

A STUDY ON THE EFFECT OF YOGA THERAPY ON ANAEMIA IN WOMEN

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Abstract

The main aim of the current study is to finding the effect of yoga therapy on anemia. For this purpose, 23 female Anemic individuals aged between 20-25 years who were willing to participate in the program were selected randomly as subjects from University Hostel for Women and Working Women Hostel, in Mangalore University Campus, Mangalagangothri for 30 days programme from 10th February to 25th March. They were randomly divided into an experimental group and a control group. Yogic practices were progressively introduced to the experimental group on six days in a week for nearly 60 to 70 minutes. The therapy was carried out in the morning from 6.15 am to 7.30 am in Yogic Science Department, Mangalagangothri, Mangalore. The control group was not exposed to any yogic practices. Assessment has been done before and after the study for the parameters Hb%, PCV (Hct), WBC, and PEFR for both the groups. The results of various tests were analyzed using student 't' test. After the yoga therapy every variable under Haemogram showed significant improvement among experimental group when compared to control group. Hemoglobin showed a significant improvement with $p=0.00002462$, PCV (Hct) with $p=0.00002216$, WBC with $p=0.00212$, PEFR with p value 3.689×10^{-07} .

Keywords: Anemia, Women, Hemoglobin, Yoga therapy

INTRODUCTION

A woman has various roles to be played in her life. She has to take care of her children, look after the needs of her family members. Apart from these, she has an additional part to play in society. In between all these the health of woman is often neglected. She faces many physical and psychological disturbances in her day to day life. These may lead into the emergence of diseases both at physical and mental level.

Anemia is a decrease in number of red blood cells (RBCs) or less than the normal quantity of hemoglobin in the blood. Most commonly, people with anemia report feelings of weakness, or fatigue, general malaise, and sometimes poor concentration. They may also report shortness of breath (dyspnoea) on exertion. In very severe anemia, the body may compensate for the lack of oxygen-carrying capability of the blood by increasing cardiac output. The patient may have symptoms related to this, such as palpitations, angina (if pre-existing heart disease is present), and symptoms of heart failure.

Yogic practices can make her emotionally stable and make her free from psychological disturbances. It helps to control and check emotions; it gives balance of mind. It makes her physically fit and healthy and makes her to approach the future life without any disturbances. Therefore this study was done to test the effectiveness of yogic practices in the management of anemic condition.

Objectives Of The Study

To study the effect of Yogic practices on anemic conditions of young girls of the age group of 20-25 years.

MATERIALS AND METHODS

The present study was conducted to assess the effect of yogic practices among young girls who were suffering from anemia. The study was undertaken at University Hostel for Women's and Working Women's Hostel, Mangalagangothri-Konaje. All the subjects of the study were of the age group of 20 to 25 years. The study was conducted for the period of 30 days from 10th February to 25th March.

The practices were taught six days in a week for nearly 60 to 70 minutes. Every day the therapy was carried out in the morning from 6.15 to 7.30. There were 23 volunteers who were suffering from symptoms of anemia and are willing to undergo yoga therapy programme. A detailed Case History of each subject was taken. The Case History included- Main complaint, Present history, Past History, Family background, Treatment followed in past, Height, Weight, Blood Pressure and Personal details such as sleep, bowel etc. were recorded. The subjects were divided randomly into

two groups. Experimental group containing 12 subjects and Control group containing 11 subjects.

The control group was not exposed to any yogic practices. Yoga therapy was introduced to the experimental group, which contained a set of twenty seven practices which included Asanas, Pranayamas, Meditation and Relaxation techniques in a proper sequence. Asanas were taught for a period of 30 minutes, Pranayama for 20 minutes, Meditation for 5 minutes and Relaxation for 15 minutes. All the practices were taught gradually. A Paired “t” test was employed in the study to analyse the significance of the result statistically.

