

Effects of Yoga in Primary Dysmenorrhea among Young Female Students to Reduce Sickness Absenteeism at Class

Kalaiselvi K¹, Mahendran P², Surobi Debnath³

¹ Assoc. Professor

² Principal

³ Physiotherapist

Acharya Institute of
Health Sciences
College of Physiotherapy
Bangalore, Karnataka.
India.

CORRESPONDENCE :

¹ Prof. Dr. Mahendran.P
Principal
Acharya Institute of
Health Sciences
College of Physiotherapy
Bangalore, Karnataka.
E-mail:
principalaihs@rediffmail.com

ABSTRACT

Background: Emotional and behavioral problems may exacerbate menstrual cycle problems and dysmenorrhea. Depression and/or anxiety symptoms are reported to have an impact on menstrual cycle function and dysmenorrhea. Due to negative effects of dysmenorrhea on an individual's psychological status, health-related quality of life (HRQoL) may be disrupted among young female students. Furthermore, dysmenorrhea is a common cause of sickness absenteeism at class by the female student community.

Objective: To find out the effects of yoga in primary dysmenorrhea among young females students to reduce the sickness absenteeism at class.

Subjects: 80 subjects on the basis of inclusion and exclusion criteria.

Materials and Methods: The data for the study is collected from Acharya College, Bangalore. The research approach opted in the study was convenient sampling. The research approach include collection of data and formulated questionnaire was distributed in 80 students on the basis of inclusion and exclusion criteria.

Result: There is a significant reduction of menstrual pain on 3rd month according to pre and post numerical VAS score while regular yoga was done for 3 months.

Conclusion: Yoga can be practiced for the reduction of menstrual pain for those who are suffering from primary dysmenorrhea and those who are taking leave from class or work place due to menstrual pain and so sickness absenteeism can be reduced at class.

Keywords: Dysmenorrhea, VAS, Yoga, HRQoL, Sickness absenteeism, Psychological status

INTRODUCTION

Dysmenorrhea is the most common gynecologic complaints. It affects half of all female adolescents today and represents the leading cause of periodic college / school absenteeism among the population.^[1] Dysmenorrhea is derived from Greek word "dys" meaning difficulty/ painful/abnormal; "meno" meaning flow.^[2]

Dysmenorrhea is a common problem in women of reproductive age. Primary dysmenorrhea is defined as painful menses in women with normal pelvic anatomy usually begins during adolescence.^[3]

Primary dysmenorrhea usually begins within first six months after menarche, once ovulatory cycles are established.^[4] Affected women experience sharp, intermittent, spasm type of pain usually concentrated in the supra pubic area.

Pain may radiate to back of the legs or lower back. Systemic symptoms of nausea, vomiting, diarrhea, fatigue, mild fever, headache and light headedness are fairly common. Pain usually develops within hours of start of menstruation and peaks as the flow becomes heaviest during the first day or two of cycle.^[5]

Primary dysmenorrhea is the most common gynecologic

disorder among female adolescents with a prevalence 63% to 93%. Several studies have shown that adolescence with primary dysmenorrhea report that it affects their academic performance, social and sport activities and is a cause of school absenteeism.^[2, 6]

The etiology of primary dysmenorrhea is not precisely understood, but most symptoms can be explained by action of uterine prostaglandins PGF₂-Alfa.^[7] Prostaglandins cause uterine contractions which result in expulsion of sloughed endometrial lining.^[8]

The risk factors of dysmenorrhea are; age < 20 years, null parity, heavy menstrual flow, smoking, upper socio economic status, attempts to lose weight, physical inactivity, disruption of social network, depression and anxiety.^[9] Physical activity is also an behavioral cofactor ; people who describes themselves as active have lower levels of inflammatory biomarkers than their sedentary counterparts.^[10]

Concentrations of various arachidonic acid metabolites in menstrual fluid are associated with menstrual pain and are influenced by hormonal contraceptives.^[11] Several other hormonal methods exist for treating dysmenorrhea oral contraceptive pills, depo- provera, minera. The proposed mechanism of action is to reduce prostaglandin release during menstruation.^[12]

The condition dysmenorrhea may be primary or secondary. It has also been shown in a small study of 18 women that those with dysmenorrhea have symptoms of high nocturnal body temperatures and disturbed sleep thorough out the menstrual cycle.^[13]

Secondary or congestive dysmenorrhea- This is associated with some structural abnormality and pathology (e.g. a fibroid, endometriosis or infection). The pain, which may be unilateral or bilateral begins 3 days before menstruation and is relieved or temporarily exacerbated as bleeding commences.

Primary or spasmodic dysmenorrhea- It is the more common type, there is no apparent structural abnormality or pathology.^[14] Pain decreases with increasing blood loss and self-management is often by over-the-counter medication such as ibuprofen.^[15]

MATERIALS AND METHODS

Population: 80 females aged between 18-25 years.

Sample size: 80 young female students.

Sampling method: Convenient sampling.

