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Effect of yogic practices on selected fitness components of college men

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Abstract

Various forms of yoga are effective means to promote the harmonious development of the body. It increases energy, improves muscle tone, relieves pain, improves balance, flexibility, postural alignment etc. In the present study, thirty college men age ranged from 22 to 28 years were selected as subject. Balance, reaction time and flexibility were considered as selected parameters and these parameters were measured by Stork Stand Test, Nelson Ruler Drop Test and Bridge-up Test respectively. Yogic treatment was given to the subjects approx. 45 min/day, five days in a week for 10 weeks. This was a single experimental group design. In statistical procedure, mean and S.D. were used as descriptive statistics and to analyze the significant difference statistical t-test was applied. The level of difference was set at 0.05. Result showed a significant difference was found only in reaction time and other parameters improved effectively but these were not statistically significant.

Keywords: yogic practice, fitness

Introduction

Yoga is nearly 5000 years old tradition. Its aim is the liberation from suffering in this life. Physical health issues and mental illness are barriers to fulfill this purpose. It means experience of integrity or unity with inner being. This unity comes after melting the deity of mind and matter into the supreme reality. It is a science by which the individual approaches truth as well as an art of living healthy physically, mentally and spiritually. It is not limited by age, sex, religion or cast. The various yogic forms are effective means to promote the harmonious development of the body and it can be practiced by those who want to have a more meaningful life (Singh *et al.*, 2015) ^[1]. Recently it has been classified by the National Institutes of Health (NIH) as a form of Complementary and Alternative Medicine (CAM) (Williams *et al.*, 2005) ^[2]. The practice of yoga makes the organs of the body active in their functioning and has good effect on internal functioning of the human body (Barnett, 2003) ^[1]. Potential benefits of yoga include increases energy, improves muscle tone, relieves pain, improves balance, flexibility, postural alignment etc. Other benefits that have been reported through various yogic treatments are quality relaxation, increases attention, concentration and improves cardiovascular fitness (Galantino *et al.*, 2008; Mandanmohan *et al.*, 2003; Ross & Thomas, 2010) ^[3, 7, 10]. It brings about the behavioral changes (Malhotra, 2017) ^[6]. The performance of all activities of daily living requires certain level of physical fitness while at rest or when moving from one position to another. Maintenance of the balance function is essential to stay physically active in life (Kadachha *et al.*, 2016) ^[5]. Yoga in long duration effects hypothalamus and brings about decrease in the systolic and diastolic BP through its influence on vasomotor centre, which leads to reduction in sympathetic tone and peripheral resistance (Bharshankar *et al.*, 2003) ^[2]. It is a method by which one obtains control of one's hidden powers. The premise of yoga differs from specific types of training because of its multifaceted requirements that challenge the body in various ways. When done properly, athletes can optimize the body functioning by minimize the movement affordances and minimize the movement constraints. All over the world, researchers extensively studied on yoga & claimed that it increases longevity (Bharshankar *et al.*, 2003) ^[2] and it has therapeutic and rehabilitative effect (Jore *et al.*, 2013) ^[4].

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Therefore, the purpose of this study was to investigate that how yoga can help to provide its impact on specific component of fitness related to player’s performance. Thus, the researcher carried out this study to find whether short duration of yogic practice has impact on physical fitness components which will ultimately influence the performance.

Objectives of the study

The objectives of the study were summarized as follows-

1. To investigate the effect of yogic practices on balance of college men.
2. To analyze the effect of yogic practices on reaction time of college men.
3. To find out the impact of yogic practices on flexibility of college students.
4. To observe the effect of yogic practices on selected motor fitness components of college men.

Hypothesis of the study

It was hypothesized that-

H0: There would be no significant effect of yogic practices on selected fitness components of college men.

Methodology

Selection of the Subjects

A total no. of thirty (n=30) subjects were selected from the Department of Physical Education, Jadavpur University for the present study. The age of the subjects was ranged from 22 to 28 years.