PARAMETERS:

The Parameters used are as follow –

❖ HAEMOGLOBIN LEVEL IN BLOOD:

Haemoglobin is the iron-containing oxygen-transport agent in the red blood cells of all vertebrates, as well as the tissues of some invertebrates. Haemoglobin in the blood carries oxygen from the respiratory organs to the rest of the body (i.e. the tissues) where it releases the oxygen to burn nutrients to provide energy to power the functions of the organism and collects the resultant carbon dioxide to bring it back to the respiratory organs to be dispensed from the organism. Blood haemoglobin level is the weight and quantity of Haemoglobin in the blood measured in gms/100ml. The quantity of Hb/deciliter or 100ml of blood is determined by Haemoglobin meter. The normal value of haemoglobin for men is 13-18g/dl and for women is 11.5-16.5g/dl.

❖ PACKED CELL VOLUME (PCV) OR HAEMATOCRIT:

Haematocrit or Packed Cell Volume measures the percentage of red blood cells in a given volume of whole blood. A high haematocrit level might mean one is dehydrated. A low hematocrit level might mean one has Anaemia. Abnormal hematocrit levels also may be a sign of a blood or bone marrow disorder. The normal value is 36-48%.

❖ WHITE BLOOD CORPUSCLES (WBC) COUNT:

White blood cells are part of our immune system, which fights infections and diseases. White blood cell (WBC) count is a count of the actual number of white blood cells per volume of blood. Abnormal white blood cell levels may be a sign of infection, blood cancer, or an immune system disorder. The normal value is 4000-11000/cu.mm.

❖ **PEAK EXPIRATORY FLOW RATE (PEFR):**

Peak Expiratory Flow Rate (PEFR) is a measure of the highest expiratory flow rate. It is measured in liters of air expired per second or liters of air expired per minute. Since it is a measure of the peak or maximum flow of expired air, it becomes a sensitive test for the presence of obstructive disease. Patients with a low PEFR would have to be further evaluated for obstructive pathologies. The Peak Expiratory Flow Rate was also tested and recorded.

YOGIC INTERVENTION

The following practices were gradually introduced to the members of experimental group. Swasthikasana, Vajrasana, Supta vajrasana, Simhasana, Tadasana-1 Trikonasana Parshvakonasana Paschimottanasana Purvottanasana Pavanamuktasana Bhujangasana Shalabhasana Dhanurasana Makarasana Ustrasana. Ujjayi Anuloma Viloma Bhastrika Bhramari, Om Meditation and Relaxation.

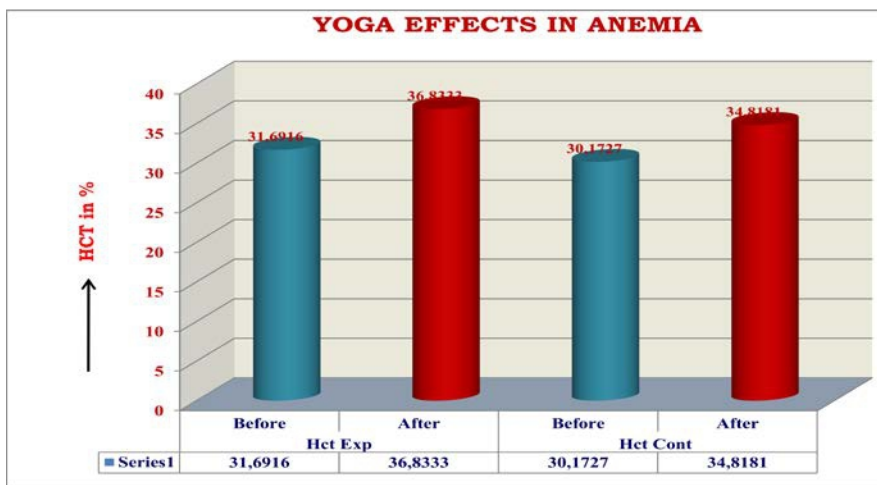
RESULTS

All the subjects of the study underwent a Haemogram Test before and after the practice of yoga training which consisted of 70 minutes of practice in a day. The obtained results suggested that the subjects of experimental group found better improvements in the Hemoglobin, Haematocrit, White blood corpuscles count, and Peak Expiratory Flow Rate due to one month's regular practice of yoga. But no such kind of considerable changes was noticed among the subjects of control group.

