

Effect of exercises of quantity limitations on the skill performance standard of the motor package (Unsu. Kata) of the Karate Egyptian National Team

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Introduction and problem of the research

Scientific research is very important in achieving civil progress and human development in the different fields of life in the modern era. It has become familiar to note the positive and clear relation between the states that made good deal of scientific and technological progress, and their sports superiority in the international championships and the Olympic games.

Karate is one of the oldest and strongest fighting games. It is a development of the natural and instinctive movements of the body to create a type of motor consistency between the arms and legs, and to find type of match between mind and body. (12:1)

Through the work of the researchers within the teaching staff members in the Faculty of Physical Education in Sadat, and through their work in the technical staff of the Egyptian Karate team, one of them as physical fitness trainer and the other as (kata) technical trainer, and through her follow up of many world and international competitions in the field of motor package competitions (kata), the two researchers found that the players of the teams of Europe and East Asia countries are more distinguished and superior, and they scored advanced positions in the international and world competitions of the World Karate Federation (WKF).

The researchers attributed this distinction of the national teams players to what is known in the field of (kata) motor exercise as Kime, while the researchers found that the Egyptian national team players have technical skill command when performing the (kata) motor packages, and no kime exists in performance in the way that allows them to achieve the desired results during the world and international competitions.

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Kime is one of the and important standards during the evaluation of the technical performance standard of the (kata) motor package players in the competitions, and it is one of the points of the technical performance evaluation points (11:26)

Kime is the sudden contraction in the right moment during the skill performance, and contraction in this time is often is the lower abdomen (hara) area. (12)

Through the research, the experts in the field of karate analyzed the Kime element and concluded its analysis to the elements that can be studied and analyzed to learn more accurate details about this important and critical element for the exercise of karate in general, and exercise of the motor (kata) packages in particular. These elements included the kime analysis through the mental field (mental kime), spiritual field (spiritual kime), and physical field (motor kime) the subject of study (7:183).

The philosophical concept of kime means the ability to know the real power of karate when the internal and external force of the person unite through the integration of the body and mind work together for explosion and beat of the opponent in one strike. Kime is the absolute and maximum training target of all elements of the building structure in the sports of karate (Kehon, Kata, Kumite) (13).

The problem of this research lies in the inability of players to make uniform and right muscular contraction of all body muscles at the same time at the end of motor performance of the motor package (kata) skills whether slow or fast, and the individual or combined skills of the arms or legs, and combination of them in sound motor symmetry taking into account that the (kata) motor package includes consecutive waves of kime with specific rhythm in accordance with the type of skills in the (kata) dynamic package.

Terms of the research

Kime

The right technical performance accompanied by right respiration process and rapid performance of combination that results from the sudden muscle contraction forces of all body muscles at the end of performance of the motor duty of skill in intensity and stability (cutting) (53:10).

Unsu- Kata

This is an international motor package (kata). It is a motor package of high difficulty in the Shutukan School, and it is distinguished with fast movement of arms in all directions to the extent that it appears as clouds. This is the meaning and philosophy of this kata (clouding hands). It teaches the player striking in sitting position, and jumping up and absorbing the jump after fall. It consists of (48) movements and requires approximately (90) seconds. (14:9)

Objectives of the Research

This research aims at identifying the effect of exercises of the limitations of quantity on the level of skill performance of the motor package (Unsu- Kata) of the players of Egypt team.

Hypotheses of the research:

- 1) There are statistically significant differences between the pre measurement and post measurement in the improvement of the motor capacities of the motor package (Unsu- Kata) in the players of the Egyptian Kata team for the favor of the post measurement.
- 2) There are statistically significant differences between the pre measurement and post measurement in the improvement of the performance of training packages and the time and level of performing the motor package (Unsu Kata) for the favor of post measurement in the sample of the research.

Procedures of the research

Methodology

The experimental methodology was used with the pre and post measurement test of one experimental group because it is suitable to the nature of the research.

Sample

The research sample was chosen on the purposeful method from the amateur stage players, youth and those who participated in the republic championship in the sports season (2001: 2011 AD), organized in the hall complex, Cairo Stadium, form 2:7/4/2011 AD, and the total number of the sample was (23) players who were divided into two groups, one of them is the main study group; namely, the players of the Egyptian national kata team and youth (n= 3),

and the pilot group consisted of (20) players to conduct the practical treatments under the research.

Table (1)
Description of the sample of the research

Items	Pilot sample	Main sample	Total
Number of players	20 players	3 players	23 players
Purpose	Pilot studies	Main study	

Consistency of the sample of the research:

Table (2)

Consistency of the sample of the research in the variables of training age group and special motor capacity tests N= 23 and the performance standard of the motor packages under research

N=23

Variables under research		Unit of measurement	Arithmetic means	Median	Standard deviation	Contortion coefficient		
Variables of growth	Year	Year	16.667	17.000	0.577	-1.732		
	Weight	Kg	75.333	75.000	3.512	0.423		
	Height	Cm	175.000	174.000	3.512	1.152		
Training life		Year	10.333	10.000	1.528	0.935		
Special motor capacities	Speed force	Reverse straight (Gyaku.Zuk box)	10Sec.	No	22.333	22.000	0.577	1.732
	Speed endurance		20Sec.	Number	39.667	39.000	1.155	1.732
	Performance endurance		45Sec.	No	59.667	60.000	0.577	-1.732
	Speed force	Front kick (Mae.Geri-	10Sec.	No	8.333	8.000	0.577	1.732
	Speed endurance		20Sec.	No	14.667	14.000	1.155	1.732
	Performance endurance		45Sec.	No	24.333	25.000	1.155	-1.732

