

## EFFECTIVENESS OF ACUPRESSURE ON REDUCTION OF PRE-MENSTRUAL SYNDROME(PMS) AMONG ADOLESCENT GIRLS (16-18YRS)

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### **Abstract**

A quasi experimental pretest and post test with control group design was adopted to assess the effectiveness of acupressure on reduction of premenstrual syndrome among adolescent girls (16-18yrs) in selected schools at Chennai, Tamilnadu. Quantitative approach was used to collect data. A total of 60 adolescent girls were included in the study, out of which 30 as an experimental group and 30 as a control group. Non-probability purposive sampling technique was used. Acupressure was given to the experimental group in pressure points like carpal, metacarpal, metatarsal, patella, wrist joint, elbow prominence, midpoint of popliteal fossa, nail buds, medial malleolus and elbow crease by use of techniques namely Ischemic compression, rolling and rotatory action based on the severity of symptoms. The level of PMS in the pre test mean score was  $42.83 \pm 5.85$  in the experimental group and in the post test mean score was  $21.47 \pm 2.06$ . The calculated 't' value of  $t = 20.790$  was highly significant ( $p < 0.001$ ) which shows reduction in symptoms PMS in experimental group. Whereas Post test findings showed no significant reduction in symptoms of PMS in control group

**Key words:** Effectiveness, Acupressure, Premenstrual syndrome, Adolescent girls.

### **Introduction:**

Adolescents are the specific group of people in the society to carry out many developmental tasks and resolve the problems of the nations. Adolescent stage is very important in the life of a girl, because in this stage physical, sexual and psychological maturity take place. The transition from childhood to adulthood is particularly stressful for girls. The healthy adolescent population is considered as a

social agent of change toward a population with a healthier lifestyle<sup>8</sup>.

Premenstrual syndrome is a constellation of physical and psychological symptoms beginning in the luteal phase of the menstrual cycle. Premenstrual syndrome is a real disorder for adolescent. Premenstrual syndrome refers to a wide range of physical or emotional symptoms that typically occur

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about 5 to 11 days before a woman starts her monthly menstrual cycle<sup>3</sup>.

Zahedan University Iran (2005) conducted a cross sectional study to determine the prevalence of premenstrual syndrome among female students. The results revealed that, out of 300 participants involved in the study, 98.2% reported mild to severe premenstrual symptoms and 16% met the criteria of DSM-IV for premenstrual syndrome<sup>11</sup>.

Acupressure was traditionally practiced in China for relaxation and health promotion. Acupressure therapy has gained popularity across the world. The Acupressure therapy uses electromagnetic forces based on the principles of acupuncture. Electromagnetic forces travel through different parts of our bodies. In acupressure therapy, needles are pricked or pressure is applied through hands at different points that lie along meridians of the body<sup>9</sup>.

Acupressure helps to restore the balance of the natural energy through applying pressure in the stimulating point thereby relieving (or) eliminating the premenstrual syndrome<sup>10</sup>. The symptoms usually go away when menses begins (or) a short time after. Marcos Hsu (2004) states that 75% of women have premenstrual syndrome during their life time<sup>5</sup>. Acupressure and the Chinese medicine can relieve PMS symptoms gently without any risk of side effects.

The National Institute of Health (2007) issued a report suggesting acupressure is effective in treating menstrual cramps and other symptoms associated with PMS. Treatments do not merely suppress symptoms, but rebalance the entire body. The success rate of acupressure in treating PMS symptoms was 77.8%, whereas it was 5.9% in the placebo group<sup>7</sup>

### **Objectives**

- 1) To assess the pre test level of premenstrual syndrome among adolescent girls in experimental and control group.
- 2) To assess the post test level of premenstrual syndrome among adolescent girls in experimental and control group.
- 3) To compare the post test level of premenstrual syndrome among adolescent girls in experimental and control group.
- 4) To determine the effectiveness of acupressure on premenstrual syndrome among adolescent girls in experimental group.
- 5) To associate the post test effect of acupressure regarding premenstrual syndrome with selected demographic variables among adolescent girls in experimental and control group.

**Hypothesis**

H1- There is a significant difference in the post test level of premenstrual syndrome score among adolescent girls in experimental and control group.

H2- There is a significant reduction in the post test level of premenstrual syndrome score after application of acupressure among adolescent girls in experimental group.

