



Effect of Pranayama and Brisk Walking Practices on Forced Vital Capacity among Sedentary Women

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Abstract

The purpose of the present study is to find out the effect of pranayama and brisk walking practices on forced vital capacity among sedentary women. The study is conducted on 45 sedentary women in totally three groups, namely, experimental group – I & II and Control Group, each group consisted of 15 sedentary women. They underwent eight weeks of practice in Pranayama and brisk walking practices of both the experimental groups whereas the control group do not undergo any type of training. Forced vital capacity are measured before and after using the Wet Spiro meter. The Analysis of Covariance (ANCOVA) analyzes the data and it is concluded that the Pranayama and brisk walking practices have a significant of ($P < 0.05$).

Keywords: Sedentary Women, Pranayama and brisk walking practices.

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Introduction

Respiratory disorders, in particular asthma are increasing in prevalence, which is a global phenomenon. Even though genetic predisposition is one of the factors in children for the increased prevalence - urbanization, air pollution and environmental tobacco smoke contribute more significantly. Our hospital based study on 20,000 children under the age of 18 years from 1979, 1984, 1989, 1994 and 1999 in the city of Bangalore showed a prevalence of 9%, 10.5%, and 18.5%, 24.5% and 29.5% respectively. The increased prevalence correlated well with demographic changes of the city. Further to the hospital study, a school survey in 12 schools on 6550 children in the age group of 6 to 15 years was undertaken for prevalence of asthma and children were categorized into three groups depending upon the geographical situation of the school in relation to vehicular traffic and the socioeconomic group of children. (Dadibhavi and Bagalkoti 1994)

We may sum up the true nature with these, as is Science and art of realizing The Absolute i.e. The Ultimate Reality or Supreme Consciousness Holistic living i.e. physical, mental, emotional, intellectual, social and spiritual well being Science of Health, Harmony and Happiness i.e. ("HHH") And here

Health, Harmony and Happiness denotes

➤ Health (Holistic Health)

- Physical, Emotional, Mental, Intellectual, Social and Spiritual Well being
- Harmony
- Inner Harmony (Body, mind and emotion) and Outer Harmony (social, professional)
- Bliss
- Beyond happiness or permanent state of happiness. (shiva sutra 1996 edition)

"Pranayama is control of Breath". "Prana" is Breath or vital energy in the body. On subtle levels prana represents the pranic energy responsible for life or life force, and "ayama" means control. So Pranayama is "Control of Breath". One can control the rhythms of pranic energy with pranayama and achieve healthy body and mind.

Patanjali in his text of Yoga Sutras mentioned pranayama as means of attaining higher states of awareness, he mentions the holding of breath as important practice of reaching Samadhi. Hatha Yoga also talks about 8 types of pranayama which will make the body and mind healthy.

Five types of prana are responsible for various pranic activities in the body, they are Prana, Apana, Vyan, Udana & Samana. Out of these Prana and Apana are most important. Prana is upward flowing and Apana is downward flowing. Practice of Pranayama achieves the balance in the activities of these pranas, which results in healthy body and mind. (Hatha yoga pradheepika 2007 edition).

The FEV1/FVC ratio, also called Tiffeneau-Pinelli index, is a calculated ratio used in the diagnosis of obstructive and restrictive lung disease. It represents the proportion of a person's vital capacity that they are

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able to expire in the first second of expiration. See the Wikipedia article on spirometry for the definitions of FEV1 and FVC. Normal values are approximately 80%. Predicted normal values can be calculated online and depend on age, sex, height, mass and ethnicity as well as the research study that they are based upon. A derived value of FEV1% is FEV1% predicted, which is defined as FEV1% of the patient divided by the average FEV1% in the population for any person of similar age, sex and body composition. In obstructive lung disease, the FEV1 is reduced due to an obstruction of air escaping from the lungs.

Statement of the Problem

The purpose of the study is to find out the effect of pranayama and brisk walking practices on forced vital capacity among sedentary women.

Review of Related Literature

Mandhane et al. (2010), conducted the study on A child's asthma quality of life rating does not significantly influence management of their asthma at Division of Respiratory Medicine, Department of Pediatrics, Faculty of Medicine and Dentistry, University of Alberta, Edmonton, Alberta, Canada. A randomized control trial of the Roaring Adventures of Puff (RAP) education program was completed among 287 grade 2-5 children with asthma. Parents and children completed a quality of life (QOL) questionnaire pre-intervention, 6 and 12 months post-intervention. We hypothesized that RAP altered how parent's assessed their child's QOL with a resultant change in asthma management. Pre-intervention, parents rated their child's overall QOL higher than their child (parent 5.41 [95% CI 5.24, 5.58] vs. child 4.54 [95% CI 4.32, 4.75]; $P < 0.001$: paired t-test). For every point increase in the parent's overall QOL score, the child was 36% less likely to receive inhaled corticosteroids in the prior 2 weeks (OR 0.64, 95% CI 0.46, 0.88; $P = 0.024$) and 46% less likely to have missed school due to asthma in the prior 6 months (OR 0.54, 95% CI 0.36, 0.82; $P = 0.016$: logistic regression). The child's QOL assessment, beyond that

provided by their parent, was not associated with the asthma management outcomes examined. They conclude, Parent's QOL perception, and not the child's, is associated with asthma management. RAP decreased the parent's QOL symptoms assessment and was important in determining the child's asthma management. *Pediatr Pulmonol.* (c) 2010 Wiley-Liss, Inc.

Methodology

The purpose of the study was to find out the effect of pranayama and brisk walking practices on forced vital capacity among the sedentary women. For the purpose of this study, forty-five sedentary women were chosen on the random basis from Tiruchy only. Their age group ranges from 30 to 40.

