Effectiveness Of Traditional Martial Art Silambam Combined with Indigenous Activities on Motor Fitness In School Children

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Abstract—**Traditional fitness is stimulating their growth, physically as well as intellectually for children. In order to assess the real facts, the investigator made an attempt to examine the impact of silambam practice after indigenous activities on physical fitness variables of 30 school boys were selected from marudhamalai devasthanam Higher Secondary School, Coimbatore. Their aged of the subject ranged from 11 to 15 years. Selected subjects were randomly assigned to two equal groups (n=15), group I underwent silambam practice after indigenous exercises (SPAIA) and group II acted as control group (CG). The silambam practice after indigenous activities was given to the experimental group for 3days per week for the period of 8 weeks. The control group did not practice in any training except their routine work. The following variables were measured with standard test items: agility, reaction time and grip strength. Pre and post test was conducted on separate days with warm up. The agility measured by 4x10meter shuttle run in seconds, reaction time measured by penny cup test in seconds, grip strength measured by Hand grip dynamometer test in seconds. To find out the individual effect 't' test was applied at 0.05level of significant. Further, the findings confirmed the silambam practice after indigenous activities is suitable protocol to bring out the desirable changes over the agility, reaction time, grip strength of school boys.**

Index Terms—**Agility, Reaction time, Grip strength, Silambam practice after Indigenous activities**

INTRODUCTION

Silambam: A Moving Meditation Indigenous games: Recreational Activities Silambattam (Silambam)
Silambam is an ancient art of staff fencing. This was patronized by the Chola, Chera and Pandiya Kings, who ruled the country of Tamilnadu and other parts of the sub-continent. According to research this form of martial arts has been in existence for over 5000 years, even before the arrival of the Indo-Aryans. Silambam is said to be the oldest in the world since the use of the stick was the first weapon used in pre-historic times. It received royal patronage from all the Tamil Kings beginning from the Sangam era. The soldiers of the King Veerapandia Kattbomman relied mainly on their prowess in Silambam in their warfare with the British Army. The Silappadikkaram of Tamil literature, dating back to 2nd century A.D., refers to the sale of Silamabam staves, swords, pearls and armor to foreign traders. The ancient trading centre at Madurai city, renowned globally, was said to be thronged by Romans, Greeks, and Egyptians among others who had regular sea trade with the ancient Dravidian kings. The silambam staff was one of the martial art weapons, which was in great demand with the visitors. Some records trace the origin of this art to the Tamil deity Murugan. Silambam is believed to have traveled from Tamil Nadu to Malaysia, where it is now a popular recreational sport and also a mode of self - defense. Four different types of staves are used. One produces a swishing sound, another involves lighted balls of cloth at one end of the staves, called 'torch silambam', a third is quite short in length but powerful, and finally

a non - elastic staff that produces a clattering sound. (Alex ,2006)

Indigenous games

Indigenous games are recreational activities that originated from a particular cultural group, community or people. These games are different from your mainstream sports, which are regulated by international federations, and have fixed rules. They preserve age- old traditions and stories of the people group. Indigenous games are a very important part of a people's heritage and culture. They preserve age- old traditions and stories of the people group. Indigenous games have an origin, which is the story behind the invention of the particular activity or game. One of the first activities lost or suspended when a society comes under threat are the games and pastimes. As these are most commonly played for fun and enjoyment, they are largely curtailed when there are safety concerns for the survival of a people. Traditional games provide the opportunity to learn about, appreciate and experience aspects of Aboriginal and Torres Strait Islander culture. They also provide essential training in social interaction. (Ken Edwards 2017).

