

# Effects of Yoga Therapy on Adolescent Girls with Primary Dysmenorrhea

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**Abstract:** Primary dysmenorrhea means painful menstruation in absence of any specific pelvic diseases. Prevalence of Dysmenorrhea is high during adolescence. Menstruation is natural and physiological event that occurs in woman's life. It is the stage of transformation from childhood to womanhood. In the present study mean age of the subjects in the group A and group B was  $15.2 \pm 0.91$  years and  $16.8 \pm 1.03$  years respectively. 30 unmarried girls of age 14-18 years with primary dysmenorrhea were included in this study. They were randomly divided into two groups Group A and Group B. Group A was treated with yoga postures. Group B subjects were not given any intervention. But they were given exercise pamphlets and were asked to continue their daily fitness regime. Group A showed significant improvement in VAS score after treatment. It concludes that yoga therapy is effective in reducing pain in Primary Dysmenorrhea.

**Keywords:** Primary, Dysmenorrhea, Adolescent Girls

## 1. Introduction

Primary dysmenorrhea or painful menstruation, in absence of specific pelvic diseases, is one of the most common complaint of women and is also the most common complaints of gynaecological problem and it may lead to disability and inefficiency.<sup>1</sup> Dysmenorrhea begins when young girls first experience the ovulatory cycles and its prevalence increases during adolescence (15-17 years) and reaches to its highest in 20-24 years and decreases progressively thereafter.<sup>1</sup> In primary dysmenorrhea pain begins few hours before or after the onset of menstruation and lasts for 24-48 hours. The pain is more in the first day and rarely continues to the next day.<sup>1</sup>

Pain is very commonly experienced and unwanted experience that affects individual's day to day activities. Experience of pain varies according to its location, intensity, duration and quality.<sup>2</sup> The prevalence of dysmenorrhea is varied in range from 25% of menstruating women, out of which 90% of adolescent females dysmenorrhea seems to be the most common.<sup>2</sup> A significant number of women experience pain during menstruation ranging from mild, moderate or severe. Menstruation is the natural & physiological event of women's life & adolescence is the stage of transformation from childhood to womanhood. Adolescent girls are often ignorant of their needs and optimal health. The knowledge, different attitudes, practices related to menstruation play an important role in shaping the self image of adolescent girls. Various physical as well as psychological problems may happen during this stage of life.

Dysmenorrhea pains are felt over the lower abdomen and may radiate into inner part of thighs. In a high percentage of adolescent girls may experience systematic symptoms such as backache, nausea, vomiting, diarrhoea, fatigue, and headache. With severe pain suffers may be absent from school or work for one to two days and it could have

negative impact on academic, social and sports activities of adolescent girls.<sup>3</sup> Since this pain is very severe it interferes with day to day activities of the girl. Health of an adolescent girl is an important part of the entire population. Dysmenorrhea can disrupt her personal life, and therefore it is considered as major public health problem which is associated with substantial economic loss related to work absence.

Primary dysmenorrhea reportedly stops spontaneously after 13 years; however, sometimes it is possible to continue until childbirth.<sup>3</sup> To deal with menstrual pain many therapies, including medication and thermotherapy, which are types of conservative therapy, and other self treatment methods have been prescribed to alleviate symptoms. For example, several medical therapies, herbal remedies and acupuncture have been reported to relieve menstrual pain.<sup>4</sup>

Practice of yoga has been found to relieve menstrual abnormalities in adolescent girls. Also practice of yoga can give self confidence, strength & menstrual health to these adolescent girls. The practice of yoga for health benefits and over all wellness has long been prompted by leading yoga teachers and practitioners. This potential of yoga has been found out recently by general public. Yoga has become a focus of attention as a potential alternative treatment for common condition associated with woman's health and menstruation problems like dysmenorrhea. Yoga is recognized as a form of mind body medicine that integrates an individual's physical, mental and spiritual components to improve aspects of health, particularly stress related illnesses.<sup>5</sup> Regular practice of yoga promotes strength, endurance and flexibility.<sup>5</sup> Regular practice leads to improvement in life perspective, self awareness and an improved sense of energy to live life fully. With the practice of yoga balance between the mind and body can be achieved.<sup>5</sup>

Volume 12 Issue 4, April 2023

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Yoga combines physical exercises, mental meditation and breathing techniques to strengthen the muscles and relieve stress. Therefore yoga can help mind and body adapt with stress, anxiety, and depression making the person feel relaxed and calm. Yoga has been used to alleviate problems with blood pressure, high cholesterol, migraine headaches, asthma, shallow breathing, backaches, menopause. Yoga has been effective in treatment for primary dysmenorrhea in adolescent girls.<sup>5</sup>

Dysmenorrhea can cause gynecological problem worldwide.<sup>3</sup> Primary psychological problems in some of the females resulting dysmenorrhea begins when adolescent girls first experience in their loneliness and inactive participation in different social activities.<sup>3</sup> In many countries, primary dysmenorrhea is the leading cause of recurrent short-term school and work absenteeism in adolescent girls.<sup>6</sup>

There has been a study on the dysmenorrhea for pain relief by using kinesiotaping and yoga therapy. They showed positive effect. These studies were performed individually and they are proven to be beneficial therefore present study is intended to combine two techniques to see their effect on primary dysmenorrhea.

