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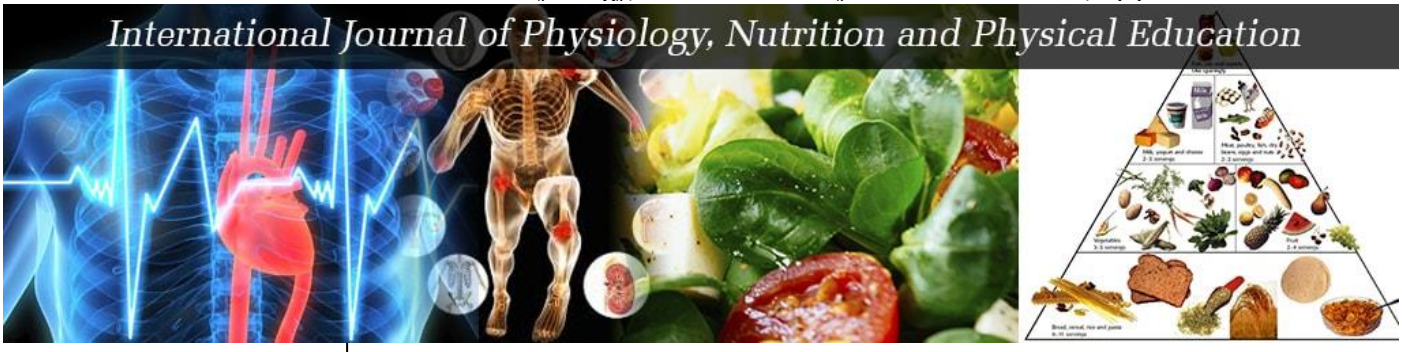

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A yogic program as an intervention for improving on physical variables among national level sportspersons

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Abstract
The study was undertaken to assess the effect of yogic program on selected physical fitness variables of National level sportspersons, for the purpose 60 male sports persons with minimum National level participation were selected from Delhi National. The samples were selected from CRS University, Jind with age of the subjects ranged between 18 to 22 years. The mean age of the subjects was 20.18±2.07. The variables for the study were Cardio-vascular Endurance, Speed and Agility, which were assessed by 12 Min Run/Walk Test, 50 Yard Dash and Shuttle run respectively. The subjects were divided into two groups' i.e. Experimental group and Control Group. Pre test of all the groups were taken on the selected variables and the experimental group was given a yogic training program for 08 weeks and the control group continued with the daily routine activity. The collected pre and post data was analyzed by computing Descriptive analysis, paired sample't' test and independent sample 't' test. A Significant difference has been found in the pre and post test values of Experimental group for the selected physical variables, No significant difference has been found in the pre and post test values of Control group for the selected physical variables, No significant difference has been found in the pre test values of Experimental and Control group for the selected physical variables, A significant difference has been found in the post test values of Experimental and Control group for the selected physical variables and finally it can be concluded that Yogic exercises are effective for improvement of physical fitness variables among sports persons.

Keywords: yoga, cardio-vascular endurance, speed, agility

Introduction
Yoga is not restricted to any particular age group. It is therapeutic for patients but it is also practiced in normal individuals to keep physically fit. A study reporting increased physical fitness in school children practicing yoga has been reported. It is thus advisable to start early. Yoga also slows down ageing as shown by a decrease in the reduction of baroreflex sensitivity with age in subjects who were practicing yoga for five years. Yogic asanas are isometric exercises that involve a coordinated action of synergic and antagonist muscles in bringing about steadiness, flexibility and accuracy of movement. Improvement is seen in static motor performance, hand eye coordination, hand grip strength, cardiovascular endurance, anaerobic power, thermoregulatory efficiency, and orthostatic tolerance.
The practice of Yoga for six months to one year improves performance by increasing stretch duration, endurance and decreasing the onset of fatigue. The mechanisms of yogic breathing may involve improvement in oxygen consumption with better oxygen delivery, utilization and minimal energy expenditure as seen in subjects who practiced pranayama. A higher work rate with reduced oxygen consumption per unit of work without increase in blood lactate levels is reported. There is an accompanied increase in peripheral blood flow, along with a decrease in body weight. Regular and continuous use of any muscle prevents fat deposition, increases flexibility and heightens performance. Ujjayi with long and short kumbhak (breath holding) may exert their effects by alterations in the skeletal muscle activity, ANS discharge, and cerebral blood flow. Breath holding with a short kumbhak increases oxygen consumption, while a long kumbhak during Ujjayi decreases oxygen consumption, and metabolic rate. Siddhasana is also known to increase oxygen consumption, and metabolic rate compared to shavasana. Virasana likewise induces a hyper metabolic National temporarily characterized by increased ventilation, and enhanced sympathetic activity.

