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## A pilot study: Comparative efficacy of power yoga, restorative yoga and their combination on reaction time among the college boys of North Tripura

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### Abstract

**Purpose:** The purpose of the study is to determine whether 6 weeks of Power Yoga, Restorative Yoga and their Combination will have an effect on reaction time among the college boys of North Tripura.

**Method:** 40 (Forty) college boys from Government Degree College, Dharmanagar were randomly selected as the subjects for the study. The age of the subjects was ranging from 17 to 22 years. The subjects were randomly assigned to an experimental groups (Power Yoga, Restorative Yoga and their combination training) and control group in equal numbers i.e., (n=10). To see the effect the analysis of covariance "F-ratio" was applied at 0.05 level of significance. For further analysis pair wise comparison of adjusted means was applied.

**Result:** After comparing the pair wise difference of adjusted means with critical difference, the Power Yoga training had shown the most significant effect on reducing the Reaction Time of College boy's students as its adjusted mean i.e., 15.54 was smaller than the adjusted means of Restorative Yoga training i.e., 16.5 and their combination training (Power & restorative yoga training) i.e., 16.04 respectively.

**Keywords:** Power yoga, restorative yoga, controlled group and reaction time

### Introduction

Yoga is a physical practice that was developed in India several thousand years ago and is now being used as an alternative form of exercise in the United States. Yoga has become increasingly popular in the West with surveys suggesting 31 million American adults have practiced yoga at least once in their lifetime (Cramer *et al.*, 2016) <sup>[1]</sup> and consider it as a means of exercise and fitness training.

Yoga is ultimate for developing harmony among body, mind and spirit. Yoga asana are ways of moving and/or holding the body in different position. Yoga asana has several exercises or postures that work wonders on fitness and health. Many experienced that yoga is a life-giving force if one practiced it regularly as yoga reduces the levels of stress and body-wide inflammation, contributing to healthier cardiovascular life. People may feel charged up with energy mentally as well as physically after getting into a routine of practicing yoga. An enhancement in awareness and eagerness, and rarer negative feelings may arise for yogis.

Power Yoga history is very much tied to the history of modern yoga. Power Yoga is really one of the first types of yoga that stepped outside of the traditional yoga systems, even though its goal is the same as the traditional systems. Power yoga enthusiasts say it enhances stamina, flexibility, posture, and mental focus. Like all physical activities, it also relieves tension (Sullivan *et al.*, 2017) <sup>[2]</sup> and releases toxins through sweat. Because it is rigorous, it burns more calories than most traditional forms of yoga and therefore can help with weight loss.

Gentle, supportive, and therapeutic are just a few words that describe restorative yoga. At its core, restorative yoga is a practice of passive healing. As the name suggests, this style of yoga "restores" the body to its parasympathetic nervous system function, which, in turn, helps the body rest, heal, and restore balance. By allowing time for longer asanas (postures or poses) and deeper breathing, restorative yoga helps elicit the relaxation response.

This response can help slow breathing, reduce blood pressure, and produce a feeling of calm and increased well-being. (Lindberg, 2020) [3]. Restorative yoga is safe, very gentle, and deeply healing as it helps your body to move from a state of fight-or-flight into a state of calm and peace. It brings about a wonderful balanced state where the body can heal itself. Hence, the scholar realizes that there is a need of the hour to explore the physical outcomes or responses concerned with college boys. So, the scholar took this study.

**Methodology**

40 (Forty) college boys from Government Degree College, Dharmanagar were randomly selected as the subjects for the study. Those individuals who had any sort of extra training programs were not included in the study. The health examination of the subjects was carried out to ensure that the subjects were medically fit to undergo different types of training programmes. The age of the subjects was ranged from 17 to 22 years.

**Experimental Design**

Pre-test Post-test randomized group design was used in this study. The subjects were divided into three experimental and a control group of 10 student (boys) subjects each. The subjects were randomly assigned to the training programs in each four of the groups.’ The subjects were selected at random by drawing lots and assignment of treatment was also at random.

**Collection of Data**

The data for physical response i.e, reaction time among the college boys of North Tripura were obtained with the help of ruler drop test by using metric ruler. All the data were taken with appropriate rest before and between the administrations of the tests. The experimental programmes were planned for five days in a week and only around one hour in a day for each group.

Pre-test and Post- test were conducted for each of the four groups prior and after completion of the experimental program where applicable.

**Administration of yogic training**

Firstly, 30 minutes of Power yoga session is given to the subjects of group A five days a week for 6 weeks. The sessions were consisting of six sets of asanas for every training day. Whereas, 45 minutes of Restorative yoga session is given to the subjects of group B five days a week for 6 weeks. The sessions were consisting of eight sets of asanas for every training day. On the other hand, a combine yogic session “(Power & Restorative) of 1 hour is given to the subjects of group C five days a week for 6 weeks. The sessions were consisting of 4 sets of Power yogic asanas and 6 sets of Restorative yogic asanas for every training day.

