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Impacts of Yogic Practice on Specific Physical Factors in Female College Athletes

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Abstract

The aim of this study was to examine the effects of yogic practice on specific physical variables among female college athletes. To achieve this goal, 30 subjects aged between 18 and 24 years were randomly selected from Trichy Districts and then assigned randomly to two groups, each comprising 15 participants: an experimental group and a control group. The experimental group followed a yogic practice regimen, while the control group did not engage in any experimental activities. The physical fitness variables focused on in this study were flexibility and balance. The research design followed a true random group design, including both pre-tests and post-tests. The 30 subjects were evenly distributed between the experimental group (comprising those undergoing yogic practice) and the control group. Pre-tests were conducted before the six-week experimental period to assess the selected physical variables in all 30 subjects. Following the experimental period, post-tests were administered, and the scores were meticulously recorded. Statistical analysis was carried out with a predetermined significance level set at a 0.05 confidence interval. The results of this study indicated a significant improvement in flexibility and balance among participants in the yogic practice group.

Keywords: Flexibility, Balance, Athletes

Introduction Athletes

Athletes are individuals who actively participate in organized physical activities or sports, showcasing a high level of skill, prowess, and dedication in their chosen disciplines. Distinguished by their exceptional physical abilities, athletes engage in competitive events that span from team sports to individual pursuits, all with the goal of achieving excellence and success. Their unwavering commitment to rigorous training regimens, the pursuit of peak performance, and the demonstration of sportsmanship set them apart within the realm of athletics. Whether on the track, field, court, or in the water, athletes epitomize the embodiment of discipline, resilience, and an unyielding pursuit of achievement. They serve as inspirational figures and sources of motivation for aspiring competitors and sports enthusiasts worldwide.

The transmission of yoga practice has been a legacy from teachers (gurus) to students, evolving over millennia and influenced by various traditions and philosophies, resulting in diverse practices. Different schools often emphasize specific components of the 8 limbs. Health benefits have been recognized as byproducts of the physical and

mental discipline of yoga practice. In the twentieth century, the introduction of yoga to the West emphasized its potential for health maintenance, prevention, and treatment of chronic diseases. Most Western yoga practices incorporate postures, breath control, and meditation, with variations in emphasis on each component by technique, sequence, and intention.

As a mind-body practice, the biological mechanism of yoga likely has multiple components. As a physical activity, its effects are comparable to other forms of exercise, generally considered low- to moderate-intensity. Exercise, including yoga, improves health by enhancing cardiovascular fitness, muscle strength, respiratory adaptations, and modifying metabolism and immune function. Yoga's unique emphasis on relaxation in static and dynamic exercises sets it apart from conventional exercise. Through systematic muscle contractions and relaxations, changes in breathing patterns, and the cultivation of mental attentiveness and awareness, yoga aims to synchronize the body and mind. Active participation is essential in yoga practice, making factors such as motivation, age, and gender potential influencers on outcomes. This is particularly intriguing to study as yoga training becomes increasingly integrated into routine programs (Manjunath, 1998).

Methodology

The researcher implemented a randomized design, incorporating both pretests and post-tests. A total of 30 female athletes (N=30) were randomly assigned to two equal groups, each comprising 15 participants: the experimental group and the control group. Prior to the commencement of any training, a pre-test was administered to evaluate selected physical fitness variables, specifically flexibility and balance, for all 30 athletes. Subsequently, the experimental group underwent a six-week regimen involving yogic practice, while the control group refrained from engaging in any training activities. At the conclusion of the six-week training period, post-tests were conducted to measure the same dependent variables. The data obtained from these tests underwent statistical analysis using the dependent t-test to determine if any statistically significant improvements were observed. It is essential to note that a significance level was set at 0.05, ensuring a 95% confidence level for all analyses.

Test I

Mean and Dependent 't' – ratio for the Pre and Post Tests on High Intensity Interval Training Group and Control Group on Flexibility

Group	Test	Mean	Standard Deviation	Standard Error Mean	t- ratio
Experimental group	Pre test	8.4	2.47	0.24	7.80*
	Post test	9.33	2.20		
Control group	Pre test	8.53	3.05	0.27	1.08
	Post test	8.83	3.20		