	Jumping for fall by exchange of position of front hit by laying on earth (Ru. Te. Fuse)	No	6.167	6.200	0.153	-0.935
Movement Kata-Unso	First section	Score	6.467	6.500	0.058	-1.732
	Second section	Score	6.467	6.500	0.058	-1.732
	Third section	Score	6.567	6.500	0.208	1.293
	Fourth section	Score	6.567	6.600	0.058	-1.732
	Fifth section	Score	6.633	6.600	0.058	1.732
	Sixth section	Score	6.567	6.500	0.115	1.732
	Seventh section	Score	6.533	6.500	0.153	0.935
	Eighth section	Score	6.333	6.300	0.058	1.732
	Ninth section	Score	6.567	6.600	0.058	-1.732
Performance level of the motor package (Kata-Unsu)		Score	6.733	6.700	0.058	1.732

Table (2) indicates that the contortion coefficients of the variables of (age, training life, weight, height) ranged between (-1.732, 1.732); that is, it was limited between (± 3), which shows that the sample of the research is homogenous.

Data collection means:

Special motor abilities test under research:

- Reverse straight box (gyako. zuki) in experimental time (10, 20 and 45 sec.)
- Front kick (Mae. Geri) in experimental time (10, 20, 45 sec.)
- Jumping for fall to exchange the front punch position and lay hands on earth (Ru. Te. Fuse)

Skill test used under research:

Scientific treatments of the tests of special motor abilities and the level of quantities of the training packages under research.

Credibility of the special motor abilities tests and the training kime level under research.

The credibility of tests under research was determined by half partition method between the lower spring and higher spring of pilot sample of (20 players). The calculated lower (T) values were (2.121) while the table (T) value was at freedom of (8)

and significance of 0.05 was (1.860), which indicates the credibility of the tests and their use as a means of measurement and evaluation.

Stability of the tests of special motor capacities and the kime level of the training sections under research

The stability of tests under research was calculated by application of tests and re-application of them (test- retest) with difference of (7) between the two applications for pilot sample of (20 players). The correlation coefficient was calculated between the first application and second application using Pearson's Simple Correlation Coefficient as the calculated (R) values ranged between (984:808). These represent high value, which gives us reflection that these tests under research are highly acceptable in terms of stability and use as a means of evaluation and measurement.

Proposed training program:

The training program was applied to the main sample of the research for (11) weeks with average of (5) days of training per week in the period from Thursday, 14/07/2011 to Tuesday, 27/09/2011 AD.

Table (3)
General Content of the proposed training program

No	Variables	Content
1	General period for application of the study	Special preparation- prediscussions
2	Total number of program weeks	(11) weeks
3	Weekly training days	(5) Saturday, Monday, Tuesday, Thursday, Friday (5)
4	Number of training modules during the program	(55) training units
5	Training module time	(60) minutes or (1) hour
6	Overall time of the program	(3300) minutes or (55) training hours
7	Formation of the used training loads	(1: 3) ∙ (1 : 2) ∙ (1 : 1)
8	Period between rest between the training stations	(0.5 : 1 , 1 : 1) as (work: rest)
9	Interval of rest among the groups	(0.5 : 1 , 1 : 1) as (work: rest)

Table (4)
General time distribution of the training program over the parts of the training module

No	Parts of training module		Percentage	Time in minutes	Notes
1	Preparatory part	Warm up (preparation)	% 10	330 minutes	
2	Main part	Quantitative trainings	% 30	990 minutes	
		Motor sections	% 35	1155 minutes	
		Skill (motor package)	% 20	660 minutes	
3	Final part	Warm down	% 5	165 minutes	
Total			% 100	3300 minutes	

Proposed training loads through the training modules of the proposed training program:

The proposed training program was applied using the periodic and repetitive training program. The daily training modules was formed on three parts (**preliminary, main, final**)

First: Preliminary part

This includes warm up

Warm up includes the exercises of light running, exercises of warm up of muscles and general activation of blood circulation and stretching exercises, and some exercises that contribute to raise the body temperatures so that the organs of the body and nervous and physiological systems be ready to accept the content of training module, and the flexibility exercises of the whole body and focus on it to restore the fast recovery from the effects of technical exercises that directly precede the physical exercise, and to prepare them to perform the content of the main part and to upgrade their capacities with direction of the content of that phase to the aerobic work as the intensity of load ranges between (40:45%) from the maximum potential of the player. The total time of this section was (330 minutes); that is, with percentage of (10%) of the total time of the proposed program under research.

Second: Main Part

This part includes three different sections (quantitative exercises of the motor package (kata- unsu) and the exercises of the nine training packages contained in the motor package (kata) under research, and the exercises of skill warm up for the motor package (kata) under research. Each of them has purpose and contents. The total time of this section was (2805 minutes); that is, with percentage of (85%) out of the total time of the proposed training program under research.

Section one: kime exercises

This section includes the kime exercises of the (kata) dynamic package under research to develop the motor capacities of the (kata) motor package under research, as the speed force of the two arms and legs, motor balance, agility, motor speed transitional speed for the different motor skills contained in this (kata) motor package whether related to the ability to change the position of the body in the different directions or ability to strike balance, and everything related to the positions (postures) contained in the motor package (kata) under research. The intensity of load used in this section vary from (60%) to (98%) of the maximum performance of each player. The total time of this section was (990 minutes); that is, (30%) out of the total time of the proposed program under research.

