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Effect of Specific Training and Functional Strength Training on Selected Corporeal and Psychomotor Variables among School Taekwondo Boys

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Abstract – The purpose of the study was to find out the effect of specific training and functional strength training on selected corporeal and psychomotor variables among school taekwondo boys. To achieve the purpose of the study, 45 school taekwondo boys were selected from various schools in Namakkal District, Tamilnadu. The age of the selected subjects were ranged from 14 to 16 years. The selected subjects for this study were randomly divided into three equal groups of 15 subjects each, Experimental GROUP-I specific training (STG), Experimental group-II Functional strength training (FSTG) and Control Group III (CG). The specific training and functional strength training was scheduled for 12 weeks prior and after the training for corporeal and psychomotor variables were put in-to statistical treatment using Analysis of Covariance (ANCOVA) to find out the significant mean differences. Scheffe s post hoc test was used to find out the paired mean differences. In all the cases the 0.05 level of confidence was fixed.

Keywords – Specific Training, Functional Strength Training, Corporeal, Psychomotor Variables and Taekwondo Boys.

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INTRODUCTION

Taekwondo was originally developed in Korea as exercises to get these muscles to work together martial art and was based on a defensive strategy. It is automatically. It is not always strength, but rather now a highly regarded contemporary sport practised by coordination that will yield effective and efficient people all over the world. For the purposes of movement, as the punch or kick of a martial arts athlete. Competition, Taekwondo can be described as a combat the use of functional strength training in younger athletes is sport consisting of sharp, strong angular moves and free- still controversial. The controversy focuses on three flowing circular movements in which an athlete uses bare areas: Are children capable of making significant strength hands and feet to repel an opponent. Since the successful gains and increases in muscle mass in response to use of kicking, both offensively and defensively, will resistive strength training? Do these gains in strength score the athlete points, it is the most important objective improves athletic performance or increase the resistance of in a Taekwondo competition.

Specific training

Sport specific training is simply fitness and performance training designed specifically for athletic performance enhancement. If the training is done in the correct way it can be very beneficial, if not, it can be detrimental.

Functional Training

Functional Training is useful need good strength, flexibility, balanced training, effective whether you are an athlete or recreational exerciser exercises, knee stability and conditioning to prevent the occurrence of injures and to improve further performance Success in many sports depends heavily upon the control the more skills. Furthermore, how to improve the athlete's explosive leg power and muscular strength. Functional strength training in younger athletes is sport consisting of sharp, strong angular moves and free- still controversial.

STATEMENT OF THE PROBLEM

The purpose of the present study is find out the effect of game specific training programme and functional strength training on selected corporeal and psychomotor variables among school taekwondo athletes

HYPOTHESES

The present study following hypotheses would formulated in the aspects

1. It was hypothesized that there would be significant improvement on selected corporeal and psychomotor variables due to effect of game specific training programme and functional strength training of school taekwondo boys from their baseline to post treatment.

2. It was hypothesized that there would be influence of effect of game specific training programme and functional strength training have may significant improvement the selected corporeal and psychomotor variables of taekwondo from their baseline to post treatment.

3. It was hypothesized that the experimental group namely effect of game specific training programme and functional strength training would be produce more significant improvement than the control group.

DELIMITATIONS

The study was delimited in the following aspects

1. To achieve the purpose of the study, forty five (n=45) school Takewondo boys were selected as subjects from Namakkal District.

2. The selected subject's age were ranged from 14 to 16 years.

3. The selected subjects (N=45) were classified into three equal groups of fifty each (n=15) used at random group design. Group-I specific training, Group-II functional strength training and Group III acted as control.

4. The study was delimited in the following dependent variables were such as flexibility, speed, reaction time and balance.

5. The training programme was delimited to weekly three days for a period of 12 weeks.

METHODOLOGY

Selection of Subjects

The purpose of the present study was to find out the effect of specific training and functional strength training on selected corporeal and psychomotor variables of taekwondo school boys. To achieve the purpose of the study, 45 school taekwondo boys were selected from various schools in Namakkal District, Tamilnadu. The age of the selected subjects were ranged from 14 to 16 years. The selected subjects for this study were randomly divided into three equal groups of 15 subjects each, Experimental GROUP-I specific training (STG), Experimental group-II Functional strength training (FSTG) and Control Group III (CG).

