International Journal of Computational Research and Development (IJCRD)
Impact Factor: 5.015, ISSN (Online): 2456 - 3137
(www.dvpublication.com) Volume 8, Issue 2, 2023

EFFECT OF CIRCUIT TRAINING AND YOGIC EXERCISES ON REACTION TIME AMONG HANDBALL PLAYERS

C. Umarani* & R. Suresh Kumar**
* Physical Director, Vidhya Amrithas Public School (CBSE). Thammampatti, Salem, Tamil Nadu, India
** DS & YWO, Kallakurichi, Tamil Nadu, India

Cite This Article: C. Umarani & R. Suresh Kumar, "Effect of Circuit Training and Yogic Exercises on Reaction Time Among Handball Players", International Journal of Computational Research and Development, Volume 8, Issue 2, July - December, Page Number 98-100, 2023.

Abstract:

The purpose of the study was to investigate the effect of circuit training and yogic exercises on reaction time among handball players. To achieve the purpose the study, forty five handball players were selected from Kallakurichi, Tamilnadu were randomly selected as subjects. As per the records, their age ranged from 18 to 21 years. For this study the true randomized experimental group design has been employed with three groups namely circuit training, yogic exercises training and control group with 15 subjects each. Reaction time was assessed by alternate hand wall test. Group I and II participated their respective treatments for a period of eight weeks and no training were given to the control group. The three groups were statistically analysed by using analysis of covariance (ANCOVA). In case of significance of mean difference was observed on the criterion measure, to find out which pair of group is high among the others, as a post - hoc test, the Scheffe's test was applied. The circuit training has better score than the yogic exercises on reaction time.

Key Words: Circuit Training, Yogic Exercises, Handball, Reaction Time.

Introduction:

Playing handball is a simple, approachable, and visually appealing way to combine certain driving habits with natural motions like running, throwing, and jumping with one hand. Additionally, the game of handball is played against a backdrop of high physical demands that are very instructive and formative. Athletes must exert a lot of physical effort to achieve great performance, which can cause weariness and irreversible health damage, particularly when preparation is based on improvisation and empiricism rather than scientific principles. Within the realm of team sports, handball is a spectacular game that relies on the skilful recovery of players' physical, technical, and mental fitness. It is played under well-established, easily understood rules. Handball's primary goal is to help each player develop their unique personality; a player's level of physical fitness is insufficient. He is continuously tested in his self-control, fairness, courage, and consideration. The game's concept is obvious, and it's a sophisticated and diverse game. All the benefits of a team sport are combined in handball. Its core principles include deft ball handling, quick physical responses, mental agility, teamwork, and, most importantly, fair play. Modern training techniques for the three sports of running, jumping, and throwing serve as the foundation for training, which calls for a thorough and well-rounded physical education (Almeida et al. 2013).

Methodology:

The purpose of the study was to investigate the effect of circuit training and yogic exercises on reaction time among handball players. To achieve the purpose the study, forty five handball players were selected from Kallakurichi, Tamilnadu were randomly selected as subjects. As per the records, their age ranged from 18 to 21 years. For this study the true randomized experimental group design has been employed with three groups namely circuit training, yogic exercises and control group with 15 subjects each. Reaction time was assessed by alternate hand wall test. Group I and II participated their respective treatments for a period of eight weeks and no training were given to the control group. The three groups were statistically analysed by using analysis of covariance (ANCOVA). In case of significance of mean difference was observed on the criterion measure, to find out which pair of group is high among the others, as a post - hoc test, the Scheffe's test was applied.

Results:

Table 1: Computation of Mean and Analysis of Covariance on Reaction Time

	CTG	YEG	Control Group	Source of Variance	Sum of Squares	DF	Mean Square	F
Pre Test Mean	21.66	21.73	21.40	BG	0.93	2	0.46	0.07
				WG	271.86	42	6.47	
Post Test Mean	25.93	24.60	21.13	BG	184.17	2	92.08	9.61*
				WG	402.26	42	9.57	
Adjusted Post Mean	25.87	24.47	21.32	BG	162.61	2	81.30	20.27*
				WG	164.46	41	4.01	

* Significant at 0.05 level

Table value for df 2 and 42 was 3.21, Table value for df 2 and 41 was 3.22

The above table indicates the adjusted mean value of reaction time of low intensity aerobic dance training, high intensity aerobic dance training and control groups were 25.87, 24.27 and 21.32 respectively. The obtained F-ratio of reaction time for adjusted mean was 20.27 greater than the table value 3.22 for the degrees of freedom 2 and 41 at 0.05 level of confidence. The result of the study indicates that there was a significant difference among three groups on reaction time.

