

# EFFECT OF YOGIC PRACTICES ON SELECTED HAEMOTOLOGICAL VARIABLES OF COLLEGE WOMEN STUDENTS

<sup>1</sup>M. Saradha\*, <sup>2</sup>A.Rajam, <sup>3</sup>R.P.Balasubramanian

<sup>1</sup> Sky Research Centre, WCSC, Aliyar, Pollachi Taluk, Coimbatore District,  
Tamilnadu, India.

<sup>2</sup> Department of Physical Education and Sports, Mother Teresa Women's University,  
Kodaikanal.624102, Tamilnadu, India.

<sup>3</sup> Sky Research Centre, WCSC, Aliyar, Pollachi Taluk, Coimbatore District,  
Tamilnadu, India.

## Abstract

The purpose of the study was to find out the effect of yogic practices on selected haematological variables of college women students. To resolve the purpose of the study 40 college women were randomly selected from Kumaraguru College of Technology, Coimbatore. Their age ranged between 18 and 22 years. The selected subjects were randomly divided into two groups consisting of twenty each. No attempt was made to equate the groups. Experimental Group I underwent Yogic practices for a period of 16 weeks. Group II acted as control group (CG) and were not engaged in any training programme other than their work. The subjects were free to withdraw their consent in case of feeling any discomfort during the period of their participation but there was no dropout during the study. The haematological variables namely Leucocytes count and Hemoglobin were selected and tested through TCDC and Shalis blood analyzer test respectively. Pre and post tests were conducted in all the variables. 16 weeks of yogic practices were given to the experimental group for a period of 16 weeks. Dependent t test was used to determine the significant difference between the treatment means. yogic practice group had significantly increased Leucocytes count and Haemoglobin whereas the control group had no significant increase in all the variables.

Key words: Yogic practices, Leucocytes count and Haemoglobin.

## 1.INTRODUCTION

The most important aim of our lives should be to maintain good health. Many people take their health for granted and abuse their bodies with a sedentary life style, bad diets, medications and high stress factors. Every person, due to genetic weaknesses, is susceptible to certain ailments that if not prevented can lead to serious illnesses. When energy is depleted in the body the organs become weak and they cannot function properly. The natural equilibrium will be disturbed and a disorder can develop. Genetic factors will dictate which particular disorder may develop and which organ might be affected. Some people may be prone to a certain condition such as diabetes, cancer, peptic ulcers and heart disease. Yoga acts preventive measures to disease by reducing stress level, keeping the internal organs toned and healthy and maintaining a balanced equilibrium between the physical, mental and spiritual level. The emphasis is to unite the system with a combination of breathing techniques, gentle exercise and mind control. This produces a tranquillity that penetrates deep into the mind and soul. It improves the health of the person on all levels. ( VimalaLalvani, 2003)

Women who are employed play a vital and multiple roles. The need for a balance, both at home and work place is important. Women tend to be care givers and out of the sense of duty, they have a hard time justifying behaviour that are "just for themselves" such as exercise, recreation and relaxation (Fogoros, 2009).

Women with her multiple role in the family, career and society faces tremendous challenge in her everyday life. Increase in lifestyle standards, more of convenience food consumption and recreation with reduced physical activity has made women the victims for cardiovascular disease. The mortality rate among women suffering from cardiovascular disease is also higher than that of men across the world, including India (Roger and Mental, 2006).

## II. YOGIC PRACTICES

The word yoga derived from the Sanskrit root 'yuj' meaning to bind, join, attach and yoke, to direct and concentrate one's attention on, to use and apply. It also means union or communion. Yoga was collated, co-ordinate and systematized by Patanjali in his classical work, the yoga sutras, which consists of 185 terse aphorisms. (Iyengar B K S, 2008).

Yogic practices have become increasingly popular in western countries as a method for coping with stress and as a means of exercise and fitness training (Schell et al., 1994). Yogic practices are an ancient practice that was developed to promote physical health as well as an awareness of one's true nature. It consists of a series of postures, called asanas, and various breathing exercises, called pranayama, which encourage balance between the physical, mental/emotional, and spiritual aspects of a human being. In short, yogic practices promotes health. Like other forms of yoga, yogic practices is purported to quiet the mind and focus the concentration; however, of all the yoga traditions, the importance of physical fitness is emphasized most in yogic practices (Worthington; 1982).

