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EFFECT OF SURYA NAMASKAR (VINYASA) ON CARDIOVASCULAR ENDURANCE FLEXIBILITY ABDOMINAL MUSCLE STRENGTH AND ENDURANCE

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Abstract: The aim of the study is to find out the effect of Suryanamaskar (Vinyasa) on the cardiovascular endurance flexibility abdominal muscle strength and endurance. Significance of the study are the study would show the cardiovascular endurance of college students. The study was delimitated to the 20 college male college students from Amravati city by using simple random sampling method, age between 18 to 21 years. The variables was delimited to cardiovascular endurance, flexibility, abdominal muscle strength and endurance only. On the basis of pre-test of Hardward Test selected students was divided into two homogeneous groups one is control and experimental group. For experimental group six weeks Suryanamaskar Type-B was given. To find out the effect of Suryanamaskar Type-B 't' test was used. Findings of the study are no significant difference in pre-test and post-test of control group, But significant mean difference found between pre-test and post-test of Experimental group and also in post-test mean difference between Control and Experimental groups. six weeks Suryanamaskar Type-B shown significant improvement in cardiovascular endurance, flexibility, abdominal muscle strength and endurance.

Keywords **–** Surya Namaskar (Vinyasa), Cardiovascular Endurance Flexibility Abdominal Muscle Strength and Endurance.

I. INTRODUCTION

Surya namaskar type B also known as Vinayasa Surya Namaskar Is a variation of traditional Surya Namaskar son salutation sequence unlike the standard Surya Namaskar which consists of 12 specific yoga poses performed in a fixed sequence Surya Namaskar Type B incorporates different postures and movements often character drives by a continuous and flowing sequence. The specific posture and sequence in Surya Namaskar Type B can vary depending on the yoga teacher or school of yoga its typically designed to be more dynamic and challenging for the traditional Surya Namaskar Type A some variation may include additional poses transition or variation of traditional poses to enhance the physical and cardiovascular benefits. Vinyasa of Surya Namaskar like other forms of Surya Namaskar is also used to build strength, flexibility and mindfulness it can be invigorating and energetic practice that combines yoga posture with synchronized breath creating a moving meditation.

The purpose of the study is to find out the effect of Suryanamaskar (Vinyasa) on the cardiovascular endurance flexibility abdominal muscle strength and endurance. It is that there would be significant effect of Suryanamaskar (Vinyasa) on the cardiovascular endurance, flexibility abdominal muscle strength and endurance of college students. The delimitations of the study are delimited to the 20 male college students selected from Amravati city. The age of the students was ranged between 18 to 21 years. The variables of the study was delimited to cardiovascular endurance, flexibility, abdominal muscle strength and endurance of the college students.

2. METHODOLOGY:

20 college students were selected as subjects from Amravati city. The age of the subjects ranged between 18 to 21 years. More than 30 students were selected for sampling. After Hardward Step Test 20 students were selected by applying Simple Random Sampling method for the selection. The 20 college students were selected from Amravati city. On the basis of pre-test of Hardward Test selected students was divided into two homogeneous groups one is control group (10 students) and other is experimental group (10 students). For the control group there is no training was given and for experimental group six weeks Suryanamaskar Type-B was given. After six weeks again post test was conducted and data was collected from control and experimental group on cardio-vascular endurance, flexibility and abdominal muscle and endurance.

3. ANALYSIS AND INTERPRETATION OF DATA

To find out the effect of Suryanamaskar Type B on the cardiovascular endurance, flexibility, abdominal muscle strength and endurance, The 't' test was used. To test the hypothesis the level of significance was set at 0.05.

