

## Effect of Yoga on menstrual problems in Adolescents

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### Abstract

Adolescence among girls is a stage of transformation from childhood to womanhood, during which, menstruation is initiated. Various psychological and physical problems happen during this stage in life. Yoga has been reported to contribute to reduction in menstrual related problems in adolescents. A study was carried out on the effect of yoga in reducing menstrual problems in adolescent girls in a Government Vocational Higher Secondary School in Kozhikode district of Kerala State. There was an experimental group of randomly selected 150 willing children, who were given yoga classes three times a week for three months. The control group of 150 willing students was not given yoga classes. Data was collected on 22 menstrual related problems from both the groups before starting yoga as well as after three months of yoga classes using a questionnaire. The study has shown the effect of practicing yoga on reducing the following menstrual related problems in adolescent children, namely, absenting from school, bleeding, muscle cramps, abdominal pain, leg/back pain, nausea, anxiety, anger, fatigue, diarrhea, lack of appetite, loss of interest during menstruation and in maintaining proper menstrual interval. The requirement of such studies among more number of adolescent children in various schools in the country is highlighted. Yoga can also be made a part of the school curriculum to help the students in achieving physical and mental health improvement, which is essential to promote an effective educational system.

**Key words:** Adolescence, Menstrual problems, Yoga

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### Introduction

Adolescence among girls is a stage of transformation from childhood to womanhood, during which, menstruation is initiated. Various psychological and physical problems happen during this stage in life. Adolescents are often ignorant of their needs and good health. The knowledge, attitude and practices related to menstruation play an important role in shaping the self-image of adolescent girls. If the children under menstruation do not maintain adequate health, the benefit of education will be less for them. The health of an adolescent girl is an important part of the entire population.

Menstrual irregularity is one of the most common gynecological complaints in adolescents, and can affect many menstruating women. It can disrupt personal life, and hence, is considered as a public health problem associated

with substantial economic loss related to work absence. Other menstrual problems in adolescents include bleeding, nausea, abdominal pain, muscle cramps, leg/back pain, anxiety, anger etc.

Practice of yoga has been found to relieve menstrual problems in adolescent children. This paper reports the results of a study carried out on the effect of yoga in reducing menstrual problems in adolescent girls.

### Review of literature

Many adolescents complain of pain, anxiety, depression, fatigue, and vomiting during the menstrual cycle (Ferguson, 1981). One of the most common menstrual problems is dysmenorrhea, with higher prevalence rate reported in adolescents. In Asia, 74.5 percent of the girls who had reached menarche had dysmenorrhea. 51.7 % of these girls reported

that it affected their concentration in class, 50.2 % restricted their social activities, 21.5 % reported that it caused them to miss school and in 12 % of girls, it caused poor school performance (Klein and Lin, 1981).

Majority of the female adolescents identify dysmenorrhea and premenstrual symptoms as problems that significantly affect their academic performance and school absenteeism. Most of the girls were unaware of the causes of these symptoms. The severity of dysmenorrhoea was significantly associated with the duration of menstrual flow and menarcheal age. But it was not associated with age factor, or with height, weight, length of menstrual cycle or frequency of physical exercise (Hillen et al, 1999). Psychological factors such as stress and deprivation were found to be associated with menstrual irregularities (Sherry et al, 1988).

Yoga is one of the most commonly practiced mind-body practices (Saper et al, 2004). Practice of yoga can help in reducing many of the problems associated with adolescence. Adolescents in the yoga group reported lower levels of functional disability, less use of emotion-focused avoidance and lower anxiety following the intervention than adolescents in the control group. When the pre-and post intervention data for the two groups were combined, adolescents had significantly lower scores for gastrointestinal symptoms and emotion-focused avoidance following the yoga intervention. (Leora Kuttner et al, 2006). Yoga has been reported to relieve pain associated with dysmenorrhoea and excessive levels of premenstrual tension (Bobak et al, 1993).

