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Effects of judo specific complex training program on selected motor components among intercollegiate level judokas

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Abstract

In this study the scholar trying to put forward a judo specific complex training program for developing the motor components as well as the technical skills which is essential for judo players. The purpose of the study was to find out the effects of judo specific complex training on selected motor components of intercollegiate level judo players in Calicut University, both male and female students, aged between 17 and 24 years. The selected 40 subjects were divided in to two equal groups of 20 each, 20 controlled group 20 experimental group.

Selection of the variables: The variables selected were Agility, Muscular Endurance, Flexibility, Explosive strength, Co-ordination, Cardiovascular endurance.

Experimental Design: The experimental designs used in the study were random group design. In which forty both male and female subjects were divided in to groups of twenty each. The experimental group underwent participation of judo specific complex training for a period of six weeks and control group were not given any training. All the subject were tested on selected criterion variables prior to and immediately after and six weeks of judo specific complex training, the study aimed at mainly to find out the effect of judo specific complex training on selected motor abilities of intercollegiate level judokas.

Results: The collected data by applying analysis of co-variance (ANCOVA) and the level of significance chosen was at 0.05 throughout the study to determine the significance difference. Under the condition and the limitation of the present investigation of the following conclusion were drawn. Judo Specific Complex Training Program improves the motor components along with the judo skills. This program may consist as a planned systemic activity based judo training for developing specific motor components.

Keywords: Judo, complex training, motor components, physical education, sports training

Introduction

Physical training is the basic requirement for sportsmen to achieve a desirable performance. The system of physical training differs in terms of level of competition, nature of sport and gender. The existing system of training in India concentrates more on individualized motor fitness components irrespective of the factors mentioned above though their physical aspects differ. As this type of individualized training prevails in the present scenario none of the sportsmen at different levels will get benefited. Hence, the sportsmen who have acquired basic fitness components in their previous training may achieve high level when they switch over from the system of training that is designed from individualized to complex in nature.

Judo is a tremendous and dynamic combat sport that demands both physical prowess and great mental discipline. From a standing position, it involves techniques that allow lifting and throwing the opponents onto their backs on the judo mat called Tatami, it includes techniques that allow pinning the opponents down to the tatami, controlling them, and applying various choke holds or joint locks until submission.

Complex Training is a Method where the athletes complete a set of heavy resistance exercise or high intensity, and then follow it with an explosive exercise or Techniques involving a similar movement pattern. Combat athletes need the ability to explode with speed in addition to brute strength. Complex training is one of the most effective ways to improve power output for combat. Complex training program can be used in the general, specific and competition phases of training.

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Statement of the Problem

The purpose of the study was to find out the effects of judo Specific Complex Training program on selected motor components of Intercollegiate Level Judokas hence the problem was stated as *effects of judo specific complex training program on selected motor components among intercollegiate level judokas.*

Delimitations of the study

The study was delimited to the total of 40 Intercollegiate Level Judokas of both male and female from Calicut University, the age ranged between 17 and 24 years. Also delimited to the selected motor fitness variables were namely Agility and Coordination, Muscular endurance, flexibility, Explosive strength, Cardiovascular endurance and to the 6 week judo specific complex training programme.

Limitations of the study

Diet, daily routines of the subjects and climate conditions were not taken in to consideration, Previous experience of the subject in the field of sports and games which may influence the training and data collection were taking in to consideration and the research scholar had not put any effect to control or assess the quality and quantity of good ingested separately for each individual. The quantum of physiological stress and other factors that affect the metabolic functions were also considered as limitations.

Hypothesis

1. There will be a significant improvement on selected motor components due to the six weeks judo specific complex training programme.
2. There will be a significant difference between experimental and control group on selected motor components due to the six week specific complex training programme.

Methodology

Selection of subjects

The purpose of the study was to find out the effects of judo specific complex training on selected motor components of intercollegiate level judo players in Calicut University, both male and female students, aged between 17 and 24 years. The selected 40 subjects were divided in to two equal groups of 20 each, 20 controlled group 20 experimental group.

Selection of the variables

Taking in to consideration all these factors a set of variables was selected to test on selected subjected, for observing the variations in their levels due to the judo specific complex training effect. The variables selected were Agility, Co-ordination, Muscular Endurance, Flexibility, Explosive strength and Cardiovascular endurance.

Selection of tests

The present study will undertake primarily to assist the effect of judo specific complex training on selected motor abilities of intercollegiate level judokas. The research scholar selected the following standardized test items to collect relevant data on the selected dependant variables and they were presented in table.

Table 1: The research scholar selected the following standardized test items to collect relevant data on the selected dependant variables and they were presented in table.

S.N	Motor abilities	Test items	Unit of measures
1	Agility and Coordination	Scott obstacle race test	Time/Seconds
2	Cardiovascular endurance	1 mile run	Time/Seconds
3	Explosive strength	Vertical Jump	Meter
4	Flexibility	Sit and reach	Centimetres
5	Muscular Endurance	Bent Knee sit - up	Number

Experimental Design

The experimental designs used in the study were random group design. In which forty both male and female subjects were divided in to groups of twenty each. The experimental group underwent participation of judo specific complex training for a period of six weeks and control group were not given any training. All the subject were tested on selected criterion variables prior to and immediately after and six weeks of judo specific complex training, the study aimed at mainly to find out the effect of judo specific complex training on selected motor abilities of intercollegiate level judokas.

