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Effect of yogasana on reaction time of sedentary women

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Abstract
The objective of the study was to find out the "Effect of yogasana on reaction time of sedentary women". For the purpose of the study sixty sedentary women were selected purposively from Bolpur, Birbhum, West Bengal, India as the subject. They were categorized into two age group of 30 to 40 years (n-30) and 40 to 50 years (n-30). Each age group were also divided into two- experimental group (n-15) and control group (n-15). Reaction time was selected as the variable for the study. Eight weeks training program of the selected asanas were given to both the experimental groups. Pre-test and post-test data of all the groups were collected by using Nelson Hand Reaction Test. To calculate the data descriptive statistics, Analysis of Co-variance (ANCOVA) and LSD post-hoc and independent t-test were used. The level of significance was set at 0.05 level. The result revealed the significant effect on reaction time of both the experimental groups-EG-1 (F-5.910) and EG-2 (F-4.726*). There was no significant difference between the two experimental groups. On the basis of the result, it was concluded that yoga asanas have significant effect on reaction time of the sedentary women group.

Keywords: yogic practice, yogasana, fitness, reaction time, sedentary women

Introduction
Health is one of the great aspects not only in today's life but also from ancient time. Here, the male always gets the first priority than the females and it happen worldwide from ancient time. In Indian it was not exceptional case. Normally female candidates participated less in physical activity. However, in rural area female candidates are engaged in physical activity but not in urban area. Normally house wife did not participate in regular activity, or lack of time involved in regular physical activity, because our society is still not allowing them to do so and also there is various responsibilities in daily life such as preparation of children for going school, maintenance of daily works in the house etc. These life-style routines are maintained by the house wife in the daily life, and this is the main cause of decrease in physical fitness of house wife. This less active or not active life-style routine continues for a long gradually lead the house wife in sedentary life which decrease the optimum capacity of internal system of the house-wife. In a different way, this life-style slowly decreases the immunity power of the house wife that ultimately increases chances of various diseases.
Reaction time is one of the important fitness components which not only play a vital role for the sports person but also for sedentary people. It helps to act and response quickly on physical performance as well as mental alertness. It is a very important fitness components for sports person as well as sedentary people. The person with this quality can perform and response every task very quickly and efficiently.
Yoga involves a systematic method by which the awareness of the processes of stress relief can be expended and thus gain control over them. Yogic practices enhance quality of life by improving physical, physiological and psycho-social perspectives of human being these are the widely addressed benefits of yoga.
As the women has less opportunity to do regular physical activity in various places specially in open places, they need some special physical activity like yogic practices which is one of the very easy mode of keeping fitness for all including the sedentary women and can be performed in closed room also.
There are a few researches on reaction time for the sedentary women. With this background

and less availability of research work on sedentary women of different age groups on selected parameters after yogic practices, this study was undertaken.

The objective of the study was to find out the effect of yogasanas on reaction time of sedentary women.

Methodology

Subjects

For the purpose of the study sixty sedentary women were selected purposively from Bolpur, Birbhum, and West Bengal, India as the subject. They were categorized into two age group of 30 to 40 years (n-30) and 40 to 50 years (n-30). Each age group were also divided into two- experimental group (n-15) and control group (n-15).

Variable

Reaction time was selected as the variable for the study.

Test and Criterion measure

To measure the reaction time of different age group sedentary women, Nelson Reaction Time test was used. The score of the subject on reaction time test was recorded in seconds.

Collection of data

Pre-test data were collected from both the two experimental groups and two control groups of different age groups of sedentary women. Yogic training schedule comprised of vrikshasana, paschimatanasana, yogamudra, sarvangasana, halasana, matsyasana, bhujangasana, salabhasana, dhanurasana, chakkarasana, bakrasanaa, utkatasana and shavasana was administered for six days a week for eight weeks to two experimental groups of 30-40 years age and 40 to 50 years age. The load was gradually increased from 1st-2nd week to 7th-8th week. Immediately after completion of the yogic treatment to the experimental group, the post-test data were collected from all the four groups.

Statistical analysis

To find out the effect of asanas on reaction time of sedentary women, descriptive statistics, Analysis of covariance (ANCOVA) and LSD post-hoc test and independent t-test were applied. The level of significance was set at0 .05 level.

Result and Discussion

Table 1: Descriptive Statistics on Reaction Time of the Selected Groups

	Group-1				Group-2			
	EG-1		CG-1		EG-2		CG-2	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
Mean (Sec)	0.218	0.209	0.22	0.215	0.2236	0.2162	0.219	0.215
Standard Deviation	0.018	0.013	0.0112	0.0114	0.0084	0.0078	0.0097	0.0084
Std. Error	0.0046	0.0034	0.00291	0.00296	0.00218	0.0020	0.0025	0.0021
Skewness	-0.0374	-0.273	-1.0584	-0.5986	-0.1600	-0.0536	-0.308	-0.230
Kurtosis	-1.343	0.0122	0.5494	-0.228	0.0254	-0.6795	-0.938	-1.103
Maximum Score (sec)	0.247	0.230	0.234	0.2303	0.239	0.2303	0.234	0.225
Minimum Score (sec)	0.191	0.180	0.196	0.191	0.207	0.2020	0.202	0.202

Table 1 describes the mean, standard deviation, Standard error, Skewness, Kurtosis, Maximum score and Minimum score of subjects in reaction time of both the groups of sedentary women.