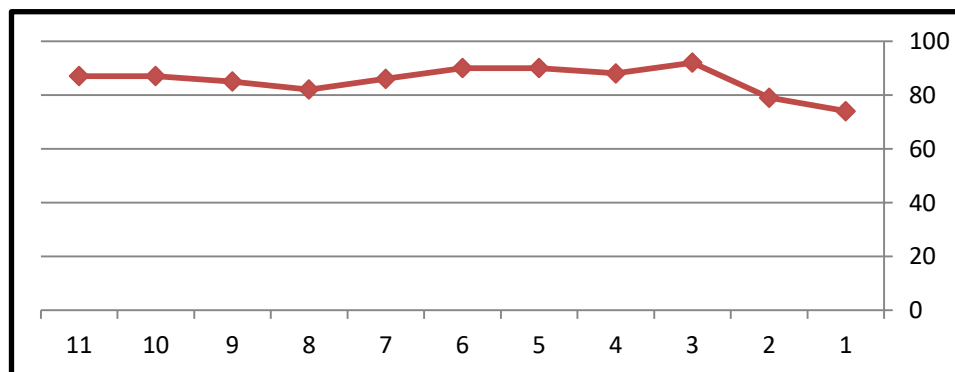
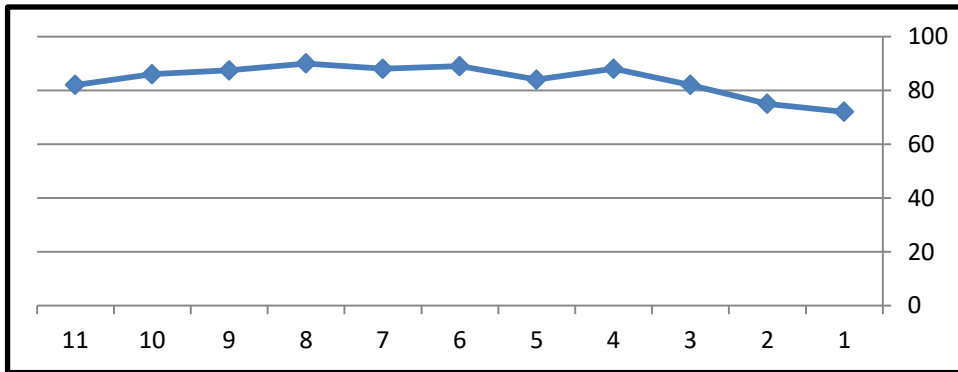


Figure (1) indicates the time distribution and training load of the kime exercise under research

Section two: training packages

The total time of this section was (1155 minutes); that is, with percentage of (35%) of the total time of the proposed program under research, and the intensity of load during this section ranged from (65%: 98%) of the intensity of the player. This section includes the kime exercises of the training package of the motor package (kata) under research for the different motor skills implied in these motor sections, whether those related to the ability to change the position of the body in the different directions or the ability of balance and equilibrium, and the related positions (postures) of the

motor package (kata) using the training approaches applied for the level of kime for the training packages under research.



شكل (2)

Figure (2)

Indicates the time distribution and weekly training load of the training packages exercises under research

Section three: skill performance exercises of the motor package (unsu kata)

The total time of this section was (6600 minutes); that is, with percentage of (20%) out of the total time of the proposed program under research. The intensity of training load during this section ranged from (60%: 98%) of the maximum intensity of player. This section includes training on the performance of the motor package (Kata. Unsu) in the training or competitive form, taking into account the technical performance of the motor package skills and focus on the main points of the different skills of Kata known as (kehon) and focus on the skills of particular difficulty degrees in the motor package (kata).

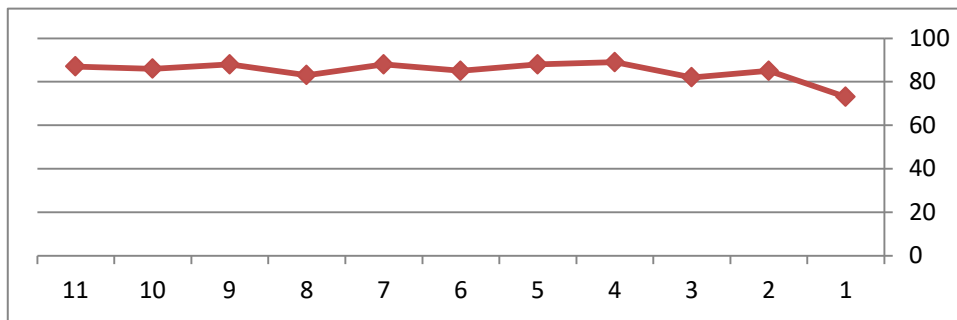


Figure (3)

Indicates the time distribution and weekly training load of the skill performance of the motor package under research

Final part

This part contains the warm down exercises that help recover of the daily training load in accordance with the aerobic energy system. The intensity of the exercise used during this part ranges from (35%: 40%) of the maximum intensity of player. In addition, the total time of this section was (165 minutes); that is, with percentage of (5%) out of the total time of the proposed program under research.

Executive steps of the research:

1- Scientific treatments to find the credibility and stability of the tests under research

- The first application was carried out on Thursday and Friday, 23, 24/06/2011 AD.
- The second application was conducted on Thursday and Friday 30/06, 01/07/2011 AD.

