondo players, The researcher used the experimental method through the experimental design of two groups, The researcher selected the research sample by the intentional method from the Assiut Sports Club players for the year (2020-2021) whose number is (20) Taekwondo players, the most important result use of Battle Rope exercises has a better positive effect than the traditional program in improving the level of some physical variables and the effectiveness of the straight punch " Moumnting " for Taekwondo players.

Introduction &Research problem:

Paying attention to physical, skillful and planning requirements is one of the most important matters that coaches must take into account in preparing players, due to the importance of these factors and the extent of their impact on the athletic performance of the players. As the extent to which winning many sports championship and competitions depends on the extent of the integrated interest in the sports preparation of players in these different areas.

Kramer (2015) points out that Battle Rope training is a modern training method that has increased in popularity in recent times as a method used by a wide range of amateur and professional players to develop physical fitness and physiological variables (13:32).

Antony Palanisamy Bobu (2017) note that John Brockfield created the training system using Battle Rope as a high-intensity training tool to develop the strength endurance and the aerobic and anaerobic endurance. It has different shapes and types. Their length usually ranges from 26-50 foot and their thickness between 1-2 inch. The weight varies according to length and thickness when starting training and the Battle Rope is fixed around a point and the athlete carries the two ends of the Battle Rope at the two endpoints which are usually wrapped with thick tape(10:709).

Marin, P. Jet al(2015), and Verdisco Jason and others (2015) agree that Battle Rope is used to develop physical fitness as it has the same effect as running but on the upper half of the body as it contributes to improving cardiovascular fitness, strength, grip strength and loss Fat and muscular endurance (14:240).

Doan Robert etal and others (2017) agree that there are three common methods used Battle Rope that allow exercises to be performed in all directions (such as side to side, up and down, or in circles)

The common Battle Rope moves are:

* Waves movement: An alternative pattern from the primary direction of the strength towards the stabilization point
* Slam movement: A strong movement from the main direction of the force towards the ground
*Whip movement: A parallel pattern with the primary direction of force towards the stabilization point. (11:174).

Mohan, K, and Kaba Rosario(2016) mentions that among the benefits of Battle Rope training is that it helps in developing aerobic endurance, increasing cardiovascular and respiratory capabilities, and developing endurance of the ability for sports that require the ability to exert strength at a high speed and for a long period of time that helps burn calories highly., improves body composition, and improves the athletic performance and neuromuscular compatibility for runners (15:158).

Essam El Din Abdel Khalek(2003) also points out that upgrading the level of skillful performance is through training, which is a process of repetition of skills performance in different circumstances to bring the player to the competition stage. Each game depends heavily on its basic skills. The skillful performance is an important factor for players, and this requires continuous and regular practice and correcting what may arise from the reasons that impede access to the correct way of performance (8: 197.198).

Hatem Al-Shloul and others (2018) believe that Taekwondo is one of the martial arts that requires many physical abilities that must be available in the junior concerted with the nature of performance. There is a great importance for the physical elements in the effectiveness of performance when meeting with the opponent. So Taekwondo depends heavily on physical fitness and its various elements; that is why good physical fitness training is an integral part of the tactical and skillful training in Taekwondo, as trainers nowadays use many methods in physical training, but have been interested in finding theories and scientific foundations for sports training to prepare an integrated player to face sports competitions (4:1195).

Ahmed Saeed Zahran (2004) also mentions that victory can only be achieved through special physical preparation, which plays an important role in raising the level of technical and planning performance of Taekwondo players. So Taekwondo player's lack of the physical characteristics required for the game lead to impede him in performing the required skillful and planning aspect (2:175:194).

Despite the great development in the field of sports training in general and weight training in particular, some taekwondo trainers do not pay special attention to this type of training during their training programs in order to overcome the deficiencies of the players and develop their physical and skillful abilities, through the experience of the researcher in the field of training may The researcher noticed that there are deficiencies of many players in performing the straight punch with a fist inside the rounds, and given the importance of this effective punch in that it is one of the decisive factors in the score of points awarded to the player when executed in matches. And with reference to previous studies analyzing the final rounds in taekwondo tournaments to find out the effectiveness of the straight punch in winning matches, he noticed a deficiency in the level of effectiveness of that punch, and if any, it is not an effective force. Training has developed through weights using tools in the direction of muscular work in order to improve strength Muscular and skillful level in the same exercise, and this is what training with the Battle Rope achieves.