Administration of Training Program

For the convenience of the training session plan for judo specific complex training was categorized according to the type and nature of the exercises and judo skills, at the same time to make the training session comfortable, the scholar it classified in to three phases so that the subjects may get progressive developments and thereby to build confidence among them. The classification of the movement education program skills were done on the basis of the systematic training classification mentioned by Dr. Hardayal Singh. In

the phase training plan covers all the basic judo skills and the Phase II covers the intermediate level training and in Phase III was the advanced phase here the judokas would perform the applications of the judo skills after a set of complex exercises. The experimental group had to undergo judo specific complex training for a period of six weeks. The control group was not involved in judo specific complex training workout. The judo specific complex training included resistance exercises, plyometric, ladder, elastic band and various types of exercises for motor components followed by judo skills. The total duration of Judo Specific Complex training including warm up and cool down sessions was of 45 minutes. Intensity of the exercise increased in progressive manner.

Analysis of data and findings of the study

The influence of complex training on Agility, Muscular endurance, flexibility, Explosive strength, coordination, cardiovascular endurance were determined by statistically examine collected data by applying analysis of co-variance (ANCOVA) and the level of significance chosen was at 0.05 throughout the study to determine the significance difference.

Table 2: Analysis of covariance on Agility and Coordination of Experimental and Control groups

	Complex Training Group	Control Group	S O V	Sum of Squares	d.f.	Mean Squares	'F' ratio	Sig.
Pre test Mean SD	18.60	18.70	B	.112	1	.112	0.017	0.896
	1.62	3.20	W	244.85	38	6.44		
Post test Mean SD	17.63	19.09	B	21.36	1	21.36	10.98	0.002*
	1.48	1.30	W	73.86	38	1.94		
Adjusted Mean	17.64	19.09	B	20.93	1	20.93	11.15	0.002*
			W	69.46	37	1.87		

*Significant ($P < 0.05$)

The above ANACOVA table indicates that, the calculated F value of Agility and Coordination of Experimental and Control group were found to be 0.017 and 10.98 respectively. In the case of pre-test the significant value 0.896 is greater than the level of significance so there is no significance

difference between the whole pre-test samples but in the case of post-test the significant value 0.002 is less than the level of significance hence here was significance difference between the whole samples of post-test.

Table 3: Sheffe's post hoc test for the differences among paired means of Experimental and Control groups on Agility and Coordination

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
1	2	-1.447*	0.433	0.002	-2.325	-.569

*Significant ($P < 0.05$)

The above Sheffe's post hoc test table shows the difference among paired means of Experimental and Control group on

Agility and Coordination was found to be 0.002 significance.

Table 4: Analysis of covariance on Cardiovascular endurance of Experimental and Control groups

	Complex Training Group	Control Group	S O V	Sum of Squares	d. f.	Mean Squares	'F' ratio	Sig.
Pre test Mean SD	11.88	12.37	B	2.41	1	2.41	2.21	0.145
	1.07	1.016	W	41.47	38	1.09		
Post test Mean SD	11.30	12.35	B	11.07	1	11.07	12.69	0.001*
	.996	.866	W	33.15	38	.873		
Adjusted Mean	11.39	12.26	B	7.24	1	7.24	9.64	0.004*
			W	27.80	37	.751		

*Significant ($P < 0.05$)

The above ANACOVA table indicates that, the calculated F value of Cardiovascular endurance of Experimental and Control group were found to be 2.21 and 12.69 respectively. In the case of pre-test the significant value 0.145 is greater than the level of significance so there is no significance

difference between the whole pre-test samples but in the case of post-test the significant value 0.001 is less than the level of significance hence here was significance difference between the whole samples of post-test.

Table 5: Sheffe's post hoc test for the differences among paired means of Experimental and Control groups on Cardiovascular endurance

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
1	2	-.876*	0.282	0.004	-1.447	-.305

*Significant ($P < 0.05$)

The above Sheffe's post hoc test table shows the difference among paired means of Experimental and Control group on

Cardiovascular endurance was found to be 0.004 significance.

Table 6: Analysis of covariance on Explosive strength of Experimental and Control groups

	Complex Training Group	Control Group	S O V	Sum of Squares	d. f.	Mean Squares	'F' ratio	Sig.
Pre test Mean SD	22.28	21.02	B	15.87	1	15.87	2.67	0.110
	2.55	2.31	W	225.82	38	5.94		
Post test Mean SD	25.37	20.36	B	251.00	1	251.00	27.60	0.000*
	3.85	1.82	W	345.54	38	9.09		
Adjusted Mean	24.97	20.76	B	165.88	1	165.88	24.03	0.000*
			W	255.33	37	6.90		

*Significant ($P < 0.05$)

The above ANACOVA table indicates that, the calculated F value of Explosive strength of Experimental and Control

group were found to be 2.67 and 27.60 respectively. In the case of pre-test the significant value 0.110 is greater than the

level of significance so there is no significance difference between the whole pre-test samples but in the case of post-test the significant value 0.000 is less than the level of

significance hence here was significance difference between the whole samples of post-test.

