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Original Research Paper

Physical Education

EFFECT OF YOGA ON PHYSICAL FITNESS VARIABLES OF COLLEGE GOING STUDENTS

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KEYWORDS: Yogasana, Physical fitness variables, College going students.

ABSTRACT

INTRODUCTION:- The word 'yoga' is derived from the roots of Sanskrit 'Yuj' which means to join, to attach, to bind, yoke and a concentrate or one attention. Practice of Yoga would directly contribute to human resource development and improvement in the quality of life by developing their fitness (Physical, mental, emotional as well as spiritual). It enhances the quality of life by improving motor ability. **PURPOSE:-** purpose of the study was to find out the effect of Yogasana on physical fitness variables of college going students. **MATERIALS & METHODS:-**To achieve the purpose, total ninety (90) college going students age range between 18-23 years were randomly selected for the study from Santal Bidroha Sardha Satabarshiki Mahavidyalaya, Goaltore, Paschim Medinipur, West Bengal. The physical fitness variables were flexibility, cardio-vascular endurance, abdominal muscle strength, body fat % and speed. They were measured by sit and reach test, 1 mile run and walk test, sit ups, skin fold calliper and 50 yard dash test respectively. The subjects were divided into two groups. One group was utilized as the control group and the other as experimental group. Each group contains forty five (45) subjects. The Experimental group (yoga group) has been given the eight (8) weeks yoga training in the college campus. The training schedule were fixed in the morning session as well as in the afternoon session minimum time duration 45-60 minutes per session with various types of yogasanas including slow warming up, warm down and resting time between and set of the exercises. On the other hand, Control group (Non-yoga group) has not given the yoga training. The Pre-test and post-test mean scores of the two groups have been taken and their scores are recorded. The Independent Paired-'t' test is conducted for evaluate the data and the level of significance is fixed at 0.05 level of confidence. **RESULTS & DISCUSSION**:-The data was analyzed statistically by computing mean, standard deviation and't' test. It was observed from the tables that in the experimental group the pre-test mean scores of physical fitness variables were 4.50, 10.50, 15.62, 19.02 and 10.50 respectively which are improved in post-test, they were 7.35, 7.60, 20.36, 16.35 and 9.70 respectively except speed. Similarly, in the control group the pre-test mean scores of physical fitness variables were 5.20, 10.30, 15.50, 19.20 and 10.20 respectively which are slightly changed in post-test that is 5.55, 10.70, 16.25, 19.52 and 10.56 respectively. It was also evident from the table that the calculated value of the each variable in the control group is less than the Table value (2.01) at 0.05 level of significant. So the result was insignificant. On the other hand, calculated value of the each physical fitness variable is more than the table value (2.01) at 0.05 level of significant in the experimental group except speed. The hypothesis was accepted since there was a significant improvement in flexibility, cardio-vascular endurance, abdominal muscle strength and body fat % of the experimental group due to 8 weeks of yoga training . The hypothesis was tested at 0.05 level of confidence. The Significant results were found in physical fitness variables of college going students in the experimental group due to yoga training. CONCLUSION:- On the basis of the obtained result, it has been observed that the experimental group has the better physical fitness than the control group except speed due to eight (8) weeks yoga training programmes

INTRODUCTION:-

Sports are a worldwide phenomenon today. It has gained immense importance and popularity in recent times demanding immaculate organization and planning. In fact, it entered a new horizon of sporting culture, leading to the emergence of sports sciences as the back bone of performance sports. With the increasing prestige being attached winning of medals in the international it is quite natural to give more stress on talent identification and to systematize the training methodology. Body Composition is the relative percentage of muscle, fat, bone and other tissues of which the body is composed. Various research studies revealed that Participation in physical activities and various games and sports helps in improving the Physical fitness by lowering Percentage of Body Fat and increasing the Lean Body Mass. Physical fitness is the product of physical exercises and exercise is very much related to health and wellbeing. The development of science and technology discouraging the human beings from doing vigorous activities as a result of which various physical and mental diseases are flourishing at a great speed throughout the world.

