

The effect of using "Battle Rope" training on some physical abilities and the performance level of (Oi-Zuki, Giaco-Zuki) skills in karate

Dr/ Amal Nadi Mohamed Masoud

Introduction and research problem:-

Kramer (2015) indicates that "Battle Rope" exercises are a modern training method that used by a lot of amateur and professional players to develop physical fitness and physiological variables . (7:32)

Essam El-Din Abdel-Khaleq (2003) also points out that the progress in the level of skillful performance is through training, by repeating of performing skills in different circumstances to prepare the player to the level of competition. Skillful performance is an important factor that requires continuous and regular training and practice, with the correction of anything that may hinder the correct method of performance. (5: 197, 198)

And the progress that appeared during the international tournaments indicates, for karate specialists, that planning has become a must. Despite this, we find a lot of karate players (male and female) do not continue to maintain the results they achieved during the tournaments, and this may be due to the lack of a qualified coach or the lack of information related to the principles of planning in the field of karate. (1:17)

At first stage, the general preparation of developing the player's training condition aims to develop the components of the training condition, especially the physical ones. As for the special preparation stage, the trainer works to achieve the goal of the special

preparation in improving and developing the level of abilities for karate sport, as it positively affects the effectiveness of the training programs towards developing the level of skill and planning represented in performance. (2: 483,484)

Through the experience of the researcher in the field of training, the researcher noticed that there is a deficiency among many players in performing the straight punch with the fist during the rounds, and due to the importance of this effective punch in achieving the points awarded to the player in matches. Training has developed through weights using tools in the direction of muscular work in improve muscle strength and skill level in the same exercise, and this is what training using "Battle Rope" achieves. This prompted the researcher to know the effect of using "Battle Rope" exercises on some physical abilities and the level of performance of my skills (Oi-Zuki, Gyaku-Zuki) in Karate.

Search aim:

The research aims to know "the effect of using "Battle Rope" exercises on some physical abilities and the performance level of the (Oi-Zuki, Gyaku-Zuki) skills in Karate sport.

Research hypotheses:

1- There are statistically significant differences between the averages of the pre and post measurements in some physical abilities in favor of the post measurement.

2-There are statistically significant differences between the averages of the pre and post measurements in the performance level of (Oi-Zuki, Gyaku-Zuki) skills in favor of the post-measurement.

Research methods and procedures

Research Methodology:

The researcher used the experimental approach through the experimental design of one experimental group by conducting pre and post measurement due to its suitability to the nature of this research.

Research sample:

The research sample includes karate players under (18) years old in Assiut governorate who are registered with the Egyptian Karate Federation.

The research sample:

The researcher chose the research sample, (30) players under (18) years old, regular in training, by the intentional way from the players of Dayrout Sports Club in Assiut Governorate. In addition to (10) players as an pilot study from the research sample and outside the main sample.

Data collection methods and tools

- Content/document analysis.
- Personal interview.
- Questionnaire forms.-
- The exams.

Homogeneity of the research sample:

The researcher homogenized the research sample to ensure that the research sample is distributed moderately in all the variables under study, as shown in Table (1).

Table (1)

The mean, median, standard deviation, and skewness coefficient in variables of age, height, weight and training age of the sample members under study (n = 30)

Variables	Measuring Unit	Mean	Median	Standard deviation	Skewness coefficient
Age	Year	16.53	16.00	0.63	0.76
Height	Cm	170.27	170.00	0.91	0.31
Weight	Kg	66.60	66.00	0.86	0.55
Training age	Year	8.57	9.00	0.50	0.28-

It is clear from Table (1) that all the coefficients of the sample were confined to (3±), which means that there is homogeneity among the

members of the research sample in the variables (age, height, weight, and training age).

Table (2)
The mean, median, standard deviation, and skewness coefficient in the physical abilities and performance of (Oi-Zuki, Gyaku-Zuki) skills for the sample under study (n = 30)

Tests	Measuring unit	Mean	Median	Standard deviation	Skewness coefficient
Push a medical ball with the right hand	Cm	5.80	5.80	0.11	1.24-
Push a medical ball with the left hand	Cm	5.32	5.40	0.19	0.66-
Inclined prone position and arms bent for 20 seconds	Number	18.56	18.50	0.18	0.10-
Incline prone position from standing for (20) seconds	Number	16.63	16.60	0.20	0.49-
Right hand fist strength	Kg	35.23	35.00	0.82	0.06-
Left hand fist strength	Kg	31.17	31.00	0.79	0.13
Performing Oi-Zouki skill	Punch	13.30	13.00	0.65	0.39-
	Punch	25.93	26.00	0.87	0.20-
Performing Gyaku-zuki skill	Punch	15.10	15.00	0.55	0.08
	Punch	37.30	37.00	1.02	0.24-
Effectiveness of Oi-Zouki skill	Punch	0.89	0.87	0.04	0.39-
	Punch	0.86	0.87	0.03	0.20-
Effectiveness of Gyaku-zuki's skill	Punch	0.76	0.75	0.03	0.08
	Punch	0.93	0.93	0.03	0.24-