Characteristics of training groups (N=30) at pre training mean

Variable	SPAIAG	CG
Age (Y)	14	13
Height (cm)	145.5	142.8
Weight (kg)	53	50

II. MATERIALS AND METHODS

2.1Participants

In order to address the hypothesis presented herein, we selected 30 school boys in Coimbatore District. Their age ranged from 11 to 15 years. The subjects were randomly assigned in to two equal groups namely, silambam practice after Indigenous Activities group (SPAIA) (n=15) and Control group (CG) (n=15). The respective training was given to the experimental group the 3 days per weeks (alternate days) for the training period of eight weeks. The control group was not given any sort of training except their routine.

2.2 Research Design

The evaluated physical parameters where Agility were assessed by Shuttle run the unit of measurement was in Seconds, Reaction time was assessed by penny cup test and the unit of measurement was in seconds, Grip Strength were measured by Handgrip Dynamometer Test the unit of measurement was in Seconds. The parameters were measured at baseline and after 8 weeks of silambam practice after Indigenous Activities were examined. The intensity was increased once in two weeks based on the variation of the exercises.

2.3 Training Protocol

The training programme was lasted for 45 minutes for session in a day, 3 days in a week for a period of 8 weeks duration. These 45 minutes included warm up for 5 minutes, and 5 minutes warm down remaining 35 minutes allotted for training programme. The equivalent in silambam practice after Indigenous activities is the length of the time each action in total 3 day per weeks (Monday, Wednesday and Friday).

2.4 Statistical Analysis

The collected data on agility, reaction time, and grip strength due to the effect of silambam practice after indigenous activities was statically analyzed with “t” test to find out the significant improvement between pre& posttest if any. In all case the criterion for spastically significance was set at 0.05level of confidence ($P<0.05$)

III. RESULTS

All subjects completed the study according to the aforementioned methodology. The 15 training subjects averaged 96% attendance and no injuries occurred from the training program. There were no significant differences in height or weight between groups either before or after the training and detraining periods.

Table – I Computation Of 'T' Ratio on Motor Fitness Variables of School Boys on Experimental Group (Scores in numbers)

Group	Test		Mean	Std. Deviation	T ratio
Experimental Group	Agility	Pre test	12.26	1.18	10.48*
		Post test	11.07	1.23	
	Reaction time	Pre test	7.26	1.53	4.32*
		Post test	5.60	1.08	
	Grip Strength	Pre test	50.13	1.09	5.28*
		Post test	52.33	0.98	

*Significant level 0.05 level (degree of freedom 2.14, 1 and 14)

Table I reveals the computation of mean, standard deviation and't' ratio on selected variables namely Agility, Reaction time and Grip strength of experimental group. The obtained't' ratio on Agility, Reaction Time and Grip strength was 10.48, 4.32, and 5.28 respectively. The required table value was 2.14 for the degrees of freedom 1 and 14 at the 0.05 level of significance.

Since the obtained't' values were greater than the table value it was found to be statistically significant.

Figure- I Bar Diagram Showing the Mean Value on Selected Motor Fitness Variables School Boys on Experimental Group