The word 'yoga' is derived from the roots of Sanskrit 'Yuj' which means to join, to attach, to bind, yoke, and a concentrate or one attention. It also means Union. Yoga is true union of our will with the will have had. The literal meaning of the word 'Yoga' is 'yoke'. It means for uniting the individual spirit with the Universal spirit or God. It is a science by which the individual approaches the truth. Yoga is not religion it is a method by which one obtain Control of one's latent powers. It is the means to reach complete Self-Realization. Yoga is a reduction of one's mental process, along with the physical. Practice of Yoga would directly contribute to human resource development and improvement in the quality of life by developing their fitness (Physical, mental, emotional as well as spiritual). Yoga is an instrument of self-evolvement and enlightenment through physical and mental well-being. It enhances the quality of life by improving motor ability.

The world is becoming more and more competitive. Quality of performance has become the key factor for personal progress. Excessive stress hampers the students' performance. Better Motor Ability means high level of physical fitness which helps in the positive self perception and improves the total performance. The

children of today are exposed to far greater stress and trying times than previous generation. **According to Nixon, "Physical Fitness refers to the organic capacity of the individual to perform the normal task of daily living without undue fatigue or tiredness having reserves of strength and energy available to meet satisfactorily any emergency demands suddenly placed upon him."** Total fitness looks at the overall individual, combining the absolute levels of physiological, psychological, social and cognitive fitness. Our nation is becoming more concerned with physical fitness. People want quality in life, and adults particularly are becoming more concerned about their health and fitness life style. Yoga will help them cope and emerge stronger and more physically, mentally and emotionally fit. Thus, **the present study examines whether there is an effect of yoga on physical fitness variables of college going students.**

THE PURPOSE OF THE STUDY:-
The purpose of the study was to see the effects of yoga on physical fitness variables of the college going students.

OBJECTIVES OF THE STUDY:- The objectives of the study are mentioned below:-

I) To measure the flexibility of the college going students.
ii) To measure the cardio-vascular endurance of college going students.
iii) To measure the abdominal muscle strength of the college going students.
iv) To measure the body fat % of the college going students.
v) To measure the speed of the college going students
vi) To design the specific yoga schedule for eight weeks of the college going students.
vii) To see the effect of yoga training on physical fitness variables of the college going students.

SIGNIFICANCE OF THE STUDY:-
I) This study may be benefitted to all the college going students and even to the other sportsmen, since they can use yogic exercises to improve their suppleness of body.
ii) All the athletes as well as all men and women may be benefited with the inclusion of yoga in their training schedule.
iii) As yoga deals with the physical, mental and emotional balance, it is expected that the result of this study may help to improve the fitness of college going students and keep themselves physically, mentally and emotionally fit during the difficult practical situation i.e. during stress and tension.

HYPOTHESES:-
i) There would be a significant improvement in flexibility among the college going students due to yoga training.
ii) Yoga training helps to improve the abdominal muscles strength of the students.
iii) Yoga training maintains the normal body fat percentage of the selected students.
iv) There would be a significant improvement in cardio-vascular endurance among the college going students due to yoga training.
v) Yoga training may not improve the speed significantly of the college going students.

METHODOLOGY:-
SUBJECTS:- To achieve the purpose, ninety (90) college going students were randomly selected for the study from Santal Bidroha Sardha Satabarshiki Mahavidyalaya, Goaltore, Paschim Medinipur, West Bengal. Subjects were divided into two groups. One group was considered as the control group and the other as the experimental group. Each group contains forty five (45) subjects. The physical fitness variables were flexibility, cardio-vascular endurance, abdominal muscle strength, body fat % and speed.

PROCEDURE:- Total Ninety (90) college going students were randomly selected for the study. They were divided into two groups. One group was utilized as the control group and the other as experimental group. Each group contains forty five (45) subjects. In the Experimental group, yoga training was given for eight weeks in the college campus. The training schedule were fixed in the morning session as well as in the afternoon session minimum time duration 45-60 minutes per session with various types of yogasanas including slow warming up, warm down and resting time between and set of exercises. On the other hand, Control group (Non-yoga group) has not given the yoga training. The physical fitness variables were flexibility, cardio-vascular endurance, abdominal muscle strength, body fat % and speed. They were measured by sit and reach test, 1 mile run and walk test, sit ups, skin fold calliper and 50 yard dash test respectively. The Pre-test and post-test mean scores of the two groups have been taken and their scores are recorded.

