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Effect of Aerobic Exercise and Yogic Practices on Muscular Strength and Anxiety

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Abstract

The purpose of the study was to find out the impact of aerobic exercise and yogic practices on shoulder muscular strength and anxiety. Forty five male students aged between 17 and 21 years were selected for the study. They were divided into three equal groups, each group consisting of fifteen subjects in which two experimental groups and one control group, in which the group I (n=15) underwent aerobic exercise, group II (n = 15) underwent yogic practices for three days (alternative days) per week for twelve weeks, and group III (n=15) acted as control, which did not participate in any training. The subjects tested on selected criterion variables such as shoulder muscular strength and anxiety at prior to and immediately after the training period. For testing the shoulder muscular strength, push-up test was used and to measure the anxiety, Taylor's Manifest Anxiety Scale was used. The analysis of covariance (ANCOVA) was used to find out the significant difference if any, between the experimental groups and control group on selected criterion variables separately. Since there were three groups involved in the present study, the Scheffé S test was used as post-hoc test. The selected criterion variables such as shoulder muscular strength were improved and anxiety was significantly decreased for the training groups when compared with the control group. Moreover, there were no significant difference was occurred between the training groups on selected criterion variables.

Keywords: Aerobic exercise, yogic practices, shoulder muscular strength and anxiety.

Introduction

High-complicated bodily endeavor is a kind of exercise which improves the productiveness of the cardiovascular shape in absorbing and transporting oxygen. The magnitude of cardio endeavor is accompanying with the presence of oxygen. It in a similar way alludes that this variety of pastime is to make use of oxygen as a section of the human body's metabolic or energy producing methodology. There are such a vary of assortments of high-impact exercise, through meaning, are carried out at average ranges of energy for produced instances of time. Aerobic is something however nothing that relates or includes or requires free oxygen[1] and in addition capability the utilization of oxygen that is sufficiently requisite to accumulate electricity insistence whilst performing bodily jerk by means of cardio metabolism.[2] The lights that can maximize depth overall performance are maximally supported by using cardio metabolism and they can be carried out for introduced duration of time. Physical activity, such as aerobic or cardio-exercise with low to high impact based on mainly on the aerobic energy development process.[3]

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Aerobic is a time period which involves, relates to or requiring the oxygen [4] and additionally linked to make use of oxygen sufficiently with needs of power throughout workout overall performance with cardio metabolism.[5] It's time-honored that minimal to modest effective things to do which is bolstered by using cardio metabolism will be labored for a most intervals of time.[7]

Walking, strolling or jogging is an earth based totally locomotor motion which lets in the human beings to cross forcibly on foot. Running is a regular method of pace, eminent through an aerial section in which two ft are on pinnacle of the ground.[8] Yoga is now not an vintage legend hidden in forgetfulness. It is the most valuable in stupor. It is the vital requirement of these days and the traditions of tomorrow. Yoga is an artwork of proper residing and, as such, is proposed to be blanketed in day by day life. It works on all components of the individual: the vital, mental, emotional, physical, psychic, and spiritual.[9]

The asana (also recognised as postures of yoga) help to stretch and loosen up the muscular tissues and human physique skeletal system. The launch thru bodily potential with soothing actions can assist to make a experience of well-being and calmness. Physical pastime or exercising of any type will help humans with excessive stages of anxiety, and asana have the extra advantages of especially growing deep muscle rest whilst

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harmonizing at the equal time.[10] Pranayama is a sensible structure of controlling the breath which falls at the coronary heart of yoga. It has big strength to revive and pacify a tiredness body, a weakening spirit, or wild mentality. The yogis of olden years educated that "Prana" is critical pressure circulating thru us, can be uncommon and channeled inside panoply of respiratory exercises. Throughout this procedure, the human being can attain a calm mind, are re-energized and uplifted. It constructed a extensive affiliation between the external, in which, an energetic coaching of asana like yoga and inside stretching practices that direct us into the deeper location of meditation.[11]

Fitness is the individual's potential to feature and stay efficiently, decisively and jest fully. Now and right here to meet self-confidently the troubles and calamity which are amongst life's expectations.[12]In the field of physical education and sports, psychology may be a component of applied psychology acquiring its subject matter from various branches of psychology. If education is considered as the process of "modification of behaviour" and psychology as the "study of behaviour", our wisdom is in including that education and psychology are the observe and reverse side of the same coin, two subjects with one aim and soul.[13]

Anxiety is man experienced in a varied of ways. Now and then, human being experiences it, as simply in sense of not dangerous fear without being able to uniqueness or of what he is fearful. Psychiatrists announced that these three floating anxiety to specify that it is not attached to any particular object. When all human being's main symptoms are that of free floating anxiety psychiatrists identify the state as an anxiety state.[14]

Materials and Methods

In this study it was aimed to find out the effect of aerobic exercise and yogic practices on shoulder muscular strength and anxiety. To achieve the purpose forty five male football players from various colleges of Thiruvalluvar University, Vellore, were selected as subjects at random from the total population of 86 students. They were divided into three equal groups of fifteen each and further divided as two experimental groups and one control group, in which the group I (n=15) underwent aerobic exercise weekly three days (alternative days – Monday, Wednesday and Friday), group II (n = 15) underwent yogic practices for six days (Monday to Saturday) per week for twelve weeks, and group III (n=15) acted as control which did not participate in any special training apart from the regular curricular activities. For every training programme there would be a change in various structure and systems in human body. So, the researchers consulted with the experts and then selected the following variables as criterion variables: 1. Shoulder muscular strength, 2. Anxiety.

