

EFFECT OF SELECTED YOGIC PRACTICES ON REACTION TIME OF SECONDARY SCHOOL CHILDREN

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Abstract:

The present study was conducted to investigate the Effect of Selected Yogic Practices on Reaction Time of Secondary School Children. Thirty secondary school children between the age group of fifteen to nineteen years were selected through systematic random sampling technique from Kapurthala district. Subjects were divided into two groups i.e. Experimental and Control group. Training of Yoga was imparted for eight weeks and data of pre test and post test was collected. Training program was not given to Control group. Audio-visual reaction time was measured by audio visual reaction timer. The results of the investigation shown significant improvement in visual reaction time which were tested on 0.05 level of confidence, where as audio reaction time was found insignificant at 0.05 level of confidence.

KEYWORDS:

Yogic practices, Audio reaction time, Visual reaction time.

INTRODUCTION

Yoga refers to the traditional physical and mental disciplines based in India. The word itself translates as 'union' and in this way defines the union of the mind, body and spirit expressed through physical postures and poses.

The whole system of Yoga is built on three main structures: exercise, breathing, and meditation. The exercises of Yoga are designed to put pressure on the glandular systems of the body, thereby increasing its efficiency and total health. The body is looked upon as the primary instrument that enables us to work and evolve in the world, and so a Yoga student treats it with great care and respect. Breathing techniques are based on the concept that breath is the source of life in the body. The Yoga student gently increases breath control to improve the health and function of both body and mind. These two systems of exercise and breathing then prepare the body and mind for meditation, and the student finds an easy approach to a quiet mind that allows silence and healing from everyday stress. Regular daily practice of all three parts of this structure of Yoga produce a clear, bright mind and a strong, capable body.

Reaction time: Your hand accidentally touches the hot plate of an oven and is withdrawn immediately. A young child runs out in front of your car and you hammer on the brakes. A lottery ball falls into its position upside down and you have to shout out the correct number as fast as you can to a colleague who is checking off the numbers for your syndicate. All three examples of reaction time are the time it takes to make a movement in response to a sensory stimulus. However, even if we try to respond as fast as possible in each situation, the reaction time is quite different.

The quickest reaction times have the simplest neuronal circuitry. Tap the knee and the leg moves. This is the tendon jerk beloved of clinical neurologists. The tap excites receptors in the quadriceps muscle at the front of the thigh and these send signals back to the lumbar part of the spinal cord. There, a direct connection is made to the motor neurons that innervate the quadriceps muscle and cause it to contract, making the leg kick forwards. It takes a total of about 30 ms for this to happen. The receptors take 1-2 ms to

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respond, and another 1-2 ms is needed for the connections to operate in the spinal cord. The remaining 27 ms or so is taken up with the time it takes nerve impulses to travel from muscle to spine and back again.

There are some responses that require much more careful evaluation of the sensory input before an appropriate movement can be selected. These have longer reaction times, since the circuits cannot be prepared in advance with any certainty. Calling out upside-down numbers on lottery balls is probably in this category. First of all the visual field must be rotated mentally by 180 degrees, and even then, fifty possible responses are available, perhaps narrowed down to 10 if the colour of the ball is known. All of this takes the CNS a good deal of processing, and by the time the response (vocalization of the number) is selected, the sensory impression has probably reached consciousness.

PROCEDURE

Population for the study was comprises from the secondary schools children of Kapurthala district of Punjab. Sixty subjects between the age group of fifteen to nineteen years were selected and divided into two groups i.e. thirty students in experimental group and thirty in the control group. Sample was selected through systematic random sampling technique. Mean score was calculated from the pre-test and the post-test using the audio visual reaction timer and then t-test was used to find out the difference between the pre-test and post-test mean values of reaction time. Pre test-post test design was used for the collection and analysis of data. After finalization of the samples for the research study, familiarization camp of one week was organized. Training was given six days in a week from 7.00 am to 9.00 am in the morning. Sunday was remaining as the rest day. After the completion of eight weeks, post-test data was recorded and analyzed. Apart from training, subjects/samples were attended their daily routine classes as scheduled. Whole research work was done under the supervision of investigator.

Eight weeks of yogic practices programme which was followed by the children includes the following exercises:

Table - 1
Training programme

Sr. No.	Monday to Saturday	Repetitions	Sets
1.	Padamasana	1	1
2.	Om Dhayana	10	3
3.	Bharamari	9	1
4.	Ujjai	5	1
5.	Anulom Vilom	150	2
6.	Suryanamskara (12 Count)	4	4
7.	Trikonasana	2	2
8.	Kuktasana	2	2
9.	Natrajasana	2	2
10	Tadasana	2	2
11	Ustrasana	2	2
12	Natrajasana	2	2

RESULT AND DISCUSSION

The data collected by adopting above procedure were statistically analysed. The results were presented in the following tables.