This is what pushed the researcher to a training program to identify the effect of Battle Rope exercises on some physical variables and the effectiveness of straight fist punching (Moumnting) for Taekwondo players.

Research objective:

The research aims to design a training program using "Battle Rope" exercises for Taekwondo players and to know its effect on:

-Some physical variables of Taekwondo.

-The effectiveness of a straight punch with a fist (Moumnting) for taekwondo players.

Research hypotheses:

In light of the research objectives, the researcher sets the following hypotheses:

1-There are statistically significant differences between the mean of the pre and post measurements in the level of some physical variables and the effectiveness of the straight punch " Moumnting " in the experimental group.

2-There are statistically significant differences between the mean of the pre and post measurements in the level of some physical variables and the effectiveness of the straight punch " Moumnting " for the control group.

3-There are statistically significant differences between the averages of the two post measurements of the experimental and control groups in the level of some physical variables and the effectiveness of the straight punch " Moumnting " in favor of the experimental research group.

Terms used in the search

Battle Rope:

A training tool used for raising the fitness and its length usually ranges from 26-50 feet and its thickness ranges between 1 to 3 inches. Its intensity varies with different length and thickness. The Battle Rope is installed around a point and the athlete carries the two ends of it, which is usually wrapped with a thick tape. There are three common movements when using it (undulation-whip-collision) movements using the Battle Rope (12:32).

Some previous studies:

1- The study of "Joseph Meier et al. (2015) (12) with the aim of evaluating the changes in body composition and hand grip strength after high-intensity training using the Kettle bell & Battle Rope using the design of the two groups, one is experimental and the other is control. The sample number was (18) students,(9) females and (4) males. The duration of the implementation of the program took (5) weeks with three training units per week, the duration of each unit was (20) minutes, as the ratio of exercises to rest was 1: 1, alternating for two minutes of Kettle bell exercises with two minutes of exercises Battle Rope .The results indicate that the Battle Rope & Kettle bell exercises do not lead to major changes in body composition or grip strength over a period of (5) weeks, although there are slight improvements in the physiological measurements of the experimental group.

2- The study of "Ratamess, n. A. Et al." (2015) (16) which aimed to measure and compare acute metabolic responses following the practice of resistance training that includes exercises with resistance to free weights and by comparing body weight with resistance to Battle Rope. The study used the experimental method and the number of the research sample individuals was ten athletes whose ages ranges from (18-20) years and used resistance training for each of the three types (Free Moving - Body Weight and Battle Rope) on separate days. This data indicates that performing resistance exercises using Battle Rope provokes high metabolic requirements higher than the traditional resistance exercises.

3- The study of Antony Bobe and Sami A Palanisamy (2012) (10) which aimed to identify the effect of high intensity Battle Rope exercises on the biochemical and physiological variables of volleyball players. The experimental approach was used to design two groups, one is experimental and the other is control with (11) Players for each one whose ages ranged between (18-90) years and the duration of the implementation of the program took (3) weeks, with three training units per week; the duration of the unit is (45) minutes. The results showed that there are statistically significant differences between the Battle Rope training group and the control group in the strength variables arm carrying strength and performance variables

among volleyball players in favor of the experimental group.

4- The study of "Hamdi Al-Sayed Abdel-Hamid" (2012) (5) which aimed to identify the effect of Battle Rope exercises on the efficiency of the respiratory system and the digital level of the 1500 runners. The researcher used the experimental method of the two groups, one is experimental and the other is control. The research sample included students of the Faculty of Physical Education, Damietta University, who are registered in the Damietta Athletics Region. The duration of the implementation of the program took (8) weeks with three training units per week, the unit duration is (45) minutes. The results showed that there was an improvement in the level of the respiratory system, the vital capacity of the inhalation, The expiratory vascular capacity, the expiratory volume and the rate of exhaled air.