STATISTICAL ANALYSIS

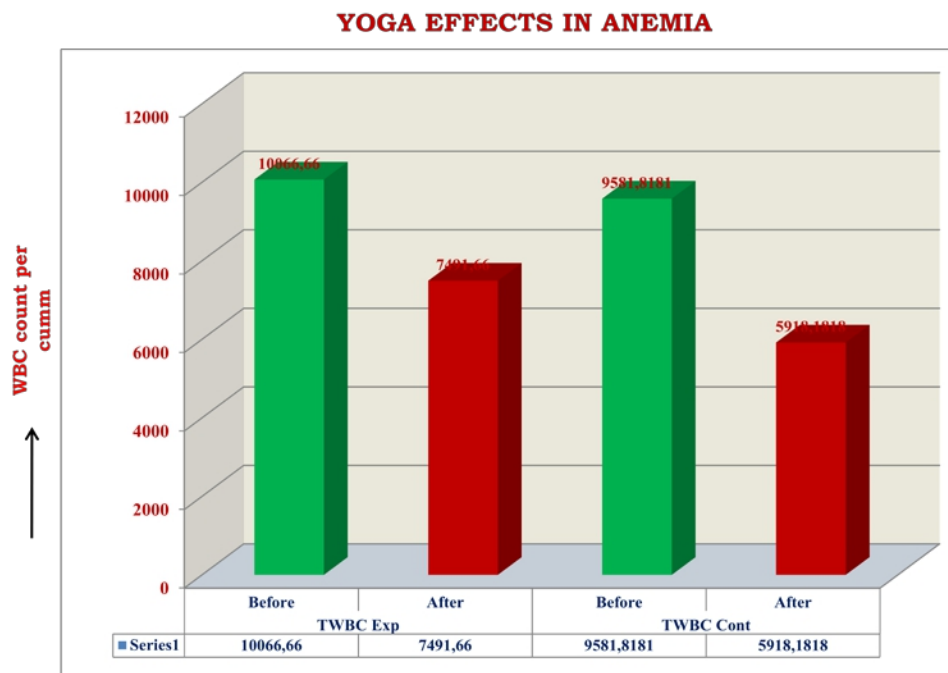
SI No	Para meters	Mean		S.D		t- Value	p - Value	Result
		Before	After	Before	After			
		1	Hb in g/dL	11.3	12.583			
2	PCV (Hct) in %	31.6916	36.83	2.88805	2.823065	7.0182	2.216×10^{-5}	HS
3	WBC count / cumm	10066.6 6	7491.66	3057.43	1516.85	3.9905	0.00212	HS
4	PEFR in lit/min	230	364.16	53.59783	41.44182	10.716	3.689×10^{-7}	HS

A paired “t” test was applied for each parameter and found out the values for each group viz, Experimental and Control group, before and after the study. The results of “t” test are as tabulated below.



→ HCT – for Experimental and Control Group

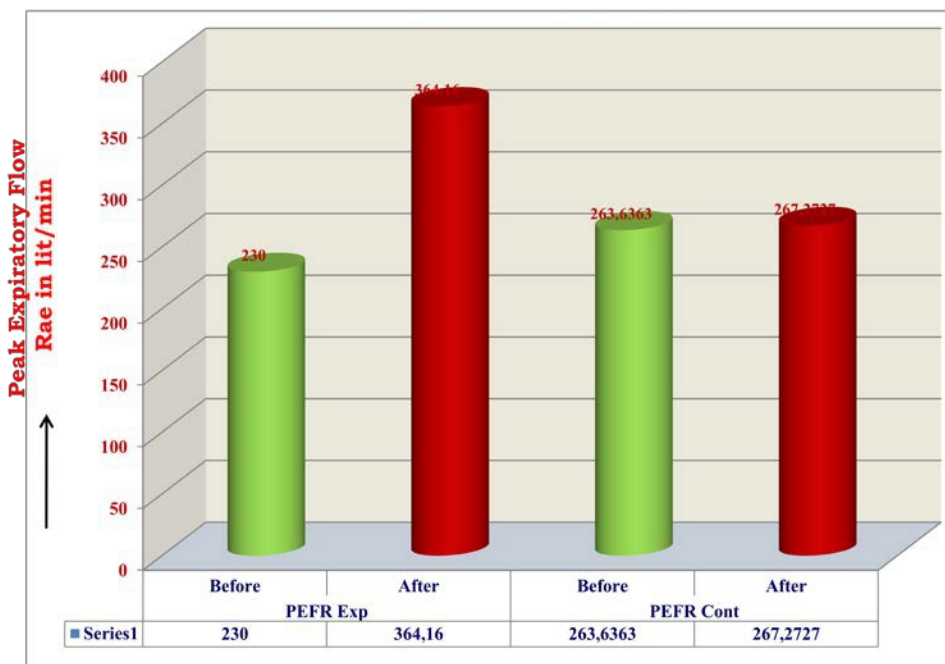
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→ TWBC – for Experimental and Control Group:

