

EFFECT OF KALARI TRAINING ON PSYCHOMOTOR ABILITIES OF SCHOOL LEVEL GIRLS

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Abstract

The purpose of the study was to find out the effects of kalari training on psychomotor abilities of school level girls. To achieve the purpose of this study 50 school level girls as subject from rural area in around Coimbatore, Tamilnadu. The 50 subjects' age ranged from 13 to 15 years. They were divided into two group's namely experimental group and control group. Twenty five were experimental group and Twenty five were control group. The control group was not given any specific training and the experimental group underwent twelve weeks of kalari training for 5 days per week for 45 minute per day. The pre tests and post tests after twelve weeks of training conducted in all the selected psychomotor variables of school level girls. The collected data were analysed using t ratio to find out the significant improvement in the selected variables by experimental group. ANCOVA was applied to find out the significant difference between the groups. The statistical analysis showed that the school level girls of experimental group had significantly improved in all the selected psychomotor variables namely Finger Dexterity, reaction time and hand steadiness. There is no significant difference in the control group in all the selected psychomotor variables namely Finger Dexterity reaction time and hand steadiness.

Key words: Finger Dexterity, Reaction Time, Hand steadiness, Kalaripayattu.

INTRODUCTION

Kalari training is traditionally carried out in an enclosure which is 21' width and 42' length. Such training grounds are constructed according to Vastushastra and are considered sacred. The entrance faces the East and the place of deity is to the South West. The deity place has its seven steps symbolizing Strength, Patience, Commanding power, Posture, Training, Expression and Sound. Students attain the power to control the internal energy, breath, mental power and the power to focus by following the rituals and reciting mantras. Students are instructed not to sleep during the day time and are advised to sleep well at night. It is important that the students understand that Kalari is not only a means of self-defence but also a means to becoming determined and self-disciplined. Kalari training can be started as early as seven years of age. Beginners start with training in balance and body flexibility and then move on to advanced lessons. Kalari requires speed, agility, and co-ordination of body parts. The training to become a Master includes training in Ayurveda and knowledge of human anatomy which helps in understanding vital nervous points.

Methodology

The purpose of the study is to find out the effects of kalari training on psychomotor abilities of school level girls. The experimental group underwent kalari training for twelve weeks 5 days per week for 45 minute per day. The control group was not given any specific training programme. The experimental design used is pre test and post test randomized group design. Psychomotor ability was assessed by using Finger dexterity board for Finger dexterity, Reaction timer for reaction time and hand Steadiness tester for arm steadiness.

Selection of Subjects

To achieve this purpose a total number of 50 school level girls in the age group of 13 – 15 years were randomly selected from rural area in and around Coimbatore

District, Tamilnadu. Among the selected subjects, 25 were experimental group and 25 were control group.

Selection of variables

The following variables were selected and the data were collected using the appropriate tools.

S.NO	VARIABLES	TEST
PSYCHOMOTOR VARIABLES		
1	Finger Dexterity	O' corners' Finger Dexterity Test
2	Reaction time	Visual Reaction timer
3	Hand steadiness	Whipple's Hand Steadiness Test

Experimental Design

The study was formulated using random group design. Fifty subjects were randomly selected from rural area in around Coimbatore. Pre test was conducted in the selected psychomotor variables. After a period of twelve weeks of specific training, post-test was conducted using the following tests.

- Finger dexterity
- Reaction time
- Hand staidness

Training

The training in the recreational adapted gadgets and adapted Physical activities were given to the experimental groups for a period of 12 weeks as follows:

Training period: 12 weeks

Training sessions: 5 days per week

Duration of one session: 45 minutes

Post tests were conducted for both the groups in all the selected variables as in the pre tests.

Statistical technique

The collected data were analysed using t ratio to find out the significant improvement in the selected psychomotor variables by both the groups. ANCOVA was applied to find out the significant difference between the groups. It was considered as the most appropriate statistical technique for the study.

RESULTS AND DISCUSSION OF 't' RATIO

The results of the significant difference between the pre tests and post tests were analysed using t ratio and the results are presented.

TABLE- I

COMPUTATION OF 't'-RATIO BETWEEN PRE AND POSTTESTS ON PSYCHOMOTOR VARIABLES OF EXPERIMENTAL GROUPS GIRLS

Variables	Pre test mean \pm SD	Post test mean \pm SD	M. D	SEM	't'-ratio
Finger Dexterity	11.81 \pm 2.86	13.56 \pm 2.80	1.76	0.1326	13.27*
Reaction Time	0.62 \pm 0.33	0.34 \pm 0.06	0.28	0.06	4.66*
Hand Steadiness	6.04 \pm 1.14	4.40 \pm 1.04	1.44	0.13	11.08*