Yoga has been practiced for thousands of years. It is based on ancient theories, observations and principles of the mind-body connections. Substantial research has been conducted to look at the health benefits of yoga – yoga postures (asanas), yoga breathing (pranayama) and meditation. These yoga practices might be interacting with various somatic and neuro-endocrine mechanisms bringing about therapeutic effects (Malhotra and Singh, 2002). Yoga is traditionally believed to have beneficial effects on physical and emotional health (Gilbert, 1999). The overall performance is known to be improved by practicing yoga techniques (Upadhyay et al., 2008) and their effects on physical functions were reported (Hadi, 2007). Yoga practices can also be used as psycho-physiological stimuli to increase the secretion of melatonin which, in turn, might be responsible for perceived well-being (Harinath et al., 2004). Yoga may be as effective as or better than exercise at improving a variety of health-related outcome measures (Ross and Thomas, 2010).

## III. BENEFITS OF YOGIC PRACTICES

Yoga has both preventive and therapeutic benefits. It has been shown to offer both physical and mental benefits to the body and the mind. Yogic practices improves flexibility and muscle joint mobility; strengthens, tones and builds muscles; corrects posture; strengthens the spine; eases back pain; improves muscular-skeletal conditions such as bad knees, tight shoulders and neck, sway back and scoliosis; increases stamina; creates balance and grace; stimulates the glands of the endocrine system; improves digestion and elimination; increases circulation; improves heart conditions; improves breathing disorders; boosts immune response; decreases cholesterol and blood sugar levels and encourages weight loss.

## IV. METHODOLOGY

The investigator used pre and post test random group design in this study. This procedure involves dividing the sample into two groups based on random selection. The investigator did not make any attempt to equate the groups in this study. The selected forty subjects were divided into two groups consisting of 20 each such as Experimental Group I and a Control Group. The treatment was administered to the experimental groups for a period of sixteen weeks. At the end of 16<sup>th</sup> week the post test were administered to both the groups.

The haematological variables namely leucocyte count and haemoglobin were selected and tested through TCDC and Shalis blood analyzer test respectively. Pre and post tests were conducted in all the variables. 16 weeks yogic practices were given to the experimental group for a period of 16 weeks. Dependent t test was applied to find out the significant difference between the pre test and the post test.

The following training programme was given for the experimental group for a period of sixteen weeks

## V. THE TRAINING SCHEDULE OF YOGIC PRACTICES IS DIVIDED INTO THREE BLOCKS,

TABLE – I

(1) The practices for the first five weeks in the Evening (4.45 to 5.45) were as follows;

Experimental group					
yogic Practices					
Sl. No.	Name of practice	Frequency	Duration of the practice	Rest time	Total duration of the practice
<b>A</b>	<b>Meditation</b>				
1	God prayer	6 days	1 minute	-	20 Minutes 30 sec
2	Guru worship	6 days	1 minute	-	
3	Kapalatathi	6 days	4 minute	-	
4	Dharava	6 days	4 minute	-	
5	Dhyana	6 days	10 minutes	30 sec	
<b>B</b>	<b>Yogasana</b>				
1	Loosening exercise	6 days	2 mintues	30 sec	39 Minutes 30sec
2	Vriksasana	6 days	4 minutes	30 sec	
3	Trikonasana	6 days	4 minutes	30 sec	
4	Pathahastasana	6 days	4 minutes	30 sec	
5	Ardha chakarasana	6 days	4 minutes	30 sec	
6	Padmasana	6 days	4 minutes	30 sec	
7	Sugasana	6 days	4 minutes	30 sec	
8	Yoga mudra	6 days	4 minutes	30 sec	
9	Matsyasana	6 days	4 minutes	30 sec	
10	Savasaana	6 days	5 minutes		
				Total	60