2- Pre measurement

- The pre measurement was conducted on the basic sample of the research on Thursday, 07/07/2011 AD in the variable of skill performance level of the motor package unsu. Kata and the training packages under research in accordance with the international standards of refereeing of the motor kata package.
- The pre measurement was run on the basic sample of the research on Friday, 08/07/2011 AD in the variable of special motor abilities of the motor package (Unsu. Kata)

3- Post measurement

- The post measurement was done on the basic sample of the research on Thursday and Friday, 29, 30/09/2011 AD.

4- Statistic treatments

The researchers used the statistic package of social science (SPSS) to treat the data statistically, and applied the following statistic approaches:

- Arithmetic Mean
- Median
- Standard deviation
- Contortion coefficient

- T- Test
- Pearson's simple correlation coefficient
- Improvement rates by percentage

The researchers were satisfied with the statistic significance at (0.05)

Presentation and discussion of the results:

Table (5)

Significance of differences and percentages of improvement between the averages of the (pre-post) measurements in the variables of special motor capacities under research for the first player

Content	Unit of measurement	First player					
		Pre	Post	Difference between the two measurements	Percentage of improvement %		
Special motor capacities	Gyaku.Zuki	Sec10	No	23	25	2	8.696
		Sec20	No	39	43	4	10.256
		Sec45	No	60	65	5	8.333
	Mae.Geri-	Sec10	No	9	10	1	11.111
		Sec20	No	14	16	2	14.286
		Sec45	No	25	27	2	8.000
	Ru.Te.Fuse	score	6	7	1.0	16.667	

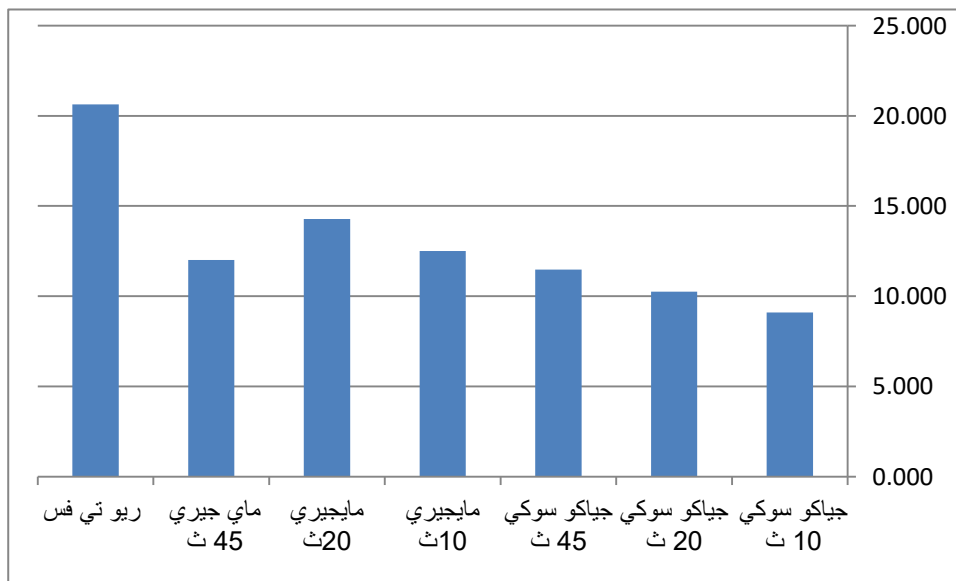


Figure (4)

Percentages of improvement between the average (pre-post) measurements in the variables of motor capacities under research for the first player

Table (6)

Significance of differences and percentages of improvement between the average of (pre- post) measurements in the variables of skill performance standard for the sections and motor packages (kata- unsu) and their performance time under research for the first player

Content	Unit of measurement	First player					
		Pre	Post	Difference between the two measurements	Percentage of improvement		
Building structure of the movement (Unsu)	Skill performance of the sections	First section	Score	6.5	7.6	1.1	16.923
		Second section	Score	6.4	7.5	1.1	17.188
		Third section	Score	6.5	7.3	0.8	12.308
		Fourth section	Score	6.6	7.3	0.7	10.606
		Fifth section	Score	6.6	7.3	0.7	10.606
		Sixth section	Score	6.5	7.2	0.7	10.769
		Seventh section	Score	6.5	7.2	0.7	9.722
		Eighth section	Score	6.4	7	0.6	9.375
		Ninth section	Score	6.5	7	0.5	7.692
Skill performance of Unsu.Kata		Score	6.6	7.2	0.6	8.333	
Skill performance of Unsu.Kata			95	102	7.0	7.368	