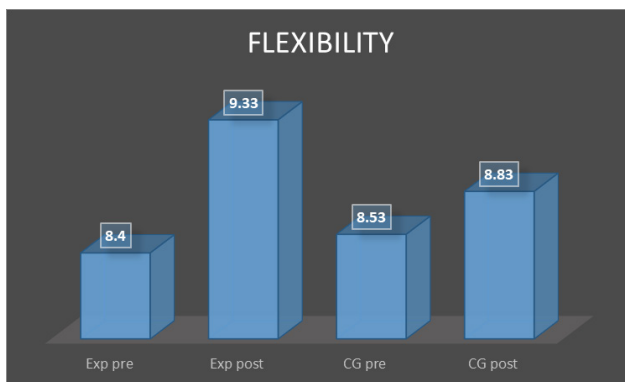
*Significant level 0.05 level degree of freedom (2.14, 1 and 14)

Table I illustrates the computation of the 't' ratio, comparing the means of pre-test and post-test flexibility scores for college-level athletes. The mean flexibility values for the experimental group were 8.4 before training and 9.33 after, while the control group had means of 8.53 and 8.83 for the respective tests. The computed 't' ratio of 7.80 exceeded the critical table value of 2.14, indicating statistical significance for 1 degree of freedom and 14 participants at a 0.05 level of confidence. This outcome strongly suggests that the flexibility of the experimental group significantly improved due to the influence of in-and-outs yogic practice. Conversely, the calculated 't' ratio

of 1.08 fell below the critical table value of 2.14, rendering it statistically non-significant for 1 degree of freedom and 14 participants at a 0.05 level of confidence. This result unequivocally indicates that the flexibility of the control group did not exhibit significant improvement following the intervention.

The bar diagram illustrates the mean values of pre-tests on flexibility for both the control group and the experimental group.

Bar diagram



Test II

Mean and Dependent ‘T’ – ratio for the Pre and Post Tests on high intensity interval training group and control Group on balance

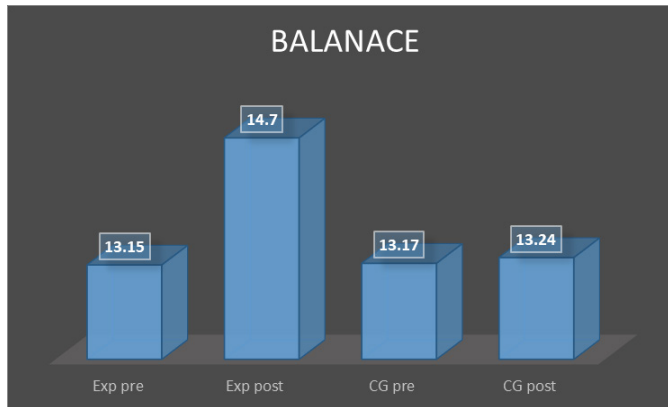
Group	Test	Mean	Standard Deviation	Standard Error Mean	t- ratio
Experimental group	Pre test	13.15	1.69	0.34	6.58*
	Post test	14.70	1.49		
Control group	Pre test	13.17	1.73	0.23	1.08
	Post test	13.24	1.62		

*Significant level 0.05 level degree of freedom (2.14, 1 and 14)

Table II outlines the computation of the ‘t’ ratio, comparing the means of pre-test and post-test balance scores among college-level athletes. The mean values for the experimental group were 13.15 before training and 14.70 after, while the control group had means of 13.17 and 13.24 for the respective tests. The calculated ‘t’ ratio of 6.58 surpassed the critical table value of 2.14, indicating statistical significance for 1 degree of freedom and 14 participants at a 0.05 level of confidence. This outcome strongly suggests that the balance of the experimental group significantly improved due to the influence of in-and-outs yogic practice. Conversely, the computed ‘t’ ratio of 1.08 fell below the critical table value of 2.14, rendering it statistically non-significant for 1 degree of freedom and 14 participants at a 0.05 level of confidence. This result clearly indicates that the balance of the control group did not exhibit significant improvement following the intervention.

The bar diagram illustrates the mean values of pre-tests on balance for both the control group and the experimental group.

Bar Diagram



Discussion on Findings

The study's findings underscore a significant improvement in the selected variables as flexibility and balance within the experimental group, consisting of individuals undergoing game-yogic practice, as compared to the control group. Moreover, the study suggests that the enhancements achieved by the game-yogic practice are notably superior to those observed in the control group. For further insights on this topic, one can refer to the research conducted by Neha Westcott, Wayne L. (2012) Resistance training is medicine: effects of strength training on health.

Conclusions

From the analysis of the data the following conclusions are

1. The experimental group, comprising individuals who engaged in a yogic practice program, exhibited a notably significant improvement in physical fitness variables, specifically flexibility and balance, among college-level athletes.
2. In contrast, the control group demonstrated negligible improvement in physical fitness variables, including flexibility and balance, among college-level athletes.

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