STATISTICAL ANALYSIS:- The Independent Paired-'t' test was conducted for evaluate the data and the level of significance was fixed at 0.05 level of confidence. To get the final result Mean, SD, Mean Difference and 't'-test were calculated.

SCHEDULE OF YOGA PRACTICES :-
1. Bhujangasana 9. Halasana,
2. Ardh-Shalabhsana 10. Ardh-Matsyedrasana
3. Ardh-Halasana 11. Shalabhasana,
4. Vakrasana 12. Viparitkarani
5. Chakrasana 13. Naukasana,
6. Paschimottan 14. Parvatasana
7. Dhanurasana 15. Makrasana,
8. Shavasana 16. Kapalbhati
17. Anulom-Vilom, 18. Meditation.

SELECTED VARIABLES & THEIR TEST AND UNITS:-

SL. NO.	FITNESS VARIABLES	TESTS	UNITS
1.	Flexibility	Sit and reach test	Cm.
2.	Cardiovascular Endurance	1 mile run and Walk test	Min/Sec.
3.	Abdominal muscle strength	Sit ups.	No/Min.
4.	Body fat %	Skin fold calliper.	Mm.
5.	Speed	50 Yard dash test.	Sec.

RESULTS:- The result of the study is discussed under the following table with the graphical presentation. Table-1 and 2 show the significant difference between pre-test and post-test scores of the subjects on physical fitness variables among the control group and experimental group.

TABLE-1
Significant Difference between Pre-test and Post-test on physical fitness variables of the Control Group after calculating the Mean, SD and t-ratio of collage going students

Sl.	Group	Variables	Test	Mean	SD	MD	t- ratio	Sig.
1.	Control Group	Flexibility	Pre - test	5.20	1.62	0.35	1.17	0.05*
			Post - test	5.55	1.85			
		Cardiovascular Endurance	Pre -	10.30	2.08	0.40	1.42	
			Post - test	10.70	2.15			

		Abdominal muscle	Pre-test	15.50	2.02	0.75	1.52	
			Post test	16.25	2.32			
		Body fat %	Pre-test	19.20	3.05	0.32	0.82	
			Post – test	19.52	3.46			
		Speed	Pre-test	10.20	2.14	0.36	1.02	
			Post – test	10.56	2.64			

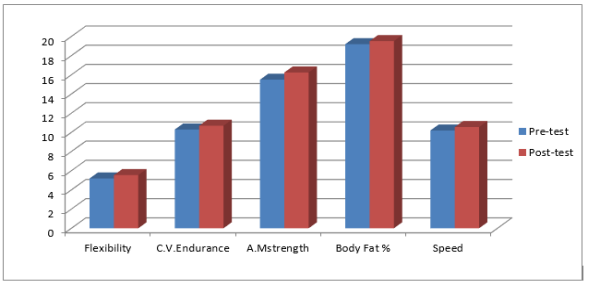

Fig.1:-Graph Showing the Significant Difference between Pre-test and Post-test on physical fitness variables after calculating the Mean, S.D & 't'-ratio of the control group of college going students.

