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Influence of yogic practices and physical training on motor ability components and physiological variables among college students

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Abstract
Yoga can bring about positive lifestyle changes, and it holds significant importance in both preventive and curative aspects during the period of education. By practising yoga, individuals can become more mindful of their bodies and recognize the importance of emotional and physical well-being. The present study aims to explore the impact of selected yogic practices and physical training on motor ability and physiological variables in college-aged men. The experimental design, subject selection, criterion variables, measuring tests, and application methods have been carefully presented. The researcher randomly recruited 30 healthy male subjects, aged between 20 to 25 years, from the Hyderabad district athletics association. These participants were then divided into three groups: the yogic practices group, the physical training group, and the control group, each comprising 10 subjects.

Keywords: Physical training, physiological variables, yogic practices, lifestyle changes

Introduction
Yoga is an old practice that comprises gentle exercise, breath control and meditation. The benefits which are associated with regular yoga practice are: It helps in lowering blood pressure, improves posture and circulation, and it creates a sense of well being
"Dallar study" provides a good illustration of its negative effects on maximum oxygen uptake and other functions.
When highly trained athletes stop their training their VO_2 maximum decreases with time. Fishman and Salton Stall (2008), carried out an investigation about the yoga in pain management, yoga is a practice that has evolved and survived over more than a thousand years. Until recently, yoga was known in the West mostly for the extraordinary feats of its adepts: Voluntarily stopping and then restarting of the heart, holding the breath for extended periods, or contortionist positions of the body. Now, with more cross-fertilization in all aspects of physical fitness, yoga has become mainstream. What may be lost in this process is the greater picture of where yoga came from, what it is, and its many uses, including medical pain relief. This paper is meant to acquaint the reader more fully with the practice of yoga and its potential roles within an integrative pain medicine practice (Barrow *et al.*, 1979; Banumgartner *et al.*, 1983) [1, 2].
The primary objective of this study is to investigate the impact of specific yogic practices and physical training on the motor ability and physiological variables of male college students. To achieve this goal, a meticulously designed experimental framework has been implemented, encompassing the selection of subjects, criterion variables, and corresponding measurement tests. Additionally, the variables and methodologies employed in their application have been thoroughly outlined for comprehensive understanding and clarity.

Methodology
Selection of subjects
Thirty subjects were selected at random from the Hyderabad district athletics association. For the study, the average age of the subject was 20 to 25 years; the selected students were further divided at random into three group's namely yogic practices, Physical training and control groups.

All the subjects were normal and healthy male students, the sample was considered as the true representative of the population. The number of each group was ten.

Observations and Discussion

The findings of this study, along with pertinent discussions, have been succinctly summarized under the following categories.

Resting pulse rate

The resting pulse rates of the three groups were examined in this study. The pre-test means for the resting pulse rate were recorded as 79.1 for the control group, 78.8 for the physical training group, and 79 for the yogic practice group. The obtained F ratio of 0.0003 was lower than the critical F ratio of 3.37 at a significance level of 0.05, considering the degrees of freedom as 2 and 27. In terms of post-test results, the means for resting pulse rate were 78.2 for the control group, 71.4 for the physical training group, and 75 for the yogic practice group. The obtained F ratio of 5.02 was higher than the critical F ratio of 3.37 at a significance level of 0.05, with the same degrees of freedom as before. After adjusting for the post-test means, the resting pulse rates were calculated as 78.19 for the control group, 71.39 for the physical training group, and 75 for the yogic practice group. The obtained F ratio of 10.25 was higher than the critical F ratio of 3.37 at a significance level of 0.05, considering the degrees of freedom as 2 and 26. As a result, the difference was deemed significant, and the Schefft's post hoc test was employed. Table 1A presents the adjusted post-test means for the three groups. The adjusted means for the control, yogic practice, and physical training groups were 78.19, 75.39, and 71.39, respectively. The mean differences between the control and yogic practice group, control and physical training group, and yogic practice and physical training groups were determined as 3.19, 6.8, and 3.61, respectively. The Schefft's confidence interval value was calculated as 3.07, indicating that all three comparisons were statistically significant

Result of breath-holding time

The breath-holding times of the three groups were examined in this study. The pre-test means for breath holding time were recorded as 53.10 seconds for the control group, 54.70 seconds for the physical training group, and 53.70 seconds for the yogic practice group. The obtained F ratio of 6.533 was lower than the critical F ratio of 0.286 at a significance level of 0.05, considering the degrees of freedom as 2 and 27.

Regarding the post-test results, the means for breath holding time were 53.50 seconds for the control group, 58.40 seconds for the physical training group, and 59.40 seconds for the yogic practice group. The obtained F ratio of 99.70 was higher than the critical F ratio of 5.244 at a significance level of 0.05, with the same degrees of freedom as before.

After adjusting for the post-test means, the breath-holding times were calculated as 54.134 seconds for the control group, 57.650 seconds for the physical training group, and 59.515 seconds for the yogic practice group. The obtained F ratio of 74.225 was higher than the critical F ratio of 37.558 at a significance level of 0.05, considering the degrees of freedom as 2 and 26.1. Thus, the difference was found to be statistically significant, and Scheffe's post hoc test was applied.

A presents the adjusted post-test means for the three groups. The adjusted means for the control, yogic practice, and physical training groups were 54.134, 57.650, and 59.515 seconds, respectively. The mean differences between the control and yogic practice groups, control and physical training group, and yogic practice and physical training groups were determined as 3.516, 1.865, and 5.381 seconds, respectively. The Scheffe's confidence interval value was calculated as 3.02, indicating that all three comparisons were statistically significant.

Result of flexibility

Table 3 presents the flexibility measurements of the three groups. The pre-test means for flexibility were recorded as 10.00 for the control group, 11.70 for the physical training group, and 12.50 for the yogic practice group. The obtained F ratios for the comparisons between control and yogic practice, control and physical training, and yogic practice and physical training were 0.904, 2.437, and 3.341, respectively. The Scheffe's confidence interval value was calculated as 2.596. Therefore, all three comparisons were found to be statistically significant.

In a study conducted by Bhalerao in 2014, the effect of selected flexibility exercises on badminton players was investigated.

Result of Agility

The study examined the agility of three groups: A control group, a physical training group, and a yogic practice group. The pre-test mean agility scores were 10.13 for the control group, 9.65 for the physical training group, and 10.39 for the yogic practice group. However, the obtained F ratio of 235 was lower than the table F ratio of 3.37, indicating no significant difference between the groups. The post-test mean agility scores were 9.68 for the control group, 9.08 for the physical training group, and 9.47 for the yogic practice group. In this case, the obtained F ratio of 1.52 was greater than the table F ratio, suggesting a significant difference. After adjusting the post-test means, the agility scores were 9.43 for the control group, 9.05 for the physical training group, and 9.95 for the yogic practice group. The obtained F ratio of 2.25 was also greater than the table F ratio, indicating significance. The results of the post hoc test showed significant differences among the groups in resting pulse rate, breath holding time, and flexibility, but not in agility. This could be attributed to the nature of physical training and yogic practice. The hypothesis of significant differences in resting pulse rate, breath holding time, and flexibility due to yogic practice was supported, while the hypothesis of insignificant differences in agility due to physical training and yogic practice was confirmed. The study cited previous research to support these findings (Davis, *et al.*, 2008; Poram, 1986; Khanna, 1990; Katie, 2008) [5-8].

Conclusion

The present study concludes that six weeks of physical training and yogic practices led to significant improvements in resting pulse rate, breath-holding time, flexibility, and agility among college men students.

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