Selection of the Parameters

To access the effect of yogic practices on selected physical fitness variables- balance, reaction time and flexibility were considered as parameters for this study. These parameters were measured by Stork Stand Test, Nelson Ruler Drop Test and Bridge-up Test respectively.

Table 1: Shows the details of test items

Sl. No.	Physical Fitness Variables	Test items
1	Balance	Stork Stand Test
2	Reaction time	Nelson Ruler Drop Test
3	Flexibility	Bridge-up Test

Treatment Program

The present study was taken to examine the effect of yogic practices on balance, reaction time and flexibility. Subjects were received a yogic treatment for approximately 45 minutes in the morning. The treatment was given to the subjects five days in a week for 10 weeks. The practice protocol was made with the concern of yoga experts, yoga trainers, researcher himself and his research guide.

Design of the study

Single experimental group design was adopted for this study.

Statistical procedure

For this study, Mean and S.D. were used as descriptive statistics and to analyze the significant difference statistical t-test was applied.

Level of significance

The level of difference was set at 0.05.

Results

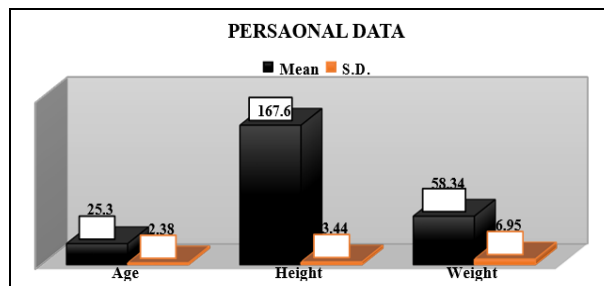
The results obtained from the data were as follows: At first, in

table 2 the personal data of the subjects were presented.

Table 2: Shows Mean and S.D. of age, height, weight and BMI of the subjects

Personal Data	Mean	S.D.
Age (Years)	25.3	±2.38
Height (cm.)	167.6	±3.44
Weight (Kg.)	58.34	±6.95
BMI	20.76	

From table 2, it was found the mean (S.D.) of personal data i.e., age, height, weight and BMI of the subjects were 25.3 (±2.38), 167.6 (±3.44), 58.34 (±6.95) and 20.76 respectively. Below in graph 1, the personal data of the subjects were presented.



Graph 1: Graphical representation of personal data of the subjects

Table-3 contains the results in the form of descriptive statistics (mean±SD) and t-value of the balance of both the legs of college men.

Table 3: Shows the Descriptive statistics (Mean±SD) of the balance of both legs of college men

Balance	Value	Mean	S.D.	t-value
On Right Leg	Pre-test value	25.60	± 14.95	0.14
	Post-test value	25.88	± 14.02	
On Left Leg	Pre-test value	29.95	± 16.02	1.08
	Post-test value	32.96	± 15.76	

10.05²⁹= 2.04

From table-3, it was found that the mean & S.D. of balance on right leg of pre and post- test value were 25.60±14.95 & 25.88±14.02 respectively and left leg were 29.95±16.02 and 32.96±15.76 respectively. To analyze the data, independent t-test was applied and t-value on right leg was found 0.14 at the 0.05 level of significance and t-value on left leg was found 1.08 at the 0.05 level of significance. From the above data, it is evident that the calculated value of ‘t’ for right leg is less than the table value i.e., 0.14<2.04 and left leg is also less than the table value i.e., 1.08<2.04. So, it can be said that there was no significant difference of balance on both legs of college men.

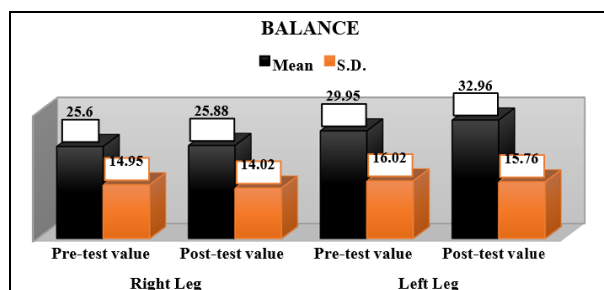


Fig 2: Graphical representation of balance on both legs of college men

Table-4 contains the results in the form of descriptive statistics (mean±SD) and t-value on reaction time of college men.

