

# Effectiveness Of Kinesiotaping And Yoga Therapy On Adolescent Girls With Primary Dysmenorrhea

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## Abstract

Dysmenorrhea begins when young girls first experience in their 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. 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. Regular practice of yoga promotes strength, endurance and flexibility. Kinesiotaping is a technique which is based on the body's own natural healing process and is used for anything from headaches to foot problems and everything in between. 30 unmarried girls of age 14-18 years were included in the study. They were divided in 3 groups. Group A received the treatment with kinesiotaping, group B received yoga therapy and group C received combination of kinesiotaping and yoga therapy. Group C showed significant reduction in pain when compared with post treatment VAS scores of Group A and B.

**Keywords:** Primary Dysmenorrhea, Yoga Therapy, Kinesio Taping, Adolescent girls

## Introduction

Primary dysmenorrhea or painful menstruation, in absence of specific pelvic diseases, is one of the most common case of severity it may lead to disability and inefficiency and is also the most common complaint of the women. Dysmenorrhea begins when young girls first experience in their 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. 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.

Release of prostaglandins and other inflammatory mediators in the uterus cause the uterus to contract.

These substances are thought to be a major factor in primary dysmenorrhea.

Dysmenorrhea pains are felt over the lower abdomen and may radiate into inner part of thighs. In a high percentage of 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 young girls.

Primary dysmenorrhea reportedly stops spontaneously after 1-3 years; however, sometimes it is possible to continue until childbirth.

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<sup>3</sup> medical therapies, herbal remedies and acupuncture have been reported to relieve menstrual pain.

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. Regular practice of yoga promotes strength, endurance and flexibility.

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.

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 seems to be effective treatment for primary dysmenorrhea.<sup>4</sup>

One treatment possibility is taping therapy. Taping therapy eases pain by contracting relevant muscles or improving blood circulation through tape attached to the skin.

Kinesiotaping is a technique which is based on the body's own natural healing process and is used for anything from headaches to foot problems and everything in between.

On the other hand, dysmenorrhea can cause gynecological problem worldwide<sup>2</sup>. Primary psychological problems in some of the females resulting dysmenorrhea begins when young girls first experience in their loneliness and inactive participation in different social activities.<sup>2</sup> In by most of the researchers in this area. In many countries, primary dysmenorrhea is the leading cause of recurrent short-term school and work absenteeism in young girls.

## Need Of Study

Primary dysmenorrhea being the commonest among adolescent age group, a treatment regime that reduces pain and absenteeism in schools is important. There has been studies on the dysmenorrhea for pain relief by using kinesio taping and yoga therapy. They were studied separately and they had positive effect. Combined effect of these techniques has not taken into consideration

## Aim

- To study the combined effect of kinesiotaping and yoga therapy on adolescent girls with primary dysmenorrhea.

## Objectives

- To study the effect of kinesotaping on girls with primary dysmenorrhea.
- To study the effect of yoga therapy on girls with primary dysmenorrhea.
- To study the combined effect of kinesiotaping and yoga therapy on girls with primary dysmenorrhea.

## Materials And Tools

- Pen
- Record sheets
- charts containing instructions about how to perform yoga techniques

- Kinesiotape
- VAS scale
- Consent form
- paper

## Methodology

- **Sample Size** = 30
- **Study Setting** = P.E.S Modern college of Physiotherapy, Pune.
- **Sampling technique** = Simple Random Sampling.
- **Sampling method** = Envelope method
- **Research Design** = Comparative study

## Inclusion Criteria

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

## Exclusion Criteria

- Girls diagnosed with secondary dysmenorrhea
- Girls with other menstrual problems
- Girls playing any outdoor sport

## Procedure

Subjects were selected according to inclusion criteria. They were divided into group A and group B by envelope method. Group A subjects were treated with kinesiotaping which was applied twice a week and it was applied during menstruation starting from the day one of the cycle. Group B subjects were treated with Yoga therapy which they practiced everyday but not during menstruation. Pre and post VAS score were taken. Data was collected and analysed statistically.

### GROUP A (KINESIO TAPING METHOD)

Taping was done twice a week during menstruation starting from first day of the cycle.

Application-

1. Patient stands with trunk flexed one horizontal strip is applied over S1 vertebral level with maximum tension.
2. Patient stands with trunk extended one vertical strip applied over the symphysis pubis and one horizontal strip is applied above symphysis.

### GROUP B (YOGA THERAPY)

Yoga therapy included 7 asnas which were taught to subjects and which they had to practice daily for 20minutes.

Patient were instructed to stop the practice during menstrual period.

Yoga therapy sessions included 7 asnas which were conducted alternate days for 4 weeks for 30-40 minutes.