* *significant at 0.05 level*

Table I reveals that the obtained 't' ratios for psychomotor ability are: 13.26 (Finger Dexterity), 4.66 (Reaction Time) and 11.08 (Hand Steadiness), The obtained 't' ratios on all the variables are greater than the table value of 2.06 for degrees of freedom 24. It is observed that the mean gains and losses made from pre and post-test are statistically significant. A twelve weeks practice of kalari training produced significant improvement from the performance of baseline. The same is presented in figure-1

FIGURE - 1

BAR DIAGRAM SHOWING PRE AND POST TEST MEANS OF EXPERIMENTAL AND CONTROL GROUP GIRLS ON PSYCHOMOTOR VARIABLES

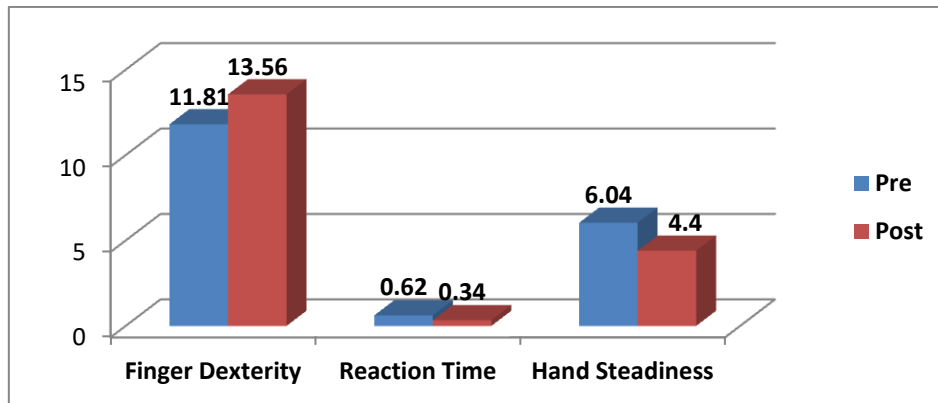


TABLE- II

COMPUTATION OF 't'-RATIO BETWEEN PRE AND POSTTESTS ON PSYCHOMOTOR VARIABLES OF CONTROL GROUPS GIRLS

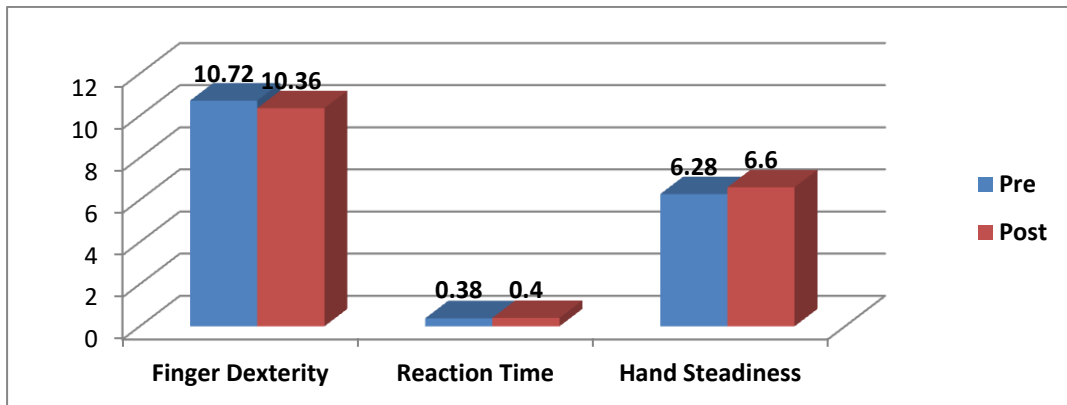
Variables	Pre mean ±S.D	Post mean ±S.D	Mean. Diff	Std. Error	't' ratio
Finger Dexterity	10.72 ±3.22	10.36 ±2.97	0.36	0.215	1.67
Reaction Time	0.38 ±0.05	0.40 ±0.12	0.02	0.01	1.34
Hand Steadiness	6.28 ±1.34	6.60 ±0.82	0.22	.18	1.78

* significant at 0.05 level

Table II indicates that the obtained 't' ratios for psychomotor ability are: 1.67(Finger Dexterity), 1.34 (Reaction Time) and 1.78 (Hand Steadiness). The obtained 't' ratios on all the variables are lesser than the table value of 2.06 for degrees of freedom 24. It is observed that the mean gains and losses made from pre and post-test are statistically insignificant. The same is presented in figure-2

FIGURE - 2

BAR DIAGRAM SHOWING PRE AND POST TEST MEANS OF CONTROL GROUP GIRLS ON PSYCHOMOTOR VARIABLES



RESULTS AND DISCUSSION OF ANCOVA

The results of the significant difference between the adjusted post means were analysed using of ANCOVA and the results are presented.

