



EFFECT OF ISOLATED AND COMBINED PILATES EXERCISES AND YOGIC PRACTICES ON KYPHOSIS DEFORMITIES AMONG SCHOOL BOYS IN KERALA STATE

Physical Education

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ABSTRACT

The purpose of the study was to determine the effect of isolated and combined Pilate's exercises and Yogic practices on Kyphosis deformities among school boys in Kerala State. For this purpose, One hundred and sixty (N=60) school boys of age ranged between 10 to 14 years having upper deformity of Kyphosis 60 boys, from various schools in Kerala State. The selected subjects were divided into three equal groups of four experimental groups of Pilate's exercises group (N=15), Yogic practices group (N=15), Pilate's exercises and Yogic practices group (N=15) and Control group (N=15). The dependent variables selected for this study was Kyphosis. All the subjects were tested prior to and immediately after the experimental period on the selected dependent variables. The data obtained from the experimental groups and control group before and after the experimental period were statistically analyzed with 't'-test and Analysis of covariance (ANCOVA). Whenever the 'F' ratio for adjusted post test means was found to be significant, the Scheffe's Post hoc test was applied to determine the paired mean differences. The level of confidence was fixed at 0.05 for all the cases. A remarkable significant improvement in the functional aspect of the deformities of the spinal column such as Kyphosis, was found due to the influence of selected Pilate's Exercises, Yogic Practices and Combined Pilates Exercises and Yogic Practices among the school boy's. The Combined Pilates Exercises and Yogic Practices group has been found to be better than the Pilates Exercises group, Yogic Practices and Control group in decreasing deformities of the spinal column such as Kyphosis.

KEYWORDS

Pilates Exercises, Yogic Practices, Combined Pilates Exercises and Yogic Practices, Kyphosis

Introduction

Good posture is help in kinetic sense. Study proposed examined the relationship between a motor skill postural and action components and balance while moving. The first experiment examined the influence of experience on the development of balance control strategies (stabilization of head in space) during locomotion given varying levels of task complexity. A qualified gymnast has a good posture. It had been proved that good gymnast has a good kinetic sense (Marie, 2002).

Concerted action of bones, joints and muscles direct all human movement, the three works together to operate a very efficient and effective system of motion and locomotion. This will discuss the bones and joints.

Poor posture causes a cramped position of heart, lungs and abdominal organs. Circulation of the blood is impeded and the organs farthest from the heart fail to receive adequate oxygen. Under stretching of muscles in bad posture causes nerves and muscle fatigue. Bad posture is responsible for undue strain on joints and ligaments, which after a time results in pain. Just as lack of alignment in an automobile cause's friction so poor posture causes fatigue fear and tear in humans.

Kyphosis is an exaggeration or increase in the amount of the normal convexity of the thoracic of spine. It is an abnormal increase in the flexion of the spine i.e., outward curvature of spine with round shoulders and head drooped forward, resulting in a hump towards the back. Such a condition may arise due to tuberculosis of spine and from various other causes (Maheswari, 2004).

Methodology

For this purpose, One hundred and sixty (N=60) school boys of age ranged between 10 to 14 years having upper deformity of Kyphosis 60 boys, from various schools in Kerala State. The selected subjects were divided into three equal groups of four experimental groups of Pilate's exercises group (N=15), Yogic practices group (N=15), Pilate's exercises and Yogic practices group (N=15) and Control group (N=15). The dependent variables selected for this study was Kyphosis. All the subjects were tested prior to and immediately after the experimental period on the selected dependent variables. Kyphosis was measured through Spondylometer.

The data obtained from the experimental groups and control group before and after the experimental period were statistically analyzed with 't'-test and Analysis of covariance (ANCOVA). Whenever the 'F' ratio for adjusted post test means was found to be significant, the Scheffe's Post hoc test was applied to determine the paired mean differences. The level of confidence was fixed at 0.05 for all the cases.

The results of the Analysis of Covariance on Kyphosis of the pre, post, and adjusted test scores of Pilate's Exercises, Yogic Practices group, Combined Pilate's Exercises & Yogic Practices and Control group are presented in Table – 1.

Table – 1 Analysis of Covariance on Kyphosis of Experimental Groups and Control Group

Test	Pilate's Exercises Group	Yogic Practices Group	Combined Pilate's Exercises and Yogic Practices Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	F ratio
Pre Test Mean	40.60	40.66	40.27	40.40	Between	1.52	3	0.51	0.51
					Within	55.47	56	0.99	
Post Test Mean	38.10	36.33	34.80	40.47	Between	2464.93	3	88.31	54.07*
					Within	91.47	56	1.63	
Adjusted Post Test Mean	37.95	36.26	34.89	40.50	Between	262.87	3	87.62	58.63*
					Within	82.20	55	1.49	

*Significant at 0.05 level of confidence

(Kyphosis Scores in Centimeters)

Table value for $df(3, 56)$ at 0.05 level = 2.76 Table value for $df(3, 55)$ at 0.05 level = 2.78

The above table-1 shows that the pre-test mean values on Kyphosis of Pilate's Exercises group, Yogic Practices group, and Combined Pilate's Exercises and Yogic Practices group and Control group are 40.60, 40.66, 40.27, and 40.40 respectively. The obtained 'F' ratio of 0.51 for pre-test scores was lesser than the table value of 2.76 for degrees of freedom 3 and 56 required for significance at 0.05 level of confidence on Kyphosis.

