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Effect of yogic practices and physical exercise on flexibility and resting heart rate among male cricket players

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Abstract

To achieve the purpose of this study, forty eight college cricket players studying in various colleges affiliated to Bharathidasan University were randomly selected as subjects. Their age ranged from seventeen to twenty years. The selected subjects (N=48) were divided into three equal groups and named Group-I as yogic practice group, Group-II as physical exercises group and Group-III as control group each group consisting of sixteen subjects. Subjects in the Group-I underwent the yogic practice, subject in the Group-II underwent the physical exercises and subjects in the Group-III did not go through any specific yogic (or) physical exercise but their regular practice. During the training period, training was given for both experimental groups, the yogic practice and physical exercises were given for twelve weeks, five days per week for forty five minutes each day in the morning session under the supervision of the investigator. The dependent variables namely sit and reach and radial method. The data was collected before and after the experimental treatment. Analysis of covariance (ANCOVA) was used to analyze the collected data. Scheffe's test was followed as a post hoc test to determine the level of significant difference between the paired means. All of the statistical analyses were computed at 0.05 level of significance. Yogic practice and physical exercises groups had shown significant changes in speed and agility when compared to control group among male cricket players. Physical exercise group are better than yogic practice on speed and agility among male cricket players.

Keywords: Yoga, physical exercise, speed and agility

Introduction

Yogic breathing or pranayama is the breathing exercise, which helps for even levels of inhaling and exhaling. Postures are mastered and techniques are introduced for relaxation and breath control. It is found that yoga has the power to calm the mind, increase our concentration and give the ability to cope with tension. It promotes total physical and mental well – being. Yogasanas have a great impact on the mind and the senses than the other physical exercises. As a result yogasanas help to develop one's physical and mental powers to calm the mind and control the senses. Yogasanas make possible not only physical and mental development but also intellectual and spiritual development. Asanas require the least possible use of physical energy. Yogasanas are called a „non-violent activity“ (Sharma, 1984) ^[1]. Physical exercises are an orderly or systematic movement of body parts with or without equipments with an objective to better performance. Generally exercises are focused on improving the motor qualities, rhythm etcetera and most of the exercises are repeated to get perfection. Exercise from the practical point of view may be formulated as “any bodily exertion for the sake of keeping the organs and their functions in a healthy state” (Karambelkar, 1971) ^[2].

Purpose of the study

The purpose of the study was to find out the effects of yoga practice and physical exercise on flexibility and resting heart rate among male cricket players.

Methodology

To achieve the purpose of this study, forty eight college cricket players studying in various

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colleges affiliated to Bharathidasan University were randomly selected as subjects. Their age ranged from seventeen to twenty years. The selected subjects (N=48) were divided into three equal groups and named Group-I as yogic practice group, Group-II as physical exercises group and Group-III as control group each group consisting of sixteen subjects. Subjects in the Group-I underwent the yogic practice, subject in the Group-II underwent the physical exercises and subjects in the Group-III did not go through any specific yogic (or) physical exercise but their regular practice. During the training period, training was given for both experimental groups, the yogic practice and physical exercises were given for twelve weeks, five days per week for forty five minutes

each day in the morning session under the supervision of the investigator.

The dependent variables namely flexibility and resting heart rate. Parameters were measured by standard tests namely sit and reach and radial method. The data was collected before and after the experimental treatment. Analysis of covariance (ANCOVA) was used to analyze the collected data. Scheffe's test was followed as a post hoc test to determine the level of significant difference between the paired means. All of the statistical analyses were computed at 0.05 level of significance.

Analysis of the data

Table 1: Analysis of Covariance of Pre, Post and Adjusted Post Test Means Of Yogic Practice, Physical Exercises and Control Groups on Flexibility And Resting Heart Rate

Test	Yogic practice group	Physical exercises group	Control group	SOV	SS	df	MS	f-ratio	
Flexibility									
Pre test									
Mean	22.34	22.58	21.65	B.M.	7.47	2	3.73	1.59	
SD(±)	0.60	0.43	2.54	W.G.	105.58	45	2.34		
Post test									
Mean	24.60	22.95	21.88	B.M.	54.78	2	29.89	55.04*	
SD(±)	0.72	0.58	0.87	W.G.	24.43	45	0.54		
Adjusted post test									
Mean	24.57	22.89	21.96	B.S.	54.79	2	27.39	54.51*	
Resting heart rate									
Pre test									
Mean	74.93	75.93	76.81	B.M.	28.16	2	14.08	1.75	
SD(±)	4.024	2.35	1.51	W.G.	360.31	45	8.00		
Post test									
Mean	72.50	70.31	77.37	B.M.	418.29	2	209.14	18.85*	
SD(±)	4.19	3.64	1.54	W.G.	499.18	45	11.09		
Adjusted post test									
Mean	73.09	70.28	76.80	B.S.	335.00	2	167.5	20.47*	
				W.S.	360.00	44	8.18		
SOV – Source of variance				SS – Sum of square			df – degrees of freedom		
MS – Mean square				B.M. –Between mean			W.G. – Within groups		
B.S. – Between sets				W.S. – Within set					

*Significant at 0.05 level of confidence. (The table values required for significance at 0.05 level of confidence for 2 & 45 and 2 & 44 are 3.20 and 3.21 respectively).

