EFFECTS OF CIRCUIT TRAINING AND YOGIC PRACTICE ON SELECTED BIOMOTOR PHYSIOLOGICAL AND PSYCHOLOGICAL VARIABLES AMONG COLLEGE MEN SOFTBALL PLAYERS

****MAIDAM CHAITHANYA BHAGATH** Ph.D Full Time Research Scholar, Alagappa University College of Physical Education, Alagappa University, Karaikudi, Tamilnadu, India
***Dr. R. SENTHIL KUMARAN** Director, Directorate of Physical Education, Alagappa University, Karaikudi, Tamilnadu, India.

Abstract

The impartial of this study was to explore the effects of 8 Effect of circuit training and yogic practices on selected variables of college men softball player total of 30 men softball player to participate in this study. Treatment group I underwent circuit training, group II acted as group III acted as control group. All forty five subjects were inducted for pre and posttest on agility, breath holding time and anxiety. The experimental training was given to the experimental group for 5 days per week (Monday to Friday) for the period of eight weeks. The control group was not given any sort of training except their routine work. The agility (semo agility test in seconds) breath holding time (breath holding test in seconds) and anxiety (SACT questionnaires in points) were assessed before and after training period. The result from 't' test and inferred that 8 weeks kettlebell training treatment produced identical changes over agility, breath holding time and anxiety of college men softball players. Further, the findings confirmed the circuit training and yogic practices is suitable protocol to bring out the desirable changes over agility, breath holding time and anxiety of college men softball players.

Keywords: Circuit Training, Yoga, Agility, Breath Holding time, Anxiety and Softball players.

INTRODUCTION

Circuit training is a type of exercise program where one does a series of timed exercises at a fairly rapid pace, with a brief period of rest in between each exercise. Circuit training workouts may target the entire body or just one specific area, such as the arms, legs, or chest. In addition, circuit training workouts may focus on strength training, aerobics, or a combination of the two; the possibilities are virtually limitless. In general, there are four types of circuit training workouts, and these include a timed circuit, a competition circuit, a repetition circuit, and a sport specific/running circuit. Each of these types of circuit training workouts can be effective and serve a different purpose depending on one's existing level of physical fitness. All of these circuit types can last as long as the exerciser chooses, but it is necessary to determine the full amount of time first. The first type of circuit training workout, a timed circuit, is the most basic. In this type, one simply sets time limits for periods of exercise and rest. For instance, one might exercise for 30 seconds, followed by a 30 second rest period, then switch to a different exercise for 30 seconds, followed by another rest period. Circuit training consists of performing multiple exercises on multiple body parts in a row with little rest in between exertions. The two most basic types of circuit training are horizontal training and vertical training. In horizontal training, all sets of one exercise are performed before a person moves on to the next exercise. In vertical training, one set of every different type of exercise is performed before returning to an exercise for the second time. The amount of weight that a person lifts during a circuit training session can vary between sets. A person can start with light weights and work up to heavier weights (increasing pyramid) or can start with heavy weights and regress to lighter weights (decreasing pyramid). The most important component of circuit training is to take little rest in between sets, whether of the same or different exercises. **(Kopf 2013).**

Yoga

Yoga, an ancient mind-body practice which originated in India and incorporates physical, mental, and spiritual elements, has been shown in several studies to be effective in improving cardiovascular risk factors, with reduction in the risk of heart attacks and strokes. There is

"promising evidence" that the popular mind-body practice of yoga is beneficial in managing and improving the risk factors associated with cardiovascular disease and is a "potentially effective therapy" for cardiovascular health. Yoga is traditionally believed to have beneficial effects on physical and emotional health **(Iyengar and Razazan, 2001)**.

HYPOTHESIS

The hypothesis argued in this paper is that softball players can significantly changes the agility, breath holding time and anxiety by combining technical and tactical sessions with circuit and yoga training over a consecutive 8 weeks period.

