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Effect of yogic asana on hand eye coordination

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Abstract

Background: Evidence suggested that multiple intervention of yogic technique may improve physical fitness. But there was no such study on the effect of yogic asana alone and its impact on hand eye coordination which is most important component of performance related physical fitness. **Aim:** The aim of this study was to determine the effect of regular practice of yogic asana on hand eye coordination. **Materials and Methods:** Total 48 residential male students (12±1 years) were participated in this study. It was randomized into two equal groups as yoga group (n=24) and waitlist control group (n=24). Yoga group was regularly practiced only yogic asana for 1 to 1.5 hour per day, 6 days per week, for 12 weeks with a progressive load method. The hand eye coordination was assessed by measuring ball transferring ability. In the present study all the measurements were done at the baseline (before onset of training) after 6 and 12 weeks of asana training. A repeated measure of ANOVA was used for analyzing the data. Simple percentage also calculated from the mean value to see the quantitative changes of the asana training. **Results:** After 12 weeks, yoga group showed a significant improvement in coordination (77.59%). **Conclusion:** Yogic asana alone may elicit a positive improvement in hand eye coordination.

Keywords: Yogic asana – hand - eye – coordination

Introduction

Hatha yogic literature is a strong evidence of the statement that asana can brings a development in physical body. An increase in motor speed for repetitive finger movements following yoga training is reported. A significant improvement in performance in a mirror tracing task at the end of a one month training programme that means hand eye coordination and concentration is developed. But there is no study on yogic posture (asana) alone and its impact on hand eye coordination. With this background, the aim of the present study was to determine whether the regular practice of yogic posture alone can improve hand eye coordination.

Methods: Subjects: On the basis of all the available literature the researcher selected school going children as the population of the present study. Forty eight residential male students of Daronda Chandimata Vidyalaya, Bolpur, West Bengal, India were participated in this study. They were not acquainted with any yogic programme before. Ethical guidelines were followed in this research; individual's subject consent and permission from school authority (headmaster and hostel super) were taken accordingly. On the basis of inclusion and exclusion criteria total 48 subjects were selected for this study. The mean age of the subject was 12 ± 1 years. All the subjects were randomized by www.randomizer.org into two groups: experimental (N=24) and waitlist control (N=24).

Design of the study: This is an experimental, prospective randomized control trial study. In this study two group namely yogic asana group (experimental) and waitlist control group stayed in the school hostel and their diet pattern, life style were not different in nature. Before introducing of yogic asana training both the groups' initial data (baseline) of all parameters were recorded. After completion of 6 weeks of regular asana practice (6 days / week) again all the variables were measured for the two groups. Then after 12 weeks of regular asana practice finally all the variables were measured for the two groups. During the period of experiment the control group was maintained similar daily routine of the school hostel and observed yoga asana practice in the practice time but not participated.

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Training protocol: The experimental group had an hour practice of suryanamaskar and 16 yogic asana (posture) in the initial day but the total time was increased up to 1.5 hour gradually by increasing repetitions and duration (time) of the yogic asanas (posture) in a progressive load method after completion of every week but not increased after 6 weeks. They practice 6 days per week (Sunday closed) for total 12 weeks in the common room of the school hostel.

Assessment criteria: Coordination was measured by the time elapsed in 5 ball transferring in 15 yards apart boxes test (D.K. Kansal). Three trails had given. The best of the three trails was final

score.

Statistical analysis: Repeated measure analysis of variance (ANOVA) was used for analyzing data and post hoc analysis was conducted. Simple percentage was also calculated from the mean value to see the quantitative changes in variables. Level of significance at .05 was determined.

Results: There was no significant difference in the baseline data between yoga asana group and wait list control group. Yoga group showed a significant improvement after 12 weeks yogic posture practice in coordination ($p < 0.05$). (Figure no.- 1 and table no.-1).

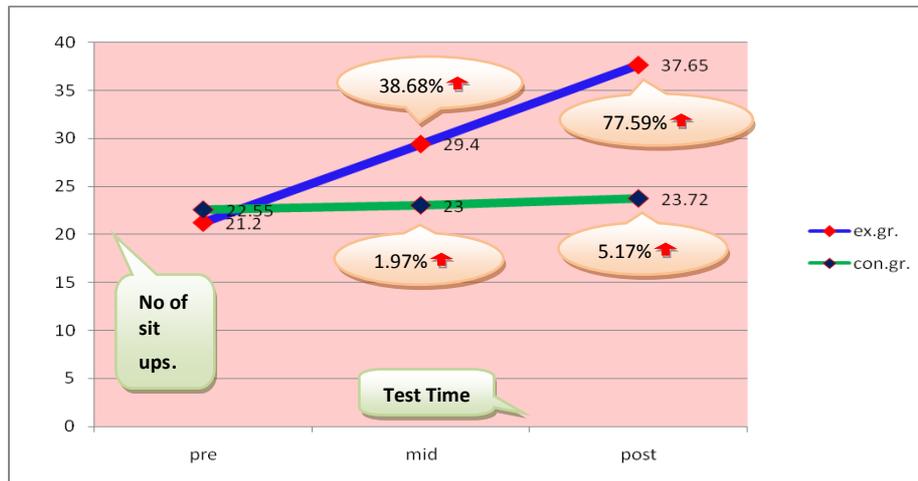


Fig. 1: Coordination

Table-1: Mean and S.D. of hand eye coordination yoga asana group wait list control group

	Pre test	Mid test	Post test	Pre test	Mid test	Post test
Coordination	21.20 ± 9.58	29.40 ± 8.82***	37.65 ± 10.07***	22.55 ± 7.95	23.00 ± 7.39	23.72 ± 7.40

* $p < 0.05$, ** $p < 0.01$ and *** $p < 0.001$

Discussion: In this study it is found that 12 weeks practice of yogic posture significantly improved hand eye coordination. Scientists have shown that yoga training (multiple interventions) improves the cardiac recovery index, cardiovascular endurance and anaerobic power and decreased blood pressure either at rest or during exercise. Some multidisciplinary studies reported increased vo2 max. Yoga in long duration affect hypothalamus and beings about decrease in the systolic and diastolic blood pressure through its influence on vasomotor centre, which leads to reduction in sympathetic tone and peripheral resistance. Reports suggested that yoga reduces sympathetic tone, increases parasympathetic tone and improves cardio vegal function. Hemodynamic effect of yoga training was to increase the stroke volume through the aeterial baroreflex mechanism. Yoga training improves thermoregulatory efficiency, respiratory muscle’s strength and endurance. In this study we observed that coordination was improved (12 %) after 6 weeks and (18 %) after 12 weeks of yogic asana practices. The increase scores in the ball transferring following yogic asana practice are suggested of an increase in hand eye coordination. In our study we have followed a progressive training load method (Singh, 1991) which is very effective for general fitness and sports performance development. The intensity (time) and repetition of asana gradually increased up to 12 weeks. The researchers could not find any study which scientifically applying progressive training load for the improvement of physical fitness through yogic asana. From the present study, it may be concluded that yogic asana alone

bring a positive improvement in the hand eye coordination.

Conclusion: From the present study, it may be concluded that yogic asana may bring a positive improvement in the hand eye coordination.

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