The table I shows that the obtained 'F' ratio flexibility 1.59 and resting heart rate 1.75 for pre-test means was less than the table value, 3.20 for df 2 and 45 required for significance at 0.05 level of confidence. The obtained 'F' ratio flexibility 55.04 and resting heart rate 18.85 for post-test means was greater than the table value 3.20 for df 2 and 45 required for significance at 0.05 level of confidence. The obtained 'F'

ratio of flexibility 54.51 and resting heart rate 20.47 for adjusted post-test means was greater than the table value of 3.21 for df 2 and 44 required for significance at 0.05 level of confidence. The results of the study indicated that there was a significant difference among the adjusted post-test means of yogic practice, physical exercises and control groups on flexibility and resting heart rate.

Table II: The Scheffe's Post Hoc Test for the Difference between Paired Means of Yogic Practice, Physical Exercises and Control Groups on Flexibility and Resting Heart Rate

Yogic practice group	Physical exercises group	Control group	MD	CI
Flexibility				
24.57	22.89	-	1.68*	0.60
24.57	-	21.96	2.61*	
-	22.89	21.96	0.93*	
Resting Heart Rate				
73.09	70.28	-	2.31*	0.22
73.09	-	76.80	3.71*	
-	70.28	76.80	6.52*	

*Significant at 0.05 level of confidence.

The table II shows that the mean difference values between yogic practice group and physical exercises group, yogic practice and control group and physical exercises group and

control group are 1.68, 2.61 and 0.93 respectively which are greater than the confidence interval value 0.60 at 0.05 level of confidence on flexibility. And resting heart rate is 2.31, 3.71

and 6.52 respectively which are greater than the confidence interval value 0.15 at 0.05 level of confidence on resting heart rate. The results of the study showed that the yogic practice group is better than physical exercise on flexibility among male cricket players and also the Physical exercise group are better than yogic practice on resting heart rate among male cricket players.

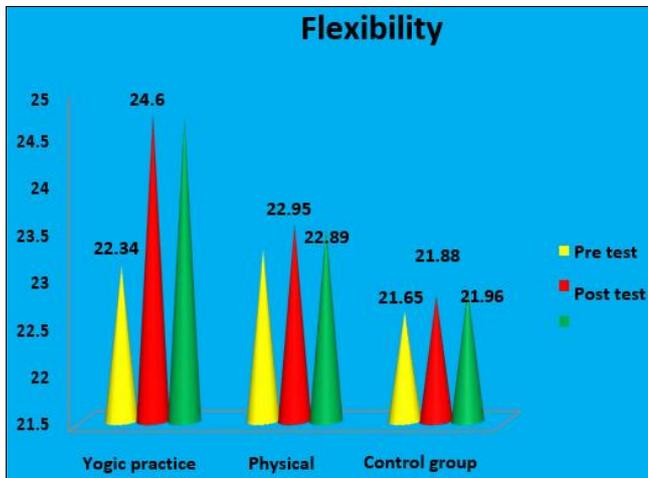


Fig 1: The pre, post and adjusted mean values of yogic practice, physical exercises and control groups on flexibility.

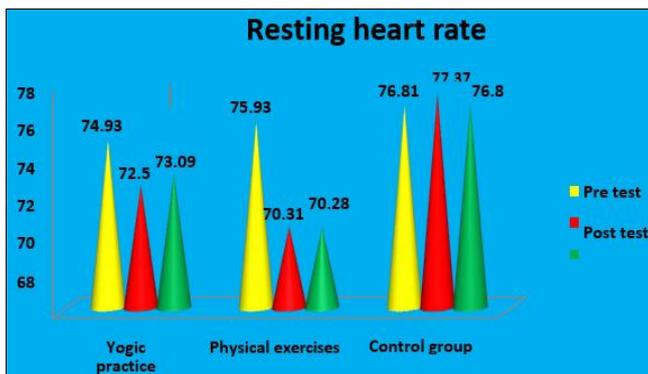


Fig 2: The pre, post and adjusted mean values of yogic practice, physical exercises and control groups on resting heart rate

Discussion on Findings

The results of the study indicated that the experimental groups namely yogic practice and physical exercises had a significant influence on flexibility and resting heart rate among male college cricket players. The results of the study showed that the yogic practice group is better than physical exercise on flexibility among male cricket players. The findings of the present study were supported by many research findings Sethu (2016a) ^[10], Weinberg *et al.* (1980) ^[13], Kalidasan (1998) ^[11], Mohan (1999) ^[4], Manikandan, & Sethu (2017) ^[3] and Samsudeen & kalidasan (2011) ^[7]. And also the Physical exercise group are better than yogic practice on resting heart rate among male cricket players. The findings of the present study were supported by many research findings Sethu (2016) ^[9] Telles, *et al.* (2004) ^[12], Rajkumar (2007) ^[15], Rani & Sahayalatha (2009) ^[6], and Samsudeen & Kalidasan (2012) ^[8].

Conclusions

From the analysis of the data, the following conclusions were drawn

1. The cricket players of the yogic practice and physical exercises groups had shown significant changes in flexibility and resting heart rate when compared to

control group among male cricket players.

2. The yogic practice group was better than physical exercise on flexibility male college cricket players.
3. The physical exercise group was better than the yogic practice group on resting heart rate among male college cricket players.
4. The control group had not shown significant change in any of the selected variables

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