5- The study "Ihab Ezzat Abdel Latif" (2019) (3) which aimed to identify the effect of Battle Rope training on some physical variables and the effectiveness of skillful performance among boxers. The researcher used the experimental approach of the two groups, one is experimental and the other is control. The research sample included players of the Tanta Railway Club for the region Western Boxing Boxing whose ages ranged from (16-18) years. They were divided into two groups, one is experimental and the other is control with (10) players for each one. The duration of the implementation of the program took (12) weeks with three training units per week. The results of the study showed that using Battle Rope exercises has a positive effect better than the traditional program in improving the level of some physical variables and the effectiveness of the skillful performance of boxers.

Research plan and procedures

Research Methodology:

The researcher used the experimental method through the experimental design of two groups; one is experimental and the other is control by conducting the pre and post measurement due to its suitability for the nature of this research.

Research community:

The research community includes Taekwondo players in Assiut Governorate, age (16-18) years old and registered in the Egyptian Taekwondo Federation season (2020-2021); whose number reached (64) players.

The research sample:

The researcher selected the research sample by the intentional method from the Assiut Sports Club players for the year (2020-2021) whose number is (20) Taekwondo players aged (16-18) years by (10) players for the experimental group and (10) players for the control group who are regular in training in order to achieve a number of local championships.

Homogeneity of the research sample:

The researcher made homogeneity for the research sample to ensure that the research sample is moderately distributed in all the variables under consideration as shown in Table (1).

Table (1)
The arithmetic mean, median, standard deviation, and torsion coefficient
in the variablesAge, height, weight, and training age for
the individuals of the sample under study

N=20

variables	Measurement unit	The arithmetic mean	median	standard deviation	torsion coefficient
Age	Year	16.66	16.60	0.52	0.346
height	Cm	186.20	168.00	0.36	1.666
weight	Kg	66.10	66.00	0.20	1.50
training age	Year	3.58	3.55	0.18	0.499

Table (1) shows that all the sample parameters were confined between (± 3), which means that there is homogeneity between the individuals of the research sample in the variables (age, height, weight and training age).

Table (2)
The arithmetic mean, median, standard deviation, and torsion coefficient in the physical variables and the effectiveness of Moumnting for the individuals of the sample under study

N=20

tests	Measurement unit	The arithmetic mean	median	standard deviation	torsion coefficient
Pushing a medicine ball with the right hand	Cm	6.10	6.00	0.20	1.50
Pushing a medicine ball with the left hand	Cm	5.81	5.80	1.02	0.029
Perform a straight punch (momtng) on the punching bag for 20 seconds with the left hand	Punch	31.66	31.60	0.95	0.189
Perform a straight punch (momting) on the punching bag for 20 seconds with the right hand	Punch	33.25	33.20	0.55	0.272
Lie flat and bend the arms for 20 seconds	Number	20.20	20.00	0.51	1.17
Prone oblique standing for 20 seconds	Number	18.91	18.90	0.47	0.063
Effectiveness of a straight punch ((MomTing	Number	0.351	0.350	0.10	0.02

Table (2) shows that all the sample parameters were confined between (± 3), which means that there is homogeneity between the individuals of the research sample in the physical variables and the effectiveness of the straight punch " Moumnting ".

The two research groups are equivalent to the variables under study:

Table (3)
The differences between the two research groups (experimental and control) in the research variables

$N_1=N_2=10$

N	Variables statistics	Measurement unit	Experimental group		Control group		Calculated(T) value
1	Age	Year	16.51	0.11	16.20	0.15	0.52
2	Length	Cm	168.15	0.52	168.10	0.41	.014
3	the weight	Kg	66.05	0.36	66.10	0.22	0.33
4	Age of training	Year	3.51	0.21	3.44	0.20	0.52
5	Pushing a medicine ball with the right hand	Cm	6.11	0.16	6.12	0.15	0.52
6	Pushing a medicine ball with the left hand	Cm	5.82	0.11	5.85	0.20	0.17
7	Perform a straight punch (Moumnting) on the punching bag for 20 seconds with the left hand	Punch	31.55	0.20	31.60	0.17	0.22
8	Perform a straight punch (Moumnting) on the punching bag for 20 seconds with the right hand	Punch	33.18	0.17	33.15	0.33	0.63
9	Lie flat and bend the arms for 20 seconds	Number	20.15	0.17	20.14	0.14	0.17
10	Prone oblique standing for 20 seconds	Number	18.85	0.32	18.80	0.20	0.62
11	Effectiveness of a straight punch	Number	0.348	0.12	0.345	0.09	0.11

Tabled (t) value = (1.73) at a level of statistical significance (0.05)

Table (3) shows that the value of calculated (t) by (T-TEST) test reached between (0.11) and (0.63), and all these values are less than the tabled value of (t) amounting to (1.73) at the level of statistical significance (0.05). That indicates the parity of the control and experimental groups in the variables under study.