**Findings**

The mean and standard deviation of college boys pertaining to reaction time in power yoga training group mentioned in Table-1 for different experimental conditions are as follows:

**Table 1:** Descriptive analysis of reaction time of college boys after power yoga training

Variables	Experimental Conditions	Mean	S.D	Minimum	Maximum	Range
Reaction Time	Pre test	18.9	3.78	12	26	14
	Post test	16	2.28	11	20	09

The mean and standard deviation of college boys pertaining to reaction time in restorative yoga training group mentioned in

Table-2 for different experimental conditions are as follows:

**Table 2:** Descriptive analysis of reaction time of college boys after restorative yoga training

Variables	Experimental Conditions	Mean	S.D	Minimum	Maximum	Range
Reaction Time	Pre test	18.2	3.89	09	24	15
	Post test	16.4	3.14	09	21	12

The mean and standard deviation of college boys pertaining to reaction time in combination yoga training group (Power &

restorative yoga training) mentioned in Table-3 for different experimental conditions are as follows:

**Table 3:** Descriptive analysis of reaction time of college boys after combination yoga training group (Power & restorative yoga training)

Variables	Experimental Conditions	Mean	S.D	Minimum	Maximum	Range
Reaction Time	Pre test	17.9	4.25	10	25	15
	Post test	15.7	3.69	09	22	13

The mean and standard deviation of college boys pertaining to reaction time in control group for different experimental

conditions are as follows:

**Table 4:** Descriptive analysis of reaction time of college boys of control group

Variables	Experimental Conditions	Mean	S.D	Minimum	Maximum	Range
Reaction Time	Pre test	18.3	5.08	12	29	17
	Post test	18.1	4.57	12	27	15

Findings pertaining to Reaction Time of college boys among all the four groups namely; Power Yoga Training(PYT), Restorative Yoga Training(RYT), Combination Yoga

Training(CYT) and control group(CG) which were subjected to analysis of covariance and mean difference method which have been presented in the following tables:

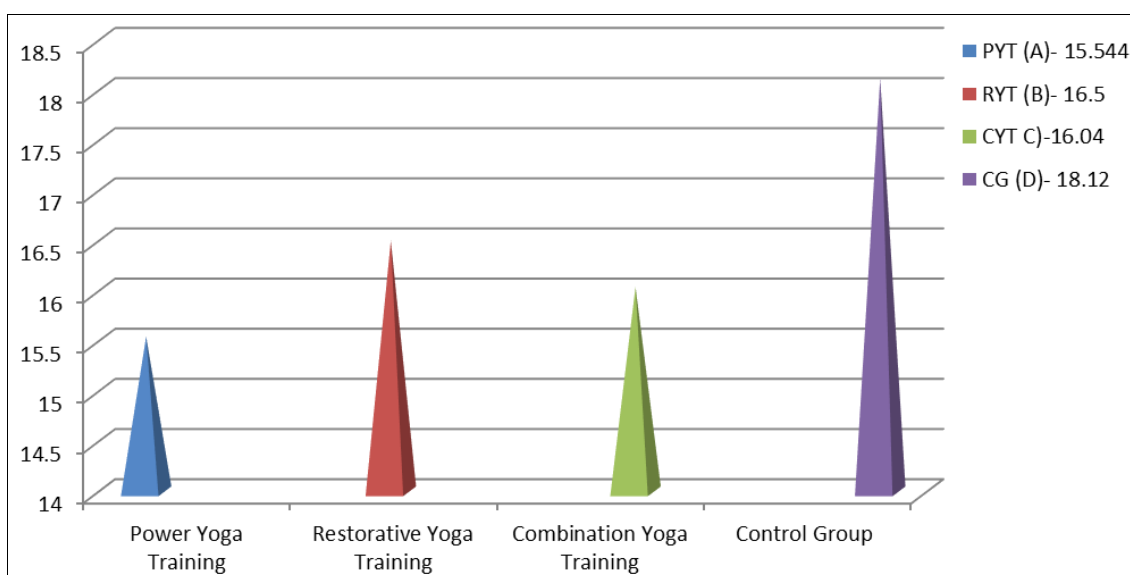
**Table 5:** Analysis of covariance of reaction time of college boys

	PYT	RYT	CYT	CG	SOV	df	SS	MSS	F-ratio
Pre Means	18.9	18.2	17.9	18.3	B	3	5.27	1.76	0.086
					W	36	733.48	20.37	
Post Means	16	16.4	15.7	18.1	B	3	34.5	11.5	0.836
					W	36	495.4	13.76	
Adjusted Post Means	15.54	16.5	16.04	18.12	B	3	37.4	12.47	12.75
					W	35	34.23	0.98	

\*Sig. at .05 levels Tab. F. 05 (3, 35) = 2.87

**Table 6:** Adjusted mean scores on reaction time during post testing in different groups

Power Yoga Training(A)	Restorative Yoga Training(B)	Combination Yoga Training(C)	Control Group (D)	Adjusted mean differences	Critical difference
15.544	16.5			0.956	0.893
15.544		16.04		0.496	
15.544			18.12	2.576	
	16.5	16.04		0.46	
	16.5		18.12	1.62	
		16.04	18.12	2.08	



**Fig 1:** Adjusted Means of different groups on Reaction Time

**Discussion**

Comparing the pair wise difference of adjusted means with critical difference (0.893), it is evident that group A is most effective as its adjusted mean (15.544) is smaller than the adjusted means of group B (16.5), group C (16.04) & group D (18.12) respectively. However, the effectiveness is insignificant between group A (15.544) and group C (16.04) as the adjusted mean difference of 0.496 is smaller than the critical difference (0.893). On the other hand the effectiveness is also insignificant between group B (16.5) and group C (16.04) as the adjusted mean difference of 0.46 is smaller than the critical difference (0.89), while group D (18.12) is least effective. Thus, as mentioned in Fig.1, it may be concluded that the training program of group A(15.544) should be preferred followed by training program of group C (16.04) which should be preferred over training of group B (16.5).Hence, as per this study Power Yoga Training (PYT) group is recommended for improving the Reaction Time of college boys of North Tripura.

**Conclusion**

College boys of Govt. Degree College, Dharmanagar, North Tripura were benefited by all the three yoga training programs. However, Power Yoga Training (PYT) had the

highest effectiveness on improving the reaction time of College boys as the adjusted mean of Power Yoga Training (15.544) is lower than the adjusted means of Restorative Yoga Training (16.5) and Combination Yoga Training (16.04) respectively

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