### Need of the study

As dysmenorrhea being most common problem faced by adolescent girls, pain relieving treatment that is effective should be implemented. In our country where women are considered backbone of the family, their health seems to be compromised since childhood. And dysmenorrhea affects the performance of women physically and mentally in every aspect. And furthermore it affects the working capacity of the girl which is a worldwide problem. Awareness should be spread among the community regarding the same. Yoga therapy is one of the ancient forms treatments that has been proven to be effective in various conditions. Kinesio taping has been effective in treating various musculoskeletal problems. But effect of these two techniques combined together on primary dysmenorrhea has not been studied. Therefore present study is intended to see the effect of yoga therapy on primary dysmenorrhea in adolescent girls.

### Aim

To study the effect of yoga therapy on primary dysmenorrhea in adolescent girls.

### Objectives

To study the effect of yoga therapy on girls with primary dysmenorrhea.

## 2. Methodology

- Sample Size = 30
- Study Setting = In and around Pune.
- Sampling technique = Purposive Sampling.
- Sampling method = Envelope method
- Research Design = Experimental study

### Inclusion criteria:

- Girls with primary dysmenorrhea
- Age group 14-18 years

- Unmarried girls

### Exclusion criteria:

- Girls diagnosed with secondary dysmenorrhea
- Girls with other menstrual problems eg polymenorrhea etc
- Girls playing sports
- Girls performing regular physical activities

### Procedure

Ethical Clearance was obtained from Ethical Committee. Subjects were selected as per the inclusion & exclusion criteria. Consent was obtained from the subjects to conduct the study. The study procedure was explained to the subjects. They were divided into group A (Yoga therapy) and group B (Control) by envelope method. Group A subjects were taught 7 yoga asanas which were conducted alternate days for 4 weeks for 3040 minutes. Group B subjects were not given any intervention. But they were given exercise pamphlets and were asked to continue their daily fitness regime. Pre and post VAS score were taken. Data was collected and analysed statistically.

### Group A: Yoga therapy

Yoga therapy sessions included 7 asanas which were conducted alternate days for 4 weeks for 3040 minutes.

- 1) Matsyasana (fish pose)<sup>3</sup>  
The asana is backbend, where subject lies on her back and lifts the chest by rising up on elbows and drawing shoulders back. The arch at the back is produced and top of head may touch the ground but no weight should rest on it.
- 2) Vajrasana (kneeling pose)  
Subject sits on the heels with calves beneath the thighs. There is a four finger gap between the knee caps and first toe of both feet touch each other and sit erect.
- 3) Ustrasana (camel posture)<sup>7,5</sup>  
Subject sits in a kneeling position and then bends backwards to touch the heels. In this position bending is deeper.
- 4) Ardhamasthyendrasana (half lord of the fishes pose)<sup>3</sup>  
One foot is placed flat on the floor outside the opposite leg and torso twists towards the top leg. The bottom leg is bent with foot outside the opposite hip. Arms help leverage into the twist by clutching either feet
- 5) Salabhasana (grasshopper pose)  
Subject lies in prone position then utilizing the strength of upper middle back to lift the weight of legs as high as possible from starting position while face down on the floor.
- 6) Bhujangasana (cobra pose)<sup>3,5</sup>  
Subject lies in prone position. From this position with palms and legs on the floor the chest is lifted.
- 7) Padmasana (lotus pose)  
Subject sits on the floor then by bending right knee and placing it on left thigh and same for the left leg. Feet should point upward and heel is close to abdomen.

### Group B: Control group

Subjects in this group were not advised any particular exercise regime. They received a consultation regarding they were asked to continue their day to day activities and exercises if they were engaged in it.

### 3. Results

The present study was conducted to study the effect of yoga therapy in adolescent girls with primary dysmenorrhea.

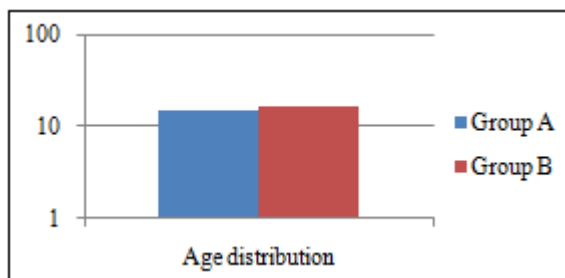
Inter group comparison were done to evaluate the effectiveness of the treatment regime. The statistical analysis was done using Microsoft excel and Instat software.

Paired t test was used to evaluate the difference within a group. And for the difference between two groups (Group A and Group B) unpaired t test was applied.

