

## EFFECT OF YOGIC PRACTICES ON SELECTED RISK FACTORS AMONG ADOLESCENT GIRLS SUFFERING WITH DYSMENORRHEA

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**Key words :** Adolescent girls, Yogic practices, Dysmenorrhea, Body weight and General mental alertness

**Abstract**–To achieve the purpose of the random group experimental study, 120 girls suffering with dysmenorrhea were identified, 90 girls among them would be screened and finally, 40 were selected randomly by using a random group sampling method between 18 and 22 years of age. The subjects might be divided into experimental group and control group of 20 subjects each. The Experimental Group was treated with Yogic practices for 12 weeks, Six days a week during the morning. The control group was on active rest. The pre-test and post-test were conducted before and after the training for the experimental and control group and the scores on Body Weight and General Mental Alertness were measured. Analysis of covariance (ANCOVA) was used to find out the significant differences among the groups. The result of the study showed that Body Weight reduced significantly and General Mental Alertness improved as a result of Yogic practices in the Experimental Group. Hence the hypothesis was accepted at a 0.05 level of confidence. The conclusion was that the Yogic practices helped to reduced Body Weight and improve General Mental Alertness among adolescent girls suffering from dysmenorrhea.

### INTRODUCTION

Menstruation is normal vaginal bleeding that occurs as part of a woman's monthly cycle. The menstrual blood is partly blood and partly tissue from inside the uterus. Menstrual cramps happen when a chemical called prostaglandin makes the uterus contract. During menstruation, the uterus contracts more strongly. If the uterus contracts too strongly, it can press against nearby blood vessels, cutting off the supply of oxygen to muscle tissue. Dysmenorrhea is the medical term for pain with menstruation or menstrual cramps.

There are two types of dysmenorrhea: primary and secondary. Primary dysmenorrhea is the name for common menstrual cramps that come back over and are recurrent. Menstrual pain from secondary dysmenorrhea is a result of problems with the reproductive organs. Conditions that can cause cramping include, Endometriosis, Adenomyosis, Pelvic inflammatory disease, cervical stenosis, and Fibroids. Dysmenorrhea is painful menstruation

caused due to hormonal imbalances, endometriosis, and dietary habits. It is the root cause of many psychological problems too. Dysmenorrhea is of two types Primary and Secondary. Secondary dysmenorrhea will lead to infertility. Hence the significance of the study is to create awareness among young Girls for disease-free life by observing Yogic practices regularly.

The purpose of the study is to find out the effect of yogic practices on, selected physiological and psychological variables among adolescent girls suffering from dysmenorrhea. Teenagers who have dysmenorrhea are more likely to be overweight and obsess and to have early warning signs of diabetes and heart disease than those with regular menstrual cycles.

It is hypothesized that there was a significant difference due to the yogic practices on selected Physiological and Psychological variables among adolescent girls suffering from dysmenorrhea than the control group.

- To find whether there is any significant difference in selected physiological variables due to the practice of yoga.
- To find whether there is any significant difference in selected psychological variables due to the practice of yoga

## MATERIALS AND METHODS

To achieve the purpose of the random group experimental study, 120 girls suffering with dysmenorrhea were identified, 90 girls among them would be screened and finally, 40 were selected randomly by using a random group sampling method between 18 and 22 years of age. The subjects might be divided into experimental group and control group of 20 subjects each. The Experimental Group was treated with Yogic practices for 12 weeks, Six days a week during the morning. The control group was on active rest.

### Training schedule

Training Schedules were designed to induce persistent practice and flexibility in adolescents during treatment. Yogic practices were formulated with reference to traditional text Hatha Yoga Pradipika and Gheranda Samhita.

The test and retest were also conducted for the subject reliability, the same subjects were used, under similar conditions by the same tester. The control group was not given any training. The pre-test and post-test were conducted before and after the training for two groups and the scores on Physiological and psychological factors are measured. Analysis of covariance (ANCOVA) is to be used to find out the significant differences among the groups' Methodology followed was clearly presented in the flow chart below.

## RESULTS AND DISCUSSION

The data pertaining to the variables collected from

two groups before and after the training period were statistically analyzed by using the Analysis of Co-Variance (ANCOVA) to determine the significant difference and tested at a 0.05 level of significance.

### Results Body Weight

The data pertaining to the variables collected from two groups before and after the training period were statistically analyzed by using the Analysis of Co-Variance (ANCOVA) to determine the significant difference and tested at a 0.05 level of significance. The analysis of Covariance (ANCOVA) on Body Weight of Yogic Practices on and Control Group was analyzed and presented in Table 3.

The obtained F ratio on pre-test scores 1.19 was lesser than the required F value of 4.2 to be significant at 0.05 level. The post-test scores analysis proved that there was a significant difference between the groups, as obtained F value of 8.62 was greater than the required F value of 4.21. This proved that the differences between the post-test means of the subjects were significant. This proved that there was a significant difference among the means due to eight weeks of yogic practices on variables.

