

Effect of Bhujangasana on Menstrual Problems among Adolescent Girls

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Abstract

Background: Menstrual Problems are most common disorders among Adolescent Girls. The impact of various Yogic Practices has proven to reduce the menstrual problems which are due to the imbalance of hormones. Most of the Adolescent girls usually prefers to take pain killers as a primary remedy to get relief from these disorders. This study highlights the importance of practice of Bhujangasana as a non-pharmacological form of remedy.

Method: This study was an Experimental study in which pre and post experimental method was used. 396 Adolescent girls were participated in this study. All these girls are divided into three groups aged between 10 to 21 years. Those age groups are 10 to 13 years, 14 to 16 years of age and 17 to 21 years of age group. Respondents were practiced Bhujangasana for 5 minutes daily. In statistical analysis pre and post data was analyzed using SPSS version 17.0 and one-way ANOVA test and Scheffes post hoc test were also used.

Result: There was a significant difference within the groups.

Conclusion: Bhujangasana is very effective in reducing Menstrual Problems. It can be practiced as a home remedy to enhance the menstrual health.

Key Words: Adolescent Girls, Menstrual Problems, Bhujangasana, Menstruation.

Introduction:

Menstrual Problems are very common in Adolescent Girls. Because Adolescent period is a transitional period in which lot of physical, mental and emotional changes are happened between them. According to WHO (World Health Organization) adolescents are between the age 10 to 19/21 (Achal, 2017). According to Ghai (2009), adolescent period is divided into three age groups, these are: first one is Early adolescent period i.e. 10 to 13 years of age group, another one is 14 to 16 years of age, is called as Middle adolescent period and 17 to 21 years of age group is called as Late adolescent period. Menstruation is an important physiological manifestation in womanhood. Motherhood is the most important part of a women's life. But sometimes this motherhood comes from which phase of a women's life is neglected by her and due to this she suffers from so many problems of menstrual period. Some

girls suffer from starting of the menses. These problems are not only physical but psychological also. Verma et al, (2011) concluded that from menarche they suffer from bleeding with a lot of pain, breast tenderness, sometimes very few bleedings with abdominal spasms, vomiting, sometimes heavy bleeding with cramps, severe headache, sometimes giddiness, vaginal pain, white discharge before or after bleeding, weakness these are the symptoms which often observed. Due to this mood swings, irritation, low confidence, aggressiveness are the commonly observed outcomes. Whole physio-psychological system will get disturbed. Temporarily they used to take some pain killer pills to get relief from this trouble. But there are so many side effects of these continuously taking pills and suffer from more complications in entire life. Dambhare et al., (2012), Patil (2013) and Patavegar et al., (2014) had found mean age of menarche was 13.51 + 1.04years, 13.45±0.95 and 12.7+1.00 years respectively. Also, menstruation is

the milestone of women’s life. Naturally normal menarche period in India is 12 to 13 years of age. But nowadays due to the effect of sedentary life and wrong diet habits number of diseases has started to occur. Xianchen (2017) had also concluded that early menarche and menstrual problems were associated and also, she had emphasized on the insomnia during menstruation. Jaikhani (2014) had found dysmenorrhea, premenstrual syndrome and irregular menstrual cycle most common menstrual problems in adolescent girls. Mohite (2013) found common menstrual problems are oligomenorrhea, menorrhagia, metrorrhagia, hypomenorrhea, dysmenorrhea, and premenstrual syndrome among slum adolescent girls of western Maharashtra. Sharma (2013) and Tsai (2016) concluded that yogic interventions are most useful to get relief from menstrual problems.

Methodology:

With the aim of to assess the impact of Bhujangasana on menstrual problems among adolescent girls (aged between 10 to 21 years), respondents were divided into three age groups as 10 to 13, 14 to 16 and 17 to 21 years of age. Self-structured questionnaire was used for the study containing the parameters such as Irregular menstrual cycle, Painful menstrual cycle, Heavy menstrual flow, Menstrual flow with more clots, Vomiting and Mood swings these are the parameters of the study. Respondents were asked to fill the questionnaire before and after the practice of Bhujangasana for 5 minutes for the period of 6 months per 5 days in a week. Total 396 adolescent girls were participated in this study.