Data collection tools:

The researcher relied on collecting research data and measurements on many tools, devices and forms, which are summarized as follows

A- Tools and devices:

- Ristameter device to measure the length.- A medical scale to measure weight. -Wooden boxes 20 cm high
- Tape measure -punch bags.- Jump ropes- Stopwatch - 3 kg medicine balls - Iron bar.
- Free weights (dumbbells) – elastic - Battle Rope-

B- Data collection forms:

- A registration form for anthropometric measurements and special physical tests under study A form for registering the skillful tests under study-
-Data collection form (name - weight - length - training age) for the individuals of the sample under study.

Scientific transactions of the tests used in the research:

Honesty:

The researcher used the validity of the differentiation by conducting tests on a distinct sample and a non-distinct sample, which are the exploratory research sample of the Menqabad club players. The researcher calculated the significance of the differences between the two distinct and non-distinct groups to ensure the validity of the tests. Table (4) illustrates this.

Table (4)

Significance of the differences between the averages for the individuals of the distinct and non-distinct group in tests of research variables

$N_1=N_2=4$

N	Variables statistics	Measurement unit	Experimental group		Control group		Calculated(T) value
1	Pushing a medicine ball with the right hand	Cm	5.02	0.11	6.55	0.14	3.25
2	Pushing a medicine ball with the left hand	Cm	5.44	0.18	5.94	0.20	3.20
3	Perform a straight punch (Moumnting) on the punching bag for 20 seconds with the left hand	Punch	28.20	0.20	32.10	0.21	3.47
4	Perform a straight punch (Moumnting) on the punching bag for 20 seconds with the right hand	Punch	39.20	0.19	33.92	0.18	3.20
5	Lie flat and bend the arms for 20 seconds	Number	18.22	0.18	2.81	0.20	3.28
6	Prone oblique standing for 20 seconds	Number	16.20	0.10	18.91	0.14	3.15
7	Effectiveness of a straight punch	Number	0.330	0.09	0.351	0.11	3.69

Tabled (t) value = (1.76) at a level of statistical significance (0.05)

Table (4) shows that there are statistically significant differences between the distinct and the non-distinct groups in the tests of physical variables and the effectiveness of the straight punch (Moumnting) understudy, which indicates the validity of these tests.

Stability:

The researcher used the Test - Retest method after (10) days of applying the first test on (8) players from (Ezzat Jalal Club in Al Hamra) who are outside the basic sample individuals to calculate the test stability by calculating the correlation coefficient between the two applications. This is clear in Table (5).

Table (5)
Correlation coefficient between application and re-application in tests of research variables
N=8

N	Statistics / Variables	Measurement unit	First application		Second application		Correlation coefficient
1	Pushing a medicine ball with the right hand	Cm	6.10	6.11	6.15	0.10	0.925
2	Pushing a medicine ball with the left hand	Cm	5.85	5.82	5.90	0.20	0.924
3	Perform a straight punch (Moumnting) on the punching bag for 20 seconds with the left hand	Punch	31.58	31.55	31.60	0.17	0.947
4	Perform a straight punch (Moumnting) on the punching bag for 20 seconds with the right hand	Punch	33.20	33.18	33.25	0.32	0.965
5	Lie flat and bend the arms for 20 seconds	Number	20.20	20.15	20.25	0.20	0.947
6	Prone oblique standing for 20 seconds	Number	18.90	18.85	19.95	0.15	0.962
7	Effectiveness of a straight punch	Number	0.350	0.348	0.355	0.08	0.950

Tabled (t) value = (0.62) at the level of statistical significance (0.05)

Table (5) shows that there is a statistically significant correlation between the first and the second application in tests of physical variables and the effectiveness of the straight punch (Moumnting) under study, which indicates the stability of these tests.