A randomized controlled trial on impact of Yoga Nidra on psychological general wellbeing in patients with menstrual irregularities was studied. The findings show that anxiety decreased significantly ( $P < 0.003$ ) and depression decreased significantly ( $P < 0.01$ ) in the Yoga group. Positive wellbeing and general health improved significantly ( $P < 0.02$ ), and vitality improved significantly ( $P < 0.01$ ) after six months of Yoga Nidra in the Yoga group,

compared with the control group (Khushbu Rani et al, 2011).

### **Methodology**

Based on the reported literature on the effect of yoga on menstrual problems and the personal experience of the first author of this paper as a yoga instructor and Director of a yoga centre, a study was envisaged to analyze the effect of yoga on menstrual problems in adolescent children

The study was carried out among adolescent girls in the age group of 16 to 17 years studying in Government Vocational Higher Secondary School, Nadakkavu, Kozhikode district in Kerala State of India. The yoga group (to whom yoga training was imparted) consisted of 150 randomly selected students, who were willing to be part of the study. The control group (with no yoga training) had 150 randomly selected willing students of the school. Informed consent of the students and their parents were obtained for participating in the study through the school authorities.

Data was collected on the effect of yoga on 21 menstrual related problems in the children using a pre-tested structured questionnaire. Before teaching yoga, survey was carried out among the experimental group using the questionnaire. This is the pre test. This was followed by yoga classes three times a week for three months. After this, they were again interviewed using the questionnaire (post test). The control group was also subject to pre and post tests using the questionnaire at the same time as students of the experimental group. The data has been presented in the paper as percentage of children reporting.

### **Results and discussion**

The results show that practice of yoga contributes to alleviation of 13 menstrual related problems in the adolescent children.

It can be observed from Table 1 that after practicing yoga (post test stage), the interval of menstrual cycle of 59.2% of the students in the yoga experimental group has become once in 28 days (which is the usual interval observed in a

healthy person), while before doing yoga, only 29.6% of the students in the experimental group reported this interval. However, as far as the control group is concerned, 23.2% of the students had 28 days menstrual interval during pre test, which reduced to only 21.4% students in the post test stage.

Table 2 gives data on absence from schools reported by the students. Due to practice of yoga, 94.4% students do not absent themselves from school on account of menstrual problems, when compared to 83.1% reporting this before practicing yoga (pre test). However, in the case of the control group, this difference in percentage of students is comparatively less (87.5 % students in pre test stage increases to only 89.3% in the post test stage).

It can be inferred from the data presented in Table 3 that yoga has been able to reduce the proportion of students reporting two problems, namely, irregular menstrual cycle with more bleeding, and continuous severe bleeding. However, in the control group, the proportion of

students reporting these problems has increased in the post test stage, when compared to the pre test stage. Similarly, after practice of yoga, more number of students is reporting less bleeding, while the number of students in the control group reporting this in the post test stage is almost the same as pre test stage.

The results testify the influence of yoga in reducing menstruation related bleeding problems in adolescent children.

Yoga is found to have a positive effect in reducing muscle cramps in the children during menstrual periods. This is evident from the data presented in Table 4, which shows that after practicing yoga, about 60% students are reporting no muscle cramps, when compared to about 51% students reporting the same during the pre test stage in the experimental group. But, the proportion of farmers reporting no muscle cramps in the pre test stage (55.4%) reduces to 53.6% in the post test stage in the control group.

**Table 1. Effect of yoga on interval of menstrual cycle**

Duration of menstrual cycle (days)	Respondents (%)			
	Yoga group		Control group	
	Pre-test	Post test	Pre-test	Post test
25- 30	22.5	14.1	42.9	46.5
28	29.6	59.2	23.2	21.4
30	14.8	14.8	12.5	21.4
> 30	14.1	4.2	14.3	7.1
No response	19.0	7.7	7.1	3.6
Total	100	100	100	100

**Table 2. Effect of yoga on absence from school due to menstrual problems**

Absent from school during menstruation	Respondents (%)			
	Yoga group		Control group	
	Pre-test	Post test	Pre-test	Post test
Yes	15.5	5.6	12.5	10.7
No	83.1	94.4	87.5	89.3
No response	1.4	Nil	Nil	nil
Total	100	100	100	100