2) Practices for **the second** five weeks in the Evening (4.45 to 5.45) were as follows;

TABLE – II

Experimental group yogic practice					
Sl. No.	Name of practice	Frequ ency	Duration of the practice	Rest time	Total duration of the practice
<b>A</b>	<b>Meditation</b>				
1	Prayer of god	6 days	1 minute	-	21Minutes 20 sec
2	Guru worship	6 days	1 minute	-	
3	Nadisudhi	6 days	3 minute	-	
4	Thanduvadasudhi	6 days	3 minute	-	
5	Nama - Rupa meditation	6 days	13 minutes	20 sec	
<b>B</b>	<b>Asanas practices</b>				
1	Loosening exercise	6 days	2 minutes	20 sec	38 Minutes 40 sec
2	Dhanurasana	6 days	4 minutes	20 sec	
3	Sethupandasana	6 days	4 minutes	20 sec	
4	Ustrasana	6 days	4minutes	20 sec	
5	Chakarasana	6 days	4 minutes	20 sec	
6	Adhomuksha svasana	6 days	3 minutes	20 sec	
7	Salabhasana	6 days	3minutes	20 sec	
8	Bhujangasana	6 days	3minutes	20 sec	
9	Yogamudra	6 days	3 minutes	20 sec	
10	Savasana	6 days	5Minutes 40 sec		
				Total	60 min

Practices for the Third six weeks in the Evening (4.45 to 5.45) were as follows;

TABLE - III

Experimental group yogic practice						
Sl. No.	Name of practice	Frequency	Duration of the practice	Sets	Rest time	Total duration of the practice
<b>A</b>	<b>Meditation</b>					
1	Prayer of god	6 days	1 minute		-	26 Minutes
2	Guru worship	6 days	1 minute		-	
3	Nadisudhi	6 days	2 minute		-	
4	Thanduvadasudhi	6 days	2 minute		-	
5	Nama-Rupa Meditation	6 days	20 minutes			
<b>B</b>	<b>Yogasana</b>					
	Loosening exercise	6 days	2minutes		10 sec	34 Minutes
1	Utkatasana	6 days	5 minutes	5 times	50 sec	
2	Virukshasan	6 days	1minutes		10 sec	
3	Trikonasana	6 days	1 minutes	1 set	10 sec	
4	Pathahastasana	6 days	1minutes	1 set	10 sec	
5	Ardha chakarasana	6 days	1 minutes	1set	10 sec	
6	Padmasana	6 days	1 minutes	1set	10 sec	
7	Sughasana	6 days	1minutes	1 set	10 sec	
8	Yoga mudra	6 days	1 minutes	1 set	10 sec	
9	Matsyasana	6 days	1minutes	1 set	10 sec	
10	Dhanurasana	6 days	1 minutes	1set	10 sec	
11	Sethupandasana	6 days	1 minutes	1 set	10 sec	
12	Ustrasana	6 days	1minutes	1 set	10 sec	
13	Chakarasana	6 days	1 minutes	1 set	10 sec	
14	Adhomuksha svasana	6 days	1minutes	1 set	10 sec	
15	Salaphasana	6 days	1 minutes	1 set	10 sec	
16	Bhujangasana	6 days	1 minutes	1 set	10 sec	
17	Uthanapathasana	6 days	1 minutes	1 set	10 sec	
18	Viparitarani	6 days	1 minutes	1 set	10 sec	
19	Pavanamukthasana	6 days	1 minutes	1 set	10 sec	
20	Savasana	6 days	5 minutes	5 set		
					Total	60 min

## VI. RESULTS OF THE STUDY

The collected data were analysed using dependent t test and the results were given below

TABLE – II

Mean gains & losses between pre and post test scores on selected variables of yogic practice group

S.No	Variables	Mean		Mean difference	SD (±)		σ DM	't' Ratio
		Pre	Post		Pre	Post		
1	Hemoglobin	11.58	12.80	1.21	1.73	1.47	0.25	4.70
2	Leucocytes count	6385	7385	1000	1178	1127	223	4.47

\* Significant at 0.05 level

An examination of table- X indicates that the obtained't' ratios were 4.70 & 4.47 for hemoglobin and leucocytes respectively. The obtained't' ratios on the selected variables were found to be greater than the required table value of 2.861 at 0.05 level of significance for 19 degrees of freedom. So it was found to be significant. The results of this study showed that statistically significant and explained its effects positively.