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YOGA EFFECTS IN ANEMIA



→ **PEFR – for Experimental and Control Group:**

DISCUSSION

Yoga therapy has given for 12 subjects, for a period of one month. Among them who are regular to the class and more than the 75% of attendance, showed significant changes in the result. By this we can say that to get the good results regular practice of yoga is needed. In the present study, the results of experimental group were proved to be statistically highly significant for HB, HCT, TC, and PEFR. Every member felt improvement after the yoga therapy programme. But there was no significant improvement among control group. As the yoga class was conducted every day in the early morning from 6.15 to 7.30am everyone developed the habit of waking up early in the morning. Also, their sleeping pattern was regularized. For the present study, a student ‘t’ test is used to test the significance of the result of the effect of yoga therapy on Anemia in Women. All subjects who participated in yoga therapy programme for 30 days have experienced positive result. Table-1 clearly shows that every variable under Haemogram showed significant improvement among experimental group.

In the statistical analysis, the significant level is taken as 0.05. If the p value is less than 0.05 the result is significant and if p value is greater than

0.05 then the result is not significant. The study showed increased in the mean for **Haemoglobin** level.

Before yoga practice it was **11.3 gm/dL** and after yoga practice haemoglobin increased to **12.583 gm/dL**. The p value for variation in haemoglobin was 0.00002462 which is less than 0.01. So, the Haemoglobin shows a statistically Highly Significant improvement with the value of **t=-6.9377** and **p =0.00002462 [<0.01]**. Control group does not shown significant improvement in Haemoglobin. The study also showed increased in the mean for **Haematocrit** (PCV) level. Before yoga practice it was **31.6916%** and after yoga practice Haematocrit level increased to **36.83%**. The p value for variation in haematocrit was 0.00002216 which is less than 0.01.

So, the Haematocrit also shown statistically Highly Significant improvement with the value of **t=-7.0182** and **p =0.00002216 [<0.01]**. Control group shown less improvement when compared to experimental group even though the result is significant. The study showed changes in the mean for **WBC Count** of patients. Before yoga practice it was **10066.66**, and after yoga practice TC Count reduced to **7491.66**. The p value for variation in TC was 0.00212, which is less than 0.01. So, the TC Count showing statistically Highly Significant effect with the value of **t=3.9905** and **p=0.00212 [<0.01]**. Control group shown less improvement when compared to experimental group even though the result is significant.

The study showed increased in the mean **PEFR** of patients. Before yoga practice it was **230%** and after yoga practices the PEFR of patients increased to **364.16%**. The p value for variation in PEFR of patients was 3.689×10^{-07} , which is less than 0.01. So, the PEFR shows a statistically Highly Significant improvement with the value of **t=-10.716** and **p =0.0000003689 [<0.01]**. Control group does not shown significant improvement in PEFR.

Therefore the significant improvement of Hemoglobin, PCV(Hct), WBC, and PEFR shows the positive effect of Yoga. It is evident from the above result that all the subjects responded to the treatment positively. But the variation of the rate of success could be dependent upon the regularity of practice, lifestyle and attitude.

CONCLUSION

The present study reveals that yoga therapy helps efficiently in reducing the symptoms of anaemia with minimum effort. Based on above results and discussion, we can come to the following conclusion:

- This short-term study has showed very significant results in Hemoglobin, Haematocrit, Total White Blood Corpuscles and PEFR.

- The yogic practices can be used efficiently to improve the Hemoglobin count.
- Long-term practice of yoga on anemic patients' definitely can give better results with least expenditure.
- Yogic practices affect the body from the cellular level itself if it is practiced properly under the guidance of yoga teacher.

The yoga therapy would yield more result if it is carried out for longer duration unlike present study.

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