The post test mean values on Kyphosis of Pilate's Exercises group, Yogic Practices group, and Combined Pilate's Exercises and Yogic Practices group and Control group are 38.10, 36.33, 34.80 and 40.47 respectively. The obtained 'F' ratio of 54.07 for post-test scores was higher than the table value of 2.76 for degrees of freedom 3 and 56 required for significance at 0.05 level of confidence on Kyphosis.

The adjusted post-test means on Kyphosis of Pilate's Exercises group, Yogic Practices group, and Combined Pilate's Exercises and Yogic Practices group and Control group are 37.95, 36.26, 34.89 and 40.50 respectively. The obtained 'F' ratio of 58.63 for adjusted post-test scores was higher than the table value of 2.78 for degrees of freedom 3 and 55 required for significance at 0.05 level of confidence on Kyphosis.

The results of the study indicate that there are significant differences among the adjusted post test means of Pilate's Exercises group, Yogic Practices group, and Combined Pilate's Exercises and Yogic Practices group and Control group in Kyphosis performance.

To determine which of the paired means have a significant difference, the Scheffe's test is applied as Post hoc test and the results are presented in Table-2.

Table - 2 The Scheffe's test for the differences between the adjusted post test paired means on kyphosis

Adjusted Post-test Means				Mean Difference	Confidence Interval
Pilate's Exercises Group	Yogic Practices Group	Combined Pilate's Exercises and Yogic Practices Group	Control Group		
37.95	36.26			1.69*	1.29
37.95		34.89		3.06*	1.29
37.95			40.50	2.55*	1.29
	36.26	34.89		1.37*	1.29
	36.26		40.50	4.24*	1.29
		34.89	40.50	5.61*	1.29

*Significant at 0.05 level of confidence

Table-2 shows that the adjusted post test mean differences on Kyphosis between Pilate's Exercises group and Yogic Practices group, Pilate's Exercises group and Combined Pilate's Exercises and Yogic Practices group, Pilate's Exercises group and Control group, Yogic Practices group and Combined Pilate's Exercises and Yogic Practices group, Yogic Practices group and Control group, Combined Pilate's Exercises and Yogic Practices group and Control group are 1.69, 3.06, 2.55, 1.37, 4.24 and 5.61 respectively, which are greater than the confidence interval value of 1.29 on Kyphosis at 0.05 level of confidence.

The results of the study showed that there was a significant difference between Pilate's Exercises group and Yogic Practices group, Pilate's Exercises group and Combined Pilate's Exercises and Yogic Practices group, Pilate's Exercises group and Control group, Yogic Practices group and Combined Pilate's Exercises and Yogic Practices group, Yogic Practices group and Control group, Combined Pilate's Exercises and Yogic Practices group and Control group on Kyphosis.

The above data also reveal that Combined Pilate's Exercises group and Yogic Practices group had shown better performance Pilate's Exercises group, Yogic Practices group and Control group in Kyphosis.

The pre and post mean values of Pilate's Exercises group, Yogic Practices group, Combined Pilate's Exercises group and Yogic Practices group and Control group on Kyphosis are graphically represented in the Figure -1.

The adjusted post mean values of Pilate's Exercises group, Yogic Practices group, Combined Pilate's Exercises group and Yogic Practices group and Control group on Kyphosis are graphically represented in the Figure-2.

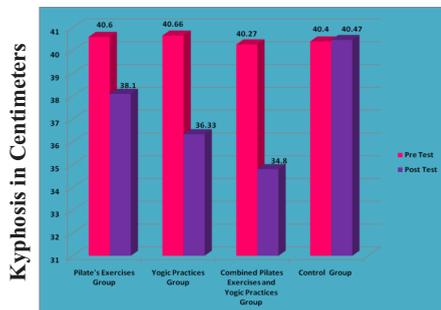


Figure: 1 The Pre and Post test Mean values of Pilate's Exercises group, Yogic Practices group, Combined Pilate's Exercises group and Yogic Practices group and Control group on Kyphosis

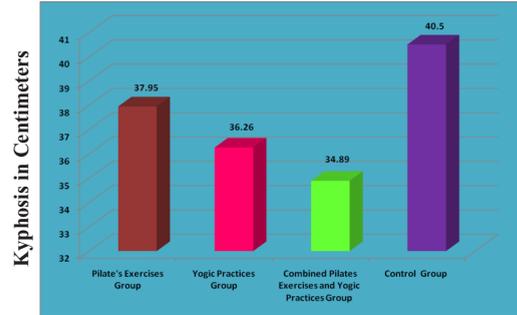


Figure: 2 The Adjusted Post Mean Values of Pilate's Exercises group, Yogic Practices group, Combined Pilate's Exercises group and Yogic Practices group and Control group on Kyphosis

Conclusion

From the analysis of the data, a remarkable significant improvement in the functional aspect of the deformities of the spinal column such as Kyphosis, was found due to the influence of selected Pilate's Exercises, Yogic Practices and Combined Pilates Exercises and Yogic Practices among the school boy's. The Combined Pilates Exercises and Yogic Practices group has been found to be better than the Pilates Exercises group, Yogic Practices and Control group in decreasing deformities of the spinal column such as Kyphosis.

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