This gets neutralized on assuming a shavasana posture (Rai and Ram, 1993a). Yoga can improve exercise performance by increasing flexibility, psychological motivation and decreasing heart rate, minute ventilation, oxygen consumption/unit work and respiratory quotient. Above all, yoga increases the subjective well-being in subjects.

Yogic techniques are known to improve one's overall performance and work capacity. Sharma *et al*. Conducted prospective controlled study to explore the short-term impact of a comprehensive but brief lifestyle intervention based on yoga, on subjective well being in normal and diseased subjects. Normal healthy individuals and subjects having hypertension, coronary artery disease, diabetes mellitus or a variety of other illnesses were included in the study. They reported significant improvement in the subjective well being scores of 77 subjects within a period of 10 days as compared to controls. Therefore, even brief intervention can make an appreciable contribution to primary prevention as well as management of lifestyle diseases. This is vital in the elderly and Hatha yoga practices for 6 months by seniors [65-85years] has shown significant improvement in quality of life and physical measures compared to walking exercise and wait-list control groups.

The most important benefit of yoga is physical and mental therapy. Indians have given great importance to,, yoga ‟and,, physical exercises ‟not only to prevent or cure the physical ailments/diseases but to keep fit also. The great ancient Rishis, Vedasand Purans also have given much importance to physical fitness. The person who is physical fit will be able to carry out the essential of his job without undue fatigue. Fitness is characterized by man's ability to function efficiently with in his potentialities. Fitness implies not only the acquisition of certain physical skills but also the ability to withstand the emergency demands training and competitions. High level of strength is essential to good performance in all-athletic games and in some events strength is of almost important. Greater strength often results in better performance. Its relative significance varies depending on the nature of the particular activity. A person having muscular fitness can carry out his daily routine efficiently and effectively with least effort and strain. Muscular fitness plays an important role in all aspects of athlete's performance improvement. Yogic exercises Yogic practices not only make the internal organs fit but also strengthen the muscles. Yogic exercises increase the general strength and tone up the muscles because these exercises stretch the muscles, due to their slow movement and held position with breathing mechanism improves the muscle tone. Training the word "Training' has been a part of human language since ancient times. It denotes the process of preparation for some task. This process invariably extends to a number of days and even months and years.

Health, physical fitness and emotional stability are the objectives which bring yoga and physical education on a common platform for the benefit of human individual. Health is a more general and comprehensive term conveying the 'feeling of well-being', while physical fitness is a more specific term. Physical fitness is the capacity of an individual to perform a given task at a particular time. Health and physical fitness are not static. They are always changing they follow the law can be maintained only by carefully selected physical activities which are called 'exercise'. The utility of the particular exercise program can be evaluated only in forms of the effects that one obtained in promoting a particular factor of physical fitness. Trough constant practice of yoga, one can overcome all difficulties and eradicate all weakness pain can be transmitted in to bliss, sorrow in to joys, and failure into success and sickness in to perfect health. Determination, patience and persistence lead one to goal.

Objectives and Hypothesis

For the purpose of the study following objectives were set:

- To find out the effect of yogic exercise program on the Cardio-vascular Endurance of the National level players.
- To find out the effect of yogic exercise program on the Speed of the National level players.
- To find out the effect of yogic exercise program on the Agility of the National level players.
- To compare the effect of yogic exercise program on the Cardio-vascular Endurance of the Different groups.
- To compare the effect of yogic exercise program on the Speed of the Different groups.
- To compare the effect of yogic exercise program on the Agility of the Different groups.

Based on the objectives of the study following hypotheses were framed for the study

- There would be no significant effect of yogic exercise program on the Cardio-vascular Endurance of the National level players.
- There would be no significant effect of yogic exercise program on the Speed of the National level players.
- There would be no significant effect of yogic exercise program on the Agility of the National level players.
- There would be no significant effect of yogic exercise program on the Cardio-vascular Endurance of the Different groups.
- There would be no significant effect of yogic exercise program on the Speed of the Different groups.
- There would be no significant effect of yogic exercise program on the Agility of the Different groups.

Procedure and Methodology

The study was undertaken to assess the yogic program as an intervention for improving on physical fitness variables among National level sportspersons, for the purpose 60 male sports persons with minimum National level participation were selected from Delhi. The samples were selected from Delhi University, with age of the subjects ranged between 18 to 22 years. The mean age of the subjects was 20.18±2.07. The variables for the study were Cardio-vascular Endurance, Speed and Agility, which were assessed by 12 Min Run/Walk Test, 50 Yard Dash and Shuttle run respectively. The subjects were divided into two groups' i.e. Experimental group and Control Group. Pre test of all the groups were taken on the selected variables and the experimental group was given a yogic training program for 08 weeks and the control group continued with the daily routine activity. The collected pre and post data was analyzed by computing Descriptive analysis, paired sample't' test and independent sample 't' test.