**Reviews of related literature:** S Chhabra. Yoga Therapy for Treatment of Menstrual Disorders without Obvious Causes. J Yoga and Physio, 2021; 8(5): 555747. DOI:10.19080/JYP.2021.08.555747: Yoga is believed to help women of all ages lead healthier lives, by immediate remedy through relaxation, and deeper action through body-mind regulation. It is believed to inspire a system that influences one's notions about wellness in life, even in presence of disorders. Menstrual abnormalities are one of the most common disorders, women suffer. It may be less or more vaginal bleeding, for a short or long duration, less or more interval between two menstrual phases, or continuous bleeding. Sometimes cause is obvious, can be treated. However, if it is not obvious, it may have linkage to

**Table 1.** Training Schedule for Experimental group

Sl. No.	Name of The Training (Monday to Saturday)	1 to 4 Weeks 40 Minutes	Duration 5 to 8 Weeks 50 Minutes	9 to 12 Weeks 60 Minutes
1.	Loosening Exercises	5	5	3
2	Suryanamaskar	6	10	10
3	Asanas	15	18	25
4	Pranayama	4	5	7
5	Meditation	10	12	15

**Table 2.** Yogic Practices for Experimental Group

Yogic practices for experimental group for 12 weeks (60 Minutes a Day) Training Time 6 am to 7am.

Sl. No.	Yogic Practices	Frequency	Posture	Breadth	Repetition/ Round	Duration of each practice (in seconds)	Rest time (in seconds)	Total duration (in seconds)
1	Loosening Exercises	6 days a Week		Normal	3	50	10	180
2	Surya Namaskara			Deep	5	90	30	600
ASANAS FOR 25 MINUTES, PRANAYAMA FOR 10 MINUTES and MEDITATION FOR 15 MINUTES								
3	Padahasthasana		Forward Position	Exhale Normal 12 Breadth	3	15	5	60
4	Parivarttha Trikonasana		Backward Forward Position Right side Twist Position left side Backward	Inhale Exhale Normal 12 Breadth Exhale Normal 12 Breadth Exhale	3	30	10	120
5	Adhomuktha Swasana		Forward Position	Exhale Normal 12 Breadth	3	20	20	120
6	Bujangasana		Backward Raise up Position	Inhale Inhale Normal 12 Breadth	2	20	10	60
7	Salabasana		Lie down Raise up Position	Exhale Exhale Normal 12 Breadth	2	20	10	60
8	Pachimottanasana		Lie down Forward Position	Inhale Exhale Normal 12 Breadth	2	20	10	60
9	Badhakonasana		Backward Forward Position	Inhale Exhale Normal 16 Breadth	2	20	10	60
10	Ardhamatsyendrasana		Raise up Bend & Twist Position Right side Relax Bend & Twist Position	Inhale Exhale Normal 12 Breadth Inhale Exhale Normal 8 Breadth	2	20	10	60
11	Koormasana		Relax Stretch & Forward	Inhale Exhale	2	20	10	60

**Table 2.** *Continued ...*

Yogic practices for experimental group for 12 weeks (60 Minutes a Day) Training Time 6 am to 7am.

Sl. No.	Yogic Practices	Frequency	Posture	Breadth	Repetition/ Round	Duration of each practice (in seconds)	Rest time (in seconds)	Total duration (in seconds)
12	Sarvangasana	<b>6 days a week</b>	Position	Normal 12 Breadth	3	30	20	150
			Raise & Relax	Inhale				
			Stretch & Tighten	Deep Breadth				
			Knees Bend & Tighten	Exhale				
			Raise hip	Exhale				
			Position	Normal 12 Breadth				
13	Matyasana	<b>6 days a week</b>	SlideDown	Exhale	3	20	10	90
			Lie & Backward	Exhale				
			Position	Deep 16 breath				
			Raise & Forward	Inhale				
14	Bhastrika	<b>6 days a week</b>	Vajrasana	25 Breadth	3	30	30	180
15	Ujjay Breadth		Sukasana	16 Breadth	5	20	10	150
16	Kapalapathi		Padmasana	20 Breadth	3	20	10	90
17	NadiShodhana		Sukasana	20 Breadth	3	30	30	180
18	Meditation		Sukasana	Normal	1	900		900
19	Shavasana		Lie down	Slow Breadth	1	600		600

