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EFFECT OF YOGIC WITH CALISTHENICS TRAINING ON MUSCULAR ENDURANCE AMONG SCHOOL FOOTBALL PLAYERS

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Abstract: To achieve the purpose of this study, 20 school men football players were randomly selected as subjects from the St. Xavier's school, Palayamkottai, Tirunelveli, Tamilnadu, India. Their age ranged from 17 to 19 years. The selected participants were randomly divided into two groups such as group 'A' yogic with calisthenics (n=10) and group 'B' acted as control group (n=10). Group 'A' underwent yogic with calisthenics for five days per week and each session lasted for an hour for eight weeks. Control group was not exposed to any specific training but they were participated in regular activities. The "Wall sit test" (seconds) was used to measure muscular endurance were selected as variables. The pre and posttests data were collected on selected criterion variables prior and immediately after the training program. The pre and post-test scores were statistically examined by the dependent't' test and Analysis of co-variance (ANCOVA). The level of significant was fixed at 0.05 level. It was concluded that the yogic with calisthenics practices group had shown significantly improved in muscular endurance. However, the control group had not shown any significant improvement on flexibility

Index Terms – Yogic, Calisthenics, Football Players, Men, Muscular Endurance

1. INTRODUCTION

Yogic practices techniques are basically used by athletes in all types of sports to increase strength and explosiveness. Yogic practices consist of a rapid stretching of a muscle (eccentric action) immediately followed by a concentric or shortening action of the same muscle and connective tissue (Baechle, T.R. and R.W. Earle, 2000). Calisthenics is a form of exercise consisting of a variety of movements which exercise large muscle groups such as running, standing, grasping, pushing, etc. These exercises are often performed rhythmically and with minimal equipment, as bodyweight exercises. They are intended to increase strength, fitness and flexibility, through movements such as pulling, pushing, bending, jumping, or swinging, using one's bodyweight for resistance. Calisthenics can provide the benefits of muscular and aerobic conditioning, in addition to improving psychomotor skills such as balance, agility and coordination. The exercises arose in the early 19th century from the work of Germans Friedrich Ludwig Jahn and Adolf Spiess in popularizing gymnastics and were especially stressed by Per Henrik Ling of Sweden as important in the development of education for women. In the United States, Catherine Beecher was an early advocate of calisthenics and wrote Physiology and Calisthenics for Schools and Families (1857). As promoted by Beecher, calisthenics were intended solely for women, but they quickly became an activity for both sexes. The health benefits of calisthenics were generally recognized by the beginning of the 20th century, and primary and secondary schools throughout the Western world began instituting the exercises as a regular activity. Calisthenics are also a part of military training. (Campney & Wehr, 1965; Shvartz & Tamir, 1971).

Football has attained greater level of popularity all over the World and played onsand, natural grass and artificial turf ground. The modem game of football demands thateach member of the team be able to play in all positions. A lively attack needs all-rounderand they must develop their skills to play in any position. One of the greatest pleasures in thesports is exposure to performance at its highest level. The highest level requires skillattainment, mental toughness, practice and dedication. Team sports require high level ofhand and leg power for achieving success at elite level of competitions. As competitions areincreasing day by day, the varieties of training also increase as they become importantfactors to improve the performance. Football is the game of great skill and to play it well isan art itself. It calls for powerful wrists, keen eyes, intelligence, presence of mind, goodeyesight, reaction time, motivation, dedication and balanced diet. It also calls for greatsportsmanship, tolerance and coolness. In short, the game demands the best both as a playerand as a man. An increased agility can also help to reduce common injuries that areassociated with too much stress being put onto inflexible muscles (Yokesh, 2019).

2. METHODOLOGY

To achieve the purpose of this study, 20 school men football players were randomly selected as subjects from the St. Xavier's school, Palayamkottai, Tirunelveli, Tamilnadu, India. Their age ranged from 17 to 19 years. The selected participants were randomly divided into two groups such as group 'A' yogic with calisthenics (n=10) and group 'B' acted as control group (n=10). Group 'A' underwent yogic with calisthenics for five days per week and each session lasted for an hour for eight weeks. Control group was not exposed to any specific training but they were participated in regular activities. The "Wall sit test" (seconds) was used to measure muscular endurance were selected as variables. The pre and posttests data were collected on selected criterion variables prior and immediately after the training program. The pre and post-test scores were statistically examined by the dependent't' test and Analysis of co-variance (ANCOVA).The level of significance was fixed at .05 level of confidence, which was considered as appropriate

3. RESULTS AND DISCUSSIONS

TABLE-1
MEANS AND DEPENDENT 'T' TEST FOR THE PRE AND POST TESTS ON MUSCULAR ENDURANCE OF EXPERIMENTAL AND CONTROL GROUP

Criterion variables	Test	ExperimentalGroup Mean	Control Group Mean
Muscular Endurance	Pre test	34.09	33.94
	Post test	45.11	35.62
	't'test	**10.59***	**1.27**