**Table 3. Effect of yoga on children on bleeding during menstruation**

Details	Respondents (%)	
	Yoga group	Control group

	Pre-test	Post test	Pre-test	Post test
Regular menstrual cycle with more bleeding	7.9	12.3	3.4	11.8
Irregular menstrual cycle with more bleeding	35.5	20.0	20.7	35.2
Continuous severe bleeding	1.3	Nil	Nil	5.9
Less Bleeding	38.2	63.1	41.4	41.2
No response	17.1	4.6	34.5	5.9
Total	100	100	100	100

Table 4. Effect of yoga on muscle cramps during menstruation

Existence of muscle cramps	Respondents (%)			
	Yoga group		Control group	
	Pre-test	Post test	Pre-test	Post test
Yes	45.8	38.7	33.9	44.6
No	51.4	59.9	55.4	53.6
No response	2.8	1.4	10.7	1.8
Total	100	100	100	100

Yoga is found influence the no. of days of abdominal pain observed during menstruation in the children. Table 5 reveals that the students having pain for two and three days actually reduce in the post yoga period, compared to before doing yoga. The table also shows that more students (52.8%) report lesser period (one day only) pain after doing yoga, when compared to 46.5% students reporting one day pain before doing yoga. However, in the control group, the proportion of students reporting pain for three days remains more or less the same in the pre and post test stages, while the proportion, who mention 2 days pain actually increases from 26.8% in the pre test to 32.1% during the post test stage (Table 5). Further, in the control group, the number of students reporting one day pain is decreasing from 44.6% in the pre test stage to 41.1% in the post test stage.

From the data presented in Table 6, it can be inferred that only 36.6% students report leg/back pain after doing yoga, compared to 47.9% students reporting it in the pre yoga stage (pre test stage). But, the proportion of control group students reporting leg/back pain remains more or less the same during pre and post test stages

(51.8 and 50% respectively). Further the increase in percentage of students reporting no such pain from the pre to post test stage is higher in the case of the yoga group of students, when compared to the increase seen in the case of the control group of students.

This indicates the effect of practicing yoga in reducing the leg/back pain of students during menstruation.

The influence of yoga in controlling nausea among children during menstruation can be inferred from Table 7. Only 14.8% students in the yoga experimental group report nausea in the post test stage, compared to 18.3% during the pre test stage. However, in the control group, the number of students reporting nausea is increasing in the post test phase.

Yoga is found to have a profound positive influence on anxiety reduction of students. Table 8 indicates that after doing yoga, about 83% of the students are free from anxiety problem associated with menstruation, compared to 72% students reporting this before yoga. In the control group, no perceptible difference is observed between the pre and post test data.

Table 5. No. of days of abdominal pain during menstruation

No. of days of abdominal pain	Respondents (%)			
	Yoga group		Control group	
	Pre-test	Post test	Pre-test	Post test
1	46.5	52.8	44.6	41.1
2	31.7	22.5	26.8	32.1
3	11.3	7.8	7.1	7.2
All days	1.4	0.7	1.8	Nil
No response	9.1	16.2	19.7	19.6
Total	100	100	100	100

Table 6. Leg/back pain during menstruation

Existence of leg/back pain	Respondents (%)			
	Yoga group		Control group	
	Pre-test	Post test	Pre-test	Post test
Yes	47.9	36.6	51.8	50.0
No	49.3	59.2	42.9	46.4
No response	2.8	4.2	5.3	3.6
Total	100	100	100	100

Table 7. Nausea during menstruation

Existence of nausea	Respondents (%)			
	Yoga group		Control group	
	Pre-test	Post test	Pre-test	Post test
Yes	18.3	14.8	25.0	26.8
No	75.4	83.8	67.9	73.2
No response	6.3	1.4	7.1	Nil
Total	100	100	100	100

Table 8. Anxiety associated with menstruation

Existence of anxiety	Respondents (%)			
	Yoga group		Control group	
	Pre-test	Post test	Pre-test	Post test
Yes	21.1	16.2	21.4	23.2
No	72.5	83.1	78.6	76.8
No response	6.4	0.7	Nil	Nil
Total	100	100	100	100

The data presented in Table 9 reveals that, as in the case of anxiety, yoga is helping the yoga group students in reducing anger. 81% of the students who have done yoga mention that they do not get angry, when compared to 70.4% students reporting it before doing yoga.