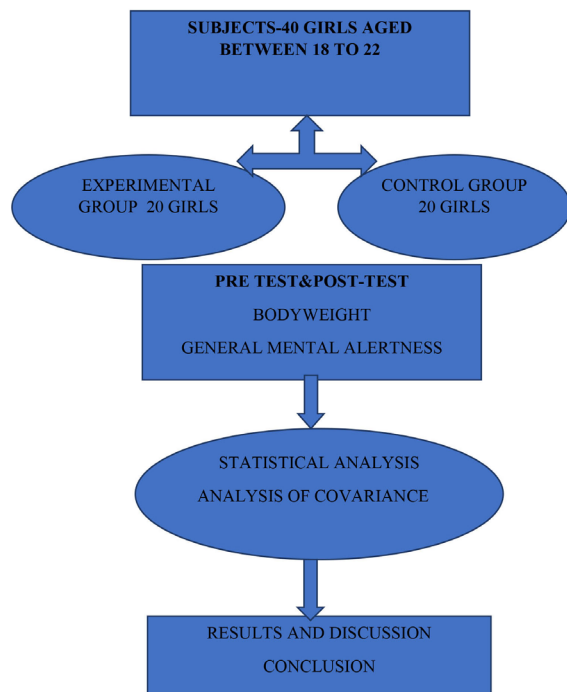
**Table 3.** Analysis of Covariance of the Means Experimental Group and the Control Group in Body Weight

Test	Experimental group	Control group	Source of variance	Sum of Squares	Degree of freedom	Mean Sum of Squares	F-Ratio
Pre-test	95.80	96.53	between	96.53	1.00	96.53	1.19
			within	2280.13	28.00	81.43	
Post-test	87.33	96.07	between	572.03	1.00	572.03	8.62
			within	1858.27	28.00	66.37	
Adjusted	87.65	95.75	between	491.86	1.00	491.86	71.25
			within	186.38	27.00	6.90	
Mean gain	-8.47	-0.47					

\*Significant at 0.05 level of confidence. (Table F-ratio at 0.05 level of confidence for 1 and 28 (degree of freedom) =4.2, 1 and 27 (degree of freedom) =4.21)

notions, not easy to treat. Objective: To know about the status of the practice of Yoga for the treatment of menstrual disorders in women who do not have obvious disorders. Material Methods: Studies, reviews in relation to the effects of Yoga on menstrual disorders were searched. There was no inclusion, exclusion criteria of studies, reviews. Whatever could be accessed including recorded

opinions were looked into. Results: Yoga is believed to be a safe, cost-effective therapeutic modality, for good health, wellbeing by regulating body weight, improving biochemical functions, obesity, and metabolic syndrome. Global Multidisciplinary group of researchers, who conducted large clinical trials to examine benefits of Yoga found positive effects of Yoga on Oligomenorrhea, infrequent



**Fig. 1.** Flow Chart Showing Methodology Adopted for Study

menstruation, menorrhagia compared to exercise or no activity, in addition to taking an omega-3 supplement or placebo. Yoga might help by improving immune function of the body, flexibility, endurance with added psychological benefits, directly and/or indirectly affecting menstrual disorders. However, after reviewing many studies about evidence of effects of Yoga on menstrual disorders, researchers concluded that more research with consistency in methods, measures, quality of studies were warranted. Conclusion: More research

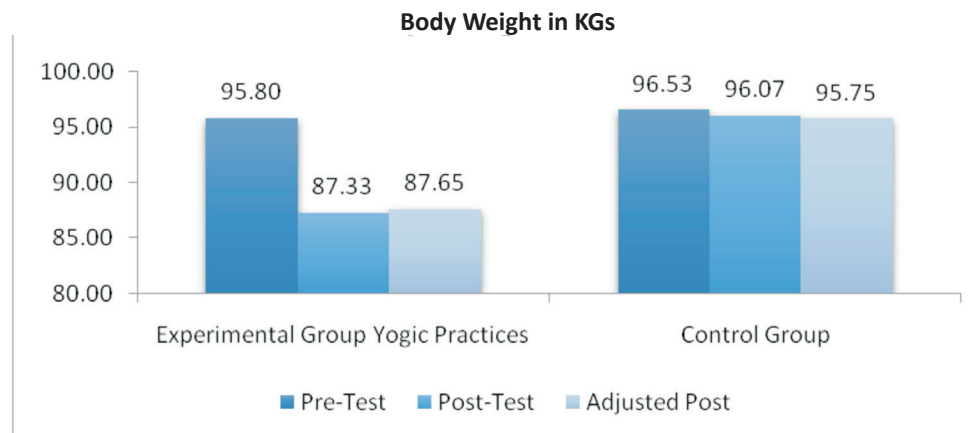
is needed about use effectiveness of Yoga practice to treat menstrual disorders. The pre-test, post-test, and adjusted post-test mean values of yogic practices and the control group on Body Weight were graphically presented in Figure 2.