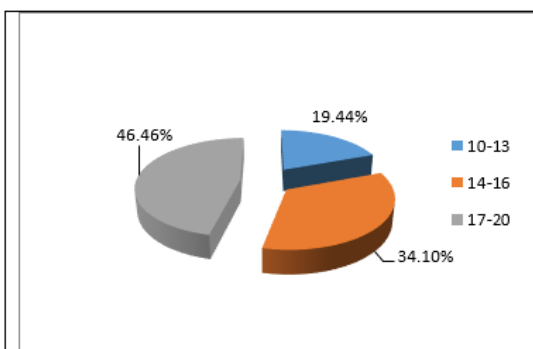


Figure 1a: Age Distribution of Respondents

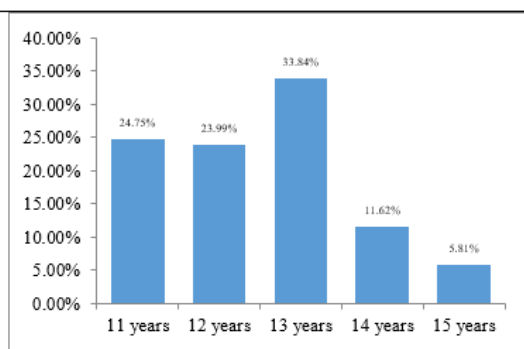


Figure 1b: Distribution of Menarche

Figure 1a shows the percentage distribution of respondents and Figure 1b shows the percentage distribution of menarche.

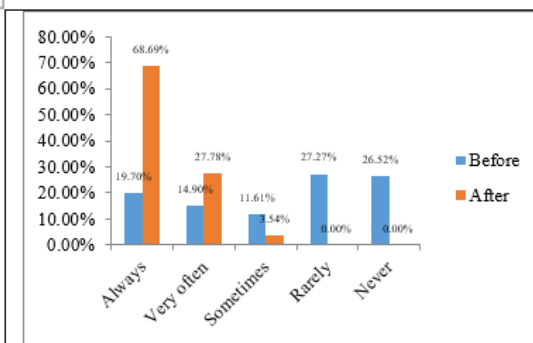


Figure 2a: Comparative distribution of irregular menstrual cycle before and after Bhujangasana

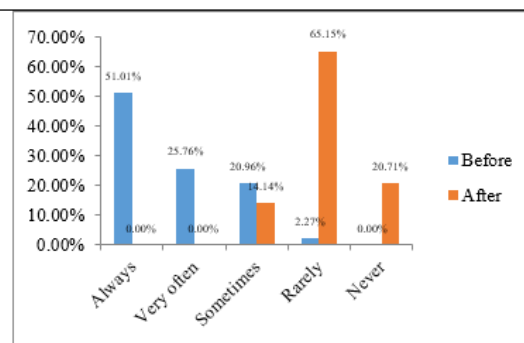


Figure 2b: Comparative distribution of mood swings before and after Bhujangasana

Figure 2a shows percentage distribution of regular period of menstrual cycle and Menstruation before and after practice of Bhujangasana. Figure 2b shows percentage distribution of mood swings before and after the practice of Bhujangasana.

and after the practice of Bhujangasana.

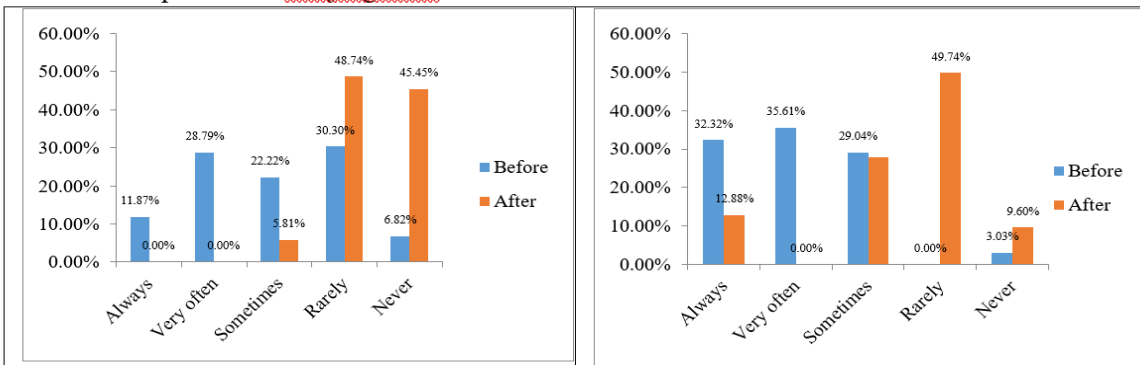


Figure 3a: Comparative distribution of Painful Menstruation of before and after Bhujangasana