METHODOLOGY

To achieve the purpose of the study 45 men softball players at the age group of 20-25 years were selected from Coimbatore district. The selected subject was randomly assigned into two equal groups, consist of fifteen each, namely circuit training group (n=15), yoga training group (n= 15) and Control group (n=15). The respective training was given to the experimental group the 5 days per weeks (Monday to Friday) for the training period of eight weeks. The control group was not given any sort of training except their routine. The evaluated agility tested by semo agility test the unit of measurement was in seconds, breath holding time were measured by breath holding test the unit of measurement was in seconds and anxiety tested by SCAT questionnaires in points. The parameters were measured at baseline and after 8 weeks of circuit and yoga training were examined. The intensity was increased once in two weeks based on the variation of the exercises.

TRAINING PROGRAMME

The training programme was lasted for 45 minutes for session in a day, 6 days in a week for a period of 8 weeks duration. These 45 minutes included warm up for 10 minutes, 25 minutes circuit and yoga and warm down for 10 minutes. The equivalent in kettlebell training is the length of the time each action in total 5 day per weeks. (Monday to Saturday)

STATISTICAL ANALYSIS

The collected data on arm explosive power and muscular strength endurance due to the effect of circuit and yoga training was statically analyzed with “t” test to find out the significant improvement between pre& posttest if any. In all case the criterion for spastically significance was set at 0.05level of confidence (P<0.05).

TABLE - I
ANALYSIS OF COVARIANCE ON PRE, POST AND ADJUSTED POST TEST MEANS ON AGILITY OF EXPERIMENTAL AND CONTROL GROUPS
(Scores in Numbers)

Test	Circuit training (CT)	Yogic practice (YP)	Control group (CG)	Source of variance	df	Sum of square	Mean square	F-ratio
Pre-test mean	8.97	8.95	8.90	B / S	2	0.01	0.65	0.012
				W / S	42	1.42	2.65	
Post-test mean	8.50	8.65	8.88	B / S	2	1.65	1.54	4.80*
				W / S	42	3.65	4.65	

ISSN: 2278-4632
Vol-14, Issue-7, July: 2024

Adjusted post-test mean	8.49	8.64	8.87	B / S	2	4.58	5.87	90.15*
				W / S	41	5.88	0.21	

* Significant at 0.05 level for the degrees of freedom (2, 42) and (2, 41), 3.22

Table 4.1 reveals the computation of 'F' ratios on pre test, post test and adjusted post test means of CT, YP and CG on agility. The obtained 'F' ratio for the pre test means of CT, YP and CG on agility was 0.012. Since, the 'F' value was less than the required table value of 3.22 for the degrees of freedom 2 and 42, it was found to be not significant at 0.05 level of confidence. Further, the 'F' ratio for post test means of CT, YP and CG on agility was 4.80. Since, the 'F' value was higher than the required table value of 3.22 for the degrees of freedom 2 and 42, hence it was found to be statistically significant at 0.05 level of confidence. The obtained 'F' ratio for the adjusted post test means of CT, YP and CG on agility was 90.15. Since, the 'F' value was higher than the required table value of 3.22 for the degrees of freedom 2 and 41, it was found to be statistically significant at 0.05 level of confidence. The results revealed that there was a significant difference in post-test means among CT, YP and CG on agility of softball players.

BAR DIAGRAM SHOWING PRE, POST AND ADJUSTED POST TEST MEANS OF YOGIC PRACTICE GROUP, CIRCUIT TRAINING GROUP AND CONTROL GROUP ON AGILITY
(Scores in Numbers)

TABLE - II
ANALYSIS OF COVARIANCE ON PRE, POST AND ADJUSTED POST TEST MEANS ON BREATH HOLDING TIME OF EXPERIMENTAL AND CONTROL GROUPS
(Scores in Numbers)

Test	Circuit training (CT)	Yogic practice (YP)	Control group (CG)	Source of variance	df	Sum of square	Mean square	F-ratio
Pre-test mean	34.00	34.00	34.06	B / S	2	0.05	0.02	0.02
				W / S	42	470.93	11.21	