Table 4: Shows the Descriptive statistics (Mean±SD) on reaction time of college men

Reaction Time	Value	Mean	S.D.	t-value
	Pre-test value	0.020	±0.0030	
	Post-test value	0.016	±0.0028	

$t_{0.05}^{29} = 2.04$

From Table-4, it was found that the mean & S.D. on reaction time of pre and post-test value of college men were 0.020 ± 0.0030 and 0.016 ± 0.0028 respectively. To analyze the above data, independent t-test was applied and t-value was found 3.775 at the 0.05 level of significance. It is evident that the obtained the calculated value of 't' on reaction time is higher than the table value i.e., $3.775 > 2.04$. Hence, it can be concluded that there was a significant difference on reaction time of college men.

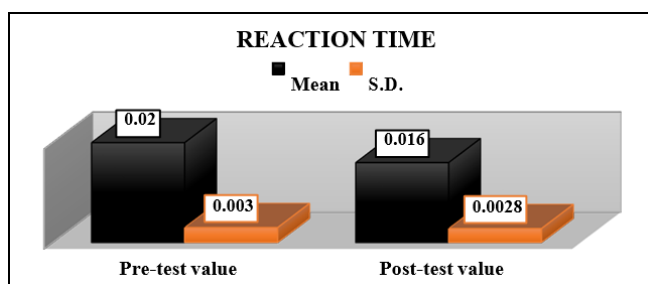


Fig 3: Graphical representation on reaction time of college men

Table-5 contains the results in the form of descriptive statistics (mean±SD) and t-value on flexibility of college men.

Table 5: Shows the Descriptive statistics (Mean±SD) on flexibility of college men

Flexibility	Value	Mean	S.D.	t-value
	Pre-test value	58.60	±7.53	
	Post-test value	58.82	±7.45	

$t_{0.05}^{29} = 2.04$

From Table-5, it was found that the mean & S.D. on flexibility of pre and post-test of college men were 58.60 ± 7.53 and 58.82 ± 7.45 respectively. To explore the above data, independent t-test was applied and t-value was found 0.20 at the 0.05 level of significance. It is evident that the obtained the calculated value of 't' on flexibility is less than the table value i.e., $0.20 < 2.04$. Hence, it can be assessed that there was no significant difference on flexibility of college men.