Table 7: Sheffe’s post hoc test for the differences among paired means of Experimental and Control groups on Explosive strength

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
1	2	4.214*	0.859	0.000	2.472	5.955

*Significant (P<0.05)

The above Sheffe’s post hoc test table shows the difference among paired means of Experimental and Control group on

Explosive strength was found to be 0.000 significance.

Table 8: Analysis of covariance on Flexibility of Experimental and Control groups

	Complex Training Group	Control Group	S O V	Sum of Squares	d. f.	Mean Squares	‘F’ ratio	Sig.
Pre test Mean SD	20.75	21.81	B	11.34	1	11.34	0.479	0.493
	5.43	4.21	W	898.95	38	23.65		
Post test Mean SD	25.85	22.15	B	136.90	1	136.90	5.16	0.029*
	5.89	4.27	W	1007.10	38	26.50		
Adjusted Mean	26.35	21.64	B	219.82	1	219.82	43.80	0.000*
			W	185.69	37	5.01		

*Significant (P<0.05)

The above ANACOVA table indicates that, the calculated F value of Flexibility of Experimental and Control group were found to be 0.479 and 5.16 respectively. In the case of pre-test the significant value 0.493 is greater than the level of significance so there is no significance difference between the

whole pre-test samples but in the case of post-test the significant value 0.029 is less than the level of significance hence here was significance difference between the whole samples of post-test.

Table 9: Sheffe’s post hoc test for the differences among paired means of Experimental and Control groups on Flexibility

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
1	2	4.718*	0.713	0.000	3.274	6.162

*Significant (P<0.05)

The above Sheffe’s post hoc test table shows the difference among paired means of Experimental and Control group on

Flexibility was found to be 0.000 significance.

Table 10: Analysis of covariance on Muscular endurance of Experimental and Control groups

	Complex Training Group	Control Group	S O V	Sum of Squares	d. f.	Mean Squares	‘F’ ratio	Sig.
Pre test Mean SD	58.90	56.15	B	75.62	1	75.62	0.933	0.340
	6.61	5.22	W	3080.35	38	81.06		
Post test Mean SD	62.85	56.55	B	396.90	1	396.90	5.79	0.021*
	7.35	5.44	W	2601.50	38	68.46		
Adjusted Mean	61.62	57.77	B	145.16	1	145.16	31.68	0.000*
			W	169.49	37	4.58		

*Significant (P<0.05)

The above ANACOVA table indicates that, the calculated F value of Muscular endurance of Experimental and Control group were found to be 0.933 and 5.79 respectively. In the case of pre-test the significant value 0.340 is greater than the level of significance so there is no significance difference

between the whole pre-test samples but in the case of post-test the significant value 0.021 is less than the level of significance hence here was significance difference between the whole samples of post-test.

Table 11: Sheffe’s post hoc test for the differences among paired means of Experimental and Control groups on Muscular endurance

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
1	2	3.856*	.685	0.000	2.468	5.245

*Significant (P<0.05)

The above Sheffe’s post hoc test table shows the difference among paired means of Experimental and Control group on Muscular endurance was found to be 0.000 significance.

Discussion on hypothesis

On the basis of the findings of the study, In case of all the selected motor components Agility and Co-ordination,

Muscular Endurance, Flexibility, Explosive strength and Cardiovascular endurance had noticed a significant difference after six weeks judo specific complex training Program. There for the first hypothesis that stated there will be a significant improvement on selected motor components due to the judo specific complex training programme were accepted.

The finding revealed that there was a significant improvement on experimental group than control group on selected criterion variable Agility and Co-ordination, Muscular Endurance, Flexibility, Explosive strength and Cardiovascular endurance had noticed a significant difference after six weeks judo specific complex training Program. Hence the second hypothesis sated that there will be a significant difference between experimental and control group on selected motor components due to the specific complex training programme were accepted.

Conclusion

Under the condition and the limitation of the present investigation of the following conclusion were drawn. Judo Specific Complex Training Program improves the motor components along with the judo skills. This program may consist as a planned systemic activity based judo training for developing specific motor components.

References

1. Ajmer Sing *et al.* Essentials of Physical education, New Delhi: Kalyani Publishers, 2008.
2. Barry Johnson L, Jack Nelson K. Practical measurement for evaluation in Physical education, USA: Burgees publishing company, 1988.
3. Giay Dee Panny. A study of the effects Resistance running on speed, strength, power, muscular endurance and agility Dissertation Abstracts International, 1971.
4. Hardiayl Singh. Science of sports training D.V.S publication, New Delhi, 1997, 15.
5. Michael Miller G. The effects of a 6-week plyometric training program on Agility. Journal of Sports Science and Medicine. 2006, 459-465.
6. Tudor Bompa O. Periodization: Theory and Methodology of Training Human kinetics publication, US, Vth edition, 2009; 1:324-325.