ISSN: 2278-4632
Vol-14, Issue-7, July: 2024

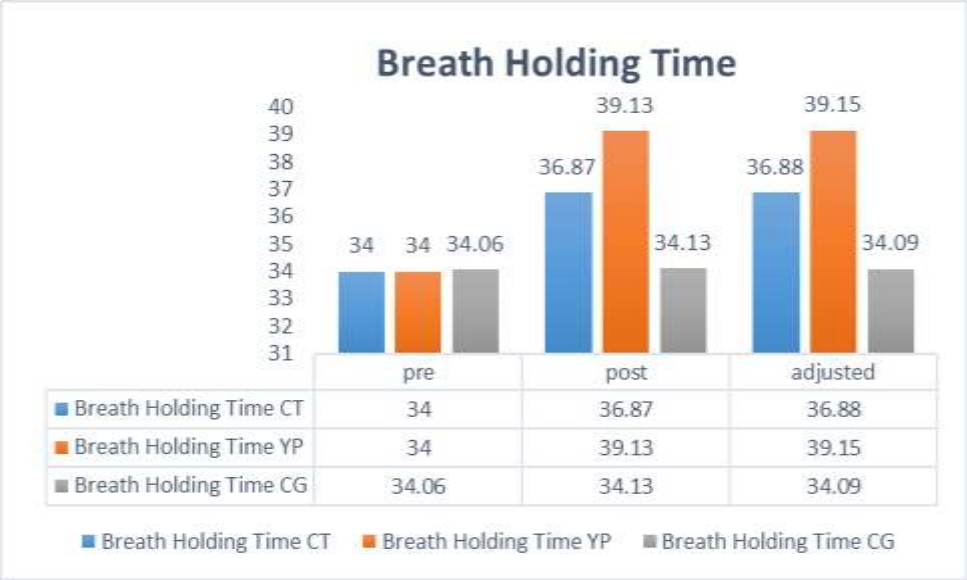
Post-test mean	36.87	39.13	34.13	B / S	2	188.04	94.02	9.46*
				W / S	42	417.20	9.93	
Adjusted post-test mean	36.88	39.15	34.09	B / S	2	192.01	96.01	28.29*
				W / S	41	139.14	3.40	

* Significant at 0.05 level for the degrees of freedom (2, 42) and (2, 41), 3.22

Table 4.2 reveals the computation of 'F' ratios on pre test, post test and adjusted post test means of CT, YP and CG on breath holding time. The obtained 'F' ratio for the pre test means of CT, YP and CG on breath holding time was 0.02. Since, the 'F' value was less than the required table value of 3.22 for the degrees of freedom 2 and 42, it was found to be not significant at 0.05 level of confidence. Further, the 'F' ratio for post test means of CT, YP and CG on breath holding time was 9.46. Since, the 'F' value was higher than the required table value of 3.22 for the degrees of freedom 2 and 42, hence it was found to be statistically significant at 0.05 level of confidence. The obtained 'F' ratio for the adjusted post test means of CT, YP and CG on breath holding time was 28.29. Since, the 'F' value was higher than the required table value of 3.22 for the degrees of freedom 2 and 41, it was found to be statistically significant at 0.05 level of confidence. The results revealed that there was a significant difference in post-test means among CT, YP and CG on breath holding time of softball players.

BAR DIAGRAM SHOWING PRE, POST AND ADJUSTED POST TEST MEANS OF YOGIC PRACTICE GROUP, CIRCUIT TRAINING GROUP AND CONTROL GROUP ON BREATH HOLDING TIME

(Scores in Numbers)



ISSN: 2278-4632
Vol-14, Issue-7, July: 2024

TABLE - III

ANALYSIS OF COVARIANCE ON PRE, POST AND ADJUSTED POST TEST MEANS ON ANXIETY OF EXPERIMENTAL AND CONTROL GROUPS

(Scores in Numbers)

