

Effects of Yogic Practices and Stretching Exercises on Heart Rate and Job Satisfaction among Information Technology Sector Men

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Abstract

The present study is an outcome of the effects of yogic practices and stretching exercises on heart rate and job satisfaction among information technology sector men. To achieve the purpose of the study forty five Information Technology Sector Men were selected from the Chennai district and their age group were between 25-35 years. Selected subjects were divided into three equal groups, namely experimental group I, experimental group II and control group. Each group consists of fifteen subjects. Random group design was used for the selection of the subjects. Training period of this study was six weeks. Experimental group I undergone the yogic practices, experimental group II undergone the Stretching Exercises and control group no training. Pre and post test were taken before and after the six weeks of training programme heart rate measured through heart rate digital monitor and job satisfaction measured through Dubey , uppal and varma (2004) standard questionnaire. To analysis the data ANCOVA and Scheffe's post hoc test was used. The result of the study shows that there was a significant decrease in heart rate and improved the Job satisfaction among information technology sector men due to the influence of yogic practices and stretching exercises than the control group. The conclusion is that the yogic practices slightly better than the stretching exercise.

Key Words: Yogic practices, Stretching exercises, heart rate, Job satisfaction.

Introduction

Money spent in Information Technology is an important indicator of current growth and prosperity of a country. Information Technology sector gives more revenue to our country their contribution also helps to improve economic status several other things of country so their health and happiness are also important. Information technology professionals are working long time in front of computer. Due to their sedentary life style they are facing health related disorder namely metabolic disorder, high & low blood pressure, psychological problems. Heavy work load, meeting deadlines, performance evaluation and lead to a higher heart rate in an individual. These stressful situations may bring changes in level of performance and confidence. In individual under performance or low confidence level reduces the satisfaction from the job. Through yoga & stretching Exercise the reduce level of job satisfaction can be restored and the increased heart rate can be normalized. Yoga is a science of right living and it works when integrated in our daily life and also gives all round development to man stretching exercise give stretches to muscle and joints improving blood circulation to the entire body and promotes healthy life. It was proven throughout the world that yoga helps to reduce Blood Pressure and regulate heart rate enhance the elasticity of

the arteries. It improves physical and mental health and helps to live a healthy life **Swami Sivananda (2007)**.

Purpose of the Study

The present study was designed to find out effects of yogic practices and stretching exercises on heart rate and job satisfaction among information technology sector men.

Hypothesis

1. It was hypothesized that there would be significant improvement in on Heart rate and Job satisfaction among information technology sector men.

2. It was hypothesized that yogic practices of group better than the stretching exercises group on Heart rate and Job satisfaction among information technology sector men due to the yogic practices and stretching exercise when compared with control group.

Review of Related Literature

Farinatti et al (2011) conducted a study on acute effects of stretching exercise on the heart rate variability in subjects with low flexibility levels. The study investigated the heart rate (HR) and heart rate variability (HRV) before, during, and after stretching exercises performed by subjects with low flexibility levels. Ten men (age: 23 ± 2 years; weight: 82 ± 13 kg; height: 177 ± 5 cm; sit-and-reach: 23 ± 4 cm) had the HR and HRV assessed during 30 minutes at rest, during 3 stretching exercises for the trunk and hamstrings (3 sets of 30 seconds at maximum range of motion), and after 30 minutes post exercise. The HRV was analyzed in the time ('SD of normal NN intervals' [SDNN], 'root mean of the squared sum of successive differences' [RMSSD], 'number of pairs of adjacent RR intervals differing by >50 milliseconds divided by the total of all RR intervals' [PNN50]) and frequency domains ('low-frequency component' [LF], 'high-frequency component' [HF], LF/HF ratio). The HR and SDNN increased during exercise ($p < 0.03$) and decreased in the post exercise period ($p = 0.02$). The RMSSD decreased during stretching ($p = 0.03$) and increased along recovery ($p = 0.03$). At the end of recovery, HR was lower ($p = 0.01$), SDNN was higher ($p = 0.02$), and PNN50 was similar ($p = 0.42$) to pre-exercise values. The LF increased ($p = 0.02$) and HF decreased ($p = 0.01$) while stretching, but after recovery, their values were similar to pre-exercise ($p = 0.09$ and $p = 0.3$, respectively). The LF/HF ratio increased during exercise ($p = 0.02$) and declined during recovery ($p = 0.02$), albeit remaining higher than at rest ($p = 0.03$). In conclusion, the parasympathetic activity rapidly increased after stretching, whereas the sympathetic activity increased during exercise and had a slower post exercise reduction. Stretching sessions including multiple exercises and sets acutely changed the sympathovagal balance in subjects with low flexibility, especially enhancing the post exercise vagal modulation.

