

## Effect of Short Term Training Programme on Agility Flexibility & Core Strength of Karate-Do Females

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### Abstract

**Objectives:** To characterize the status of Short Term Training Programme on Agility Flexibility & Core Strength of Karate-Do Females and to investigate the post effect of 21 days Short Term Training Programme on Agility Flexibility & Core Strength of Karate-Do Females. **Methods:** The present study was conducted on 20 Interuniversity and school national level karate-do participants after applying purposive sampling belongs to Banasthali University, Rajasthan, Chronological Age ranged of the participants were  $17\pm 2$  years. Subjects with history of any recent musculoskeletal injuries like fractures, dislocation, joint instability or any soft tissue injuries or any health issues and Karate-do players with less than one year of active participation in the game were excluded from the study. The study was confined to the following selected variables: - Agility Flexibility & Core Strength. 21 days Short Term Training Programme was applied on Karate-Do Females. The data for proposed study was prior collected before applying the 21 days Short Term Training Programme and after conducting the program. **Results:** Significant difference found in Flexibility with t—value 5.689, Agility with t-value 4.445 and Core Strength with t—value 7.266 respectively. **Conclusion:** 21 days short term training programme puts its significant effect on flexibility, Agility and Core Strength of Karate-Do Females.

**KEYWORDS:** Agility, Flexibility & Core Strength.

### Introduction

In the past two decades sports have gained tremendous popularity all over the globe. The popularity of the sports is still increasing at a fast pace and this happy trend is likely to continue in the future also. Our Sports Conditioning Programs are geared to all athletes, and strive to improve athletic performance through increased power, strength, speed, agility, and flexibility. Without proper conditioning, an athlete will not gain the maximal benefit from practice, will not perform at optimal levels, and will be at an increased risk for injury.

The area of performance sports is not merely a glamorous area of sports; it also fulfills certain valuable social functions due to which it has been accorded high importance all over the world. Science of Training unlike other disciplines, studies sports performance and sports training in totality and not just one aspect of the whole. The knowledge gained by these disciplines has to be understood by the coaches do not have sufficient scientific background and training to make full and effective use of the knowledge of acquired by the sports science disciplines, this creates a gap between sports scientists and coaches. The science of training is very much useful to fulfill this gap to

enhance performance.

The goal of sports training is to maximize each player's personal athletic performance, for which we should take care of some definite components and try to work out to chalk out the training program which will focus on increasing core strength, agility and flexibility etc. Agility is defined as the ability to change the position of your body and/or its parts quickly and accurately. Flexibility is the range of movement at a joint allowed by the muscles (length & elasticity) that surround it. Core strength training (CST) is widely practiced by professionals with the goals of enhancing core stability and increasing core muscular strength, thereby improving athletic performance. . To enhance sports performance of Karate-do players there is a need to sketch out training programme or schedule for improving core strength, agility and flexibility etc. For this the investigator hereby plan out a twenty one days training schedule or short term training programme specifically to develop core strength, agility and flexibility and applied it on karate do female players to find out its effect. So keeping in mind the mentioned objective the present study was planned and implemented.

### **Purpose of the Study**

The specific purposes of this study were as follows:-

- 1) To characterize the pre and post status of Agility, Flexibility & Core Strength of Karate-Do Females with the application of 21 days short term training programme.
- 2) To find out the significant difference between pre and post test on Agility, Flexibility & Core Strength of Karate-Do Females with the application of 21 days short term training programme.

### **Material and Methods**

The present study was conducted on 20 Interuniversity and school national level karate-do participants after applying purposive sampling belongs to Banasthali University, Rajasthan.

#### **Inclusion Criteria:**

- ✚ Chronological Age ranged 17±2 yrs female karate-do players
- ✚ Interuniversity and school national level karate-do participants of Banasthali University, Rajasthan.

#### **Exclusion criteria:**

- ✚ Subjects with history of any recent musculoskeletal injuries like fractures, dislocation, joint instability or any soft tissue injuries or any health issues.
- ✚ Karate-do players with less than one year of active participation in the game.