Figure 3b: Percentage of Heavy menstrual flow before and after Bhujangasana

Figure 3a shows comparative distribution of Painful Menstruation of before and after the practice of Bhujangasana. Figure 3b shows percentage distribution of regular period of heavy menstrual flow before and after the practice of Bhujangasana. Considerable reduction in pain and heavy menstrual flow during menstruation is found as shown in Figure 3a and 3b. |

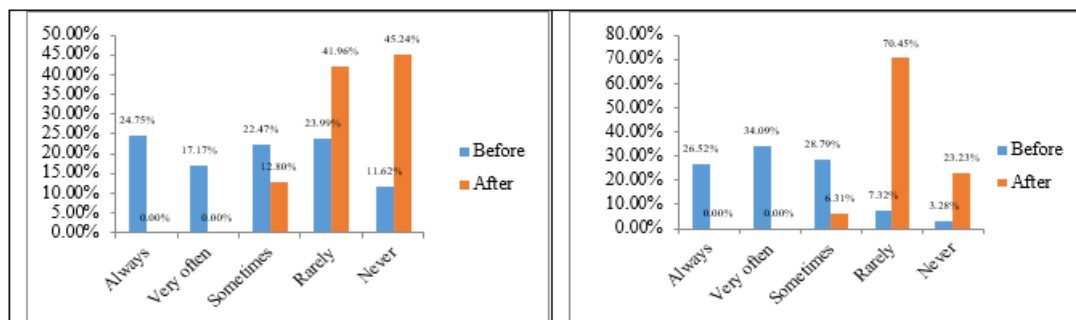


Figure 4a: Percentage wise distribution of heavy menstrual flow with more clots before and after Bhujangasana

Figure 4b: Percentage wise distribution of Nausea, vomiting during menstruation before and after Bhujangasana

Figure 4a shows comparative distribution of Menstrual flow having more clots before and after the practice of Bhujangasana. Figure 4b shows percentage distribution of Nausea, vomiting during menstruation before and after the practice of Bhujangasana. Considerable reduction in menstrual flow, nausea, vomiting during menstrual period is also observed as shown in Figure 4a and 4b.

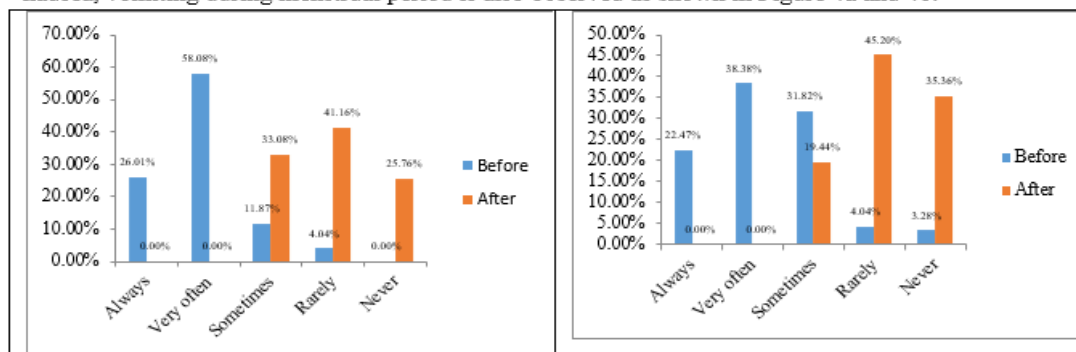


Figure 5a: Percentage wise distribution of absenteeism or disturbed social life

Figure 5b: Percentage wise distribution of habit of taking pain killers

Figure 5a shows comparative distribution of absenteeism or disturbed social life before and after the practice of Bhujangasana. Figure 5b shows percentage distribution of habit of taking pain killers before and after the practice of Bhujangasana. Considerable reduction is found as shown in Figure 5a and 5b. |