Halfon et al.,(1990) evaluated its effects on employees' health; the participants were randomly divided into 2 groups of equal size. The test group participated in

regular physical exercise before lunch for 15 minutes, 5 days a week. The controls played social games for the same time periods while seated. The physical activity program included stretching, relaxing, and aerobic exercises. The program was carried out by employees who had been trained to be instructors by the researchers and were supervised by a professional teacher. During the 7 months of the study, adherence was about 90%. The results in test and control groups were determined by questionnaires. After 7 months, the test group clearly showed increased interest in sports activities, increased job satisfaction and work efficiency, and decreased fatigue during work

Methodology

Selection of the Subjects

To achieve the purpose of these study forty-five subjects were randomly selected from various information technology sectors in Chennai district, the subject's age groups was ranged between 25-35 years only. The study was formulated random group design consisting of pretest and posttest. The subjects (N=45) were randomly assigned to three equal groups. The groups were assigned as Experimental group I (n=15), Experimental group II (n=15) and Control group (n=15). Heart rate measured through heart rate digital monitor and job satisfactions were measured through Dubey, uppal and varma (2004) standard questionnaire. Pretest was conducted for all the subjects. The Yogic practices group performed the following yogic practices such as Sasangasana, Vakrasana, Nirakunjasana, Dhanurasana, Sarvangasana, Shanthiasana, Nadi suddhi pranayama, Bhramari pranayama, Ujjayi pranayama. The Stretching Exercises group performed the following exercise such as Brisk walking, Squat thrust, Side line, Hip flexor serious, Dorsal, Arm swings, V-Sit Stretch, Gluteal and Trunk Stretch, Cat and Camel Stretch for a period of six weeks, the duration of the training was 45 minutes, the training programme consist of warming up and loosening exercise 5% intensity was increased every weeks. The post test was conducted on the above said dependent variables after a period of six weeks in the respective treatments.

Statistical Technique

The data collected from the subjects were analyzed using Analysis of Covariance to find out the adjusted mean difference among the treatment groups. The Scheffe's post hoc test was used to find out the paired mean significance at 0.05 levels.

Results and Discussions

Results on Heart Rate

The statistical analyses comparing the initial and final means of heart rate due to yogic practices and stretching exercises on information technology sector men presented in table -I

Table - I

Analysis of Co-Variance of the Means of Two Experimental Groups and the Control Group in Heart Rate (Scores in Beats per minute)

	Exp Group-I	Exp Group-II	Control Group	Source of variance	Sum of squares	df	Mean squares	Obtained F-ratio
Pre test mean	78.93	81.47	78.07	Between	93.64	2.00	46.82	2.49
				Within	789.60	42.00	18.80	
Post test mean	70.20	74.73	78.27	Between	490.53	2.00	245.27	16.99*
				Within	606.27	42.00	14.43	
Adjusted post test mean	70.63	73.20	79.37	Between	591.03	2.00	295.52	90.57*
				Within	133.78	41.00	3.26	

*Significant. Table F ratio at 0.05 level of confidence for 2 and 42(df) =3.22, 2 and 41(df) = 3.23

From the table I the obtained F value for pretest 2.49 was lesser than the required table F value of 3.22, this indicates that the random assignment of the subjects were successful. The posttest obtained F value 16.99 was greater than the required value of 3.22 to be significant at 0.05 levels. Taking into consideration of pre and post adjusted posttest mean was conducted, the obtained F value 90.57 was greater than the required value of 3.23 and hence it was accepted that yogic practices and stretching exercises significantly decreased the heart rate.

Table - I (A)

Scheffe's Post-Hoc Test for Heart Rate (Scores in Beats per minute)

Means			Mean difference	Required C.I
Exp Group-I	Exp Group- II	Control Group		
70.63	73.20		2.57*	1.67
70.63		79.37	8.74*	1.67
	73.20	79.37	6.16*	1.67

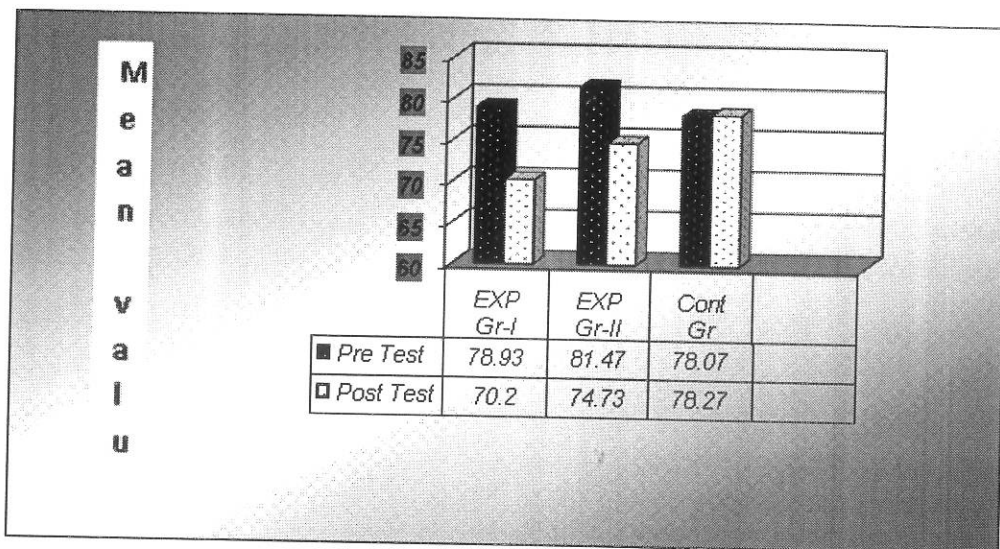
* Significant

The table I(a), shows that the mean differences between yogic practices and control group, Stretching exercises and control group were significant. When compared between the experimental groups yogic practices groups were better than stretching exercise group.