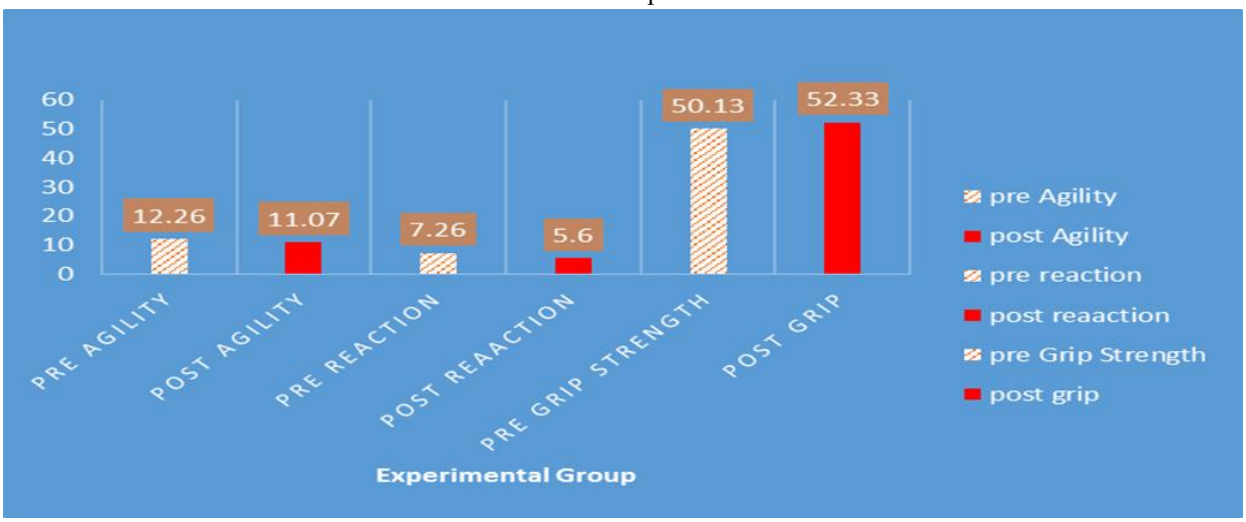
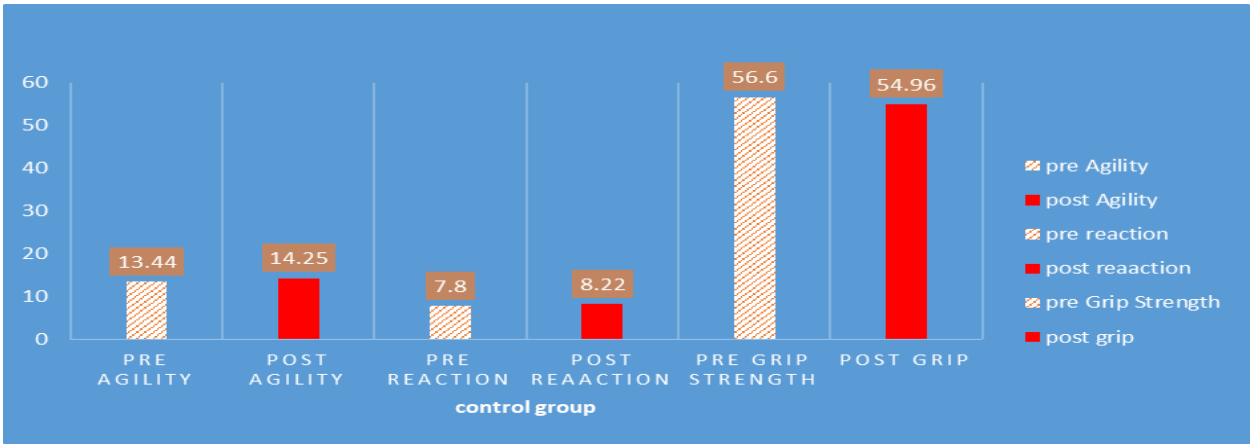


Table – II Computation Of 'T' Ratio on Motor Fitness Variables of School Boys on Control Group (Scores in numbers)

Group	Test		Mean	Std. Deviation	T ratio
Control Group	Agility	Pre test	13.44	1.84	1.57
		Post test	14.25	1.55	
	Reaction time	Pre test	7.80	1.32	1.23
		Post test	8.22	1.03	
	Grip Strength	Pre test	56.60	0.86	0.53
		Post test	54.96	0.77	

Further the computation of mean, standard deviation and't' ratio on selected variables parameters, namely Agility Reaction time and Grip strength of control group. The obtained't' ratio on Agility Reaction time and Grip strength was 1.57, 1.23 and 0.53 respectively. The required table value was 2.14 for the degrees of freedom 1 and 14 at the 0.05 level of significance. Since the obtained't' values were lesser than the table value it was found to be statistically not significant.