TABLE- III

ANALYSIS OF ANCOVA FOR THE ADJUSTED POST TEST MEAN OF EXPERIMENTAL GROUP AND CONTROL GROUP GIRLS ON PSYCHOMOTOR VARIABLES

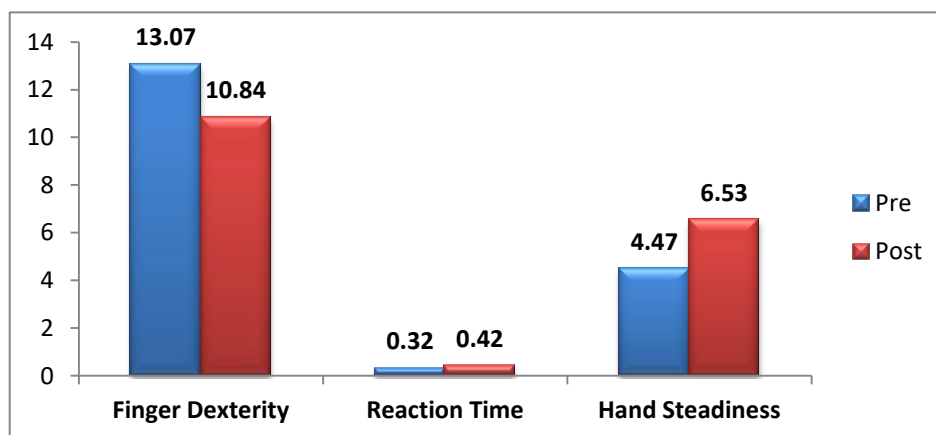
S.NO	VARIABLES	Adjusted post test mean		Source of variance	Sum of squares	Mean square	df	F ratio
		Exp. Girls	Cont Girls					
1	Finger Dexterity	13.07	10.84	Between	59.72	59.72	1.00	81.57*
				Within	34.41	0.73	47.00	
2	Reaction time	0.32	0.42	Between	0.11	1.00	0.11	13.47*
				Within	0.39	47.00	0.008	
3	Hand Steadiness	4.47	6.53	Between	52.49	1.00	52.49	149.11*
				Within	16.54	47.00	0.35	

*Significant at 0.05 level of confidence

Table – III indicates that the Obtained F ratios for the adjusted post test means of Finger Dexterity, Reaction time and Hand Steadiness are found to be greater than the required table value of 4.06 at 0.05 level of significances for 1, 48 degrees of freedom. The results of this study are statistically significant and explained their effects positively. Thus the results obtained proved that the training on Finger dexterity, Reaction time and Hand produced significant improvement among the experimental group of girls. The same is presented in figure-3.

FIGURE -3

BAR DIAGRAM SHOWING ADJUSTED POST TEST MEANS SCORES ON PSYCHOMOTOR VARIABLES OF GIRLS EXPERIMENTAL GROUP AND CONTROL GROUP



DISCUSSION ON FINDINGS OF FINGER DEXTERITY

- The result of the study had revealed that there is significant difference in finger dexterity of the experimental group of girls from pre test to post test.
- The result of the study had revealed that there is no significant difference in finger dexterity of the control group of girls from pre test to post test.

- The results were is with the results of the study conducted in which physical activities had improved finger dexterityof children with mental retardation (**Horvat and Franklin 2001**).

The results also reveal that the experimental group had significantly improved finger dexterity better then the control group

DISCUSSION ON FINDINGS OF REACTION TIME

- The result of the study had revealed that there is significant difference in reaction time of the experimental group of girls from pre test to post test.
- The result of the study had revealed that there is no significant difference in reaction time of the control group of girls from pre test to post test.
- The result of the research regarding reaction time was also supported by the findings of **Yildirim et al. 2010**.

The results also reveal that the experimental group had significantly improved reaction time better then the control group

DISCUSSION ON FINDINGS OF ARM HAND STEADINESS

- The result of the study had revealed that there is significant difference in arm hand steadiness of the experimental group of girls from pre test to post test.
- The result of the study had revealed that there is no significant difference in arm hand steadiness of the control group of girls from pre test to post test.
- The result of the research regarding arm hand steadiness was also supported by the findings of **Alagesan, 2016**.

The results also reveal that the experimental group had significantly improved hand steadiness better than the control group.

CONCLUSIONS

There is a significant improvement on finger dexterity between pre and post – tests of the experimental group as a result of 12 weeks of kalaritraining .

There is a significant improvement on Reaction time between pre and post – tests of the experimental group as a result of 12 weeks of kalari training.

There is a significant improvement on arm hand steadiness between pre and post – tests of the experimental group as a result of 12 weeks of kalari training.

The results also reveal that the experimental group had significantly improved in finger dexterity, reaction time and hand steadiness better than the control group.

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