However, in the control group, there is an increase of only 1.9% students reporting anger in the post test stage, when compared to the pre test stage.

Children reporting no fatigue during menstruation are increasing during the post yoga

than the students during the pre yoga stage in the yoga group (Table 10). However, the proportion of students having fatigue problem is remaining more or less the same during pre and post test phases in the control group.

that the proportion of students, who do not have diarrhea problem increases from about 90% in the pre test stage to about 95% in the post test stage in the yoga, while in the control group, the proportion of students is decreasing in the post test stage.

Yoga is seen to help the students to prevent diarrhea during periods. Data in Table 11 shows

Table 9. Anger during menstruation

Existence of anger	Respondents (%)			
	Yoga group		Control group	
	Pre-test	Post test	Pre-test	Post test
Yes	27.5	18.3	30.4	32.1
No	70.4	81.0	66.0	67.9
No response	2.1	0.7	3.6	Nil
Total	100	100	100	100

Table 10. Fatigue during menstruation

Existence of fatigue	Respondents (%)			
	Yoga group		Control group	
	Pre-test	Post test	Pre-test	Post test
Yes	44.4	32.4	42.9	50.0
No	51.4	66.9	51.8	50.0
No response	4.2	0.7	5.3	Nil
Total	100	100	100	100

Table 11. Diarrhea during menstruation

Existence of diarrhea	Respondents (%)			
	Yoga group		Control group	
	Pre-test	Post test	Pre-test	Post test
Yes	7.8	4.2	3.6	3.6
No	90.1	95.1	96.4	94.6
No response	2.1	0.7	Nil	1.8
Total	100	100	100	100

Table 12. Lack of appetite during menstruation

Existence of lack of appetite	Respondents (%)			
	Yoga group		Control group	
	Pre-test	Post test	Pre-test	Post test
Yes	40.9	28.9	25.0	28.6
No	55.6	69.7	71.4	71.4
No response	3.5	1.4	3.6	Nil
Total	100	100	100	100

Table 13. Loss of interest during menstruation

Existence of loss of interest	Respondents (%)			
	Yoga group		Control group	
	Pre-test	Post test	Pre-test	Post test
Yes	40.9	28.9	25.0	28.6
No	55.6	69.7	71.4	71.4
No response	3.5	1.4	3.6	Nil
Total	100	100	100	100

The effect of yoga in maintaining appetite of the students during menstruation can be inferred from Table 12. Compared to about 56% of students reporting no loss of appetite before practicing yoga, the figure increases to about 70% students after practicing yoga. But, in the case of the control group, the proportion of students remains the same during both the pre test and post test stages.

Similarly, yoga is found to have a perceptible influence on reducing loss of interest to do things for the students during menstruation. Table 13 shows that the proportion of students reporting no loss of interest increases from 55.6 % before doing yoga to 69.7% after practicing yoga. However, in the control group, both pre-

test and post test shows 71.4% children reporting this.

### Conclusions

The study has revealed the effect of practicing yoga on reducing the menstrual related problems in adolescent children, namely, absenting from school, bleeding, muscle cramps, abdominal pain, leg/back pain, nausea, anxiety, anger, fatigue, diarrhea, lack of appetitive and loss of interest during menstruation and in maintaining proper menstrual interval. Such type of studies should be carried out among more number of adolescent children in various schools in the country. Yoga can also be made a part of the school curriculum to help the students in achieving physical and mental health improvement, which is essential to promote an effective educational system.

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