1. Matsyasana (fish pose)<sup>3</sup>  
The asna 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. Ardhamastyendrasana (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 and 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 C

### COMBINATION OF KINESIOTAPING AND YOGA THERAPY

This group received combination of both treatment. Subjects in this group were taught all the yoga postures which they were instructed to practice daily for 20 minutes. Subjects were instructed to stop practicing yoga during menstruation. Subjects were given kinesiotaping during menstrual cycle started from first day of the cycle which was given twice a week.

## Results

The present study was conducted to study the combined effect of kinesiotaping and 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 instat software.

Inter group analysis was done by ANOVA test

### 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 in group C it was  $16.7 \pm 1.25$  years where p value  $P=0.0037$ . There was no significant difference between the groups.

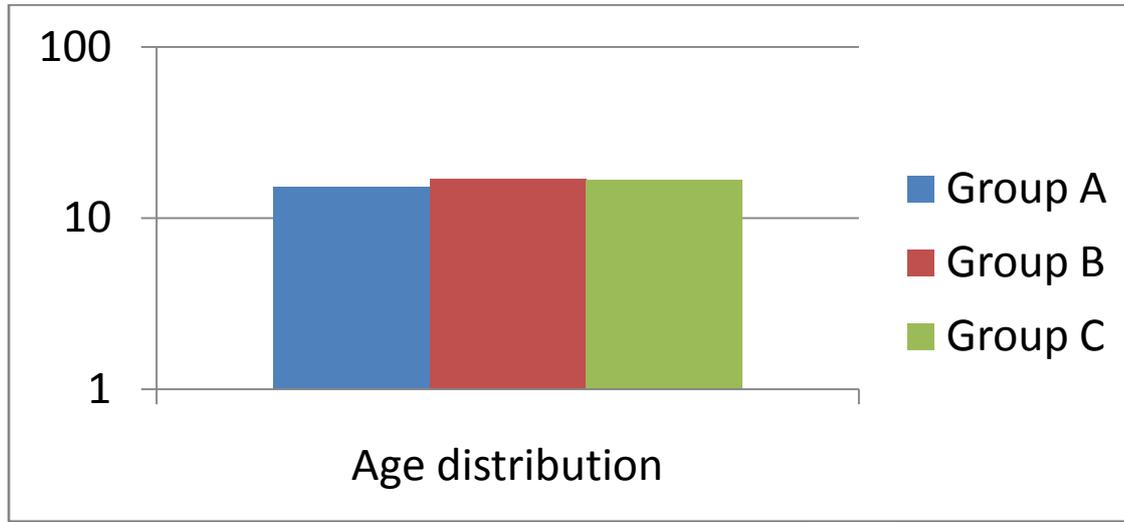
### VAS score

The average pre-treatment score of VAS of group A was  $9.10 \pm 0.73$ , VAS of group B was  $8.6 \pm 0.96$ , and VAS of group C was  $8.9 \pm 0.73$ . The ordinary ANOVA test was performed to analyse the pre-treatment values. 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  $6 \pm 0.66$  with  $p=0.01$  and VAS of group C was  $4.9 \pm 0.56$  with  $p=0.004$ .

Post treatment values were analysed with ordinary ANOVA test where the values were significant with  $p=0.0009$

