

The Effect of Suryanamaskara on Muscular Strength, Endurance and Flexibility of Age Groups 11 to 14 Years School Going Boys: A Study

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ABSTRACT

In this study researcher described flexibility which is one of the important component of physical fitness. The purpose of the study was to study the effect of Suryanamaskara on flexibility, Muscular Strength and Endurance of age groups 11 year to 14 year (5th to 8th std.) school going boys. With the help of the simple random sampling technique researcher selected 40 boys from Our Lady of Grace High School, Bicholim, North Goa. Each group consisted of 10 students. The researcher used the single group, pretest-posttest design and conducted 8 weeks Suryanamaskara, daily 45 min. For the collection of data, Flexibility was measured by standard physical fitness test Sit and Reach and the arm and shoulder muscle Muscular Strength and Endurance measured through one min Push-ups and evaluated the performance between pre test and post test. To determine the effect of Suryanamaskara Paired Sample 't' test was used. On the basis of findings of the study, there was a significant effect of Suryanamaskara on Flexibility, Muscular Strength and Endurance and improvement in the performance of post test on each age group of boys.

Key Words: Physical Fitness, Suryanamaskara, Flexibility, Muscular Strength and Endurance of school going boys.

INTRODUCTION

Suryanamaskara is a series of twelve physical postures. Suryanamaskara on Sun Salutation is common sequence of Hathya Yogasana. It's origin lie in a worship of Surya, the Hindu solar deity. The sequence of movement and poses can be practiced on varying levels of awareness, ranging from that of physical exercise in various styles.

The physical base of the practice links together asana in a dynamically performed series. The series give such a profound stretch to the body that it is considered to be a complete yoga practice by itself. The purpose of the study was to determine the effect of 8 weeks,

Suryanamaskara practice on Muscular Strength, Endurance and Flexibility of age groups 1 to 14 years school going boys.
Sample

The investigation was carried out at Our Lady of Grace High School, Bicholim, District North Goa, state Goa for the 5th to 8th standard high school boys (n=40) who were randomly divided into four equal groups, viz. age groups 11 years, 12 years, 13 years and 14 years. Each group consisted of 10 students. For the selection of sample simple random sampling technique was used.

METHODOLOGY

The objective of this study was to study the effect of Suryanamaskara on Muscular s Strength, Endurance and Flexibility variable of the age group between 11, 12, 13 and 14 years school going boys. For this purpose experimental method was

employed. For experiment, research used the single group, pretest - posttest design. The experimental has been planned in three phases:

- Phase 1: Pre test
- Phase 2: Treatment (Physical activity program)
- Phase 3: Post test

The procedure of the Experimental Study:

These selected subjects of experimental group representing schools population were undergoing the training of respective Suryanamaskara 45 minutes/day except Sundays and Holidays of the total period of eight weeks. Every day started by warm up and finish by 5 minutes rest period of lying on others back in Shavasana. This design provided some improvement over the first, for the effects of the treatment are judged by the different between the pretest and the post test scores. The test item was conducted as the standard physical battery and the procedures described in the AAHPERED health related physical test. The sit andreach test was administered to asses Flexibility of hamstring, hip, and lower back and the push up test was administered to asses Muscular Strength and Endurance

Analysis of data

To determine the performance between pretest and posttest following procedures were considered.

- *Descriptive statistics of physical fitness variables
- *Graphical structure of Pretest and Posttest Mean scores
- *Statistical process to determine the significant difference Pre and Post test.

Table 1: Descriptive Statistics Analysis of Variable Sit and Reach (n=40)

Age group	Pre Test			Post Test		
	Mean	Std. Deviation	S.E.M	Mean	Std. Deviation	S.E.M
11 YEAR	2.15	1.73	0.54	3.6	1.86	0.59
12 YEAR	2.05	1.84	0.58	3.85	2.23	0.707
13 YEAR	2.3	1.82	0.57	4.5	2.48	0.78
14 YEAR	2.05	1.99	0.63	3.75	2.15	0.68

S.D.- Standard Deviation S.E.M- Standard Error of Mean
M.D-Mean difference

Table 2: Age Group wise Difference between Pre and Post test of sit and Reach

Age group	Paired Differences			Df	Sig. (2-tailed)	T
	M.D	S.D	S.E.M			
11 years	1.45	0.831	0.263	9	0.001	5.51
12 years	1.8	1.549	0.489	9	0.001	3.67
13 years	2.2	0.714	0.226	9	0.001	9.73
14 years	1.7	0.48	0.15	9	0.001	11.12

Table 3: Descriptive Statistics Analysis of Variable Push-up test (N=40)

Age group	Pre Test			Post Test		
	Mean	Std. Deviation	S.E.M	Mean	Std. Deviation	S.E.M
11 years	11.2	4.36	1.38	17.8	4.04	1.28
12 years	8.7	2.75	0.86	16.4	2.91	0.92
13 years	8.5	2.91	0.92	16.8	3.85	1.21
14 years	11.7	1.94	0.61	18.5	3.37	1.06

Table 4: Age Group wise Difference between Pre and Post Test in Push-ups

Age group	Paired Difference			Df	Sig. (2 tailed)	T
	M.D	S.D	S.E.M			
11 years	6.6	2.988	0.945	9	0.001	6.98
12 years	7.7	3.4	1.075	9	0.001	7.16
13 years	8.3	2.75	0.869	9	0.001	9.54
14 years	6.8	0.71	0.71	9	0.001	9.55

Findings

Analysis of Independent sample t test for variables sit and Reach, As presdres,eein table 2, revealed the following finding

*The paired difference in pre and post test of sit and reach in age groups 11 years,12 year,13 years,14 years arerespectively [PD=1.45,1.8,2.2 and 1 respectively found statistically significant [$5.51 > 0.05$, $3.67 > 0.05$, $9.73 > 0.05$ and $11.12 > 0.05$]. As seen in table 2,the t value for Sit and Reach [Flexibility] of all 11 years,12 years,13 years,14 years age groups were statistically significant at 0.05

* As shown in table 1t value for sit and Reach [Flexibility] of all 11 yrs, 12 yrs, 13 yrs and 14 yrs, age groups are statistically significant difference between Pre and Post groups.

*The paired difference in pre and Posttest of push-ups in age groups 11 years, 12 years, 13 years and 14 years are PD=6.6, 7.7, 8.3 and 6.8 respectively found statistically significant at ($6.98 > 0.05$, $7.16 > 0.05$, $9.54 > 0.05$ and $9.55 > 0.05$). As seen in the table 3, the t value for Push-ups (Flexibility) of all 11 years, 12 years, 13 years, 14 years age groups were statistically significant at 0.05.

*In table 4 the t value for push-ups [Muscular strength and endurance] of all 11yrs, 12 yrs,13yrs and 14yrs, age groups statistically significant difference between pre and post groups

CONCLUSION

***It is interpreted that the performance of posttest in 11 years,12 years,13 years,14 years, age groups boys the variables Flexibility and muscular endurance and strength found improved than pretest performance.**

*This indicates that the effect of Suryanamaskara improved Flexibility of hamstring, hip, lower lower back and endurance and strength of arms and shoulders of boys.

*There existsa statistically significant effect of Suryanamaskara on flexibility and strength and endurance variables of each age group i.e. 11 years,12 years,13 years and 14 years school boys of north Goa district

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