Table-1

Summary of Mean, Standard Deviation and t-ratio for the Data between the Means of Pre and Post-tests of Control Group

	Test	Mean	S.D.	M.D.	S.E.	t-ratio
Hardward Step Test	Pre	65.155	4.580	0.696	1.484	0.469@
	Post	64.459	3.473			
Sit & Reach Test	Pre	15.550	1.452	0.010	0.503	0.020@
	Post	15.560	1.301			
Partial Crul-Up Test	Pre	10.100	1.197	0.100	0.426	0.235@
	Post	11.200	1.135			

@ Not significant at 0.05 level Tabulated $t_{0.05(9)} = 2.262$

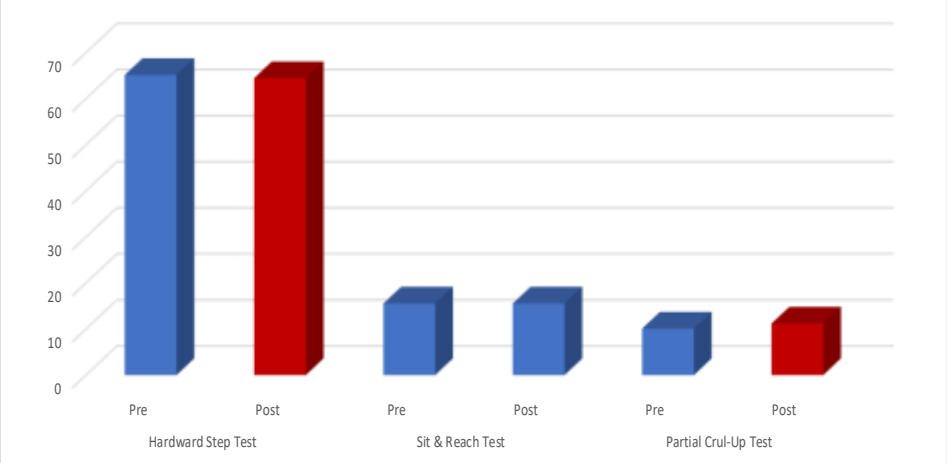

Figure 1 : Showing Mean Difference for the Data Between the Means of Pre and Post-tests of Control Group

Table-2

Summary of Mean, Standard Deviation and t-ratio for the Data Between the Means of Pre and Post-tests of Experimental Group

	Test	Mean	S.D.	M.D.	S.E.	t-ratio
Hardward Step Test	Pre	65.142	3.559	3.561	1.254	2.840*
	Post	68.703	3.304			
Sit & Reach Test	Pre	15.630	1.574	1.280	0.541	2.367*
	Post	16.910	1.382			
Partial Crul-Up Test	Pre	10.200	1.476	1.900	0.561	3.386*
	Post	12.100	1.595			

* Significant at 0.05 level Tabulated $t_{0.05(9)} = 2.262$

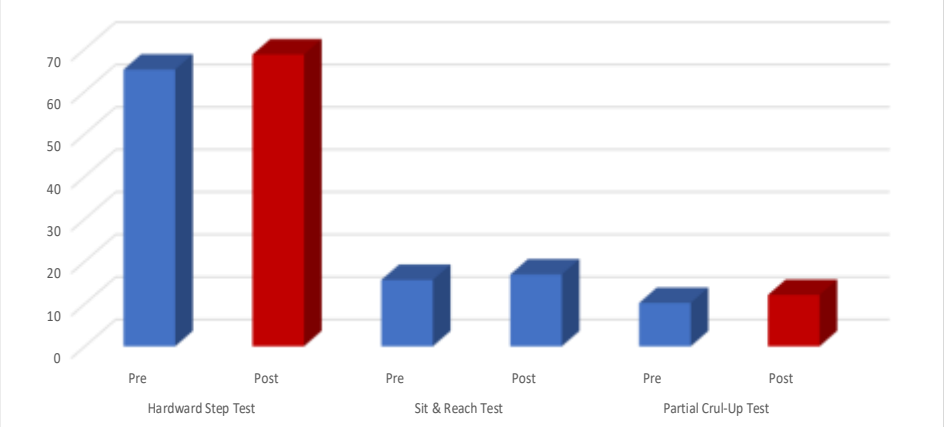

Figure 2 : Showing Mean Difference for the Data Between the Means of Pre and Post-tests of Experimental Group