All subjects will be asked to sign the written consent form stating the voluntary acceptance to participate in the study. Eligible subjects who fulfill the inclusion and exclusion criteria will be selected for the study. Short term training programme for 21 days has been conducted on Karate-do Inter University and school Female players. The three training components i.e. Agility, Flexibility and Core Strength have been taken as criterion measure. To test the flexibility of the players Groin Test (G-1979) ;to measure agility 4×100 mts shuttle run and to test the core strength one minute bent knee sit-ups test has been conducted. Since the karate-do players needs flexibility of legs and the core

strength is also a dominant component, the sets of exercises was designed accordingly. To get the desirable and authentic results and also to maintain the enthusiasm of the athletes modification was done accordingly, so we maintained the regularity of the participants.

**Table-I: Description of 21 days (Three weeks) short term Training Programme applied on Karate-do females**

S.N	Name of Activity	First Week		Second Week		Third Week	
		Rept.	Intens.	Rept.	Intens.	Rept.	Intens.
<b>Agility</b>							
1.	Partner Cone Exercise	(Depends upon opponent speed)					
2.	Negro Box Exercise	10+10	-	15 times	medium	10 times	Medium
3.	Sideward single leg hurdle exer.	6H×2	Light(50-60)	3 times	Sub max.	2 times	Medium
4.	Forward Sideward backward run	2 times	Low(50-60)	3 times	Sub max.	3 times	low
5.	Hurdle Mazes	2 times	Medium	3 times	Sub max.	2 times	Medium
<b>Flexibility</b>		<b>Rept.</b>	<b>Intens.</b>	<b>Rept.</b>	<b>Intens.</b>	<b>Rept.</b>	<b>Intens.</b>
6.	Forward walk lunges	10+10	Low	15+15	low	10+10	Low
7.	Supine Groin Stretch with partner	10	Low	3 times	Medium	2 times	Low
8.	Wall Groin Stretch	2 times	Low	3 times	Max.	2 times	Medium
9.	Kneel down lunge stretch	10+10	Medium	15+15	Sub max.	10+10	Low
10.	Leg Split	2 times	Medium	3 times	Max.	2 times	Medium
<b>Strength</b>		<b>Rept.</b>	<b>Intens.</b>	<b>Rept.</b>	<b>Intens.</b>	<b>Rept.</b>	<b>Intens.</b>
11.	Pelvic Thrust	10+10	Medium	15 times	Medium	15 times	Low
12.	Good Morning	10+10	Low	15 times	Medium	10 times	Low
13.	Abdominal Ex. in Bridge position	10+10	Low	12+12	Medium	10+10	Low
14.	Knee 90° folded crunches	15+15	Medium	20+20	Medium	15+15	Medium
15.	Side balance crunch	10+10	Low	15+15	Medium	10+10	Medium

**Statistical Technique**

The below mentioned statistical technique was used to fulfill the need of objectives of the study:

1. Descriptive Statistics
2. Paired t-test

(The hypothesis was tested at 0.05 level of significance. The statistical analysis was done with the help of SPSS-20 version)

**Results & Findings**

To find out the status before and after applying 21 days training programme yogic and breathing techniques on Karate-Do Females’ descriptive statistics was used. Whereas, to find out the significant difference between the means of two scores of pre & post values, paired t-test was applied and the results are presented in table – II.

**Table-II: Descriptive and t-test Value of Flexibility Agility & Core Strength with the application of short term training programme**

Variables	N	Pre test Mean	SD	Post test Mean	SD	r	t-value	p-value
Flexibility	20	2.2475	1.019	1.405	0.86358	0.765	5.689*	.000
Agility	20	20.69	0.98631	19.55	1.36710	0.562	4.445*	.000