It is clear from Table (2) that all the coefficients of the sample were limited to (3±), which means that there is homogeneity among the members of the research sample in the variables (physical and skillful)

Program schedule:

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

- * Number of weeks = 12 weeks.
- * Number of training units per week = 3 training units.
- * Training unit time = 85 minutes.

* The total time of the training program = 12 weeks x 3 training units x 85 minutes. Training unit time = 3060 minutes.

*Battle rope training time from the total time of the training program:

*Through the questionnaire that was presented to the experts, it was concluded:

* Battle Rope training time = 15: 30 minutes during the program.

* Total time for Battle Rope exercises during the training program = 1080 minutes.

Steps to conduct the training program:

The researcher conducted the training program as follows:

The researcher conducted the pilot study on the pilot sample from the original community, which consisted of (10) players from the Dayrout Sports Club and from outside the basic research sample, on Sunday corresponding to 2nd of August, 2021.

The study aimed the following:

- Selection of assistants and training them to do measurements.
- Identify the available tools and devices and their validity.
- Accuracy of organization and workflow in measurement.
- Determine the time and procedures of the tests and how to sequence them.
- Identifying the difficulties that the researcher may face when applying tests and measurements and how to overcome them.
- Coordinating appointments for the implementation of the program with the players.

Pre- measurements of the sample under study:

Pre- measurements were conducted on the research sample for physical variables, as well as the effectiveness of the skills under study, on Monday and Tuesday on 10,11 /8/2020.

The apply of the Program applying:

The proposed training program was applied for (12) weeks on the sample of the research and implementation of training units at Dayrout Sports Club from 15/8/2020 to 4/11/2020.

The post measurements of the group under study:

The researcher conducted the post measurements of the variables under study, on 7/11/2020, for all the tests under study, with the same method of applying the pre-measurement and under the same conditions, then the data was collected, classified, tabulated, and then processed statistically.

Statistical treatments used in the research:

The researcher prepared, tabulated, and analyzed the data statistically, extracting and interpreting the results for each of the following statistical methods: the mean, median, standard deviation, skewness coefficient, correlation coefficient, T-test, and improvement rate.

Presenting and discussing of the results:

Presenting 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 abilities of the research sample in favor of the post measurement.

Table (3)
The significance of the differences between the mean scores of the pre and post measurements of the research sample in physical abilities (n=30)

Variables	Measuring unit	Pre-measurement		Post-measurement		difference between the two means	Improvement %	"T" value
		x	y	x	y			
Push a medical ball with the right hand	Cm	5.80	0.11	8.01	0.33	2.21	38.10	8.34
Push a medical ball with the left hand	Cm	5.32	0.19	7.05	0.33	1.74	32.51	6.69
Inclined prone position and arms bent for 20 seconds	number	18.56	0.18	34.37	0.72	15.81	85.18	7.81
Incline prone position from standing for (20) seconds	number	16.63	0.20	29.60	0.50	12.97	77.99	6.99
Right hand fist strength	Kg	35.23	0.82	54.67	0.48	19.43	55.15	7.39
Left hand fist strength	Kg	31.17	0.79	49.57	0.50	18.40	59.03	9.89

The tabular value of (t) is at the level of $0.05 = 1.812$

It is clear from Table (3) that there are statistically significant differences between the mean scores of the pre-measurements and post-

measurements of the experimental group in some physical variables and the effectiveness of the straight punch for the post-measurement, where the

calculated (T) value is greater than the tabular (T) value at the level of significance (0,05) in all variables.

Presenting the results of the second hypothesis:

Which states: There are statistically significant differences between the

mean of the pre and post measurements in the level of performance of (Oi-Zuki, Gyako-Zuki) skills of the research sample for the post-measurement.