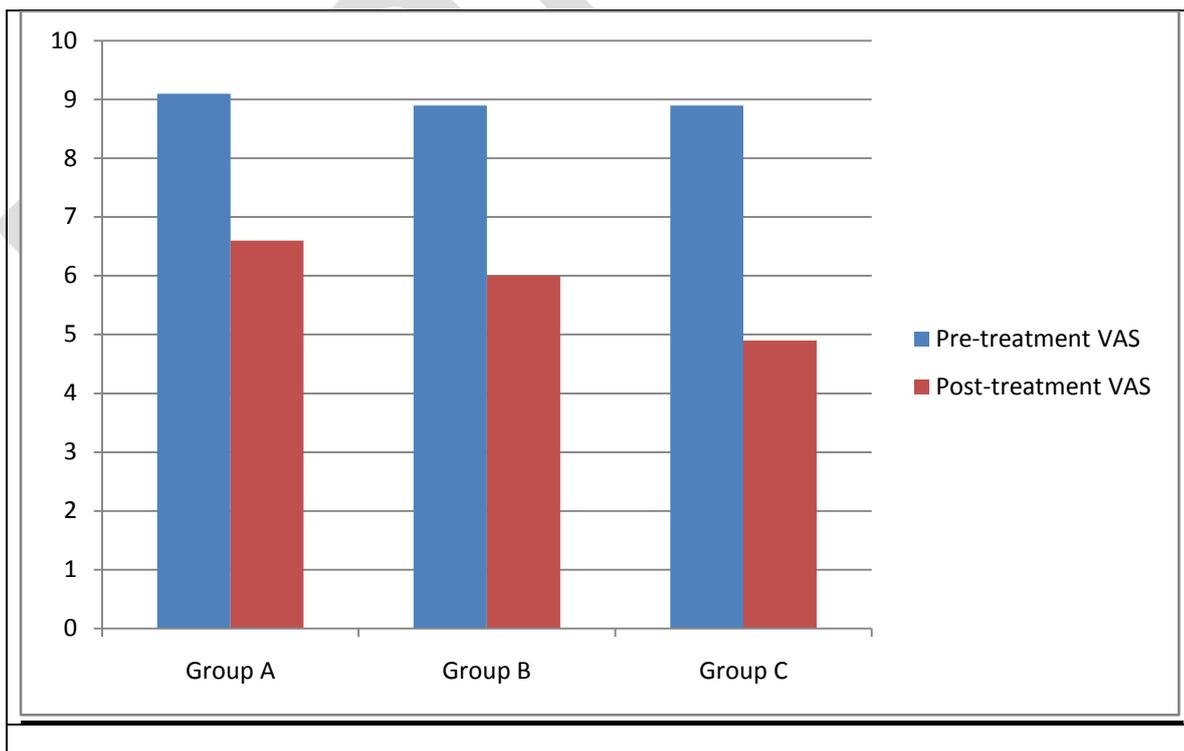
**Graph 1.1: Age distribution**



Groups	Mean with SD
Group A	15.2±0.91
Group B	16.8±1.0
Group C	16.7±1.2

**Table No 1.1**

**Graph 1:2 VAS score of pre and post treatment of groups A B and C**



	(Mean values with SD) Pre-treatment VAS	(Mean values with SD) post-treatment VAS
<b>Group A</b>	<b>9.10+/-0.73</b>	<b>6.6+/-0.69</b>
<b>Group B</b>	<b>8.9+/-0.73</b>	<b>6+/-0.66</b>
<b>Group C</b>	<b>8.9+/-0.73</b>	<b>4.9+/-0.56</b>

**Table no 1.2**

## Discussion

The present study was conducted to study the combined effect of kinesiotaping and yoga therapy in adolescent girls with primary dysmenorrhea. The subjects were divided into 3 groups. Group A received the treatment with kinesiotaping, group B received yoga therapy and group C received combination of kinesiotaping and yoga therapy. 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 hypothesis which stated that there will be effect on pain in primary dysmenorrhea on combination of kinesiotaping and yoga therapy in adolescent girls. The VAS taken post treatment showed reduction in the values as compared to the VAS of pre-treatment.

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 and in group C was  $16.7 \pm 1.25$ . 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.

There was significant reduction in the VAS score of all the three groups with ( $P=0.0009$ ). However VAS of group C with ( $P=0.0004$ ) showed better reduction in pain as compared to group A ( $P=0.0002$ ) and group B with ( $P=0.0004$ ).

The present study suggests that combination of kinesiotaping and yoga therapy is helpful to decrease the pain in adolescent girls with primary dysmenorrhea.

Kinesio taping is an auxiliary treatment that maximizes natural recovery ability and corrects the balance of the human body by adjusting electromagnetic flows on the skin, indirectly stimulating muscles or organs right under the skin using non-chemically-treated tape<sup>1</sup>. This technique is said to promote three effects: to normalize muscular function; to increase lymphatic and vascular flow; and to diminish pain.<sup>1</sup> It is considered to be a very simple, and safe treatment that has few side effects and continuously takes effect as long as the tape remains attached to the skin. Taping may increase or reduce muscle strength, and many investigators have hypothesized on to explain the possible underlying mechanism, proposing neurofacilitation and mechanical restraint, and a relationship between cutaneous afferent stimulation and motor unit firing. In other words, Kinesiotape decreases muscle tone and alleviates pain by inducing constant relaxation and contraction of the muscles through physical stimulation of cutaneous afferents, and is effective at maximizing natural healing power by stimulating organs through muscles right under the skin or reciprocal innervation.<sup>1</sup>

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. Zahra Rakhshae 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 ( $P < 0.05$ ).<sup>18</sup> 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.

## Conclusion

The combination of kinesiotaping and yoga therapy is effective in decreasing the pain in adolescent girls with primary dysmenorrhea.

## Limitations

- 1) Sample size was less.
- 2) Long term follow up of the patients was not done.

## Future Scope

- 1) Further studies with larger sample size can be conducted.
- 2) Long term effects of the intervention should be checked by timely follow up of the patients.

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