Core Strength	20	31.40	3.63318	39.35	4.59147	0.310	7.266*	.000
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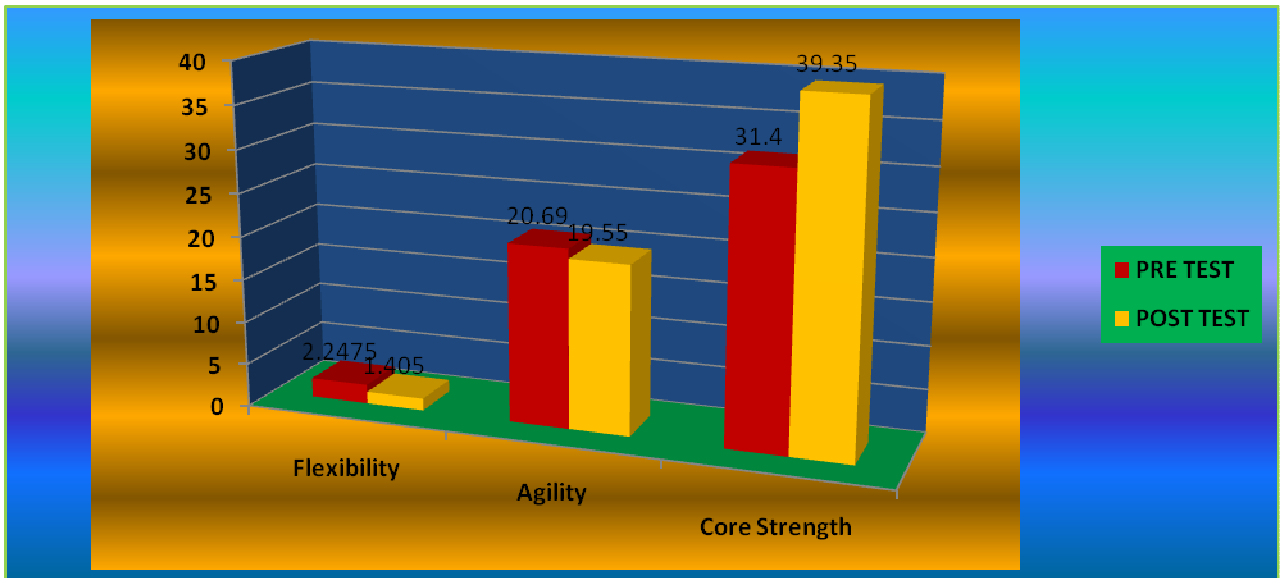
\* t-value required to be significant at  $p < 0.05$

It is evident from the table no. II, that:-

- The mean value of pre test of Flexibility (2.2475) > post test of Flexibility (1.405), Computed t-value of Pre Test and Post test flexibility is found to be **significant** in Karate-Do Females with the application of short term training programme, as  $p\text{-value} < 0.05 (5.689^*)$ ;
- The mean value of pre test of Agility (20.69) > post test of Agility (19.55), Computed t-value of Pre Test and Post test Agility is found to be **significant** in Karate-Do Females with the application of short term training programme, as  $p\text{-value} < 0.05 (4.445^*)$ ;
- The mean value of pre test of Core Strength (31.40) < post test of Core Strength (39.35), Computed t-value of Pre Test and Post test Core Strength is found to be **significant** in Karate-Do Females with the application of short term training programme, as  $p\text{-value} < 0.05 (7.266^*)$ .

Furthermore, the Mean Value of Flexibility Agility & Core Strength with the application of short term training programme on karate-do females are presented with the help of figure no. I

**Figure No. I: Graphical Representation of Mean Value of Flexibility Agility & Core Strength with the application of short term training programme on karate-do females**



**Discussions of Findings**

With the abovementioned statistical findings, significant difference was found in

flexibility, Agility and Core Strength of Karate-Do Females with the application of 21 day short term training programme. The study shows that faster adaptations process occur when new exercise were used or variety of exercises were used as training means. Study also shows that the variation of exercises didn't affect even the psychological and physical load. The athletes were not feeling much exerted while performing the given task. In almost similar kind of study entitled "Effect of Core Stability Training on Speed of Running in Female Cricket Players" conducted by **Gandhi Amil Pankajbhai, 2015**. The objective of the study was to assess speed of running in female cricket players by before and after 2 weeks of core stability training. The outcome of the result concludes that, 2 weeks of core stability training improves speed of running and agility in selected female cricket players as measured by 4x10 m shuttle run test and T test for agility. The present study also reveals the similar results with the outcome of significant results. At last the study is not based on the principle of over compensation/super compensation but the fitness level of an athlete. General agility, Flexibility and core strength can be increased in lesser duration with variety of programme. Since the activity was a lactate, no active means of recovery was used; during training all athletes were relaxed and comfortable.

### Conclusion

The following conclusion may be drawn from the present study:

- ✚ 21 days short term training programme puts its significant effect on flexibility, Agility and Core Strength of Karate-Do Females.

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