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EFFECT OF SURYA NAMASKARA ON SELECTED PHYSICAL AND PHYSIOLOGICAL VARIABLES OF COLLEGE STUDENTS

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Abstract:-The purpose of the study was found out the effect of surya namaskara on selected physical and physiological variables of college students. The selected physical variables were body composition, muscular endurance and flexibility and selected physiological variables were systolic blood pressure, diastolic blood pressure, resting heart rate, and vital capacity. 50 male students of B.A, B.Sc. B.Com and B.Sc. (Ag) were randomly selected from Ch. Charan Singh P. G. College, Etawah. Pre and post measurement of selected physical and physiological variables data were analyzed by paired't' test. The result shows that there were significant effects on physical variables i.e. muscular endurance and flexibility. While there was insignificant effects of surya namaskar on body composition (fat percentage) and significant effects on selected physiological variables such as resting heart rate, vital capacity, systolic and diastolic blood pressures.

Keywords:physical, physiological, variables .

INTRODUCTION :-

Human life focuses on physical, mental, social and spiritual aspects. Human health is divided into physical mental and social dimension. The Sanskrit name Surya (sun) here refers to the sun and Namaskara means 'Salutations'. Surya namaskara been handed down fro the enlightened sages of the Vedic age. The sun symbolizes spiritual consciousness and, in ancient times, was worshipped on a daily basis.

The basic translation of surya namaskara is salutations to the sun. It is very ancient tradition which has been in existence since the Vedic period. The physical basis of practice links together twelve asana in dynamically performed in a series.

The ideal time to practice surya namaskara is at sunrise, the most peaceful time of the day. Whenever possible practice in the open air, facing the rising sun. Sun set is also a good time to practice as it stimulates the digestive fire. Each cycle of surya namaskara is sequence of certain 'asana' perform along with 'pranayama'. The sequence of asana is such that each asana is complimentary to the next. During surya namaskara, muscles of the entire body experience stretch and pressure alternately and therefore it is said to give more benefits with less expenditure of time.

METHOD AND MATERIAL

50 male students of B.A, B.Sc. B.Com and B.Sc. (Ag) were randomly selected from Ch. Charan Singh P. G. College, Etawah.

PROCEDURES

Criterion Measures

S.No.	Variables	Equipment/test	Measures in
1.	Body composition	Skin Fold Calliper	Millimetres
2.	Muscular endurance	Sit Ups	Numbers
3.	Flexibility	Sit and Reach	Centimetre
5.	Systolic Blood Pressure	Sphygmomanometer	mmHg
6.	Diastolic Blood Pressure	Sphygmomanometer	mmHg
7.	Resting heart/pulse rate	Pulparatory Method (Pulse Rate Count)	Numbers
8.	Vital capacity	Spirometer	Litres

After pre test 12 weeks training schedule were introduced. The subjects were asked to perform on Surya Namaskar daily for 25 minutes each followed by five minute relaxation period, 6 times per week for a period of 12 weeks in morning session. When performing training schedule, subjects were instructed to hold each posture for duration of one inhalation or exhalation depending on the movement being performed.

The subjects 50 were divided in two equal groups. The groups were assigned the name as follows: Experimental Group and control group.

STATISTICAL PROCEDURES

Pre and post measurement of selected physical and physiological variables data were analyzed by paired't' test.

FINDINGS

Table 1
DESCRIPTIVE STATISTICS OF SELECTED PHYSICAL AND PHYSIOLOGICAL VARIABLES OF EXPERIMENTAL GROUP

S.No.	Variables	Pre Test		Post Test	
		Mean	SD	Mean	SD
1.	Fat %	12.56	2.41	12.48	2.13
2.	Muscular Endurance	34.33	11.12	36.05	11.05
3.	Flexibility	26.72	4.32	27.19	7.44
4.	Resting Heart Rate	73.16	5.28	71.28	4.57
5.	Vital Capacity	2.13	0.53	2.34	0.41
6.	Systolic Blood Pressure	118.72	11.06	115.11	10.88
7.	Diastolic Blood Pressure	76.36	8.43	72.17	7.53