***Significant at .05 level. (Table value required for significance at .05 level for 't'-test with df 9 is 2.26)

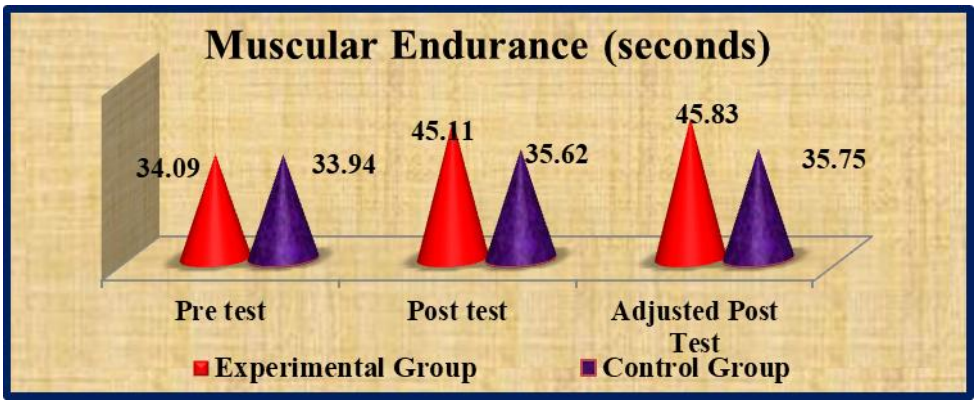
The table-1 shows that the obtained dependent t-ratio values between the pre and posttest means of yogic with calisthenics and control groups are 10.59 & 1.27 respectively. The table value required for significant difference with df 9 at 0.05 level is 2.26. From the above table the dependent't'-test value of muscular endurance between pre and post-tests means of experimental group was greater than the table value 2.26 with df 9 at .05 level of confidence, it was concluded that the experimental group had significant improvement in the muscular endurance when compared to control group.

TABLE-2
COMPUTATION OF MEAN AND ANALYSIS OF COVARIANCE MUSCULAR ENDURANCE OF EXPERIMENTAL AND CONTROL GROUPS

	Experimental Group	Control Group	Source of Variance	Sum of Squares	Df	Mean Square	F
Muscular Endurance (Adjusted PostMean)	45.83	35.75	BG	169.12	1	169.12	**27.19***
			WG	105.74	17	6.22	

* Significant at 0.05 level. Table value for df 1, 17 was 4.45

Table-2 shows that the adjusted post-test means values on muscular endurance of experimental and control groups 45.83 & 35.75 respectively. The obtained f- ratio of 27.19 for adjusted post-test mean is greater than the table value 4.45 with df 1 and 17 required for significance at 0.05 level of confidence. The results of the study indicated that there was a significant mean difference exist between the adjusted post-test means of yogic with calisthenics and control groups on muscular endurance.



The bar diagram figure-1 shows that the mean values of pre, post and adjusted post tests on muscular endurance of yogic with calisthenics and control groups.

4. DISCUSSION ON FINDINGS

The present study highlights a statistically significant improvement in muscular endurance among male football players who incorporated a combination of yogic practices and calisthenics into their training regimen. These findings align with previous research by Kumar & Yokesh (2019), Darwin Engels & Paul Jeeva Singh (2020), and Dhruv et al. (2023), all of which have emphasized the positive effects of yoga and bodyweight exercises on athletic performance. The improvement in muscular endurance can be attributed to the synergistic effect of yogic practices and calisthenics. Yoga enhances flexibility, core stability, and breath control, which contributes to better muscular efficiency and endurance. Calisthenics, on the other hand, focuses on strength-building through bodyweight exercises, promoting functional strength, and improving muscular endurance without the need for external weights. The integration of these two training modalities ensures a holistic approach to conditioning, benefiting football players by enhancing their strength, flexibility, and recovery. Additionally, these findings reinforce the growing recognition of alternative training methods in sports science. Traditional strength training often prioritizes weightlifting and resistance exercises, but the inclusion of yoga and calisthenics offers a more balanced and injury-preventive approach. Given that football players require a combination of strength, agility, and endurance, the results suggest that yogic practices with calisthenics could be a valuable addition to football training programs. Future research could further explore the long-term effects of this combined training approach, its impact on different fitness parameters, and its effectiveness in preventing injuries. Moreover, studying its influence on different age groups and skill levels in football could provide deeper insights into its applicability in sports training. In conclusion, the significant improvement in muscular endurance observed in this study underscores the effectiveness of integrating yogic practices with calisthenics in football training. This approach not only enhances performance but also supports overall physical well-being, making it a valuable training method for athletes.

5. CONCLUSION

Within the limitations and delimitations of this study the following conclusions were drawn from the result.

1. There was significant improvement on muscular endurance due to the effect of yogic with calisthenics among school football players.
2. However, the control group had not shown any significant improvement on any of the selected variables.

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