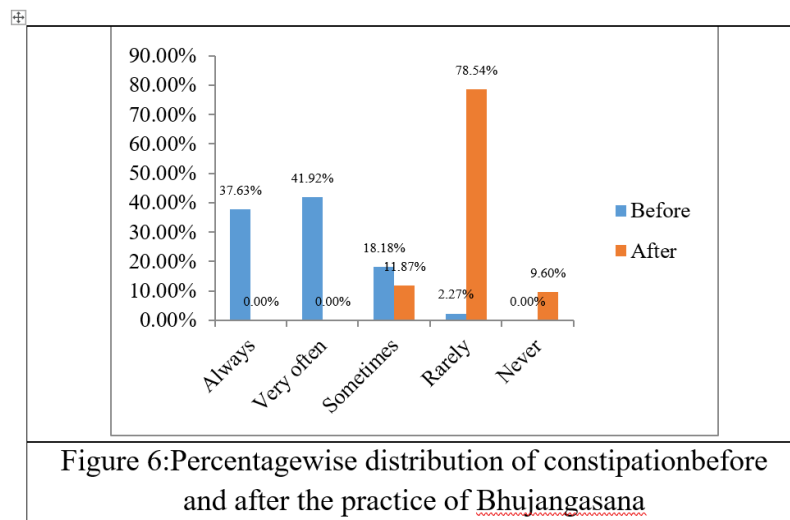


Figure 6:Percentage wise distribution of constipation before and after the practice of Bhujangasana

Figure 5b shows percentage distribution of habit of taking pain killers before and after the practice of Bhujangasana. Considerable reduction is found as shown in Figure 6.

Statistical Data Analysis

Statistical Data Analysis gives the trends of analysis. In this study a comparison of pre and post test results are done with Scheffe’s post hoc test and one-way ANOVA test.

Comparison Of Pre-Test And Post-Test

Obtained scores of the respondents of pre-test and post-test were of different age groups. The difference between pre-test and post-test in each variable was observed and also assessed. Statistical significance was found in the total score and individualized scores. Statistical data analysis was used by using one-way analysis of variance (ANOVA) and Scheffe’s post hoc test.

One-way ANOVA test:

The one-way ANOVA test is a statistical test. It is commonly used to determine the statistical differences among the means of two or more groups. Total three age groups of adolescent girls ae studied in this study. These are (10 to 13 years, 14 to 16 years and 17 to 21 years of age). Mean score of pre-test of total score of menstrual problems was found 53.06 and that of post-test was found 30.41 with a mean difference of 22.65 which was statistically highly significant (t= 89.42, P=0.000<0.01; Table 1).

Table 1: Comparison of Pre-Test and Post-Test Scores of Total Score of Menstrual Problems

	Mea n	SD	N	Mean Differen ce	Paire d t	p-value
Pre - Test	53.06	5.32	396	22.65	89.42	0.000<0.01**
Pos t Test	30.41	3.58	396			

**Highly Significant

Since it is found that $t = 89.42 > t_{table} = 2.336$, so, it is concluded that the null hypothesis is not accepted. Using the P-value approach: The p-value is 0.000, and since $p\text{-value} = 0.000 < 0.01$, it is concluded that the null hypothesis is not accepted.

Comparison of pre-test and post-test scores on total score of menstrual problems according to age group of the girls

According to age groups, for understanding the menstrual problems, scores of pre-test and post-test are studied as shown in Table 2.

Table 2: Comparison of Pre-Test and Post-Test total score of Menstrual Problems According to Age group of Girls

Age group	Experime ntal type	Effectiveness					
		Me an	Me an Diff	S D	N	Paired 't'	p-value
10-13	Pre	53.69	21.96	2.00	77	42.80	0.000<0.01**
	Post	31.73		4.68			

14-16	Pre	56.18	25.16	5.40	135	59.46	0.000<0.01**
	Post	31.02		2.92	135		
17-21	Pre	50.50	21.10	4.93	184	61.78	0.000<0.01**
	Post	29.40		3.21	184		

**Highly Significant

After practice of Bhujangasana ANOVA test is applied for the results for different age groups as shown in Table 3.

Table 3: ANOVA test for difference in mean total score of Menstrual problems for different age group after Pranayama

Source of Variation	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1327.354	2	663.677	29.956	0.000*
Within Groups	8706.856	39	22.155		
Total	10034.210	39			

* Statistically significant at 0.01 level of significance

Table 3 represents ANOVA test result of difference in means of three age groups for the total score of menstrual problems. The comparison between groups and within group is done by ANOVA test, it is found that 'F' value is 29.956 which is statistically significant at 0.01 significance level (p = 0.000).

After practice of Bhujangasana, to test the difference in mean total score of Menstrual problems for different age group, Scheffe's post-hoc-test is conducted as shown in Table 4.