Results and Discussion

Table 1: Descriptive analysis and results of Paired sample‘t’ test for difference between pre and post test scores of physical fitness variables of yogic exercise group

S. No.	Variables	Group	Mean	SD	N	‘t’	Sig.
1	Cardio-Vascular Endurance	Pre	2.34	0.29	30	22.09*	0.002
		Post	2.68	0.28	30		
2	Speed	Pre	7.44	0.35	30	18.99*	0.003
		Post	7.04	0.38	30		
3	Agility	Pre	10.87	0.68	30	42.11*	0.000
		Post	10.61	0.71	30		

Table no. 1 clearly indicates the Descriptive analysis and results of Paired sample‘t’ test for difference between pre and post test scores of physical fitness variables of yogic exercise group, which shows that the mean and standard deviation values for pre and post test for Cardio vascular Endurance, Speed and Agility are found to be 2.34±0.29/2.68±0.28, 7.44±0.35/7.04±0.38 and 10.87±0.68/10.61±0.71 respectively, whereas the values of paired sample‘t’ test shows that a significant difference has been observed in the pre and post test values of experimental group for Cardio-Vascular Endurance (22.09*), Speed (18.99*) and Agility (42.11*), which are significant at 0.05 level. The graphical representation of descriptive analysis has been shown in fig no. 1

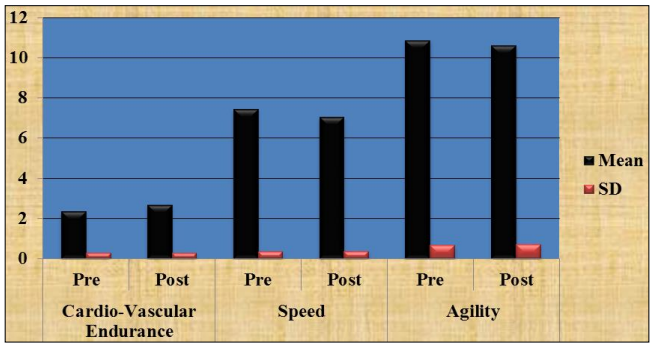

Fig 1: Graphical Representation of Descriptive analysis of pre and post test scores of physical fitness variables of yogic exercise group

Table 2: Descriptive analysis and results of Paired sample‘t’ test for difference between pre and post test scores of physical fitness variables of Control Group

S. No.	Variables	Group	Mean	SD	N	‘t’	Sig.
1	Cardio-Vascular Endurance	Pre	2.44	0.27	30	2.09	0.32
		Post	2.45	0.26	30		
2	Speed	Pre	7.36	0.33	30	1.89	0.19
		Post	7.33	0.35	30		
3	Agility	Pre	10.87	0.59	30	2.33	0.56
		Post	10.76	0.69	30		

Table no. 2 clearly indicates the Descriptive analysis and results of Paired sample‘t’ test for difference between pre and post test scores of physical fitness variables of Control group, which shows that the mean and standard deviation values for pre and post test for Cardio vascular Endurance, Speed and Agility are found to be 2.44±0.27/2.45±0.26, 7.36±0.33/7.33±0.35 and 10.87±0.59/10.76±0.69 respectively, whereas the values of paired sample‘t’ test shows that no significant difference has been observed in the pre and post test values of control group for Cardio-Vascular Endurance (2.09), Speed (1.89) and Agility (2.33), which are not significant at 0.05 level. The graphical representation of descriptive analysis has been shown in fig no. 2

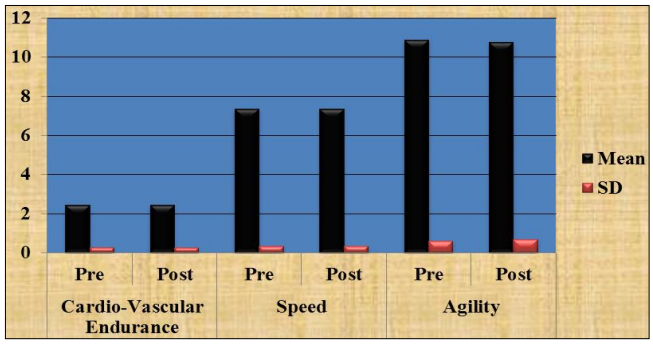

Fig 2: Graphical Representation of Descriptive analysis of pre and post test scores of physical fitness variables of Control group

Table 3: Descriptive analysis and results of Independent sample‘t’ test for difference between Experimental group and control group for pre-tests scores of physical fitness variables