TABLE - 1

SELECTED VARIABLES AND TESTS

S. No.	Variables	Tests	Unit of Measurements
1	Speed	50 meters Dash	Seconds
2	Flexibility	Sit and Reach Test	Centimetres
3	Balance	Stork stand test	Seconds
4	Reaction Time	Reaction time ruler test	Seconds

TRAINING PROCEDURE

The procedure used for the Specific Training Group (STG), and Functional Strength Training Group (FSTG) is as follows. The total duration of STG and FSTG was 12 weeks. These twelve weeks STG and FSTG were segmented into three phases. The duration of training programme for each phase was four weeks. Thus the Phase – 1 was executed in first four weeks (1^{st}, 2^{nd}, 3^{rd} & 4^{th}), Phase – 2 was executed in the second four weeks (5^{th}, 6^{th}, 7^{th} & 8^{th}) and the Phase – 3 was executed in the third four weeks (9^{th}, 10^{th}, 11^{th} & 12^{th}). Specific training programme administered for subjects for three days a week for about 12 weeks. The duration of training for a day was 60 minutes. Of this session orientation 5 minutes, warm – up, 5 minutes , Specific stretching 10 minutes, Exercises 35 minutes and 5 minutes used for cool down.

STATISTICAL TECHNIQUE

The collected data from the three groups prior to and immediately after the experimental treatments on selected dependent variables were statistically analyzed by using the statistical technique of analysis of covariance (ANCOVA).Whenever the "F" ratio for adjusted post-test means was found to be significant, Scheffe's test was followed as a post hoc test to determine which of the paired means difference was significant. In all the cases 0.05

level of confidence was fixed as a level of confidence to test the hypotheses.

TABLE - 2

COMPUTATION OF ANALYSIS OF COVARIANCE OF MEANS OF SPECIFIC TRAINING PROGRAMME, FUNCTIONAL STRENGTH PROGRAMME AND CONTROL GROUPS ON CORPOREAL AND PSYCHOMOTOR VARIABLES

Variables	Test	Specific Training Group	Functional Strength Group	Control Group	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
SPEED	Pre-Test	11.10	11.11	11.12	BG	0.003	2	0.01	0.003
					WG	19.053	42	0.45	
	Post-Test	10.51	10.81	11.09	BG	2.466	2	1.23	3.26*
					WG	15.864	42	0.38	
	Adjusted Post-Test	10.52	10.81	11.08	BG	2.362	2	1.18	5.53*
					WG	3.101	41	0.08	
FLEXIBILITY	Pre-Test	23.27	23.27	23.26	BG	0.001	2	0.001	0.01
					WG	96.8	42	2.31	
	Post-Test	27.40	26.33	23.27	BG	138.13	2	69.07	32.28*
					WG	89.87	42	2.14	
	Adjusted Post-Test	27.40	26.33	23.26	BG	138.13	2	69.07	49.27*
					WG	53.87	41	1.31	
REACTION TIME	Pre-Test	0.28	0.28	0.28	BG	0.000	2	0.000	0.32
					WG	0.007	42	0.001	
	Post-Test	0.22	0.18	0.28	BG	0.076	2	0.038	32.11*
					WG	0.050	42	0.001	
	Adjusted Post-Test	0.21	0.18	0.28	BG	0.077	2	0.039	33.57*
					WG	0.047	41	0.001	
BALANCE	Pre-Test	0.29	0.29	0.28	BG	0.000	2	0.000	0.003
		20.73	20.67	20.73	WG	0.04	42	0.02	
					BG	325.2	2	7.74	27.68*
	Post-Test	26.27	30.00	20.67	WG	662.04	42	331.02	
	Adjusted Post-Test	26.25	30.03	20.65	BG	502.26	2	11.95	40.81*
					WG	668.24	41	334.12	

B.G. –Between Groups W.G. – Within Groups

*Significant at 0.05 level of confidence. (The table values required for significance at 0.05 level of confidence for 2 & 42 and 2 & 41 are 3.22 and 3.23 respectively).

Table 2 shows that the pre-test means in corporeal variables of the Specific Training Group, Functional Strength training Group and the control groups are 11.10, 11.11, 11.12, 23.27, 23.27 and 23.26 respectively, resulted in an "F' ratio of 0.5 & 0.01 which indicates statistically no significant difference between the pretest means at 0.003 level of confidence. The posttest means of corporeal variables of the Specific Training Group, Functional Strength Group and the control groups are 10.5, 10.81, 11.09, 27.40, 26.33and 23.27 respectively, resulted in an "F' ratio of 3.26 & 32.28 which indicates statistically significant difference between the posttest means at 0.05 level of confidence. The adjusted posttest means of corporeal variables of the Specific Training Group, Functional Strength training Group and the control groups are 16.65, 15.92, 11.08, 27.40, 26.33 and 23.26 respectively. The obtained F-ratio value was 5.53 & 49.27 which was higher than the table value 3.22 with df 2 and 41 required for significance at 0.05 level. It indicates that there was a significant difference among the adjusted post test means of corporeal variables of the Specific Training Group, Functional Strength training Group and the control groups.

