

The Effect of Yogic Practices on Academic record, Memory, Body Weight and Lung function of the School going Children

Dr. K. Krishna Bhat* & Dr. K. Krishna Sharma**

*Former Professor and Chairman, Dept of Human Consciousness and Yogic Sciences, Mangalore University, Mangalagnagothri, Karnataka

** Asst.Professor and Chairman ,Dept of Human Consciousness and Yogic Sciences, Mangalore University, Mangalagnagothri, Karnataka

Email: scienceyoga@rediffmail.com

Abstract

Today's children are the citizens of tomorrow. The impurities of both body and mind are destroyed if one follows disciplines of yoga. "yoganganusthanadasuddhiskaye jnanadiptiravivekakhyaateh" says Maharshi Patanjali (P.Y.S II-28). The present study was undertaken to verify the fact on school children. Yoga training was given for 11 students of age 12-13 years of a higher primary school in a rural village of D.K district. The training was given to 7th standard students for a period of 48 days. Peak expiratory flow rate, weight, memory and class marks were compared before and after the training.

By applying paired 't' test; students have shown highly significant improvement ($p < 0.05$) after yoga training in their peak expiratory flow rate ($p = 0.000000212$), weight ($p = 0.000073$), memory ($p_{span} = 0.00000000433$; $p_{score} = 0.00000000433$) and class marks ($p = 0.0000571$). Thus the present study shows the improvement of school children by yoga training.

Key words: Peak expiratory flow rate, Weight, Memory, Class marks.

Introduction

The present condition of modern society seriously affects the physical and mental health of school children. Yoga can be used to attain health and the idea may be inculcated in school children in their early age. The impurities of both body and mind are destroyed by following the disciplines of yoga. "yoganganusthanadasuddhiskaye jnanadiptiravivekakhyaateh" says Maharshi Patanjali (P.Y.S II-28). Yoga contributes to improve the physical, mental and moral standards. The present study is undertaken to verify this fact on school children. Peak expiratory flow rate, weight, memory and class marks were considered as the parameters for the present study. It is hypothesized that yoga practice increases the peak expiratory flow rate of an individual. Increased peak flow rate indicates the improvement in respiratory capacity. Improved

respiration is the symptom of good physical and mental health according to yoga. This is rightly explained by Yogi Svatmarama as “*calevate calam cittam niscalae niscalam bhavet...*” [H.P: II – 2]. This in turn may be helpful to improve the memory and there by to improve the intelligence level in school children. Thus yoga can be beneficial to attain mental health which may lead to improvement of student’s performance in studies as well.

Materials and Methods

11 students of seventh standard of age group between 12-13 years of a higher primary school in a rural village of D.K district, Karnataka were randomly selected for the present study. The yoga training was given for a period of 48 days. Peak expiratory flow rate, weight, memory and class marks were considered as the parameters for the present study and were recorded before and after yoga training. Peak expiratory flow rate in lts / min was recorded using a peak flow meter. Body weights in kilograms were noted using a weighing machine.

For the memory test, Bhatia’s Battery of Performance Test was used. In this I.M.S (immediate memory span) test was conducted. Memory span is a threshold defining the limit of immediate retention. The magnitude of the span varies the respondent’s mental setup and other experimental condition. The experiments will make a list of 10 trials starting from 3 digits. The digits will increase by one by one in succeeding trial. The experimenter will speak out the first trial in 3 digits. And the respondent has to repeat it in the same order the experimenter continues with further trails, increasing one digit each, until the responded fails to repeat all the digits in the same order. The highest trail repeated by the responding correctly will be her or his I.M.S. The average I.M.S of a normal child is 5 as studied.

Scoring: One mark will be considered for each correct unit irrespective of the digits. The score above 5 will be considered as above average response for memory test and below 5 will be below average for memory test.

The examination marks were procured of the eleven respondents. Both prior and after practice examination marks card were seen to assess the improvement in children.

The yoga training was given for a period of 48 days. The session was started with *pranava* recitation. For the current study, there were 21 yogic practices chosen by using previous experience which includes 18 asanas, 2 pranayamas and a meditation technique. These practices were introduced in a sequential manner and 16th day onwards the repetition of all the asanas, pranayamas and meditation in sequence were done. Students were guided properly on diet since food is also a part of yoga. The entire data collection was completed

between 23 of November 2003 to 10th January 2004. The list of yogic practices which were systematically taught to the students is given below.

Asanas: Swastikasana, Vajrasana, Suptavajrasana, Tadasana-I, Tadasana-II, Trikonasana, Parsvakonasana, Pascimottanasana, Purvottanasana, Janusirsasana, Salabhasana, Dhanurasana, Bhujangasana, Bharadwajasana, Ardha matsyendrasana, Viparita karani, Halasana and Savasana

Pranayama: Ujjayi pranayama, Anuloma-viloma pranayama

Meditation: Pranava mediation.

Result

The data collected are statistically analyzed using paired 't' test and the values obtained are tabulated below

Parameter	Mean		S.D		t stat value	Remark	
	Before	After	Before	After			
Peak expiratory flow rate	89.10	135.91	17.581	18.278	11.5302	Significant	
Weight	27.91	29.05	4.614	4.767	5.92557	Significant	
Memory	Span	4.0	6.64	0.775	0.924	17.3308	Significant
	Score	2.0	4.64	0.775	0.924	17.3308	Significant
Examination marks	357.1	469.18	135.83	123.65	6.11003	Significant	

Discussion:

The data obtained after 48 days of yoga practice when compared with that obtained before the commencement of the practice shows an improvement in all the parameters considered. The raise in peak expiratory flow rate, weight gain, improvement in memory test and also the marks obtained in the examinations clearly shows a trend towards the general improvement.

It seems the *asanas* contribute in correcting the imbalanced secretions, so that their optimum integration is achieved. Pranayama aids in bringing a better co-ordination by fixing the mind and also increases the power to concentrate on the breathing that is a little deeper than normal the ability to recall and recognize improves with less thoughts to confuse the memory. This is rightly explained by Yogi Svatmarama as "*calevate calam cittam niscala niscalam bhavet...*"[H.P: II2]. Meditation when practiced calms down the physical

activity and increases the mental activity by working upon the nervous system. This makes a child to improve significantly.

The data collected are statistically analyzed using paired 't' test and 0.05 is considered as the level of significance. The statistical values obtained for peak expiratory flow rate shown highly significant improvement ($t = 11.5302$, $p = 0.000000212 < 0.05$) after yoga training. The weight also increased significantly by yoga practice with $t = 11.5302$ and $p = 0.000073 < 0.05$. The statistical values obtained for memory test ($t_{\text{span}} = 11.5302$, $p_{\text{span}} = 0.000000212 < 0.05$ and $t_{\text{score}} = 11.5302$, $p_{\text{score}} = 0.000000212 < 0.05$) shown highly significant improvement in students memory power after yoga training. Similarly statistical values ($t = 11.5302$ and $p = 0.000073 < 0.05$) for class marks showing their improved performance.

Conclusion:

The data obtained and analyzed for 11 students clearly shows the improvement in all the parameters under taken. Considering these findings it can be concluded that yoga is beneficial to improve the over all health of school children. Therefore yoga can be introduced simultaneously at several schools and good result can be expected with large number of students.

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