



P-ISSN: 2394-1685  
E-ISSN: 2394-1693  
Impact Factor (ISRA): 5.38  
IJPESH 2018; 5(1): 79-81  
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www.kheljournal.com  
Received: 14-11-2017  
Accepted: 15-12-2017

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## Effect of yoga on selected physiological and haematological variables among irregular menstrual women

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**DOI:** <https://doi.org/10.22271/kheljournal.v5.i1b.04>

### Abstract

The purpose of the study was to investigate the effects of yogic practices on physiological and biochemical variables among irregular menstrual women. To facilitate the study, 30 irregular menstrual women were selected from various hospitals, Chennai as subjects at random in this study. Yogic practices were given to the experimental group for the period of six weeks. The pre-test was taken from the subjects before administering the training. The subjects were involved with their training for a period of six weeks. The subjects were monitored throughout the sessions. At the end of the six weeks, training post-test with respect to body mass index, hemoglobin were measured by using the standardized tests and methods. The significant difference between the means of the experimental group and control group for the pre-test and post-test scores were determined by 't' test. The level of significance was fixed at 0.05 level of confidence. The result of this study proved that significant differences were recorded due to six weeks of yogic therapy for irregular menstrual women. Hemoglobin of the experimental group showed significant increase when compared to the control group. BMI (Body Mass Index) showed significant decrease when compared to the control group.

**Keywords:** Yoga, physiological, menstruation, women

### Introduction

Women's health in India can be examined in terms of multiple indicators, which vary by geography, socioeconomic standing and culture. To adequately improve the health of women in India, multiple dimensions of wellbeing must be analysed in relation to global health averages and also in comparison to men in India. Health is an important factor that contributes to human wellbeing and economic growth. Currently, women in India face a multitude of health problems, which ultimately affect the aggregate economy's output. Addressing the gender, class or ethnic disparities that exist in health care and improving the health outcomes can contribute to economic gain through the creation of quality human capital and increased levels of savings and investment.

Gender is one of many social determinants of health which include social, economic, and political factors that play a major role in the health outcomes of women in India. Therefore, the high level of gender inequality in India negatively impacts the health of women. The role that gender plays in health care access can be determined by examining resource allocation within the household and the public sphere. Gender discrimination begins before birth, females are the most commonly aborted sex in India. If a female fetus is not aborted, the mother's pregnancy can be a stressful experience due to her family's preference for a son.

### Regular Menstruation

The ova are larger than sperm and are formed by the time a female is born. Approximately every month, a process of oogenesis matures one ovum to be sent down the Fallopian tube attached to its ovary in anticipation of fertilization. If not fertilized, this egg is flushed out of the system through menstruation.

The menstrual cycle is the cycle of natural changes that occurs in the uterus and ovary as an

essential part of making sexual reproduction possible (Silverthorn, Dee Unglaub 2013; Sherwood, Laurelee 2013)<sup>[6]</sup>. Its timing is governed by endogenous (internal) biological cycles. The menstrual cycle is essential for the production of eggs, and for the preparation of the uterus for pregnancy. The cycle occurs only in fertile female humans and other female primates. In human females, the menstrual cycle occurs repeatedly between the age of menarche, when cycling begins, until menopause, when it ends.

**Irregular Menstruation**

Irregular cycles or irregular periods is an abnormal variation in length of menstrual cycles in a female. A female usually experiences cycle length variations of up to eight days between the shortest and longest cycle lengths. Lengths ranging between eight and 20 days is considered as moderately irregular cycles. Variation of 21 days or more is considered very irregular. Irregular menstruation is a menstrual disorder whose manifestations include irregular cycle lengths as well as metrorrhagia (vaginal bleeding between expected periods).

**Methodology**

The purpose of the study was to investigate the effects of yogic practices on physiological and biochemical variables among irregular menstrual women. To facilitate the study, 30 irregular menstrual women were selected from various hospitals, Chennai as subjects at random. In this study yogic practices were given to experimental group for the period of six weeks. The pre test was taken from the subjects before administering the training. The subjects were involved with their training for a period of six weeks. The subjects were monitored throughout the sessions. At the end of the six weeks training post test with respect to body mass index, hemoglobin were measured by using the standardized tests and methods. The significant difference between the means of the experimental group and control group for the pre test and post test scores were determined by „t” test. The level of significance was fixed at 0.05 level of confidence. The result of this study proved that significant differences were recorded due to six weeks of yogic therapy for irregular menstrual women.