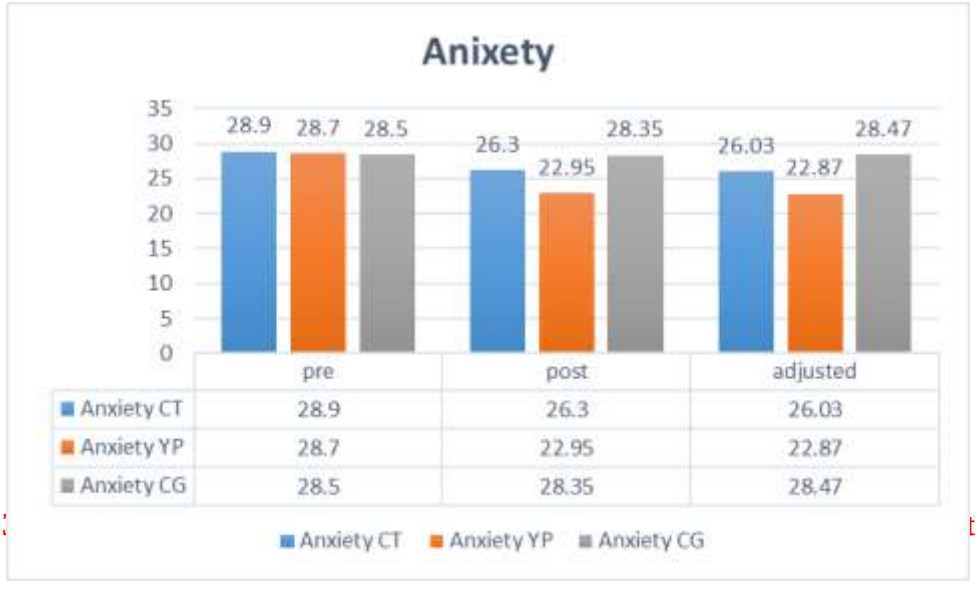
* Significant at 0.05 level for the degrees of freedom (2, 42) and (2, 41), 3.22

Test	Circuit training (CT)	Yogic practice (YP)	Control group (CG)	Source of variance	df	Sum of square	Mean square	F-ratio
Pre-test mean	28.90	28.70	28.50	B / S	2	2.95	0.98	0.017
				W / S	42	4337.80	57.07	
Post-test mean	26.30	22.95	28.35	B / S	2	519.43	173.14	5.97*
				W / S	42	4428.25	58.26	
Adjusted post-test mean	26.03	22.87	28.47	B / S	2	511.97	170.66	36.68*
				W / S	41	348.88	4.65	

Table 4.3 reveals the computation of 'F' ratios on pre test, post test and adjusted post test means of CT, YP and CG on anxiety. The obtained 'F' ratio for the pre test means of CT, YP and CG on anxiety was 0.017. Since, the 'F' value was less than the required table value of 3.22 for the degrees of freedom 2 and 42, it was found to be not significant at 0.05 level of confidence. Further, the 'F' ratio for post test means of CT, YP and CG on anxiety was 5.97. Since, the 'F' value was higher than the required table value of 3.22 for the degrees of freedom 2 and 42, hence it was found to be statistically significant at 0.05 level of confidence. The obtained 'F' ratio for the adjusted post test means of CT, YP and CG on anxiety was 36.68. Since, the 'F' value was higher than the required table value of 3.22 for the degrees of freedom 2 and 41, it was found to be statistically significant at 0.05 level of confidence. The results revealed that there was a significant difference in post-test means among CT, YP and CG on anxiety of softball players.

BAR DIAGRAM SHOWING PRE, POST AND ADJUSTED POST TEST MEANS OF YOGIC PRACTICE GROUP, CIRCUIT TRAINING GROUP AND CONTROL GROUP ON ANXIETY

(Scores in Numbers)



4. DISCUSSION ON FINDINGS

Persons currently are not absorbed in exercising and jogging as they think that it wastes their time and had no other benefits rather than for health. However, when they daily workout in circuit based training will become a sort of exercise and also it become a skill to defence themselves from danger. The present study experimented the influence of eight weeks circuit training and yogic practices on the selected variables of the men softball players. The results of this study indicated that circuit and yoga training is more efficient to bring out desirable changes over the agility, breath holding time and anxiety of the men softball players.