Table (4)

The significance of the differences between the mean scores of the pre and post measurements of the performance level of (Oi-Zuki, Gyaku-Zuki) skills of the research sample. (n=30)

Skills under study	Physical/skill exams	Measuring unit	Pre-measurement		Post-measurement		difference between the two means	Improvement %	"T" value
			x	y	x	y			
Straight front punch) Oi-Zuki(	Powerful speed S)10(	punch	13.30	0.65	19.10	0.80	5.80	43.60	6.97
	Speed endurance (20) s	punch	25.93	0.87	34.07	0.94	8.13	31.35	8.30
Reverse straight front punch) Gyaku-Zuki(	Powerful speed S)10(	punch	15.10	0.55	24.47	0.63	9.37	62.05	8.03
	Speed endurance (20) s	punch	37.30	1.02	49.77	0.43	12.47	33.43	7.67
effectiveness) Oi-Zuki(	Powerful speed S)10(	punch	0.89	0.87	0.95	0.04	0.07	7.86	5.55
	Speed endurance (20) s	punch	0.86	0.87	0.97	0.03	0.11	12.79	5.09
effectiveness) Gyaku-Zuki(	Powerful speed S)10(	punch	0.76	0.75	0.94	0.03	0.19	25	7.04
	Speed endurance (20) s	punch	0.93	0.93	1.00	0.01	0.06	6.45	8.67

The tabular value of (t) is at the level of $0.05 = 1.812$

It is clear from Table (4) that there are statistically significant differences between the mean of the pre- and post-measurements in the level of performance of the skills under study for the post-measurement, where the calculated (T) value was greater

than the tabular (T) value at the level of significance (0.05) in all variants.

Discussing the results:

It is clear from Table (3) that there are statistically significant differences between the mean scores of the pre-measurements and the post-measurements of the research sample

in some physical variables for the post-measurement, where the calculated (T) value was greater than the tabular (T) value at the level of significance (0.05) in all variants.

The researcher believes that the improvement in the post-measurement in the physical variables is due to the effect of the proposed training program using the " Battle Rope" that applied on the research sample.

The coach ,while directing the intensive training loads, must first determine the physical and physiological characteristics of the player, and then, rationing the training loads and distributing the training units. (3:109).

The researcher also attributes the high results of the research sample in the physical tests in the post measurement to the high level of endurance of the strength gained from the application of the training program using (Battle Rope), and this agrees with what was indicated by the study of **Yahya Al-Hawi (1997)** that the directed weight training program had a significant effect on the post measurements of the maximum static and kinematic strength tests with weights. (6:108)

These results agree with what was indicated by **Ismail Hamed and others (2005) (3)**, which indicated that training with weights had led to the superiority of the post-measurement over the pre-measurement of muscle strength tests.

Thus, the first hypothesis is achieved, which states: There are statistically significant differences between the means of pre and post

measurements in the level of some physical variables in the basic research group.

It is clear from Table (4) that there are statistically significant differences between the mean of the pre- and post-measurements of the research sample at the level of skills under study for the post-measurement, where the calculated (T) value is greater than the tabular (T) value at the significance level (0.05).

The researcher attributes this result to the use of "Battle Rope" exercises that applied on the basic research sample.

These results agree with what **Abdel-Fattah Fathi Khader (1996 AD)** indicated that the level of strength is affected within the training program applied on the research sample because it contains general preparation and skill training. It also showed a significant improvement in the static and kinetic maximum force tests, which indicates the mutual effect between the different types of force . (4:32)

The researcher indicates the superiority of the post-measurement over the pre-measurement to the effect of the training program , which included general and private physical exercises in its preparation part , while the main part included training on competitive performance in the sport of karate.

This agrees with what **Ismail Hamid (2005)** indicated that the training programs with weights directed towards the development of strength achieved a significant superiority over other training

programs during the post tests of strength characterized by speed. (3:57)

The researcher attributes the superiority of the basic research sample in the skills under study to the effect of the training program using (Battle Rope), during which the load was directed towards the development of strength characterized by speed and speed endurance, during which the special principles of weight training were followed.

The researcher believes that as a result of the overlapping effects of training, we find that with the increase in the maximum strength gained from the weight training program (Battle Rope), it was followed by superiority in the strength endurance tests of the basic research sample.

Thus, the second hypothesis is achieved, which states: There are statistically significant differences between the mean of the pre and post measurements in the level of performance of (Oi-Zuki, Jiakku-Zuki) skills among the research sample for the post-measurement.

Conclusions and recommendations:

Conclusions:

The researcher reached the following conclusions by analyzing and discussing these results:

1- The proposed training program using Battle Rope led to an improvement in the level of some physical variables for karate players.

2- The proposed training program using Battle Rope led to an improvement in the level of the effectiveness of the skillful performance of karate 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 "Momting" for karate players.

Recommendations

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

1- Taking into account the results of this study and generalizing it, and emphasizing the provision of stadiums with modern training means, due to the positive impact that achieves in physical development.

2- Applying "Battle Rope" exercises when developing training programs for karate players, because of their positive effects on the level of physical abilities.

3- The need to use "Battle Rope" exercises when developing training programs in general, because of their positive effects on the level and effectiveness of skillful performance.

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