#### Age Distribution:

The mean age of the subjects in the group A was  $15.2 \pm 0.91$  years and in group B it was  $16.8 \pm 1.03$  years.

#### Age distribution:



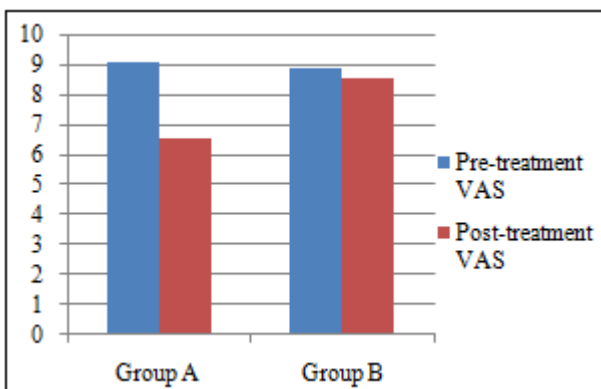
Graph 1: Age distribution among Group A and Group B

Table 1: Mean age of group A and Group B

Groups	Mean with SD
Group A	15.2±0.91
Group B	16.8±1.0

#### VAS score:

The average pretreatment score of VAS of group A was  $9.10 \pm 0.73$ , VAS of group B was  $8.9 \pm 0.96$ . There was no significant difference among the values, where p value ( $P=0.4$ ). The post treatment VAS of group A was  $6.6 \pm 0.51$  with  $p=0.02$  and VAS of group B was  $8.6 \pm 0.66$  did not show much difference. Post treatment values were analysed using paired t test. Unpaired t test was used for between group analysis and was found to be significant ( $P=0.01$ ).



Graph 2: VAS score of pre and post treatment of Group A and Group B

Table 2: Pre and post treatment VAS score of Group A and Group B

	(Mean values with SD) Pretreatment VAS	(Mean values with SD) post treatment VAS
Group A	9.10±0.73	6.6±0.69
Group B	8.9±0.73	8.6±0.66

VAS of group A pre treatment was  $9.10 \pm 0.73$  and post treatment it reduced to  $6.6 \pm 0.69$  and Group B pre treatment VAS score was  $8.9 \pm 0.73$  and post treatment assessment showed  $8.6 \pm 0.66$ . Which shows that Group A had significant effect on VAS score when assessed post treatment.

### 4. Discussion

The present study was conducted to study the effect of yoga therapy in adolescent girls with primary dysmenorrhea. The subjects were divided into 2 groups. Group A received yoga therapy and group B did not receive any treatment or intervention.

Outcomes were measured in the form of VAS which was taken pre and post treatment of each group.

The result from statistical analysis of the present study supported alternate hypothesis which stated that there will be effect on pain in primary dysmenorrhea by c yoga therapy treatment in adolescent girls. The VAS taken post treatment showed reduction in the values as compared to the VAS of pretreatment.

In the present study the mean age of the subjects in group A was  $15.2 \pm 0.91$  years, in group B was  $16.8 \pm 1.03$  years. In this study the statistical analysis of age distribution showed no differences in the groups which represents the homogeneity of the groups in terms of age distribution. Usha Nag et al<sup>1</sup> conducted a study meditation and yoga as an alternative treatment for primary dysmenorrhea in which their mean age was 16 which coincides with the present study.

There was significant reduction in the VAS score of group A ( $P=0.0002$ ) and group B did not show any difference in the VAS score post treatment.

The present study suggests that yoga therapy helps in decreasing pain in adolescent girls with primary dysmenorrhea. Yoga works on the whole person, bringing mind and body into harmony. The effect of relaxation techniques could be explained partially by nonspecific decreased activation of the brain secondary to decreased input of stimuli from the internal and the practice of asana (yogic postures) develops muscle strength and flexibility, which facilitates diaphragmatic breathing external environment. Decreased anxiety and depression through relaxation techniques influences the emotional component of pain.

However in the contrary to results of this study Veena Kirthika et al<sup>7</sup> found that when yoga asnas compared to Swiss ball exercises in primary dysmenorrhea, swiss ball exercises were more effective in reducing the pain. They

included 30 females who were divided into two groups. And 12 week program was conducted for both the groups. Menstrual distress questionnaire was taken as outcome measure. They concluded that both exercise regimes showed significant effects but Swiss ball showed better reduction in pain intensity as it focused on strengthening of core muscles.

Zahra Rakhshae<sup>3</sup> studied the effect of yoga on dysmenorrhea. In their study, the results showed that compared with the Control group, there was a significant difference in the pain intensity and pain duration in the experimental group ( $P < 0.05$ ). The authors concluded, yoga reduced the severity and duration of primary dysmenorrhea. The findings suggest that yoga poses are safe and simple treatment for primary dysmenorrhea.

Yoga promotes strength, flexibility, and endurance. This is one reason which showed significant reduction in the VAS of group A subjects.

## 5. Conclusion

Yoga therapy can be considered as effective treatment in decreasing pain in primary dysmenorrhea.

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