Table 4: Scheffe's post-hoc-test for difference in mean total score of Menstrual problems for different age group after the practice of Bhujangasana

Age group (I)	Age group (J)	Mean Difference (I-J)	Std. Error	Sig.
10-13	14-16	-3.19*	0.67	0.000
	17-21	0.86	0.64	0.402
14-16	10-13	3.19*	0.67	0.000
	17-21	4.06*	0.53	0.000
17-21	10-13	-0.86	0.64	0.402
	14-16	-4.06*	0.53	0.000

* The mean difference is statistically significant at the 0.01 level.

The superiority of the age group was identified by Scheffe's post hoc-test. Table No. 4.represents post-hoc-test result of difference in

means of three age groups for the total score of menstruation problems. There were significant differences found between age group 10-13 and 14-16; 10-13 and 17-21 as well between 14-16 and 17-21 at 0.01 level of significance with mean differences -3.19, 0.86 and 4.06 respectively (p values, 0.000 respectively).

Means plot of difference in mean total score of menstrual problem for different age group after the practice of Bhujangasana

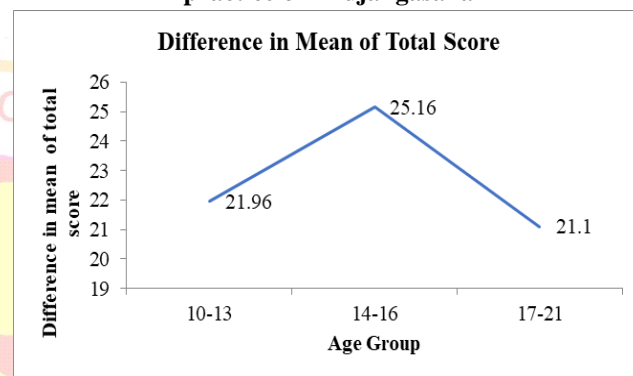


Figure 7: Means plot of difference in mean total score of menstrual problem for different age group after the practice of Bhujangasana

Figure 7 shows mean score of difference after experimentation in pre-test score of variable-total score of menstrual problems of three age groups. From the graph it is observed that mean of difference in three age groups are significantly different. Age 14-16 shows better results than that of age group 10-13 and 17-21.

Interpretation:

From Table 3 and 4 it is indicated that there is significant difference found between Age group 10-13 & 14-16 as well as 14-16 & 17-21. It means that Bhujangasana effectively reduces menstrual problems for all the three ages' group of adolescent girls.

Further Figure 7 represents the degree of effectiveness of experimental age groups. Practice of Bhujangasana is more effective in age group 14-16 than age group 10-13 and 17-21 in reducing total score of menstrual problems among adolescent girls.

Discussion:

This study reveals with menstrual problems among adolescent girls by observing the physical and mental state at the Menarche, before and during menstruation. In this study it is found that due to heavy menstrual pain or heavy discharge 84.09 %

adolescent girls could not attend the school or college. Their Daily Routine is totally disturbed due to menstrual problems. Reddy Govardhan (2017) and Aggarwal (2020) also concluded that Bhujangasana is very effective in reducing menstrual problems. Gherand (1979) concluded that to stretching effect on abdomen it stimulates the appetite, contraction and relaxation of muscles of digestive organs performed very well that's why digestive enzymes are stimulated and this will result into proper digestion. Michel (2009) concluded that in Bhujangasana, neck is also bent in backward direction so the stretching effect on neck thyroid gland is stimulated, metabolism, the function of thyroid gland is performed in a proper manner and it alleviates constipation. It is also effective in kidney's and liver's disorders. Adrenal glands are also situated on kidney so adrenal gland gets stimulated. Due to this the hormone of adrenal gland, cortisol is maintained and removes tension. Due to the stretching of muscles of lower abdomen genital organs get stimulated. Estrogen and progesterone hormone levels are maintained very well. Naturally menstrual cycle is regulated. Also, in Bhujangasana stretching effect on pelvic region, the pelvic muscles are strengthened and it will help to remove pain during menstruation. According to Basavaraddi (2015) Bhujangasana is very effective in painful menstruation, Dysmenorrhea. Stretching effect on spinal cord enhances autonomous nervous system. So parasympathetic nervous system is stimulated and sympathetic nervous system is cooled down. It alleviates mood swings and that's why naturally nausea, vomiting, headache such type of symptoms is vanished.

Conclusion:

Due to the stretching and pressuring on abdomen, chest, back and reproductive organs, whole physio-psychological system get stimulated and practice of Bhujangasana maintains the physical, mental and emotional health in a proper way. Hence it is concluded that Bhujangasana is very effective in reducing menstrual problems among adolescent girls.

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