Research design: Pre and post experimental design.

Study duration: 3 months.

Study setting: From Acharya College of Health Sciences, Acharya College of Nursing, Acharya PU College, Bangalore.

Tools used in the study: Formulated questionnaire
Exercise mat Stationary (pen, paper, eraser etc).

Inclusion criteria

- Age group between 18-25 years.
- Subject who have moderate to unbearable pain during and prior to menstruation.
- Subjects who take medicine for pain relieving during menstruation.
- Subject who is willing to participate in the study.
- Subjects who are taking leave from college due to menstrual pain.
- Subjects who are unmarried.
- Subjects who are unable to perform their ADL due to menstrual pain or face difficulty in performing ADL.

Exclusion criteria

- Subjects who have gynecological issue like PCOD, endometriosis.
- Subjects who are married.
- Subjects under medication for gynecological issue.
- Subjects who are not willing to participate in the study.
- Subjects less than 18 and more than 25 years of age.
- Subjects who feels hesitation to perform yoga poses to reduce menstrual pain.

Outcome Measures

1. Numerical Visual Analogue Scale (VAS).
2. Primary Dysmenorrhea Questionnaire.

PROCEDURE

80 subjects were selected on the basis of inclusion and exclusion criteria from Acharya College of Physiotherapy, Acharya College of Nursing and Acharya PU College. The study population consisted of age group 18-25 years. After explaining the subjects about the yoga poses, written consent was taken from the subjects.

Formulated Questionnaire prior to yoga intervention was distributed among the subjects and were asked to completely fill the questionnaire including the numerical VAS. The questionnaire was formulated to rule out whether subjects have primary or secondary dysmenorrhea and to know about their menstrual characteristics.

Subjects were divided into 8 groups and each group consists of 10 subjects. Yoga poses were demonstrated to the subjects according to their groups, one group at a time. Total of 8 sessions were carried out to demonstrate and teach yoga poses to all subjects in a group wise fashion.

On the first day 3 groups were taught the yoga poses (3 sessions), on the second day another 3 groups were taught yoga poses (3 sessions) and on the third day remaining two groups were taught yoga poses (2 sessions).

The subjects were then allotted time to practice the yoga poses and were instructed to continue practice the yoga poses on alternate days or three times a week, each session of about 30 minutes duration for a total of 3 months. The subjects were observed weekly once to check whether the yoga poses performed are accurate.

After 3 months of yoga intervention again formulated questionnaire was distributed and numerical VAS score was obtained from the subjects.

YOGA POSES

1. *Bidalasana – Cat Pose*

- Start by sitting down on your hands and knees.
- Keep the arms and legs perpendicular to the floor
- Exhale and curve the back up towards the ceiling, starting from the lower back followed by the upper back. Bring the crown of the head towards the floor and relax the neck down.
- Repeat these movements consecutively for about 10 breaths (10 times).
- Try to hold the position for 5-10 seconds for each repetition.

2. *Matsyasana- Fish Pose*

- Lie on your back. Your feet are together and hands relaxed alongside the body.
- Place the hands underneath the hips, palms facing down.



- Keeping the chest elevated, lower the head backward and touches the top of the head to the floor.
- Press the elbows firmly into the ground, placing the weight on the elbow. Lift your chest up from in-between the shoulder blades. Press the thighs and legs to the floor.
- Now lift the head up, lowering the chest and head to the floor. Bring the hands back along the sides of the body. Relax
- Repeat the pose for 10 times and hold the position for 15-20 seconds for each repetition.

3. *Bhujangasanas- Camel Pose*

- Lie flat on your stomach. Place your hands on the

side and ensure that your toes touch each other.

- Then, move your hands to the front, making sure they are at the shoulder level, and place your palms on the floor.
- Now, placing your body's weight on your palms, inhale and raise your head and trunk.
- You need to arch your neck backward in an attempt to replicate the cobra with the raised hood.
- Hold the asana for about 15 to 30 seconds and while breathing normally.
- To release the pose, slowly bring your hands back to the sides. Rest your head on the ground by bringing your forehead in contact with the floor. Place your hands under your head. Then, slowly rest your head on one side and breathe.
- Repeat the pose for 10 times.

RESULTS

The study included 80 subjects with primary dysmenorrhea and tested whether the yoga poses help in reduction of pain during periods.

No adverse effects were observed.

All the participants completed the session of yoga exercise and showed significant reduction in menstrual pain. Sickness absenteeism at class reduced markedly.

DATA ANALYSIS

SPSS V. 16.0 Software. Excel has been used to generate bar diagram and tables. Paired t- table.

This table is mean, standard deviation and standard error values for pre and post sickness absenteeism.

Pre yoga sickness absenteeism was 2.2875 and post yoga sickness absenteeism was 1.3250. A significant difference exists between pre and post sickness absenteeism.

T-test value is 10.145 and p value is 0.000 which is less than 0.05. The p is less than 0.05 which is statistically significant and indicates decrease in sickness absenteeism after yoga intervention.