The subjects were divided into three groups, first group considered as Experimental Group - I would undergo pranayama practices and the second group considered as Experimental Group - II would undergo brisk walking practices and third group consider as Control Group not attend any practices, and the pre test and posttest would be conducted before and after the training. Training would be given for eight weeks. It would be found out finally the effect of pranayama and brisk walking practices on the selected forced vital capacity among the sedentary women in scientific method. The collected data were statistically analyzed by using the Analysis of Covariance (ANCOVA).

Training Schedule

Experimental Group – I : Pranayama practices
Experimental Group – II: Brisk walking practices
Group III : Control Group (No Training).

Results and Discussions

The statistical analysis comparing initial and final means of forced vital capacity due to pranayama and brisk walking practices among the sedentary women is presented in the Table 1.

Table 1. Computation of mean and analysis of covariance of forced vital capacity of experimental and control group (in milliliters)

Tests/ Groups	EX.GR-I	EX.GR-II	CG	S O V	Sum of Squares	df	Mean Squares	"F" Ratio
Pre Test	2.667	2.34	2.44	B	0.85	2	0.427	1.64
				W	10.91	42	0.26	
Post Test	2.077933	2.14	3.03	B	8.53	2	4.26	91.19*
				W	1.96	42	0.05	
Adjusted Post Test	2.08	2.14	3.03	B	8.48	2	4.24	88.59*
				W	1.963	41	0.05	

*Significant at 0.05 level of confidence (The Table Value for significant at 0.05 level of confidence with df 2 and 42, and 2 and 41 are 2.42 and 2.41).

Since significant improvements were recorded, the results were subjected to post hoc analysis using the

scheffe's confidence interval test. The results were presented in the table 2.

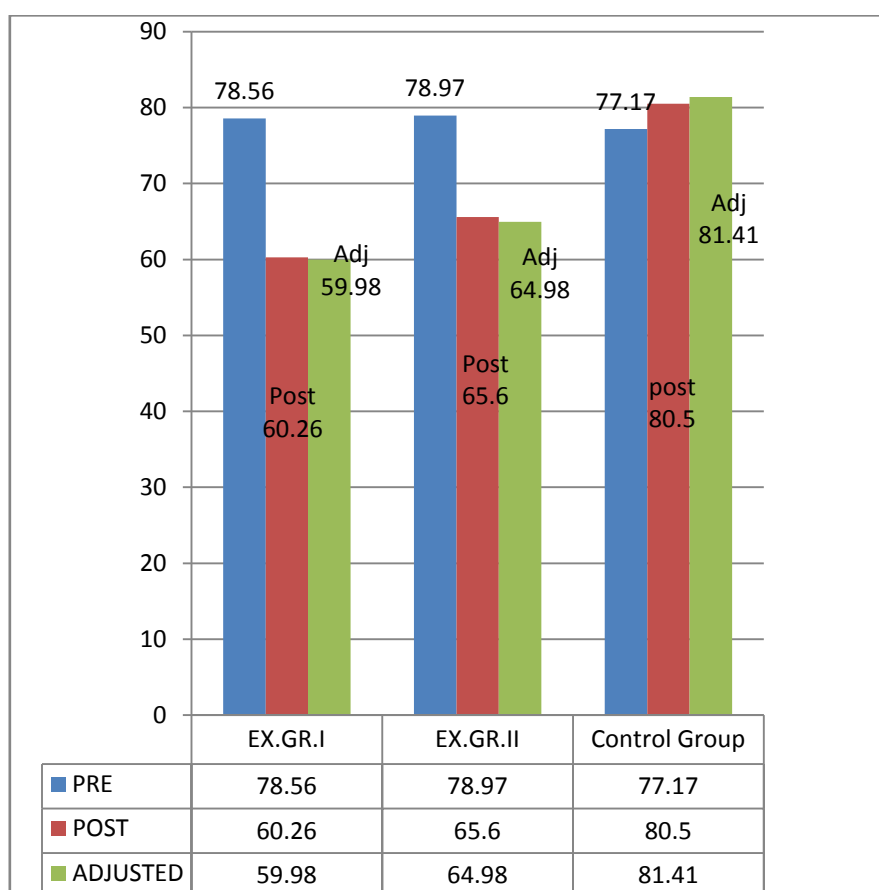
Table 2. Scheffe's post-hoc test for forced vital capacity

EX.GR-I	EX.GR-II	Control group	Mean difference	Required C.I
59.98	64.98	-	4.99*	4.70
59.98	-	81.41	21.42*	4.70
-	64.98	81.41	16.43*	4.70

*significant

The obtained adjusted mean values were presented through bar diagram in the figure 1.

Figure 1. Bar diagram showing pre, post and adjusted post-test values of control group, two experimental groups on forced vital capacity



Discussions on Findings

Taking into consideration of the post test means and adjusted post test means were determined and analysis of covariance was done and the obtained F value 91.19 and 88.59 were greater than the required value of 3.22 and hence it was accepted that the pranayama and

brisk walking practices significantly changes forced vital capacity of sedentary women.

Conclusion

The analysis of co-variance of forced vital capacity indicated that the Experimental Group – I

(pranayama practices) and Experimental Group – II (brisk walking practices) Group III (Control group), were significantly differences the forced vital capacity . It may be due to the effect of Pranayama and brisk walking practices .

The findings of the study showed that the Experimental Group – I (pranayama practices) and Experimental Group – II (brisk walking practices) group III (Control group) had significantly differences in forced vital capacity

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