Figure 1

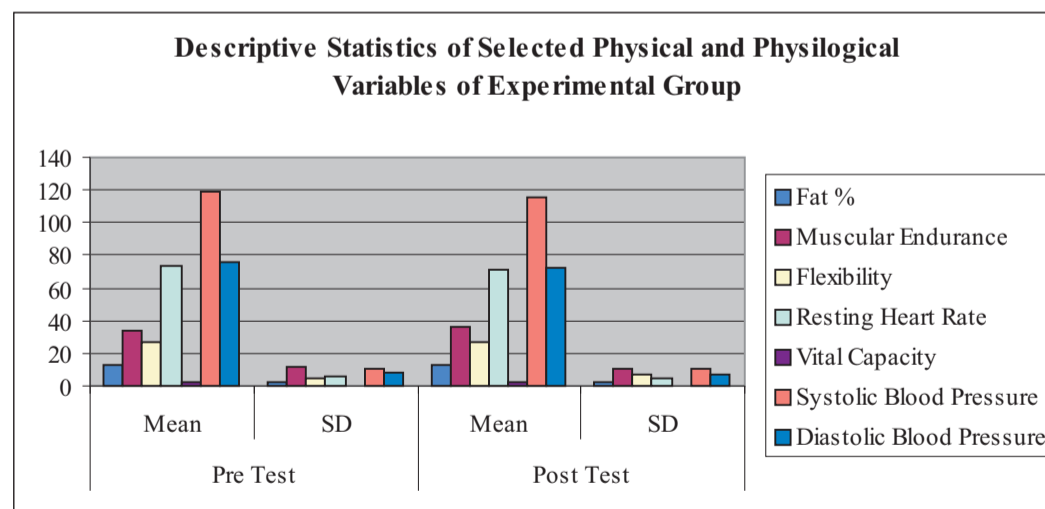


Table 2
DESCRIPTIVE STATISTICS OF SELECTED PHYSICAL AND PHYSIOLOGICAL VARIABLES OF CONTROL GROUP

S.No.	Variables	Pre Test		Post Test	
		Mean	SD	Mean	SD
1.	Fat %	13.04	3.23	13.12	3.35
2.	Muscular Endurance	35.11	10.18	35.16	10.24
3.	Flexibility	28.19	9.22	28.05	9.13
4.	Resting Heart Rate	74.11	5.19	73.94	5.03
5.	Vital Capacity	2.83	0.63	2.84	0.68
6.	Systolic Blood Pressure	119.50	10.88	119.67	10.76
7.	Diastolic Blood Pressure	76.27	8.13	77.06	9.77

Figure 2

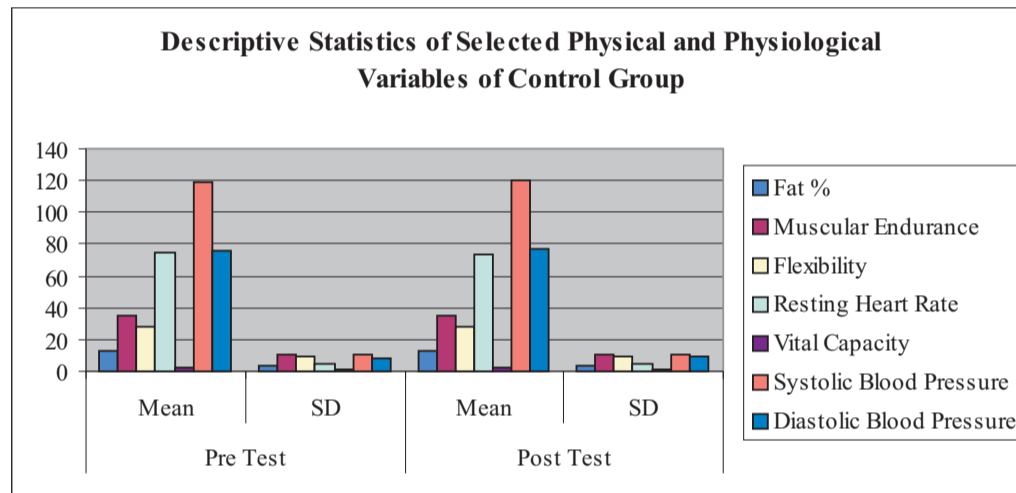


Table 3
SIGNIFICANCE DIFFERENCES BETWEEN PRE AND POST TEST MEANS OF EXPERIMENTAL AND CONTROL GROUP IN SELECTED PHYSICAL VARIABLES

S.No.	Physical Variables	't' ratio	
		Experimental	Control
1.	Fat % (Body Composition)	1.82	1.55
2.	Muscular endurance	2.58*	1.79
3.	Flexibility	3.61*	0.86

*t value required to significant at 0.05 level of confidence with 23 degree of freedom was 2.061.

Table 4
SIGNIFICANCE DIFFERENCES BETWEEN PRE AND POST TEST MEANS OF EXPERIMENTAL AND CONTROL GROUP IN SELECTED PHYSIOLOGICAL VARIABLES

S.No.	Physiological Variables	't' ratio	
		Experimental	Control
1.	Resting Heart Rate	2.98*	1.31
2.	Vital Capacity	3.07*	0.73
3.	Systolic Blood Pressure	4.21*	1.59
4.	Diastolic Blood Pressure	3.67*	1.42

*t value required to significant at 0.05 level of confidence with 23 degree of freedom was 2.061.

DISCUSSION OF FINDINGS

Table 3 shows that there are significant effects on physical variables i.e. muscular endurance and flexibility. D. Maniazhagu and S. Revathi conducted a study on effects on varied packages of yogic practice on muscular endurance of obese women, result of study was surya namaskar highly influenced of muscular endurance. While there was insignificant effects of surya namaskar on body composition (fat percentage).

Table 4 shows that there are significant effects on selected physiological variables such as resting heart rate, vital capacity, systolic and diastolic blood pressures.

M. Fondran Kristine conducted a study on the effects of surya namaskara yoga practice on resting heart rate and blood pressure, flexibility, muscular endurance and perceived well-being in healthy adults, this study is supported the our results.

Therefore, surya namaskar there should be practiced daily to get above beneficial effects. Surya namaskar is the combination of asana and pranayama, it is simple to practice, consumes only less time so that college students can practices every day.

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