The bar graph shows a significant reduction in sickness absenteeism at class after yoga intervention.

Table 1. Analysis of Vas Score Pre and Post

Paired Samples Statistics				
	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 Pre	7.2125	80	1.58868	.17762
Post	3.6000	80	1.43730	.16069

Table 2 . Analysis of Sickness Absenteeism Pre and Post

Paired Samples Statistics				
	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 Pre	2.2875	80	.95723	.10702
Post	1.3250	80	.52229	.05839

Table 1. Analysis of Vas Score Pre and Post

Paired Samples Test								
Visual Analogue Scale (Vas)	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval Of the Difference				
				Lower	Upper			
Pair 1 Pre-Post	3.61250	.99992	.11179	3.38998	3.83502	32.314	79	.000

Table 2 . Analysis of Sickness Absenteeism Pre and Post

Paired Samples Test								
Visual Analogue Scale (Vas)	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval Of the Difference				
				Lower	Upper			
Pair 1 Pre-Post	.96250	.84858	.09487	.77366	1.15134	10.145	79	.000

DISCUSSION

The purpose of the study is to find out the effect of yoga during primary dysmenorrhea among young female students and to reduce sickness absenteeism at class.

The study was done among 80 young female students suffering from primary dysmenorrhea on the basis of questionnaire and pre and post VAS score. The subjects were instructed to practice yoga thrice a week for 12 weeks (3 months). The VAS score of the subjects were noted before initiation of yoga intervention and after 12 weeks of yoga intervention.

Vasantha S. studied the effectiveness of yoga on primary dysmenorrhea among adolescent girls and data was collected by using Numerical Pain Intensity Scale and observed a significant reduction in the pain scores according to pre test and post test of the study group.^[16] In my study also there was a significant reduction in post numerical VAS score after yoga intervention when compared to pre numerical VAS score.

Su- Ying Tsai studied the effect of yoga on menstrual symptoms among female employees and data was collected using structured questionnaire including pain scores. 12 weeks of yoga intervention program was given and found to be effective in reducing body pain and abdominal cramps.^[17]

In my study also structured questionnaire and numerical VAS score is used to assess the severity of menstrual pain and 12 weeks of yoga intervention program was given to the subjects which reduced the menstrual pain and menstrual cramps among the subjects.

Gauri S Kulkarni, Nilima Bedekar conducted an experimental study of selected yoga poses on young adult female population reporting primary dysmenorrhea. A record of absenteeism and VAS score of pre and post yoga session was noted. Yoga intervention program of thrice a week for 12 weeks was given to the subjects.

Results showed a significant reduction in absenteeism and VAS score after yoga sessions.^[18] In my study also formulated questionnaire was used to record sickness absenteeism due to menstrual pain and numerical VAS to note the menstrual pain score before and after yoga sessions of 12 weeks duration. Results revealed a significant reduction in absenteeism and menstrual pain.

Rakhshee studied the effect of three yoga poses in women with primary dysmenorrhea. VAS scale was used to assess the intensity of pain and questionnaire was used to collect data of menstrual characteristics. Results showed a significant reduction in pain intensity after yoga intervention and yoga poses are safe to perform.^[19]

In my study also three yoga poses were taught to the subjects to relieve menstrual symptoms. Data was collected using numerical VAS and formulated questionnaire. Results showed a significant reduction in menstrual symptoms post yoga session and yoga poses are safe to perform and have no adverse effects.

As the study included yoga sessions, statistical analysis of collected data had shown significant changes in p value in the participants. The primary reason for not much improvement might be the subjects had difficulty in performing the yoga poses accurately which was suggested in the study, moreover due to missed periods in some subjects they could not feel the difference or the subjects have not performed the yoga poses regularly.

Major drawback of the current study was that there was no control group and the experimental group sample was less for the study.

The results demonstrate that there is a significant reduction in the menstrual pain during and after the yoga intervention and also there is a marked reduction in sickness absenteeism at classes of the young female students due to menstrual pain.

CONCLUSION

The study showed that yoga poses can be used for the reduction of menstrual pain in adolescent girls who are suffering from primary dysmenorrhea. The yoga poses are safe to perform and have no adverse effects. Yoga also reduces sickness absenteeism at class of the young female students suffering from menstrual pain.

Findings from the study suggested that yoga can be effective in reduction of pain but the subjects were unable to do it correctly and pre training for yoga must be considered in the next research.

Limitations of the study

- Subjects could not complete the study due to missed period.
- Study samples were less.
- There was no control group and randomization of the population was not done
- Study duration was less.

Recommendation

- Pre training for the yoga poses must be considered.
- Sample size should be larger.
- Comparative study of the population must be considered.
- Regular practice of yoga by subjects must be monitored properly.

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CONFLICT OF INTEREST :

The authors declared no conflict of interest.

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ETHICAL CLEARANCE: It has obtained from college ethical committee.

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