**Table 1:** Mean, Standard Deviation and Mean Difference of the Groups and the “T” Test of the Control Group and the Experimental Group for Body Mass Index

Group	Test	N	Mean	SD	MD	T
Control	Pre Test	15	27.28	1.91	0.212	1.049
	Post Test	15	27.5	1.92		
Experimental	Pre Test	15	27	2.66	1.20	7.972*
	Post Test	15	25.3	2.48		

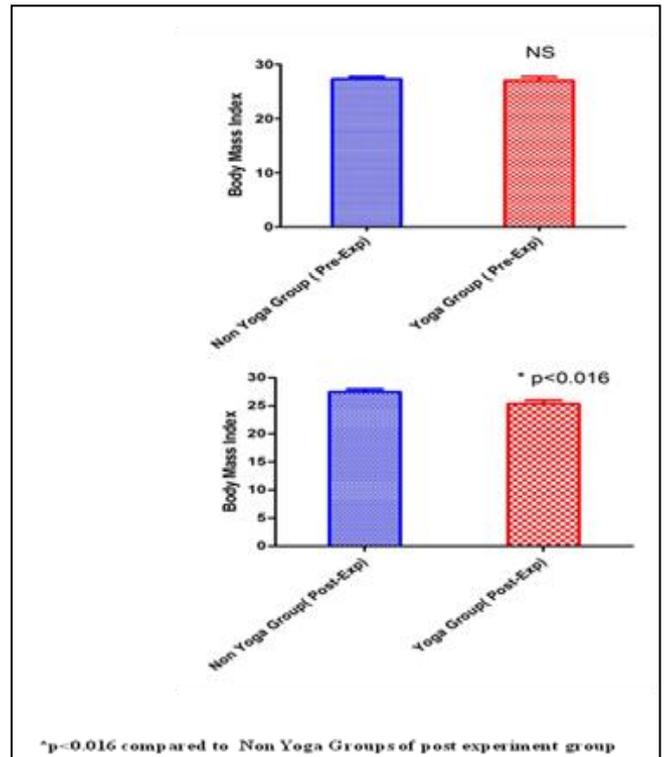
\*Significant at 0.05 level of confidence

‘t’ ratio at 0.05 level of confidence for the degree of freedom (DF) at 28=2.0484

**Results of Body Mass Index**

The data from the pre test and post test on body mass index levels of the control group and experimental group have been statistically analyzed using dependent ‘t’ test and the results are presented in the Table I. The table I shows that the pre test means of control group and experimental group were 27 and 25.3 respectively. The pre test standard deviation of the control group and the experimental group were 1.91 and 2.66 respectively. Table I shows that the post test means of the control group and the experimental group were 27.5 and 25.3 respectively. The post test standard deviation of the control

group and the experimental group were 1.91 and 2.66 respectively. The mean difference between the control group and the experimental group were 0.212 and 1.20 respectively. Table I shows that the pre test mean and the post test mean of the experimental group were 27 and 25.3 respectively. The standard deviation of the pre test and the post test of the experimental group were 2.66 and 2.48 respectively. The obtained ‘t’ value 0.02 of the experimental group with respect to the body mass index level was significantly higher than the obtained ‘t’ value 0.76 of the control group is proven that there is a significant difference in the body mass index levels of the experimental group. The obtained mean values in pre-test and post-test values of control group and the experimental group are represented through bar diagram figure for better understanding of the results.



**Fig I:** Bar Diagram Showing Post-Test Values of Control Group, Experimental Group on Body Mass Index

**Results of Hemoglobin**

The Hemoglobin was measured through Blood Test the Table- VI Shows the ‘T’ of Hemoglobin Yogic Practices (Group I) and Control Group (Group II) of Irregular Menstrual Women.