Figure- II Bar Diagram Showing The Mean Value on Selected Motor Fitnessvariables School Boys On Control Group



IV. DISCUSSION AND FINDINGS

Silambam had become such an integral part of my life. It is good option for the people who want a fit, toned body without bulging muscles. If you want to look good without worrying about over bulking, try picking one of these. I have been into various forms of fitness from tennis, cycling and trekking to Bharatanatyam and gym training. Ever since I started Silambam, I realized that it is a very effective urban workout. The way the activity unfolds, it takes care of everything: muscle strengthening, agility, flexibility, core strengthening, footwork, balance and breathing. You don't need a special area, court or equipment to train. Once you pick up the basics, you can easily practice in your backyard or on the terrace, even without the staff. Performance in silambam is determined by the relationship of agility, balance, hand-eye coordination, muscular strength endurance. The sports activities also assured that the importance of silambam after indigenous activities increase the muscles' ability to contract faster and move explosively through joint range. Results also indicate the silambam after indigenous activities are suitable for developing agility and skill as most exercises and performed explosively without decreasing velocity and elongated concentration is turned into shortness concentration with maximum movement. Syedali et al., (2017) for 16weeks there was significant improvement on motor fitness variables of silambam and kalari training of school boys. Toriola, A. L. et al., (2015). Effects of a 12-Week Physical Education Intervention Programme on physical and motor fitness of Grade 7 learners in Potchefstroom, South Africa. The effect of an enhanced quality Physical Education Programme on physical activity and fitness among Grade 7-learners. Jayalakshmi, P et al., (2017) Effect of Sedikuchi silambam practice on selected Biomotor variables among college girls

The reaction time also contributes to the overall duration of specific movement tasks. It is possible to say that the reaction time is very important in Silambam because a faster reaction can reduce the total movement time. In Silambam, unlike other sports, reaction time and muscle coordination level during movement play an important role in the evaluation of performance and physical strength (Iermakov, Podrigalo, & Jagiełło, 2016). Many researchers agree that the reaction time in silambam plays an important role in overall sports performance compared to other martial sports (Borysiuk, 2008; Gracz & Tomczak, 2008; Harmenberg, Ceci, Barvestad, Hjerpe, & Nyström, 1991). Comparing the reaction times of karate athletes and fencers, it was found that silambam showed shorter reaction times (Colin, 2008). Rinke Tiwari (2015). "Reaction ability test for female Kho-Kho players"

The stick is subjected to significant dynamic effects. Stick deflection is due to high rotational, translation and acceleration of wrist. Wrist movements play an important role in the transfer of momentum to the silambam. Keeping the role of wrist in the performance of silambam wrist flexion, extension, ulna radial deviation, carpal metal carpal and phalanges were taken as dependent variables for this present investigation. The silambam after indigenous

activities significantly enhanced the grip strength of wrist flexion, extension, ulna deviation, radial deviation, carpal, metacarpal, phalanges of school boys over respectively by findings a significant difference a comparison of pretest to post- treatment scores. From the data it is noted that players gradually improved their results over grip strength than silambam after indigenous activities. (Jayalakshmi, P et al., (2017))

The result from this study is very encouraging and it demonstrates the benefits of silambam after indigenous activities. The school boys are not only using indigenous activities to improve their mobility but also to improve the performance. Besides, the results support that improvement in mobility can occur 8 weeks of silambam after indigenous activities.

V. CONCLUSIONS

From the results of the study and discussion the following conclusions were drawn. Findings from the current study suggest that school boys who are more competent in Silambam after indigenous activities spend more time engaged in physical, in particular during time periods of the day that represent key physical activity opportunities for school boys. Bodily competency appears to be a better predictor of children's Silambam after indigenous activities during school-based physical activity opportunities than breathing competency. This suggests that improving movement skill competency, particularly physical variables are agility, reaction time and grip strength among children is a potential avenue for promoting children's Silambam after indigenous activities throughout the day. Findings from the current study substantially contribute to the understanding of silambam practice after indigenous activities in children and will assist in evidence-based intervention design to increase performance.

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