The ordered adjusted means on heart rate were presented through bar diagram for better understanding of the results of this study in Figure - 1.

Figure-1

Bar Diagram Showing the Pre and Post Test Means of Heart Rate



Discussion on the Findings of Heart Rate

The results proved that there was a significant difference in heart rate due to yogic practices and stretching exercises compared to control group. When compared between the experimental groups yogic practices group was better than stretching exercises and control group.

Results on Job Satisfaction

The statistical analyses comparing the initial and final means of Job satisfaction due to yogic practices and stretching exercises on information technology sector men presented in table -II

Table - II
Analysis of Co-Variance of the Means of Two Experimental Groups and
the Control Group Job Satisfaction
(Scores in points)

	Exp Group-I	Exp Group-II	Control Group	Source of variance	Sum of squares	df	Mean squares	Obtained F-ratio
Pre test mean	76.40	71.73	70.93	Between	261.51	2.00	130.76	2.73
				Within	2009.47	42.00	47.84	
Post test mean	36.20	51.67	71.07	Between	9156.31	2.00	4578.16	60.19*
				Within	3194.67	42.00	76.06	
Adjusted post test mean	32.74	52.99	73.20	Between	11066.27	2.00	5533.14	208.13*
				Within	1089.96	41.00	26.58	

*Significant. Table F ratio at 0.05 level of confidence for 2 and 42(df) =3.22, 2 and 41(df) = 3.23

From the table II the obtained F value for pretest 2.73 was lesser than the required table F value of 3.22, this indicates that the random assignment of the subjects were successful. The posttest obtained F value 60.19 was greater than the required value of 3.22 to be significant at 0.05 levels. Taking into consideration pre and post test adjusted posttest mean was conducted, the obtained F value 208.13 was greater than the required value of 3.23. Hence it was accepted that yogic practices and stretching exercises significantly increased on job satisfaction among information technology sector men.

Table - II (A)
Scheffe's Post-Hoc Test for Job Satisfaction
(Scores in points)

Exp Group-I	Means		Mean difference	Required C.I
	Exp Group-II	Control Group		
32.74	52.99		20.24*	4.77
32.74		73.20	40.46*	4.77
	52.99	73.20	20.22*	4.77

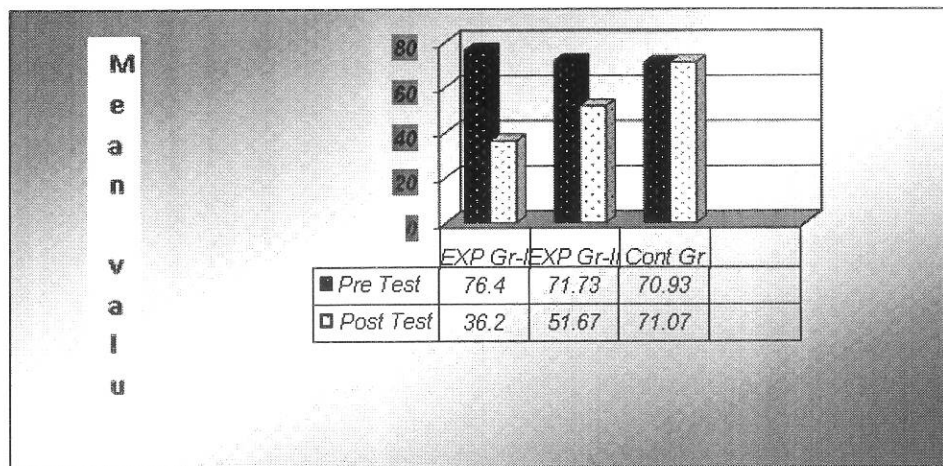
* Significant

The table II(a), shows that the mean differences between yogic practices and control group. Stretching exercises and control group were significant. When compared between the experimental groups yogic practices groups were better then stretching exercise group.

The ordered adjusted means on job satisfaction were presented through bar diagram for better understanding of the results of this study in Figure - 2.

Figure-2

Bar Diagram Showing the Pre and Post Test Means of Job Satisfaction



Discussion on the Findings of Job Satisfaction

The result presented in table-II (a) proved that there was a significant difference in job satisfaction due to yogic practices and stretching exercises compared to control group. When compared between the experimental groups yogic practices group was better than stretching exercises and control group.

Conclusion

Based on the results obtained, the following conclusions were drawn:

1.It was concluded that the heart rate were significantly decreased and Job satisfaction were significantly increased due to the influences of six week Yogic practices and Stretching exercises.

2. When compared between the experimental groups yogic practices group was better than Stretching exercises group in Information Technology sector men.

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