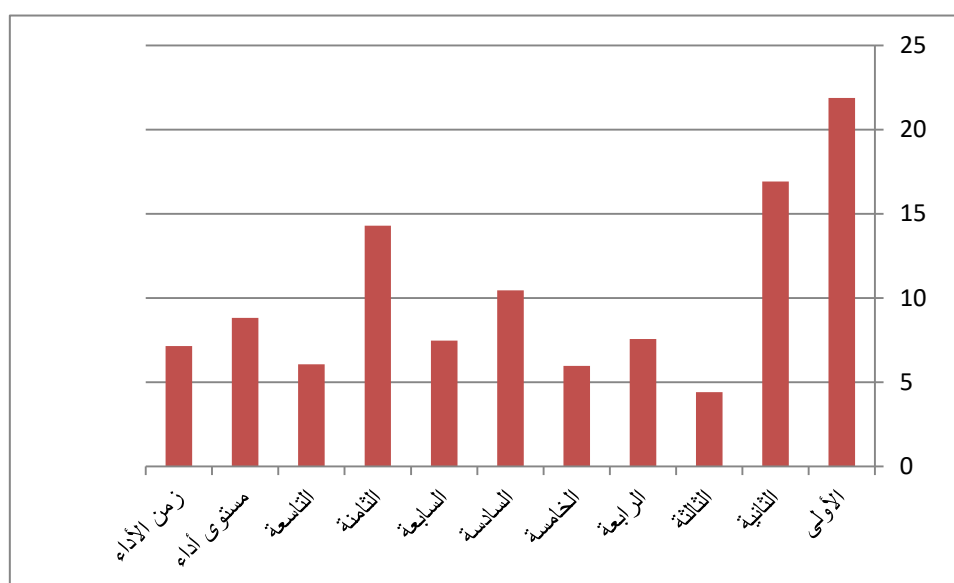


Figure (5)

Percentages of improvement between the average (pre-post) measurements in the variables of performance standard of the motor packages and sections (Unsu) and the time of their performance under research for the first party

Table (7)

Significance of differences and percentages of improvement between the average (pre- post) measurements in the variables of special motor capacities under research for the second player

Content		Unit of measurement	Second player				
			Pre	Post	Difference between the two measurements	Percentage of improvement %	
Kime limitations	Gyaku.Zuki	10Sec	No	22	25	3	13.636
		20Sec	No	41	44	3	7.317
		45Sec	No	59	66	7	11.864
	Mae.Geri-	10Sec	No	8	9	1	12.500
		20Sec	No	15	17	2	13.333
		45Sec	No	23	26	3	13.043
	Ru.Te.Fuse -		Score	6.2	7.1	0.9	14.516

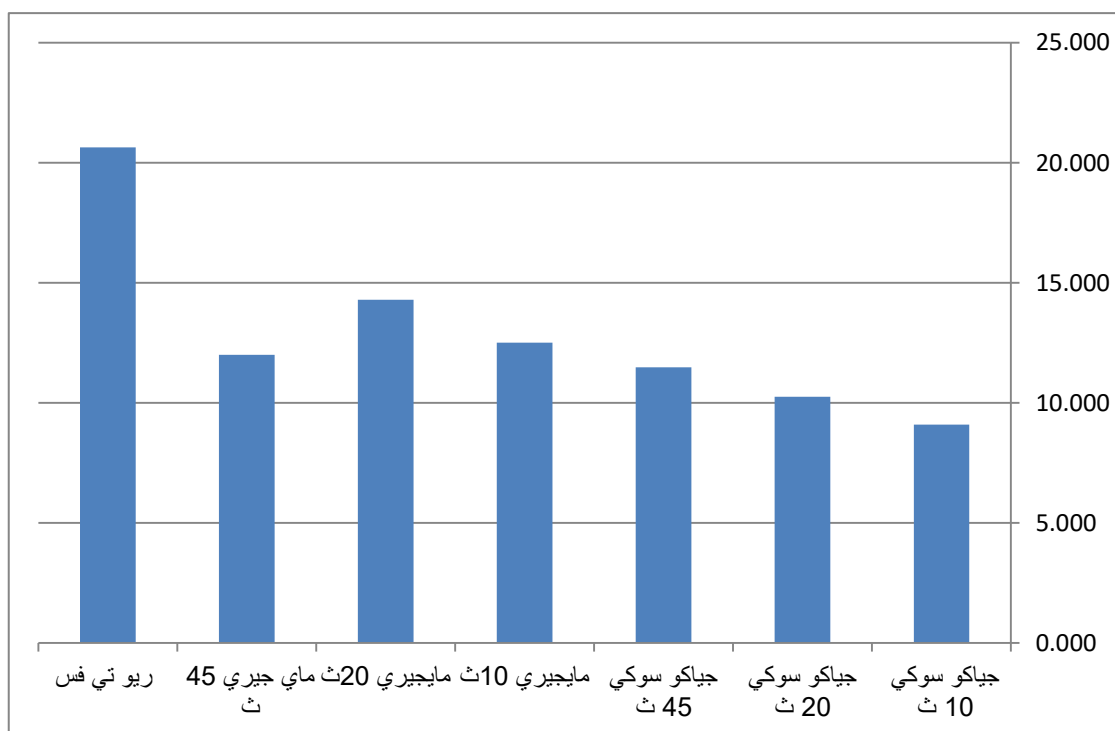


Figure (6)

Percentages of improvement be the average (pre-post) measurements in the variables of special motor capacities under research for the second player
Table (8)

Significance of differences and percentages of improvement between the average (pre-post) measurements in the variables of skill performance levels of the sections and motor package Kata- Unsu and their performance time under research for the second player

Content		Unit of Measurement	Second player			
			Pre	Post	Difference between the two measurements	Percentage of improvement %
Building structure of unsumotor package ()	Skill performance standard of sections	Score				
	First section	Score	6.5	7.5	1	15.385
	Second section	Score	6.5	7.6	1.1	16.923
	Third section	Score	6.4	7.2	0.8	12.500
	Fourth section	Score	6.5	7.4	0.9	13.846
	Fifth section	Score	6.6	7.4	0.8	12.121
	Sixth section	Score	6.5	7.2	0.7	10.769
	Seventh section	Score	6.4	7.1	0.7	10.938
	Eighth section	Score	6.3	7.2	0.9	14.286
Ninth section	Score	6.6	7.3	0.7	10.606	
Skill performance standard of Unsu.Kata		Score	6.7	7.3	0.6	8.955
Skill performace standard of motor package Unsu.Kata		ث	97	105	8	7.216