Time distribution of the program:

Determine the total time for training during the followed program according to the following:

- Number of weeks = 12 weeks
- Number of training units per week = 3 training units
- Training unit time = 85 minutes
-Total time for the training program = 12 weeks x 3 training units x 85 minutes Training unit time = 3060 minutes
- Battle Rope training time from total training program time
- Through the form that was presented to the experts, it was reached:
- Battle Rope training time = 15: 30 minutes during the program
- Total time of Battle Rope training during the training program = 1080 minutes

Steps of implementing the training program:-

The researcher implemented the training program as follows:

The researcher conducted the exploratory study on an exploratory sample of the main community, with(8) players from the Manqabad Club and from outside the basic research sample, on Sunday 2 / 8 / 2020. The study aimed at the following:

Selecting the assistants and their training in taking measurements

Knowing the available tools and devices and their validity

Accuracy of organization and workflow in measurement

Determining the time and procedures of the tests and how to sequence them

Knowing the difficulties that the researcher may face when applying tests and measurements and how to overcome them

The study resulted in the following:

- Validity of measuring tools and devices for use
- Training of assistants to apply tests-
- Knowing the exam times and their order
- Overcoming some difficulties that may constitute a handicap during the application

- Coordinating the appointments to implement the program with the players.

Pre measurements of the group "under study":

Pre-measurements were made on the research group for physical variables, as well as the effectiveness of the straight punch (Moumnting) under study, on Mondays and Tuesdays 10, 11 / 8 / 2020.

Program application:

The proposed training program was implemented for (12) weeks according to the research and implementation of the training units in Assiut Sports Club from 15/8/2020 until 4 / 11 / 2020.

Post measurements of the group" under study":

The researcher made post measurements of the variables under study on Sunday 7/11/2020 for all the tests under study, in the same method of applying the pre-measurement and under the same circumstances. Then the data were collected, classified, tabulated and then statistically treated

Statistical treatments used in the research:

The researcher prepared, tabulated and statistically analyzed the data with the results being extracted and interpreted for each of the following statistical methods: the arithmetic mean, the median, the standard deviation, the skew coefficient, the correlation coefficient, the T-test, the percentage improvement between the two groups.

Presentation and discussion of results

Present the results of the first hypothesis:

Which states: There are statistically significant differences between the averages of the pre and post measurements in the level of some physical variables and the effectiveness of the straight punch " Moumnting " in the experimental research group

Table (6)

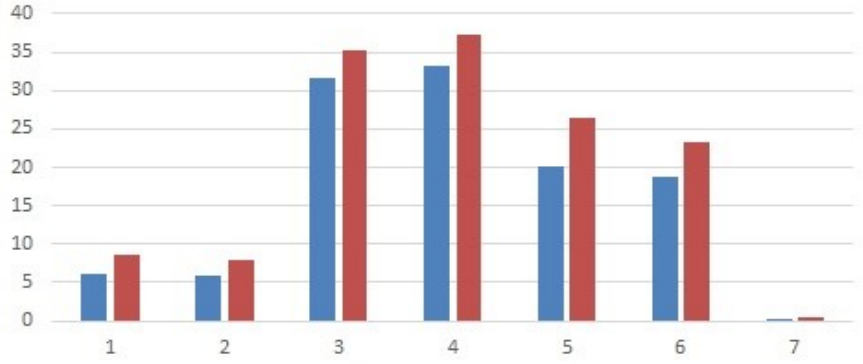
The significance of the differences between the mean scores of the pre and post measurements of the experimental research group in the physical variables and the effectiveness of a straight punch (Moumnting)