**Table II:** Mean, Standard Deviation and Mean Difference of the Groups and the ‘T’ Test of the Control Group and the Experimental Group for Hemoglobin

Group	Test	N	Mean	SD	MD	t
Control	Pre Test	15	10.59	4.8	0.07	2.35
	Post Test	15	10.49	1.66		
Experimental	Pre Test	15	10.9	1.30	1.18	2.74*
	Post Test	15	12.7	1.70		

\*Significant at 0.05 level of confidence

‘t’ ratio at 0.05 level of confidence for the degree of freedom (DF) at 28=0.0484

**Results of Hemoglobin**

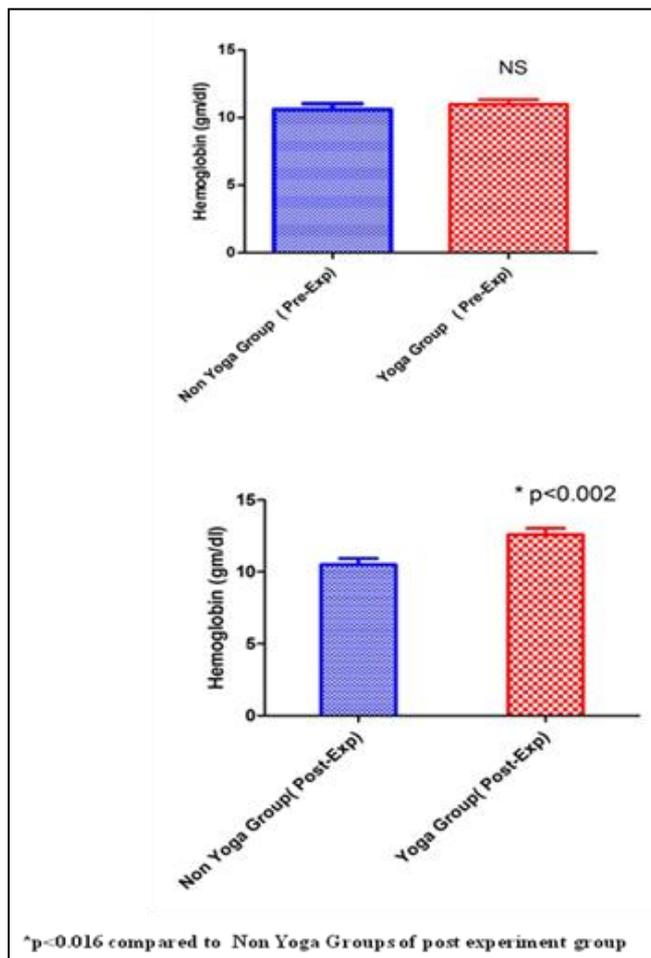
The data from the pre test and post test on hemoglobin levels of the experimental group and the control group have been

statistically analyzed using dependent 't' test and the results are presented in the Table II. Table II shows that the pre test means of control group and the experimental group were 10.59 and 10.49 respectively. The pre test standard deviation of the control group and the experimental group were 4.8 and 1.30 respectively. Table II shows that the post test means of control group and the experimental group were 10.49 and 12.7 respectively. The post test standard deviation of the control group and experimental group were 1.66 and 1.70 respectively. The mean difference between the control group and the experimental group were 0.07 and 1.18 respectively, Table II shows that the pre test means and the post test mean of the experimental group were 10.9 and 12.7 respectively. The standard deviation of the pre test and post test of the experimental group were 1.30 and 1.70 respectively. The obtained 't' value (0.002) of the experimental group with respect to the hemoglobin levels was significantly higher than the required 't' value( 0.5)and it is proven that there is a significant difference in the hemoglobin levels of the experimental group. The obtained mean values in pre-test and post-test values of control group and the experimental group are represented through bar diagram figure for better understanding of the results.

- The level of irregular menstruation has significantly reduced in yogic practice group and control group.

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**Fig II:** Bar Diagram Showing Post-Test Values of Control Group, Experimental Group on Hemoglobin

## Conclusion

Within the limitation of the present study, the following conclusions were drawn:

- Hemoglobin of the experimental group showed significant Increase when compared to the control group.
- BMI (Body mass Index) showed significant decrease when compared to the control group.