Skill performance standard of packages

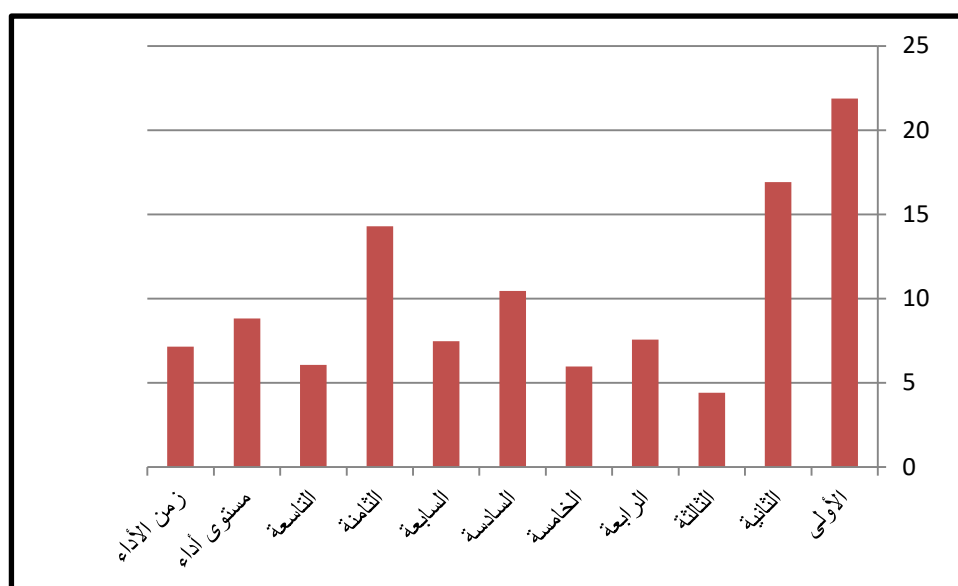


Figure (7)

Percentages of improvement between the average (pre-post) measurements in the variables of skill performance level of the packages and motor sections (Kata- Unsu) and their performance time under research for the second player

Table (9)

Significance of differences and Percentages of improvement between the average (pre-post) measurements in the variables of special motor skills under research for the third player

Content		Unit of Measurement	Third player				
			Pre	Post	Difference between the two measurements	Percentage of improvement %	
Kime limitations	(Gyaku.Zuki)	10Sec	No	22	24	2	9.091
		20Sec	No	39	43	4	10.256
		45Sec	No	61	68	7	11.475
	(Mae.Ger-)	10Sec	No	8	9	1	12.500
		20Sec	No	14	16	2	14.286
		45Sec	No	25	28	3	12.000
	Ru.Te.Fuse		Score	6.3	6.6	0.3	20.635

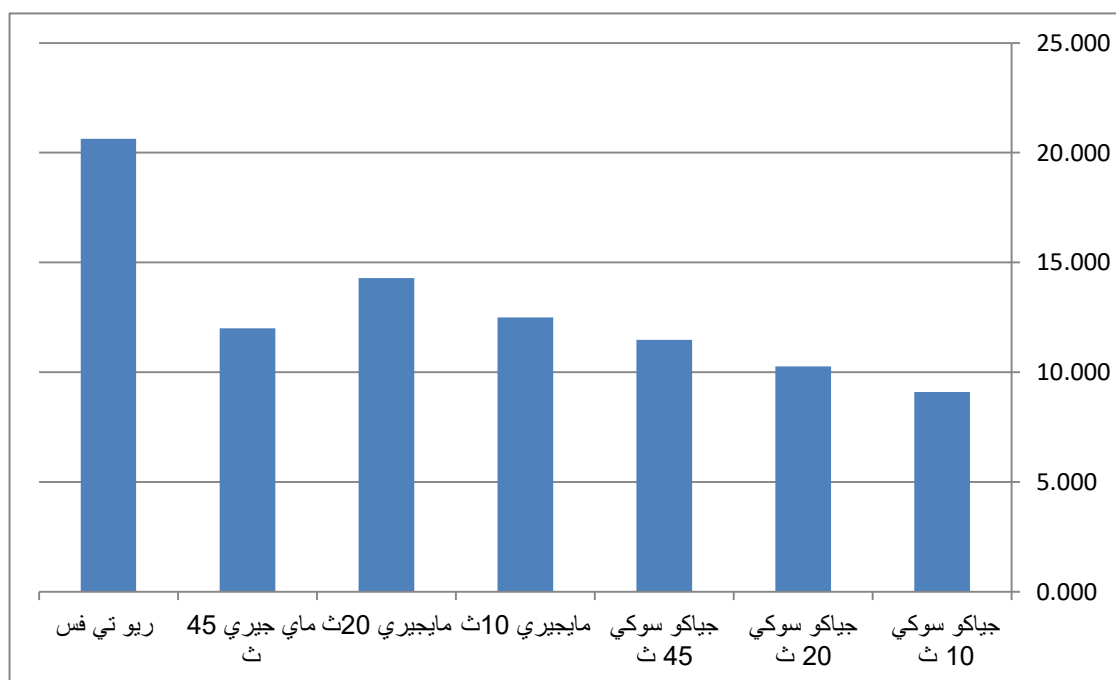


Figure (8)

Percentages of improvement be the average (pre-post) measurements in the variables of special motor capacities under research for the third player
 Significance of differences and percentages of improvement between the average (pre-post) measurements in the variables of skill performance levels of the sections and motor package Kata- Unsu and their performance time under research for the third player