Statistics / Variables	Measurement unit	Experimental group		Control group		the differences between the mean scores	Improvement percentage	Calculated (T) value
Pushing a medicine ball with the right hand	Cm	6.11	0.16	8.52	0.20	2.41	28.28	4.85
Pushing a medicine ball with the left hand	Cm	5.82	0.11	7.90	0.15	2.08	26.32	4.32
Perform a straight punch (Moumnting) on the punching bag for 20 seconds with the left hand	Punch	31.55	0.20	35.20	0.22	3.65	10.36	4.29
Perform a straight punch (Moumnting) on the punching bag for 20 seconds with the right hand	Punch	33.18	0.17	37.35	0.21	4.17	11.16	4.26
Lie flat and bend the arms for 20 seconds	Number	20.15	0.17	26.33	0.22	6.18	23.47	4.98
Prone oblique standing for 20 seconds	Number	18.85	0.32	23.20	0.31	4.35	18.75	4.19
Effectiveness of a straight punch "Moumnting"	Number	0.348	0.12	0.388	0.15	0.04	10.30	4.25

The tabled (t) value at 0.05 = 1.812

Table (6) shows that there are statistically significant differences between the mean

scores of the pre and post measurements of the experimental group in some physical variables and the effectiveness of the straight punch (Moumnting) in favor of the post measurement, where the calculated value of (t) was greater than the tabled (t) value at a significant level (0,05) in all variables.



Present the results of the second hypothesis:

Which states: There are statistically significant differences between the averages of the pre and post measurements in the level of some physical variables and the effectiveness of the straight punch " Moumnting " in the control group

Table (7)

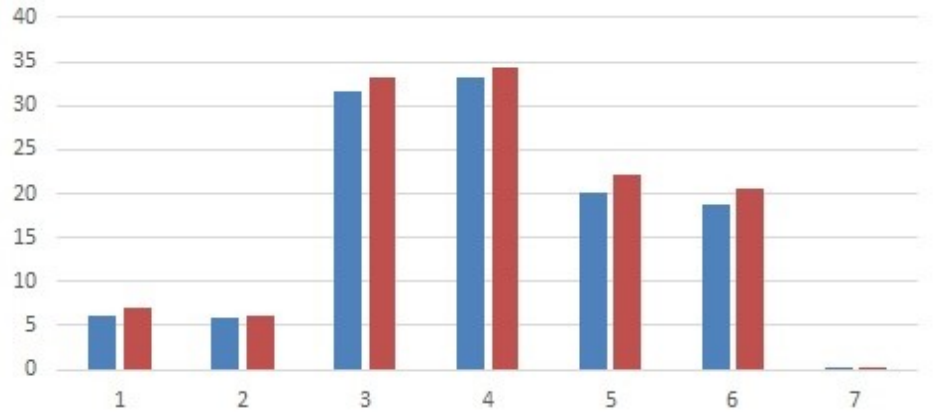
The significance of the differences between the mean scores of the pre and post measurements of the control research group in the physical variables and the effectiveness of a straight punch (Moumnting)

Statistics / Variables	Measurement unit	Experimental group		Control group		the differences between the mean scores	Improvement percentage	Calculated (T) value
Pushing a medicine ball with the right hand	Cm	6.12	0.15	6.94	0.17	0.28	4.03	2.85
Pushing a medicine ball with the left hand	Cm	5.85	0.20	6.12	0.22	0.27	4.41	2.63
Perform a straight punch (Moumnting) on the punching bag for 20 seconds with the left hand	Punch	31.60	0.17	33.18	0.21	1.58	4.76	2.15
Perform a straight punch (Moumnting) on the punching bag for 20 seconds with the right hand	Punch	33.15	0.33	34.26	0.19	1.11	3.32	4.84
Lie flat and bend the arms for 20 seconds	Number	20.14	0.14	22.05	0.16	1.55	7.02	2.66
Prone oblique standing for 20 seconds	Number	18.80	0.20	20.68	0.23	1.88	9.09	2.45
Effectiveness of a straight "punch Moumnting"	Number	0.345	0.09	0.351	0.11	0.06	1.70	2.34

The tabled (t) value at 0.05 = 1.812

Table (7) shows that there are statistically significant differences between the mean scores of the pre and post measurements of the control group in some physical variables and the effectiveness of the straight punch (Moumnting) in favor of the post measurement, where the

calculated value of (t) was greater than the tabled (t) value at a significant level (0,05) in all variables.



Present the results of the third hypothesis:

Which states: There are statistically significant differences between the averages of the two post measurements of the experimental and control groups in the level of some physical variables and the effectiveness of the straight punch " Moumnting " in favor of the experimental group.