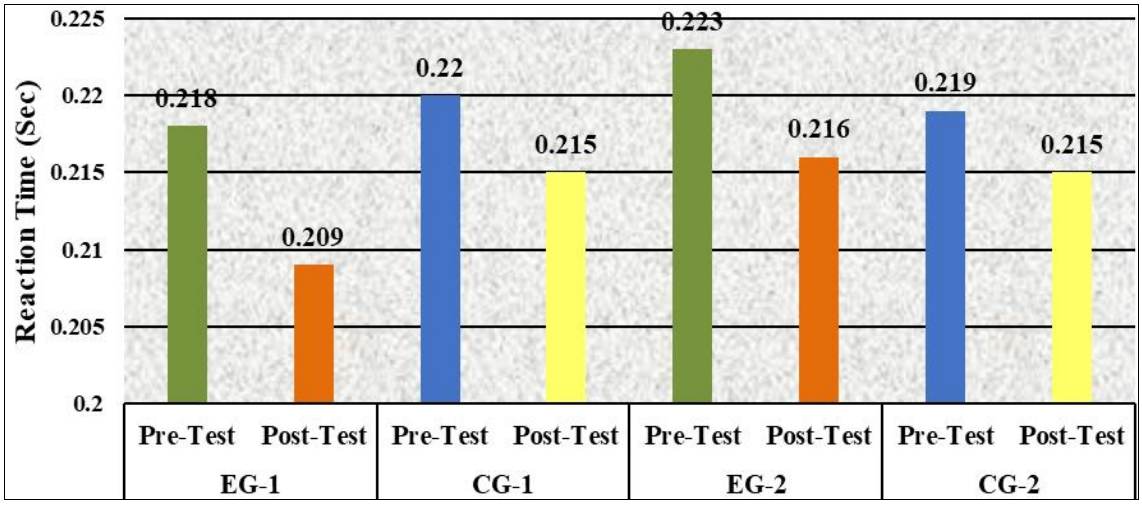

Fig 1: Graphical Representation of Pre-Test & Post-Test Mean for Distinct Groups on Reaction Time of both the Sedentary Women Groups

Table 2: ANCOVA for G-1 Distinct Groups on Reaction Time for Pre-Test and Post-Test Data

Source	DF	Sum of Squares	Mean Square	F-value
Treatment Group	1	0.000	0.000	5.910*
Error	27	0.001	0.000	
Total	28	0.001		

Table value of F (1, 27) = 4.22 Significant at the .05 level

Table-2 reveals significant improvement in reaction time (F=5.910) among G-1 groups. The obtained F value was found greater than that of tabulated F value 4.22 at 0.05 level of significance with 1, 27 degree of freedom.

Table 3: Pair wise Comparisons of G-1 Groups of Adjusted Means on Reaction Time Obtained in Pre-Test and Post-Test Data

Group	N	Pre-Test	Post-Test	Mean Adjusted	Mean Difference	CD
EG-1	15	0.22	0.21	0.209	0.005*	0.004
CG-1	15	0.22	0.21	0.214		

*. The mean difference is significant at the .05 level

Table-3 expresses the paired adjusted final mean differences in reaction time that clearly indicates the significant difference between the experimental and control group (0.005*) which was greater than that of the critical value 0.004.

Table 4: ANCOVA for G-2 Distinct Groups on Reaction Time for Pre-Test and Post-Test Data

Source	DF	Sum of Squares	Mean Square	F-value
Treatment Group	1	0.0001	0.0001	4.726*
Error	27	0.0003	0.0000	
Total	28	0.0003		

Table value of F (1, 27) = 4.22 Significant at the .05 level

Table-4 reveals significant improvement in reaction time (F=4.726*) among the G-2 groups as the obtained F value was found greater than that of the tabulated F value 4.22 at 0.05 levels of significance with 1, 27 degree of freedom.

Table 5: Pair wise Comparisons of G-2 Groups of Adjusted Means on Reaction Time obtained in Pre-Test and Post-Test Data

Group	N	Pre-Test	Post-Test	Mean Adjusted	Mean Difference	CD
EG-1	15	0.22	0.22	0.214	0.003*	0.002
CG-1	15	0.22	0.22	0.217		

*. The mean difference is significant at the .05 level

Table-5 reveals the paired adjusted final mean differences in reaction time clearly indicates the significant difference between the experimental and control group (0.003*) which was greater than that of the critical value 0.002.

Table 6: Mean Difference between Experimental Group-1 and Experimental Group-2 on Reaction Time

Group	Mean	Mean Difference	Std. Error of Diff	t-Value	Sig. Level
EG-1	0.01	0.003	0.0027	1.107	0.278
EG2	0.007				

Table-6 expresses the result of independent t-test between the experimental group-1 and experimental group-2 where the t-value (t=1.107) was found not significant as the p-value was 0.278.

The result may be due the similar type of lifestyle spent by both the category of sedentary women and also the age group difference was not so much. This result of the study was supported by the study of Sharma, V.K. *et al*. (2018) [5] who worked to determine the Effect of Yoga on Perceived Stress and Reaction Time in Sedentary Males. The result showed that Yoga has got the beneficial effect on sensory motor performance (decreased auditory and visual reaction time) and reduces stress level.

Conclusion

On the basis of the result, it may be concluded that the Yogasana training improve the reaction time of the sedentary women.

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