Table-3
Summary of Mean, Standard Deviation and t-ratio for the Data Between the Means of Post-tests of Control and Experimental Groups

	Group	Mean	S.D.	M.D.	S.E.	t-ratio
Hardward Step Test	Control	64.459	3.473	4.244	1.438	3.429*
	Experimental	68.703	3.304			
Sit & Reach Test	Control	15.560	1.301	1.350	0.490	2.755*
	Experimental	16.910	1.382			
Partial Crul-Up Test	Control	10.200	1.135	1.900	0.506	3.758*
	Experimental	12.100	1.595			

* Significant at 0.05 level Tabulated $t_{0.05(18)} = 2.100$

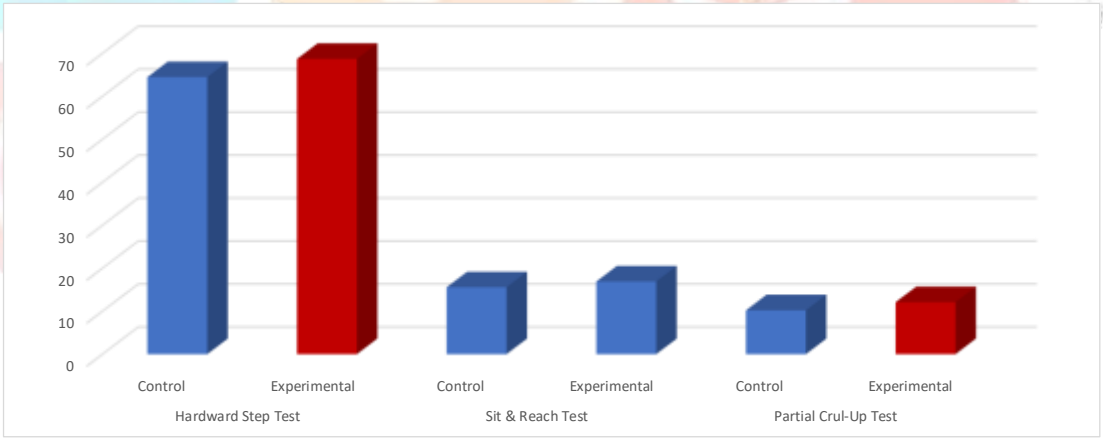

Figure 3 : Showing Mean Difference for the Data Between the Means of Post-tests of Control and Experimental Group

Findings of the Study:

- Mean difference between the pre-test and post-test of control group in Hardward Step Test (0.469), Sit & Reach Test (0.020) and Partial Curl-up Test (0.235) which are less than the tabulated t-value of 2.262 at 0.05 level of confidence of 9 degree of freedom. Hence their is no significance difference in Control group in Hardward Step Test, Sit & Reach Test and Partial Curl-up.
- Mean difference between the pre-test and post-test of Experimental group in Hardward Step Test (2.840), Sit & Reach Test (2.367) and Partial Curl-up (3.386) which are greater than the tabulated t-value of 2.262 at 0.05 level of confidence of 9 degree of freedom. Hence their is significance difference found in Experimental group in Hardward Step Test, Sit & Reach Test and Partial Curl-up.
- Post-test mean difference between Control and Experimental groups in Hardward Step Test (3.429), Sit & Reach Test (2.755) and Partial Curl-up (3.758) which are greater than the tabulated t-value of 2.100 at 0.05 level of confidence of 18 degree of freedom. Hence their is significance difference found in Post test of Control and Experimental groups in Hardward Step Test, Sit & Reach Test and Partial Curl-up test.

Conclusions

Insignificant difference found in Pre and post-test of control group, but significant difference observed in pre and post-test of Experimental group in cardio-vascular endurance, flexibility and abdominal muscle and endurance. Also Significant difference observed in Post-test mean difference between Control and Experimental groups in cardio-vascular endurance, flexibility and abdominal muscle and endurance. Hence it is concluded that the effect of Suryanamaskar (Vinyasa) was significant in cardio-vascular endurance, flexibility and abdominal muscle and endurance.

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