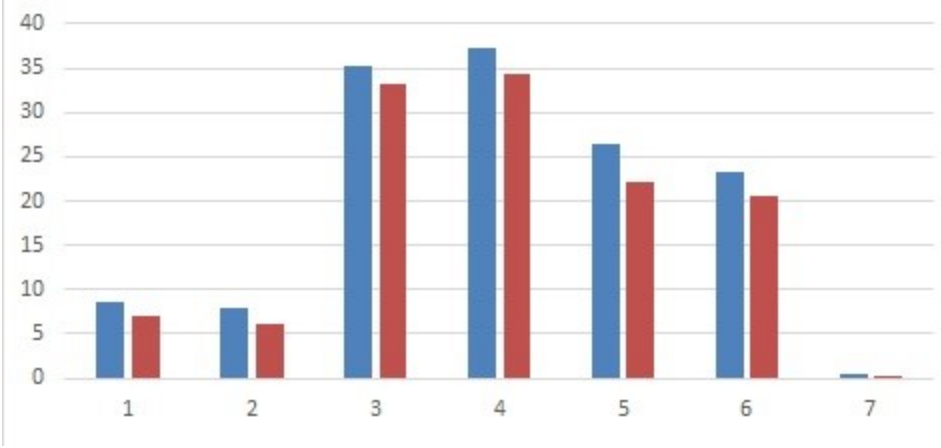
Table (8)

The significance of the differences between the two post measurements of the experimental and control groups In the physical variables and the effectiveness of a straight punch (Moumnting)

Statistics / Variables	Measurement unit	Experimental group		Control group		Calculated(T) value
Pushing a medicine ball with the right hand	Cm	8.52	0.20	6.94	0.17	4.36
Pushing a medicine ball with the left hand	Cm	7.90	0.15	6.12	0.22	4.10
Perform a straight punch (Moumnting) on the punching bag for 20 seconds with the left hand	Punch	35.20	0.22	33.18	0.21	4.26
Perform a straight punch (Moumnting) on the punching bag for 20 seconds with the right hand	Punch	37.35	0.21	34.26	0.19	4.28
Lie flat and bend the arms for 20 seconds	Number	26.33	0.22	22.05	0.16	4.41
Prone oblique standing for 20 seconds	Number	23.20	0.31	20.68	0.23	4.36
Effectiveness of a straight punch "Moumnting"	Number	0.388	0.15	0.35	0.11	4.19

The tabled (t) value at 0.05 = 1.73

Table (8) shows that there are statistically significant differences between the averages of the two post measurements of the two research groups in some physical variables and the effectiveness of the straight punch (Moumnting) in favor of the post measurement, as the calculated value (t) was greater than the tabled value of (t) at the level of significance(. , 05) in all variables.



Discuss the results:

Table (6) shows that there are statistically significant differences between the mean scores of the pre and post measurements of the experimental group in some physical variables and the effectiveness of the straight punch (Moumnting) in favor of the post measurement, as the calculated value of (t) was greater than the tabled value of (t) at a significant level (0,05) in all variables.

The researcher believes that the improvement in the pre-measurement in the physical variables is due to the effect of the proposed training program using the Battle Rope and applied to the experimental group, in which the load was directed as a plan for developing the maximum strength.

When directing the intense training loads, the coach must first determine the physical and physiological characteristics of the player, and then, after legalizing the training loads, he distributes the training unit (1:109).

The researcher attributes this improvement in the level of physical variables and performance effectiveness to the nature of the program and its physical exercises using the Battle Rope resistors which are suitable for their capabilities and abilities, rated load and directed to developing these physical elements

These results are consistent with what was indicated by Ismail Hamed and others (2005) (1), that weight training has led to the superiority of post-measurement over pre-measurement for muscle strength tests.

Thus, the first hypothesis is fulfilled, which states: There are statistically significant differences between the averages of the pre and post measurements in the level of some physical variables and the effectiveness of the straight punch " Moumnting " in the experimental research group.

Table (7) shows that there are statistically significant differences between the averages of the pre and post measurements of the control group in some physical variables and the effectiveness of the straight punch (Moumnting) in favor of the post-measurement, where the calculated value of (t) was greater than the tabled value of (t) at the level of significance (0,05) in all variables.