Content		Unit of measurement	Third player				
			Pre	Post	Difference between measurements	Percentage of improvement %	
Building structure of unsu motor package ()	Skill performance level of sections	First section	Score	6.4	7.8	1.4	21.875
		Second section	Score	6.5	7.6	1.1	16.923
		Third section	Score	6.8	7.1	0.3	4.412
		Fourth section	Score	6.6	7.1	0.5	7.576
		Fifth section	Score	6.7	7.1	0.4	5.970
		Sixth section	Score	6.7	7.4	0.7	10.448
		Seventh section	Score	6.7	7.2	0.5	7.463
		Eighth section	Score	6.3	7.2	0.9	14.286
		Ninth section	Score	6.6	7	0.4	6.061
Skill performance level of Unsu.Kata		Score	6.8	7.4	0.6	8.824	
Unsu.Kata Skill performance time of the motor package Unsu.Kata		T	98	108	10	7.143	

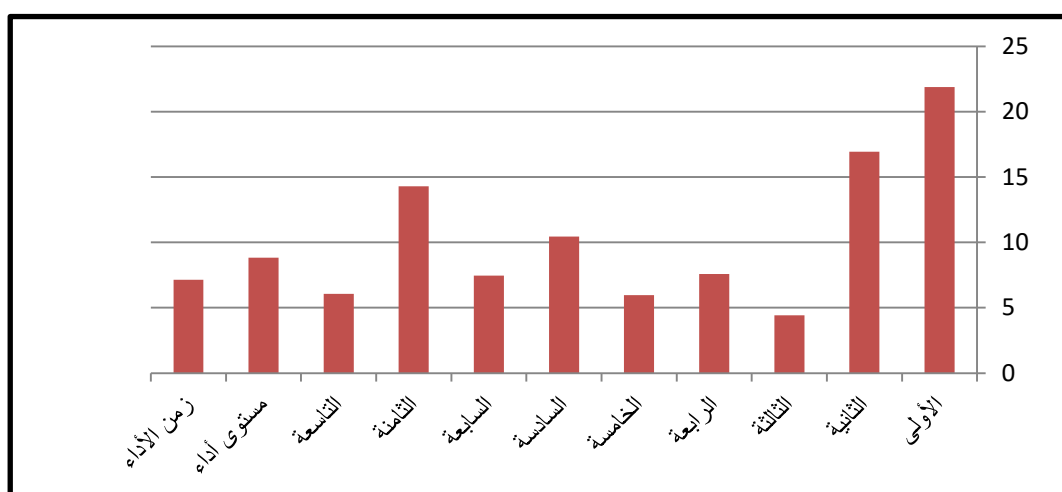


Figure (9)

The percentage of improvement between the average (pre-post) measurements in the variables of skill performance level of the section and the motor package (kata- unsu) and its performance time under research for the third player.

The data of table (5), (7), (9) and figures (4), (6) and (8) indicate that there are statistically significant differences between the pre and post measurements of the values of speed force variables of gyaku. Zuki. The percentage of improvement between the average pre and post measurements was (8.696%), (13.636%) and (9.091%) for the first, second and third players respectively.

There were statistically significant differences between the pre and post measurements of the values of variables of endurance of gyaku. Zuki, and the percentage of improvement between the average pre and post measurements was (10.256%), (7.317%) and (10.256%) for the first, second and third players respectively.

There were statistically significant differences between the pre and post measurements of the variable of performance endurance of gyaku. Zuki, and the percentage of improvement between the average pre and post measurements was (8.333%), (11.864%) and (11.475%) for the first, second and third players respectively.

There were statistically significant differences between the pre and post measurements of the values of speed force of Mae-Geri, and the percentage of improvement between the average pre and post measurements was (11.111%), (12.500%) and (12.500%) for the first, second and third players respectively.

There were statistically significant differences between the pre and post measurements of the values of speed endurance of Mae. Geri and the percentage of improvement between the average pre and post measurements was (14.286%), (13.333%) and (14.286%) for the first, second and third players respectively.

There were statistically significant differences between the pre and post measurements of the values of speed endurance of Mae. Geri and the percentage of improvement between the average pre and post measurements was (8.000%), (13.043%) and (12.000%) for the first, second and third players respectively.

There were statistically significant differences between the pre and post measurements of the variables of agility for Ru.Te.Fuse, and the percentage of improvement between the

average pre and post measurements was (16.667%), (14.516%) and (20.635%) for the first, second and third players respectively.

The data of tables (6), (8), (10) and figures (5), (7), (9) indicate that there are statistically significant differences between the pre and post measurements of the values of performance variables of the training sections that comprise the building structure of the motor package (kata) under research. The percentage of improvement between the average two measurements was (9.375%), (17.188%), (10.606%), (16.923%), (4.412%) and (21.875%) in the first, second and third players respectively.

There were statistically significant differences between the pre and post measurements of the variable of skill performance level of kata under research, and the percentage of improvement between the average pre and post measurements was (8.333%), (8.955%) and (8.824%) for the first, second and third players respectively.

There were statistically significant differences between the pre and post measurements of the variable of skill performance level of kata under research, and the percentage of improvement between the average pre and post measurements was (7.368%), (7.216%) and (7.143%) for the first, second and third players respectively

According to the above results of the study, we find the importance of the limitations of kime in improvement of the performance of (Kata) under research. These limitations clearly included several variables that included the skill performance level of the training package of (Kata) under research and the time and level of performance of the motor package (kata) under research.