TABLE-2

Significance Difference between Pre-test and Post-test on physical fitness variables of the experimental group after calculating the Mean, SD and t-ratio of collage going studenSignificant at 0.05 level

Sl.	Group	Variables	Test	Mean	SD	MD	t- ratio	Sig.
2.	Experimental Group	Flexibility	Pre - test	4.50	2.05	2.85	3.45	0.05*
			Post - test	7.35	2.85			
		Cardiovascular Endurance	Pre - test	10.50	3.18	2.90	4.62	
			Post - test	7.60	2.15			
		Abdominal muscle strength	Pre-test	15.62	3.32	4.74	5.34	
			Post – test	20.36	3.45			
		Body fat %	Pre-test	19.02	2.46	2.67	3.58	
			Post – test	16.35	3.24			
		Speed	Pre-test	10.50	2.22	0.80	1.02	
			Post – test	9.70	2.31			

Significant at 0.05 level

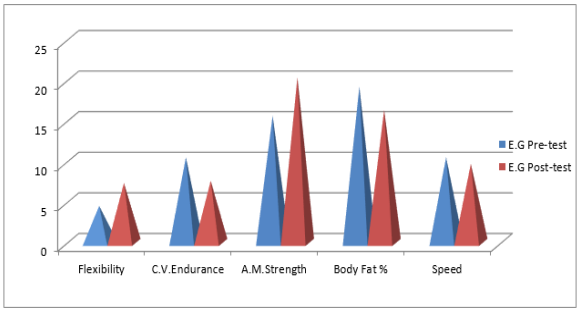

Fig.2:-Graph Showing the Significant Difference between Pre-test and Post-test on physical fitness variables after calculating the Mean, S.D & 't'-ratio of the Experimental group of college going students.

DISCUSSION:-

It is observed from the above tables that in the exp100erimental group the pre-test mean scores of physical fitness variables were 4.50, 10.50, 15.62, 19.02 and 10.50 respectively which are improved in post-test, they were 7.35, 7.60, 20.36, 16.35 and 9.70 respectively except speed. Similarly, in the control group the pre-test mean scores of physical fitness variables were 5.20, 10.30, 15.50, 19.20 and 10.20 respectively which are slightly changed in post-test that is 5.55, 10.70, 16.25, 19.52 and 10.56 respectively. It is also evident from the above table that the calculated value of the each variable in the control group is less than the Table value (2.01) at 0.05 level of significant. So the result was insignificant. On the other hand, calculated value of the each physical fitness variable is more than the table value (2.01) at 0.05 level of significant in the experimental group except speed. The hypothesis is accepted since there was a significant improvement in flexibility, cardio-vascular endurance, abdominal muscle strength and body fat % of the experimental group due to 8 weeks of yoga training.

Meditation or Dhyana, a part of Astanga yoga plays an important role for reduce the stress and anxiety which have been reported by **Anderson and Freshman6 (1982), Nagendra3, Deshpande and Raghuram4 (2009), Morison and Ibrahim7 (1981) and Yadhav5 (2006).** In this study, Meditation reduced stress significantly after six months of yoga treatment. Meditation have a greater impact on the mind and the senses than other exercises with the result that meditation helps to develop one's physical and mental powers to make the mind clam and control the emotion. Yoga involves and includes eight paths (i.e. **Astanga yoga – yama, niyama, asana, pranayama, pratyahara, dharana, dhyana and Samadhi.).** The astanga yoga is based on the idealistic approach, a real road to attain good consciousness, self confidence and self-concept. Meditation helps the individual to overcome these emotions to facilitate a calm, peaceful mind and healthy and stress free body. It promotes relaxation, develops self-concept, self confidence, positive attitude and social ability and reduces stress as well as anxiety. Excessive stress and anxiety hamper the students' performance. Better Motor Ability means high level of physical fitness which helps in the positive self perception and improves the total fitness. The children of today are exposed to far greater stress and trying times than previous generation. Yoga will help them to cope and emerge stronger and more physically, mentally and emotionally fit. Hence, the researcher was motivated to take up the present study.

CONCLUSION:-

Many research studies have been done on the various types of training programmes. It is proved that eight weeks (8) yoga training programmes have a significant role on the physical fitness variables of the college going students. On the basis of the results obtained from the present empirical investigation and within the limitation, the following conclusions may be drawn.

1. In the Experimental group (yoga group) the physical fitness variables were better after the given period of eight weeks (8) yoga training and the result was significant except speed.

2. On the other hand, in the Control group (Non-yoga group) the physical fitness variables were not better or slightly changed after the given period of eight weeks (8) yoga training and the result was insignificant.

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