S. No.	Variables	Group	Mean	SD	N	‘t’	Sig.
1	Cardio-Vascular Endurance	Exp. Group	2.53	0.29	30	1.89	0.45
		Control Group	2.52	0.28	30		
2	Speed	Exp. Group	7.28	0.37	30	0.97	0.81
		Control Group	7.27	0.37	30		
3	Agility	Exp. Group	10.80	0.69	30	1.33	0.78
		Control Group	10.82	0.65	30		

Table no. 3 clearly indicates the Descriptive analysis and results of Independent sample‘t’ test for difference between pre test scores of physical fitness variables of Experimental and Control group, which shows that the mean and standard deviation values for pre test for Cardio vascular Endurance, Speed and Agility are found to be 2.53±0.29/2.52±0.28, 7.28±0.37/7.27±0.37 and 10.80±0.69/10.82±0.65 respectively, whereas the values of Independent sample‘t’ test shows that no significant difference has been observed in the pre test values of Experimental and control group for Cardio-Vascular Endurance (1.89), Speed (0.97) and Agility (1.33), which are not significant at 0.05 level. The graphical representation of descriptive analysis has been shown in fig no. 3

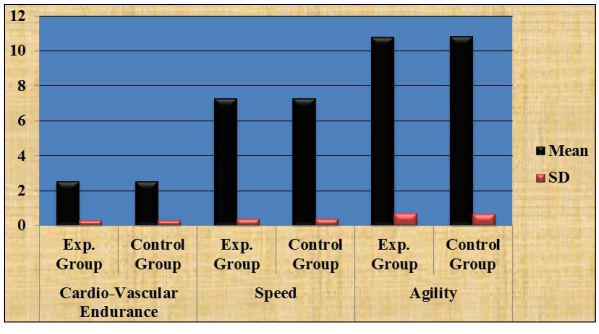

Fig 3: Graphical Representation of Descriptive analysis of pre test scores of physical fitness variables for Experimental and Control group

Table 4: Descriptive analysis and results of Independent sample't' test for difference between Experimental group and control group for Post-tests scores of physical fitness variables

S. No.	Variables	Group	Mean	SD	N	't'	Sig.
1	Cardio-Vascular Endurance	Exp. Group	2.78	0.29	30	3.098*	0.05
		Control Group	2.52	0.28	30		
2	Speed	Exp. Group	7.78	0.37	30	2.882*	0.04
		Control Group	7.27	0.37	30		
3	Agility	Exp. Group	10.88	0.69	30	2.139*	0.05
		Control Group	10.42	0.65	30		

Table no. 4 clearly indicates the Descriptive analysis and results of Independent sample't' test for difference between post test scores of physical fitness variables of Experimental and Control group, which shows that the mean and standard deviation values for post test for Cardio vascular Endurance, Speed and Agility are found to be 2.78±0.29/2.52±0.28, 7.78±0.37/7.27±0.37 and 10.88±0.69/10.42±0.65 respectively, whereas the values of Independent sample't' test shows that a significant difference has been observed in the post test values of Experimental and control group for Cardio-Vascular Endurance (3.098*), Speed (2.882*) and Agility (2.139*), which are significant at 0.05 level. The graphical representation of descriptive analysis has been shown in fig no. 4

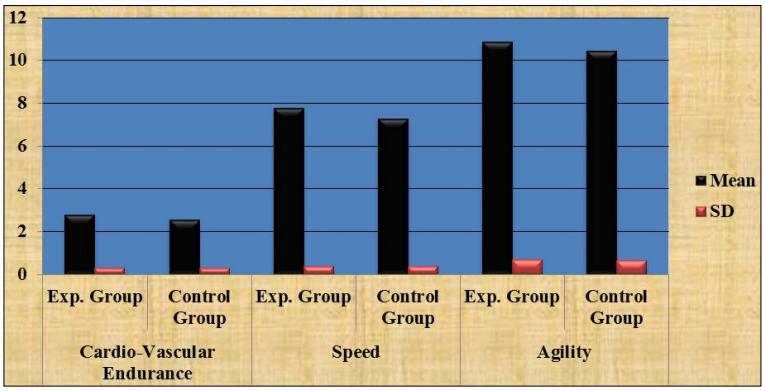

Fig 4: Graphical Representation of Descriptive analysis of post test scores of physical fitness variables for Experimental and Control group

Conclusions

Based on the results following conclusions can be made:

- A Significant difference has been found in the pre and post test values of Experimental group for the selected physical variables.
- No significant difference has been found in the pre and post test values of Control group for the selected physical variables.
- No significant difference has been found in the pre test values of Experimental and Control group for the selected physical variables.
- A significant difference has been found in the post test values of Experimental and Control group for the selected physical variables.
- It can be concluded that Yogic exercises are effective for improvement of physical fitness variables among sports persons

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