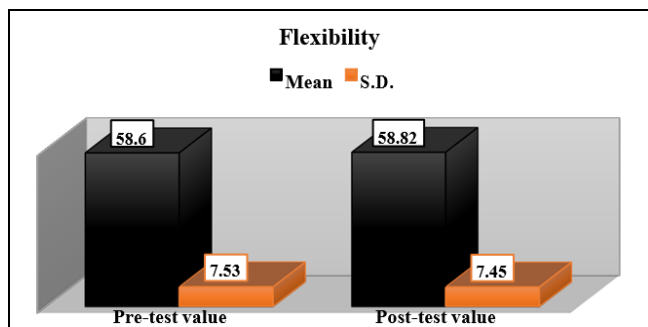


Fig 4: Graphical representation on flexibility of college men

Discussion

In the present study, effect of yogic practices on balance, reaction time and flexibility have been studied and observed. From the above results, it is clear that the analysis of data pertaining to comparison in the personal parameter and selected physical fitness parameters under the pre-test and post-test of balance, reaction time and flexibility. The effect of yogic practices on selected subjects reveals that the practice of 10 weeks of yogic treatment can increase the selected physical fitness components efficiently. As per as the fitness parameters are concerned, it can be said that this state of readiness can only be achieved through the practices of yogasana. The yogic treatment helped efficiently to reduce stiffness of the body. The practice of yoga enhances the flexibility of the various joints and muscles. Thus, the muscles get eased and the toxins of the body can easily flush out with the help of various secretions of hormones (McCall, 2007) [8]. In this research, selected parameters have been improved effectively through the impact of yogic practices. Similar type of works have been done by different researchers namely Barnett, 2003 [1]; Polsgrove *et al.*, 2016 [9]. They found there was a significant difference between pre- and post-treatment. But in this study, only significant difference was found in reaction time and other parameters were not statistically significant. It may be perhaps due to the facts as this was a single group designed study and subjects in the group were actively associated with physical activity since their childhood and even more, they were the student of master of physical education, so they could have developed their physical fitness through strenuous physical activities. So that their physical fitness status may had at high level. For that reason, only 10 weeks of yogic treatment least developed their physical fitness. Though, treatment was able to improve fitness parameters effectively.

Conclusion

On the basis of above result following conclusions were drawn:

1. Yogic practice has a positive effect on fitness components i.e., balance and flexibility. But it was not statistically significant.
2. There was a significant effect of yogic practices on reaction ability of college men.

References

1. Barnett A. Community-based group exercise improves balance and reduces falls in at-risk older people: A randomised controlled trial. *Age and Ageing* 2003;32(4):407-414. <https://doi.org/10.1093/ageing/32.4.407>.
2. Bharshankar JR, Bharshankar RN, Deshpande VN, Kaore SB, Gosavi GB. Effect of yoga on cardiovascular system in subjects above 40 years. *Indian Journal of Physiology and Pharmacology* 2003;47(2):202-206.
3. Galantino ML, Galbavy R, Quinn L. Therapeutic Effects of Yoga for Children: A Systematic Review of the Literature. *Pediatric Physical Therapy* 2008;20(1):66-80. <https://doi.org/10.1097/PEP.0b013e31815f1208>.
4. Jore SB, Kamble P, Bhutada TB, Patwardhan MS. Effect of Pranayama training on Audio-Visual Reaction Time. *Biomedical Research* 2013;2(1):35-37.
5. Kadachha D, Neela S, Parekh A. Effects of yogasana on balance in geriatric population. *International Journal of Physiotherapy and Research* 2016;4(2):1401-1407. <https://doi.org/10.16965/ijpr.2016.107>.

6. Malhotra P. Surya namaskar: A way to relax the mind. *Sleep Medicine and Disorders: International Journal* 2017;1(6):133-135.
<https://doi.org/10.15406/smdij.2017.01.00028>.
7. Mandanmohan Jatiya L, Udupa K, Bhavanani AB. Effect of yoga training on handgrip, respiratory pressures and pulmonary function. *Indian Journal of Physiology and Pharmacology* 2003;47(4):387-392.
8. McCall T. The Scientific Basis of Yoga Therapy. *Yoga Journal* 2007. <https://www.yogajournal.com/teach/the-scientific-basis-of-yoga-therapy/>. Retrieved on 10.04.2017.
9. Polsgrove MJ, Eggleston BM, Lockyer RJ. Impact of 10-weeks of yoga practice on flexibility and balance of college athletes. *International Journal of Yoga* 2016;9(1):27-34. <https://doi.org/10.4103/0973-6131.171710>.
10. Ross A, Thomas S. The Health Benefits of Yoga and Exercise: A Review of Comparison Studies. *The Journal of Alternative and Complementary Medicine* 2010;16(1):3-12. <https://doi.org/10.1089/acm.2009.0044>.
11. Singh T, Singh A, Kumar S. Effects of 8Week Yoga on Muscular Strength, Muscular Endurance, Flexibility and Agility of Female Hockey Players. *The International Journal Research Publication* 2015;5(7):97-101.
12. Williams Petronis J, Smith D, Goodrich D, Wu J, Ravi N, Doyle EJ *et al.* Effect of Iyengar yoga therapy for chronic low back pain. *Pain* 2005;115(1):107-117. <https://doi.org/10.1016/j.pain.2005.02.016>.