Ten to sixteen week yoga practice reduces stress, anxiety and improves quality of life in subjects with moderate stress **(Smith *et al.* 2007). Richard** *et al.,* **(2005)** suggested that yoga techniques enhance well-being, mood, attention, mental focus and stress tolerance. Modification of mood and reduction of stress in psychiatric inpatients is possible through yogasanas **(Lavey** *et al.* **2005). Kimberlee** *et al.,* **(2009)** reported that yoga reduced stress in older adult men and women. Environmental factors and workload impose stress which may lead to oxidative stress among the police personnel. The stressful conditions, alteration in physiological factors, may lead to various diseases. **Vega** *et.al.,* **(2013)** reported that the circuit training program was effective to increase and maintain both muscular and cardiovascular endurance among schoolchildren. **Manickam (2013)** suggests that there was a significant improvement on selected strength and endurance parameter namely leg strength and strength endurance. **Taşkin (2009)** indicated that the circuit training, which is designed to be performed 3 days a week during 10 weeks of training, improves sprint-agility and anaerobic endurance. **Sarachandra (2014)** reported that the circuit training was significantly improved the speed and agility among young high school football players.

The result from this study are very encouraging and it demonstrates the benefits of circuit and yoga training. The softball players are not only using exercises to improve their mobility but also to improve the performance. Besides, the results support that improvement in mobility can occur 8 weeks of circuit and yoga training.

CONCLUSIONS

1. Based on the result of the study it was concluded that the 8 weeks of circuit training have been significantly changes in agility, breath holding time and anxiety of men softball players.
2. It was concluded that the 8 weeks of yoga training have been significantly changes in agility, breath holding time and anxiety of men softball players.
3. It was also concluded that, when circuit training is compared with yogic practices significantly improved the agility of men softball players.
4. It was also concluded that, when yogic practices is compared with circuit training significantly improved the breath holding time and anxiety of men softball players.

REFERENCES

1. Iyengar B K S (2008, 36th impression), “Light on Yoga”, Noida, Uttar Pradesh, India, Harper Collins Publishers, Page No: 19, 21 and 57-59.
2. Dasi, S., & Kumar, P. S. P. (2022). EFFECTS OF PNF STRETCHING AND OWN BODY EXERCISES ON BALANCE AND MEAN ARTERIAL BLOOD PRESSURE FITNESS VARIABLES AMONG SOFTBALL PLAYERS. Emerging Trends of Physical Education and Sports Science.
3. Smith, D. R., Devine, S. U. E., Leggat, P. A., & Ishitake, T. (2005). Alcohol and tobacco consumption among police officers. The Kurume medical journal, 52(1+ 2), 63-65.
4. Reichard AA, Jackson LL.(2010) Occupational injuries among emergency responders. Ameture Journal of Indian Medicine.;53:1–11.
5. Kamioka, H., Tsutani, K., Katsumata, Y., Yoshizaki, T., Okuizumi, H., Okada, S., ... & Mutoh, Y. (2016). Effectiveness of Pilates exercise: A quality evaluation and summary of systematic reviews based on randomized controlled trials. Complementary Therapies in Medicine, 25, 1-19.

6. Taşkin H.(2009) Effect of circuit training on the sprint-agility and anaerobic endurance. J Strength Cond Res. 2009 Sep;23(6):1803-10. doi: 10.1519/JSC.0b013e3181b3dfc0.
7. Samantha Kopf , (2013) Circuit Training Basics.National Academy of Sports Medicine Certified Personal Trainer.
8. Deepak, K. T. (2023). The Effects Of Plyometric And Saq Training On Selected Skills Among Female Softball Players.
9. Salameh, H. B. (2017). The effect of a proposed training program using medicine balls on some physical variables and the digital achievement of throwing events in athletics for students of physical education. Young, 3, 18.
10. Utama, A. B., Komari, A., Sunardianta, R., & Marhaendro, A. S. D. (2020). Relationship between Ball Control, Footwork and Table Tennis Performance of College Students.