Data Analysis

Analysis of covariance was used to determine the differences, if any, among the adjusted post test means on selected criterion variables separately. Whenever the 'F' ratio for adjusted post test mean was found to be significant, the Scheffé *S* test was applied as post-hoc test. The level of significance was fixed at .05 level of confidence to test the 'F' ratio obtained by analysis of covariance.

Table 1. *Analysis of Covariance and 'F' ratio for Shoulder muscular strength and Anxiety of Aerobic exercise Group, Yogic practices Group and Control Group*

Variable Name	Group Name	Aerobic exercise Group	Yogic Practices Group	Control Group	'F' Ratio
Shoulder muscular strength (in Nos./Min.)	**Pre-test Mean±S.D.**	26.13 ± 1.30	25.80 ± 1.08	25.27 ± 1.10	2.11
	Post-test Mean±S.D.	28.47 ± 1.13	28.93 ± 1.30	24.73 ± 1.49	46.63*
	Adj. Post-test Mean	28.145	28.88	25.109	66.41*
Anxiety (in Points)	**Pre-test Mean±S.D.**	17.60 ± 1.40	17.00 ± 1.13	16.80 ± 1.08	1.76
	Post-test Mean±S.D.	15.07 ± 1.34	14.80 ± 1.32	17.07 ± 1.28	13.38*
	Adj. Post-test Mean	14.656	14.917	17.360	54.10*

* Significant at .05 level of confidence. (The table value required for significance at .05 level of confidence with df 2 and 42 and 2 and 41 were 3.22 and 3.23 respectively).

Table 1 shows that pre and post test means 'f' ratio of aerobic exercise group, yogic practices group and control group on shoulder muscular strength was 2.11, which is insignificant at 0.05 level of confidence. The post and adjusted post test mean 'f' ratio value of experimental groups and control group was 46.63 and 66.41 which was significant at 0.05 level of confidence. The pre test means 'f' ratio of aerobic exercise group,

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yogic practices group and control group on anxiety was 1.76, which is insignificant at 0.05 level of confidence. The post and adjusted post test mean 'f' ratio value of experimental groups and control group was 13.38 and 54.10, which was significant at 0.05 level of confidence. The overall study shows that there was a significant decrease in shoulder muscular strength and anxiety. Further, to find out which of the paired mean significantly differ, the Scheffĕ *S* test was applied and presented below.

Table 2. *Scheffĕ S Test for the Difference Between the Adjusted Post-Test Mean of Shoulder muscular strength and Anxiety*

Aerobic exercise Group	Yogic Practices Group	Control Group	Mean Difference	Confidence Interval at 0.05 level
Adjusted Post-test Mean Difference on Shoulder Muscular Strength				
28.145		25.109	3.036*	0.75
28.145	28.88		0.735	0.75
	28.88	25.109	3.771*	0.75
Adjusted Post-test Mean Difference on Anxiety				
14.656		17.360	2.704*	0.712
14.656	14.917		0.261	0.712
	14.917	17.360	2.443*	0.712

* Significant at 0.05 level of confidence.

Table 2 shows that the Scheffĕ *S* Test for the difference between adjusted post-test mean of aerobic exercise group and control group (3.036) and yogic practices group and control group (3.771) which were significant at 0.05 level of confidence. But there was no significant difference between aerobic exercise group and yogic practices group (0.735) on shoulder muscular strength after the respective training programme.

Table 2 shows that the Scheffĕ *S* Test for the difference between adjusted post-test mean difference in anxiety between aerobic exercise group and control group (2.704), and yogic practices group and control group (2.443) were significant at 0.05 level of confidence in favour of yogic practices group. But there was no significant difference between aerobic exercise group and yogic practices group (0.261) on anxiety after the respective training programme.

Conclusions

1. The aerobic exercise and circuit training groups has shows their improvement in shoulder muscular strength than the control group. Arazi and Faraji [15] has found that muscular strength was improved after the endurance training. Boehde *et al* [16] has found that there was a significant improvement in shoulder muscular strength after the yoga practice.
2. Anxiety were significantly improved for all the training groups, such as, resistance training group and yogic practicesgroup when compared with the control group. Chidambara Raja [17] found that there was a significant decrease in anxiety after the physical exercise regime. Rocha *et al* [18] also found that there was a significant reduction in anxiety after the yogic practice programme.

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