Table 2 shows that the pre-test means in psychomotor variables of the Specific Training Group, Functional Strength training Group and the control groups are 0.28, 0.28, 0.28 0.29, 0.29 and 0.28 respectively, resulted in an "F' ratio of 0.32 & 0.003 which indicates statistically no significant difference between the pretest means at 0.003 level of confidence. The posttest means of psychomotor variables of the Specific Training Group, Functional Strength Group and the control groups are 0.22, 0.18, 0.28, 26.27, 30.00 and 20.67 respectively, resulted in an "F' ratio of 32.11 & 27.68 which indicates statistically significant difference between the posttest means at 0.05 level of confidence. The adjusted posttest means of psychomotor variables of the Specific Training Group, Functional Strength training Group and the control groups are 0.21, 0.18, 0.28, 26.25, 30.03 and 20.65 respectively. The obtained F-ratio value was 33.57 & 40.81 which was higher than the table value 3.22 with df 2 and 41 required for significance at 0.05 level. It indicates that there was a significant difference among the adjusted post test means of psychomotor variables of the Specific Training Group, Functional Strength training Group and the control groups.

TABLE 3

THE SCHEFFE'S TEST FOR THE DIFFERENCES BETWEEN PAIRED MEANS OF THE ADJUSTED POST-TEST ON CORPOREAL AND PSYCHOMOTOR VARIABLES

Variables	Adjusted Post-test means			Mean Difference	Confidence Interval
	Specific Training Group	Functional Strength Training Group	Control Group		
SPEED	10.52	10.81	---	0.29*	0.26
	10.52	---	11.08	0.56*	
	-----	10.81	11.08	0.27*	
FLEXIBILITY	27.40	26.33	---	1.07*	1.06
	27.40	---	23.26	4.14*	
	-----	26.33	23.026	3.30*	
REACTION TIME	0.21	0.18	---	0.03*	0.03
	0.21	---	0.28	0.07*	
	-----	0.18	0.28	0.10*	
BALANCE	26.25	30.03	---	3.78*	2.65
	26.25	---	20.65	5.60*	
	-----	30.03	20.65	9.38*	

* Significant at 0.05 level of confidence

Table 3 shows that the adjusted post-test mean difference in corporeal and psychomotor variables between, Specific Training Group, Functional Strength training Group and the control groups and between Specific Training Group, Functional Strength training and control groups are 0.29, 0.56, 0.27, 1.07, 4.14, 3.30, 0.03, 0.07, 0.10, 3.78, 5.60 and 9.38 respectively which were statistically significant at 0.05 level of confidence. It is concluded that there is a significant difference on

corporeal and psychomotor variables among the groups.

DISCUSSION ON HYPOTHESES

1. The first formulated hypothesized that there would be significant improvement on selected corporeal and psychomotor variables due to effect of specific training of school taekwondo boys from their baseline to post treatment. The findings of the study revealed that there were significant improvements on selected corporeal and psychomotor variables due to effect of specific training of school taekwondo boys from their baseline to post treatment. Hence, the first hypothesis was accepted on the above-said variables.

2. The second formulated hypothesized that there would be significant improvement on selected corporeal and psychomotor variables due to effect of functional strength training programme of school taekwondo boys from their baseline to post treatment. The findings of the study revealed that there were significant improvements on selected corporeal and psychomotor variables due to effect of functional strength training programme of school taekwondo boys from their baseline to post treatment. Hence, the second hypothesis was accepted on the above-said variables.

3. Third formulated hypothesized that there would be significant differences among experimental groups and control group. The findings of the study showed that the experimental group namely specific training and functional strength training would be produce more significant differences among experimental groups and control group on selected corporeal and psychomotor variables. Hence the third hypothesis was also accepted.

CONCLUSIONS

From the analysis of the data; the following conclusions were drawn:

1. The specific training group had shown significant improvement in all the selected corporeal and psychomotor variables after underwent the specific training for a period of twelve weeks.

2. The Functional training group had shown significant improvement in all the selected corporeal and psychomotor variables after underwent the functional strength training for a period of twelve weeks.

3. Specific training group shown better improvement than functional strength training group on speed, flexibility.

4. Functional strength training group shown better improvement than specific training on balance and reaction time

5. The experimental groups had shown more significant differences than the control group on all the variables

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