The researchers attribute this improvement to the proposed training program to develop the performance level of kata under research. This program includes the kime exercises of the skill content of the motor package (kata) that led to improvement and development of the concept of kime in terms of the proper technical performance accompanied by sound respiration and rapid performance to collect the sudden muscle contraction forces of all body muscles at the end of performance of the motor skill in stability and intensity (cut), which is indicated in the performance standard of the players under study in the post measurement.

In addition, the training program included exercises of the motor sections that comprise the motor package (kata) under research. The two researchers believe that division of

motor package (kata) into single and compound motor packages in consecutive manner in line with the motor and time track of the motor package (Kata) under research, according to the generally acceptable international pattern of performance of motor package (kata) under research in the international championships and competitions, which is in agreement with the conclusions of (2), (3), (4) and (6).

- The slow skill performance of the motor skills of each motor section and performance at speed and force of focus by the end of each motor skill, as referred to in (8)
- The skill performance using light bar half kilogram for the motor skills of each motor section, with performance at speed and force of focus during the track of each motor skill.
- Slow skill performance of the motor skills of each motor section and holding graded weight dimple with performance at the speed and force of focus by the end of each motor skill.
- Slow skill performance using half kilogram dimples for the motor skills of each motor section with performance at the speed and force of focus by the end of each motor skill.

The exercises of motor package (kata) under research as proposed by the researcher contributed to improve the motor capacities of the motor package (kata) under research. The effect of these exercises appeared in the level of performance of training sections, and the performance standard of the motor package kata Unsu.

Through the percentages of improvement that were obtained, there appear relation between the improvement of skill performance of kata under research and the increase of overall performance time of kata. This is attributed to the improvement of kime standard in the sample of the research.

The training program also included the high and low intensity periodic training method and repetitive training of loads in accordance with the average (50:75%, less than maximum (75:90%) and maximum load (90:100%)) of the maximum intensity for player.

According to the results of this study, the objectives and hypothesis of the research were verified.

Conclusions And Recommendations

Conclusions:

- 1- Improvement of the motor capacities of kata under research in the sample of the research, as the percentage of improvement between the pre and post measurements in the speed endurance of gyaku. Zuki of the first player was (7.317%), while the highest percentage of improvement between the pre and post measurements in Ru. Te. Fue improved and was (20.635%) of the third player.
- 2- The Kime level of the training packages of kata under research improved in the sample of the research. The lowest improvement percentage between the pre and post measurements in the third motor package improved and was (4.412%) in the third player, while the highest percentage of improvement between the pre and post measurements in the first motor package improved and was (21.875%) in the third player.
- 3- The technical performance standard of kata under research improved in the sample of the research. The lowest percentage of improvement between the pre and post measurements was (7.143%) in the third player. The highest percentage of improvement between the pre and post measurements was (7.368%) in the first player.

Recommendations:

- 1- Training programs for development of performance standard of motor packages (kata) shall include the kime trainings of each kata package separately.
 - 2- The kime trainings included in the study shall be used as reference in setting similar exercises of the other motor package (kata) in karate.
 - 3- Similar training programs shall be planned for the national teams in the different age groups in the major of kata motor packages.
 - 4- Trainign shall be conducted following the training sections approach, as one of the training means in the field of development of kata performance packages in karate.
 - 5- The necessary and required means and tools for development of kime in the kata motor package player shall be employed.
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References:

- 1- Ahmed Mohamed Bahaa El **Shutukan Karate Kata**, Al Rawy House, Kingdom of Saudi Arabia, 1994 din, AD.
- 2- Ahmed Mahmoud Mohamed Ibrahim **Encyclopedia of limitations of sports training: theory and application for planning the training programs of karate**. Al Maaref Establishment, Alexandria, 2005
- 3- Ahmed Mahmoud Mohamed Ibrahim Atef Mohamed Abaza Scientific and applied bases for planning the training programs of kata in karate, Al Maaref Establishment, Alexandria, 2005 AD.
- 4- Ahmed Mahmoud Mohamed Ibrahim Scientific and applied encyclopedia: modern approaches and limitations of rating and planning of karate training programs, Al Maaref Establishment, Alexandria, 2011 AD.
- 5- Reda Youssef Yousry Abdelkader: Proposed training approach for development of the performance of kata in accordance with the energy production of karate, unpublished PhD thesis, Faculty of Physical Education in Sadat, Menounfiya University, 2008 AD.

Foreign references

- 6- Einat Bar-On Cohen: **Kime and the Moving Body: Somatic Codes in Japanese Martial Arts**, Body & Society December 2006 12: 73-93,.
- 7- Gilles Lavigne
- 8- : **The Endless Search for Absolute Kime: Karate Budo** , CreateSpace Independent Publishing Platform; 1 edition , Quebec , Canada , 2015.
- 9- Funakoshi Gichin: **The Twenty Guiding Principles Of Karate**, Tr., John Teramoto, Kodansha International L T D., Tokyo, Japan, 2005.
- 10- Masatoshi Nakayama: : **Best Karate**, Vol (10), Kodansha International L T D., Tokyo, Japan, 1985.
- 11- Schlatt: :**The Shotokan Karate Dictionary**, SAKE Translation International Lauda, Germany, 1996.
- 12- World Karate Federation: : **Kata And Kumite Competition Rules**, Version 6, January 2009.
- 13- <http://en.wikipedia.org/wiki/Kime>
- 14- <http://jka.or.jp/en/karate/techniques.html>