### Results General Mental Alertness

The obtained F ratio on pre-test scores 2.80 was lesser than the required F value of 4.2 to be significant at a 0.05 level of confidence. This proved that there was no significant difference between the groups in the pre-test and the randomization at the pre-test was equal. The post-test scores analysis proved that there was a significant difference between the groups, as obtained F value 4.44 was greater than the required F value of 4.2. This proved that the differences between the post-test means of the subjects were significant. Thus, Yogic practices improved General Mental Alertness considerably in line with the study conducted by (Cristina(2018)

**Review related literature: Cristina E. McGovern RN, BSN, PHN (14 June 2018)**

<https://doi.org/10.1111/jmwh.12729>. The search yielded a total of 378 articles, of which 14 (age range 13-45 years, N = 1409) met the criteria for final review: 8 RCTs and 6 quasi-experimental studies. Downs and Black ratings were predominantly moderate in quality with moderate risk of bias, ranging from 15 to 23 (RCTs) and 10 to 17 (quasi-experimental studies). Statistically significant improvements along with most QOL domains, including physical pain, sleep, concentration, negative feelings, social relationships, work capacity, and overall QOL, were identified after a yoga intervention. Results indicate preliminary evidence



**Fig. 2.** Bar Diagram Showing the Mean Difference Among Experimental Group and Control Group on Body Weight

**Table 3.** Analysis of Covariance of the Means of the Experimental Group and the Control Group in General Mental Alertness

Test	Experimental group	Control group	Source of variance	Sum of Squares	Degree of freedom	Mean Sum of Squares	F-Ratio
Pre-test	34.95	33.85	between	12.10	1.00	12.10	2.80*
			within	1285.50	28.00	33.83	
Post-test	38.90	34.70	between	176.40	1.00	176.40	4.44*
			within	1510.00	28.00	39.74	
Adjusted	38.40	34.61	between	101.64	1.00	101.64	8.28*
			within	454.20	27.00	12.28	
Mean gain	3.95	0.85					

\*Significant at 0.05 level of confidence. (Table F-ratio at 0.05 level of confidence for 1 and 28 (degree of freedom) =4.2, 1 and 27 (degree of freedom) =4.21)

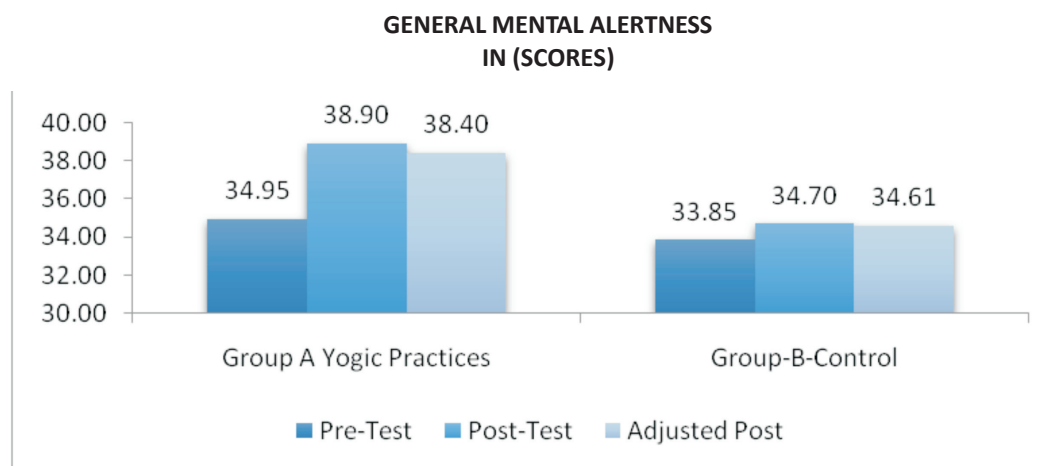
for yoga as a safe and effective QOL improvement method for women with primary dysmenorrhea. Practitioners may consider yoga for the management of primary dysmenorrhea. However, future research using larger RCTs of high methodological quality is needed to ascertain the magnitude of yoga's clinical significance. The pre-test, post-test, and adjusted post-test mean values of yogic practices and the control group on General Mental Alertness were graphically presented in Figure 3.

The results presented proved that there was a significant difference due to twelve weeks Yogic Practices on Experimental Group than the control group on Physiological variables Body weight and Psychological variable General Mental Alertness among girls suffering with dysmenorrhea. Thus, the

hypothesis was accepted at a 0.05 level of confidence.

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\*Significant at 0.05 level of confidence. (Table F-ratio at 0.05 level of confidence for 1 and 28 (degree of freedom) =4.2, 1 and 27 (degree of freedom) =4.21)

**Fig. 3.** Bar Diagram Showing the Mean Difference Among Experimental Group and Control Group On general Mental Alertness



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### Conflict of Interest

There is no Conflict of Interest with reference to the above study "Effect of Yogic Practices on Selected risk factors among adolescent girls suffering with Dysmenorrhea"

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