The researcher attributes this result to the regularity of the control group players in daily training

This is consistent with what was indicated by Dia al-Azab, Mohsen Ramadan (1999), who referred to the superiority of the post measurement over the pre-measurement of the control group in tests of maximum static and kinetic strength by weights. The effect of this was

attributed to the effect of the contents of the program applied on the control group, which included physical exercises and various exercises. (21: 6)

The researcher attributes the superiority of the post-measurement over the pre-measurement to the effect of the training program applied on the control group, which included the preparation part on general and private physical exercises, while the main part of it included training on competitive performance in taekwondo.

Thus, the second hypothesis is fulfilled, which states: There are statistically significant differences between the averages of the pre and post measurements in the level of some physical variables and the effectiveness of the straight punching " Moumnting " of the control group.

Table (8) indicates that there are statistically significant differences between the averages of the two post measurements of the two research groups in some physical variables and the effectiveness of the straight punch (Moumnting) in favor of the post one, where the calculated value (t) was greater than the tabled value of (t) at the level of significance 0,05 in all variables.

The researcher attributes this result to using the Battle Rope exercises, which is applied to the experimental research group players.

These results are consistent with what Abdel-Fattah Fathi Khader (1996) indicated that the level of strength is affected within the unified program applied to the experimental and control groups due to what it contains of the general preparation and skillful training, as well as it showed a significant improvement in the tests of maximum fixed and kinetic strength, which indicates the mutual effect between the different types of strength (32: 7)

The researcher also attributes the high results of the experimental group in physical tests in the post one to the high level of strength gained from applying the training program using the Battle Rope, and this is consistent with what Yahya Al-Hawi (1997) indicated that the weight training program is directed to develop the effectiveness of skillful performance. It had a significant effect on the post measurements of the static and kinetic maximum force tests with weights. (108: 9).

This is consistent with what was indicated by Ismail Hamed (2005), who indicated that weight training programs directed towards the development of strength distinguished by speed have achieved a moral superiority over other training programs during the telemetry of strength tests characterized by speed. (1:57)

The researcher attributed the superiority of the experimental group over the control group in these tests to the effect of the training program using (Battle Rope), during which the load was directed towards the development of strength endurance and during which the principles of weight training were followed, in addition to the effect of the unified program applied to the two groups.

The researcher believes that as a result of the interaction of training effects, we find that with the increasing in the maximum strength gained from the (Battle Rope) training program, it was followed by superiority in the strength endurance tests of the experimental group over the control group

The researcher attributed the superiority of the experimental group over the control group in testing the effectiveness of the straight punch " Moumnting " to the high level of special physical characteristics during the "Battle Rope" training program in addition to the effect of the unified program applied on both the experimental and control groups, which included training on the straight punch " Moumnting ".

Thus, the third hypothesis is fulfilled, which states: There are statistically significant

differences between the averages of the two post measurements of the experimental and control research groups in the level of some physical variables and the effectiveness of the straight punch " Moumnting **" in favor of the experimental research group.**

Conclusions and recommendations:

Conclusions:

In light of the research objectives, hypotheses, and statistical treatments used by the researcher and based on what the research results showed, the researcher reached the following conclusions

1-The proposed training program using the Battle Rope leads to improving in the level of some physical variables for Taekwondo players

2-The proposed training program using the Battle Rope leads to improving in the effectiveness of the physical skills performance of Taekwondo players

3-The use of Battle Rope exercises has a better positive effect than the traditional program in improving the level of some physical variables and the effectiveness of the straight punch " Moumnting " for Taekwondo players.

Recommendations:

Within the limits of the research community and the selected sample and in light of the research objectives and hypotheses, and through the results, the researcher recommends the following:

1-Apply Battle Rope exercises when developing training programs for Taekwondo players because of its positive effects on the level of physical characteristics and the effectiveness of the straight punch " Moumnting ".

2-The necessity of using Battle Rope exercises when developing training programs in general because of their positive effects on the level of physical characteristics and the effectiveness of skillful performance.

3-Using the Battle Rope training program in the different ages.

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