TABLE – III

Significance of mean gains &amp; losses between pre and post test scores on selected variables of control group

S.No	Variables	Mean		Mean difference	SD ( $\pm$ )		$\sigma$ DM	't' Ratio
		Pre	Post		Pre	Post		
1	Hemoglobin	12.25	12.07	0.18	1.94	1.62	0.13	1.32
2	Leucocytes count	6540	6542	2.50	1062	1091	28.20	0.089

An examination of table-II indicates that the obtained 't' ratios were 0.089 & 1.32 for, hemoglobin and leucocytes respectively. The obtained 't' ratios on the selected variables were found to be lesser than the required table value of 2.861 at 0.05 level of significance for 19 degrees of freedom. So it was found to be insignificant.

### DISCUSSION ON THE FINDINGS

The prime intention of the researcher was to analyse the effect of yogic practices on selected haematological variables among college women. The yogic practices group had significantly improved in leucocyte count and haemoglobin.

Yogic practices helps women to maintain their health and wellness. The below mentioned study is a research **Geetha.K (2014)** found out the Effect of Yogic practices on selected hematological variables among college girls suffering with irregular menstruation. The study involved 60 subjects under the age group of 16 to 21 years. Experimental group I & II underwent training for 12 weeks. The control group was kept in active rest. Analysis of co-variance (ANCOVA) to determine the significant difference and tested at 0.05 level of significance. The result of the study showed that the Glucose tolerance and total cholesterol were significantly reduced as result of Yogic practices.

### VII. CONCLUSION

Within the limitations and on the basis of the findings of the study, it was very clear that sixteen weeks of simple Yogic practices produced significant changes in leucocyte count and haemoglobin of college women students.

### References:

- [1] Vimla Lalvani, 2003. *The Power of Yoga*.
- [2] Author Swami Adiswarananda, *A Guide to the spiritual paths of Action, Devotion, Meditation and knowledge*.(PG18); published by the president Sri Ramakrishna Math, Mylapore, Chennai-4
- [3] <http://www.webmd.boots.com/hypertension-high-blood-pressure/guide/diastolic-systolic>
- [4] Cole, Roger. *Physiology of yoga*. Ingra Yoga Institute Review, Oct 1985. f Corby, J. C., W. T. Roth, V. P. Zarcone, Jr., and B. S. Kopell. *Psychophysiological correlates of the practice of Tantric Yoga meditation*. *Archives of General Psychiatry*, May 1978, 35(5):571-577. f
- [5] Iyengar, BKS (2008), *Light on Yoga* Published by An imprint of Harper Collins Publishers India Pvt. Ltd., New Delhi P.20.
- [6] Sharma, P.D (1984). *Yogasana and pranayama for health*. Navneet Publicans, 10-11.
- [7] Swamy Sivananda (1935). *Yoga Teachers Manual* Pub International Vendanta Centers, Valmorin, Quebec, Canada  
The Complete books of yoga: *Harmony of body and mind* Orient paper Backs: Vision Book pvt. Ltd.
- [8] World Health Organization. (2009). "Women and health: today's evidence tomorrow's agenda."
- [9] Worthington VA. (1982) *History of Yoga*. London. UK: Routledge and Kegan Paul, 1982.
- [10] Yogi Bhajan. (2016). *The Aquarian Teacher*, KRI International Teacher Training in Kundalini Yoga as taught by Yogi Bhajan, Kundalini Research Institute, 4th Edition.
- [11] Bal, B.S., Kaur, P.J. (2009) *Effects of selected asanas in hatha yoga on agility and flexibility level*. *Journal of Sport and Health Research*. 1(2):75-87.
- [12] Gilbert C. (1999). *Yoga and Breathing*. *J. Bodywork Mov. Ther.* 3:44-54. 9.