Table - 2

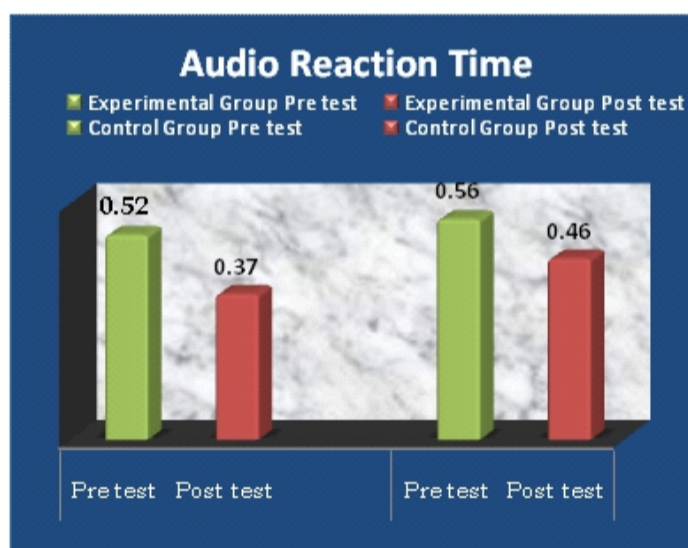
Comparison of pre-test and post-test mean scores of experimental and Control group on Audio Reaction Time					
		Mean	SD	SEDM	t-value
Experimental Group	Pre-test	0.52	0.3	0.06	1.67
	Post-test	0.37	0.37	0.07	
Control Group	Pre-test	0.56	0.29	0.05	1.19
	Post-test	0.46	0.34	0.06	

* Significant value at 0.05 level=2.05

Table-2 shows the comparison of pre and post test score of experimental and control group respectively. Where the mean score of pre and post test of experimental group is 0.52 and 0.37 and standard deviation is 0.3 and 0.37. The t-value 1.67 is found to be insignificant at 0.05 level of confidence which shows that the audio reaction of experimental group after the training 8 week of Yogic Practices is higher than the post test of the same group. Table further shows the comparison of pre and post test score of control group. Where the mean score of pre and post test of control group is 0.56 and 0.46 and standard deviation is 0.29 and 0.34. The t-value 1.19 is found to be insignificant at 0.05 level.

Pre and post test of experimental group was not found significant at 0.05 level, the result may be insignificant as training period may be less and secondly psychological variable i.e. audio reaction time are very difficult to train with yogic practices.

Figure - 1



Above Figure No.1 reflects the comparison of mean on audio reaction time between experimental and control group. So it is clearly showing the training effect though the t value is found insignificant.

Table - 3

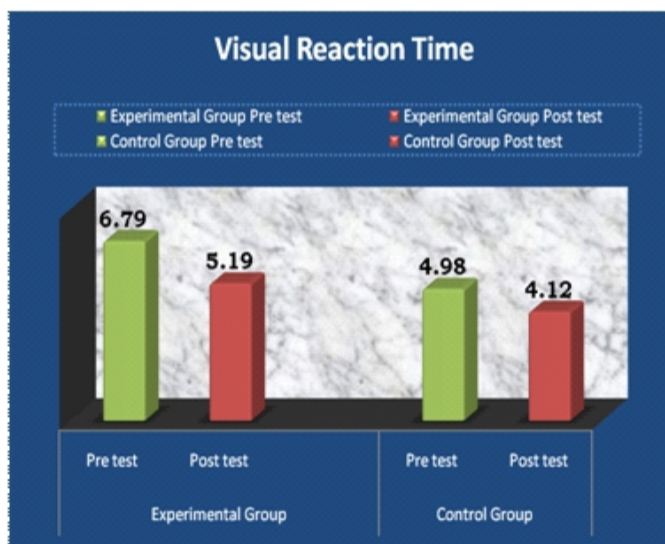
Comparison of pre-test and post-test mean scores of experimental and Control group on Visual Reaction time					
		Mean	SD	SEDM	t-value
Experimental Group	Pre-test	6.79	3.12	0.59	2.06*
	Post-test	5.19	2.8	0.51	
Control Group	Pre-test	4.98	2.95	0.54	1.19
	Post-test	4.12	2.57	0.48	

* Significant value at 0.05 level=2.05

Table-3 shows the comparison of pre and post test score of experimental and control group respectively. Where the mean score of pre and post test of experimental group is 6.79 and 5.19 and standard deviation is 3.12 and 2.8. The t-value 2.06 is found to be significant at 0.05 level of confidence which shows that the visual reaction time of experimental group after the training 8 week of Yogic Practices is not higher than the post test of the same group. Table further shows the comparison of pre and post test score of control group. Where the mean score of pre and post test of control group is 4.98 and 4.12 and standard deviation is 2.95 and 2.57. The t-value 1.19 is found to be significant at 0.05 level.

Pre and post test of experimental group was found significant at 0.05 level, the result may be significant as training period may be good and secondly physiological variable i.e. visual reaction time are not difficult to train with yogic practices .

Figure - 2



Above Figure-2 reflects the comparison of mean on visual reaction time between experimental and control group. So it is clearly showing the training effect though the t-value is found significant.

CONCLUSION

On the basis of the findings of the study, it was concluded that eight weeks of yogic practices are useful program to improve the reaction time. Significant difference was observed between experimental and control groups on the visual reaction time. Experimental group performed better on the visual reaction time due to the training of yogic practices. Treatment of yogic practices indicates decrease in audio reaction time. When t test was applied on both groups, Experimental group showed insignificant in comparison to control group on the audio reaction time.

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