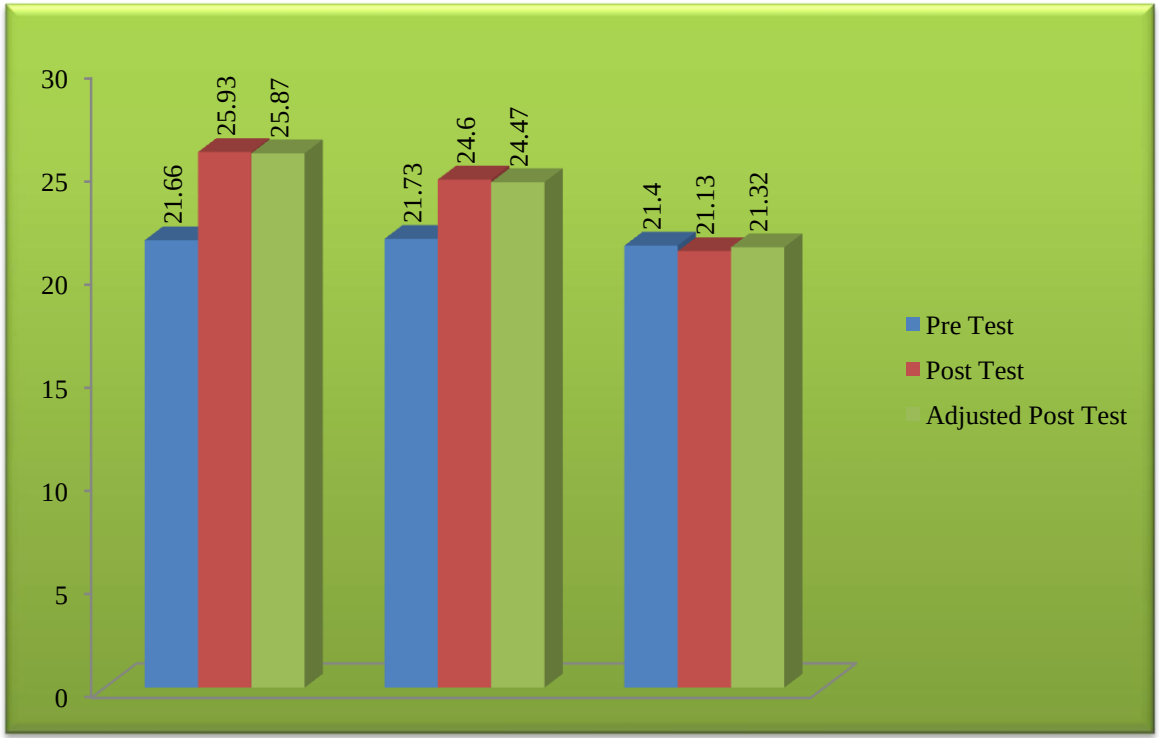
Table 2: Scheffe's Post Hoc Test on Reaction Time

CTG	YEG	Control Group Mean	Mean Difference	CI value
25.87	21.32	----------	1.21*	1.08
25.87	-------	24.47	0.87	
--------	21.32	24.47	1.05*	

*****P < 0.05, Confidence interval value (0.05) = 1.02

From the above table the mean difference values between low intensity aerobic dance training and high intensity aerobic dance training (1.21) reveals that there was a significant difference in the variable reaction time as the mean difference value was greater than the confidence interval value (1.08). Whereas the mean difference between low intensity aerobic dance training and control group (1.05), high intensity aerobic dance training and control group (0.87) do not show any significant difference as mean difference value was lesser than the confidence interval value (1.08). The result indicating that low intensity aerobic dance training have better score than the other two groups on reaction time. The pre, post and adjusted mean values of reaction time of between low intensity aerobic dance training, high intensity aerobic dance training and control groups are graphically represented in the figure 1.

Figure 1: Bar Diagram Showing the Mean Values on Reaction Time



Conclusions:

- The result indicating that circuit training and yogic exercises has better score than the other two groups on reaction time.
- The circuit training has better score than the yogic exercises on reaction time.

References:

1. Almeida G P, Silveira PF, Rosseto NP, et al (2013). Glen humeral range of motion in handball players with and without throwing-related shoulder pain. J Shoulder Elbow Surg, 22:602-7
2. Barrow, H.M, and Mc. Gee. M. (1988). Practical measurements in Physical Education and Sports, New Delhi: Surjeet Publication.
3. Barrow, Harold M. Rose Mary Mc Gee and Kathleen A. Tritschler (1989). Practical measurements in Physical Education and Sports, Philadelphia: lea Fibiger.
4. Eswaramoorthy, A. &Suresh Kumar, M. (2020). Effect of yogic practices and aerobic training on flexibility among physical education students. Purakala, 31, 8, 417-420.

5. Karuppaiah, M., & Kumar, M.S. Examination of the Changes on Selected Performance Parameters in Response to Circuit Training among Kabaddi Players. Asian Pacific Journal of Health Sciences. 2022, 9, 3, 25,26
6. Suresh, Kumar M. (2019). Effect of yogic practices on selected lung volumes among asthmatic men. The International journal of analytical and experimental modal analysis, XI, VII, 1286-1290.
7. Vijayarani, C. A., V. Vallimurugan & Suresh Kumar. M. (2012). Influence of Yogic Practices on Selected Physiological and Psychological Variables of Adolescent Boys. Recent Research in Science and Technology. 3,1.