**Methodology:**

A quasi experimental study was conducted to assess the effectiveness of acupressure on reduction of premenstrual syndrome among adolescent girls (16-18yrs) in selected schools at Chennai, Tamilnadu. The research design selected for the study was quasi experimental pre test post test with control group. Samples were selected by non-probability purposive sampling technique based on the severity of symptoms. The study was conducted in Mohamed Sathak Matriculation Higher Secondary School in Arumbakkam, as an experimental group and Savithri Ammal Oriental Higher Secondary School at Mylapore, as a control group. The reliability of the instrument was established by test retest method.

**Effectiveness of Acupressure**

There was a positive significant in the test retest method( r=0.95) which shows that tool was highly reliable. The data was collected by using Modified Kelly Wallence PMS questionnaire by the investigator and were analyzed by using descriptive and inferential statistical methods.

**Score Interpretation**

Rating scale was used to assess pre and post test level of PMS among adolescent girls. It consists of 26 symptoms to assess the PMS among adolescent girls. Each symptom has three categories such as mild score is one, moderate score is two, severe score is three. The total score of rating scale was 78.

The resulting score were arranged as follows:

<33 %	:	Mild Premenstrual syndrome
34 - 67%	:	M o d e r a t e Premenstrual syndrome
>67 %	:	S e v e r e Premenstrual syndrome

**Data Collection Procedure**

The data was collected from 1/6/12 to 15/7/12. The investigator selected six to seven girls for a week by using non-probability purposive sampling technique.

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Before starting the data collection permission was sought from the ethical committee, written consent was received from the parents and students. Based on the severity of PMS, adolescent girls (16-18yrs) were selected for the study. The pretest was conducted by using modified Kelly Wallence PMS questionnaire to assess the moderate and severe PMS adolescent girls both in the experimental and control group. Those who got the score of 26-78 were selected for the study. In experimental group the researcher used the tool for 126 adolescent girls, in that 52 girls had PMS. 30 girls were selected for experimental group. Acupressure was given to the pressure points such as carpal, metacarpal, metatarsal, patella, wrist joint, elbow prominence, midpoint of popliteal fossa, nail buds, medial malleolus and elbow crease by using techniques of Ischemic compression, rolling and rotatory action based on the severity of symptoms. Acupressure was applied 2-3 minutes for experimental group. On the same day post test was conducted. Discussion was done with the adolescent girls and doubts were clarified. Continuously up to four days the researcher visited and applied acupressure for experimental group and conducted the post test daily by using Modified Kelly Wallence PMS questionnaire. In control group the researcher used the tool for 87 Continuously up to four days the researcher visited and conducted the post test daily by using Modified Kelly Wallence PMS questionnaire. In control group the researcher used the tool for 87 adolescent girls. 38 girls had PMS in the category of moderate and severe. 30 girls were selected in control group. On the same day post test was conducted.

Continuously up to four days the researcher visited and conducted the post test daily by using Modified Kelly Wallence PMS questionnaire.

### **Major Findings:**

In the pretest, most of the girls (28, 93.33%) had moderate level of PMS and 2(6.67%) girls had severe level of PMS and no one had mild level of PMS in the experimental group. In the post test, all the 30(100%) girls had mild level of PMS in the experimental group and none of them had moderate and severe level of PMS after the application of acupressure. The statistical analysis of post test shows significant reduction in the level of PMS score which indicates acupressure was effective for experimental group.

In experimental group the pre test mean score was 42.83 with S.D 5.85 and the post test mean score was 21.47 with S.D 2.06. The calculated 't' value of  $t = 20.790$  was statistically highly significant ( $p < 0.001$ ) level which clearly shows that the acupressure given to the adolescent girls (16 – 18 yrs) had significant reduction on their post test level of premenstrual syndrome.

In control group the pre test, almost 27(90%) girls had moderate level of PMS 3(10%) girls had severe level of PMS and no one had mild level of PMS in control group. In the post test, most of the 29(96.67%) girls had moderate level of PMS, 1(3.33) had severe level of PMS and none of them had mild level of PMS in control group.

Thus in control group pre test mean score was 45.4 with S.D 5.77 and the post test mean score was 43.47 with S.D 4.82. The calculated 't' value of  $t = 4.300$  was statistically significant at  $p < 0.001$  level which shows that there is some reduction in the premenstrual symptoms.

The statistical analysis of post test showed that there was no significant reduction in symptoms of PMS.

In experimental group none of the demographic variable had shown any statistical significance with the post test level of PMS among adolescent girls. In control group, area of residence had shown statistically high significant association at  $p < 0.001$  level with the post test level of PMS and there no statistical significance was observed with other demographic variables.

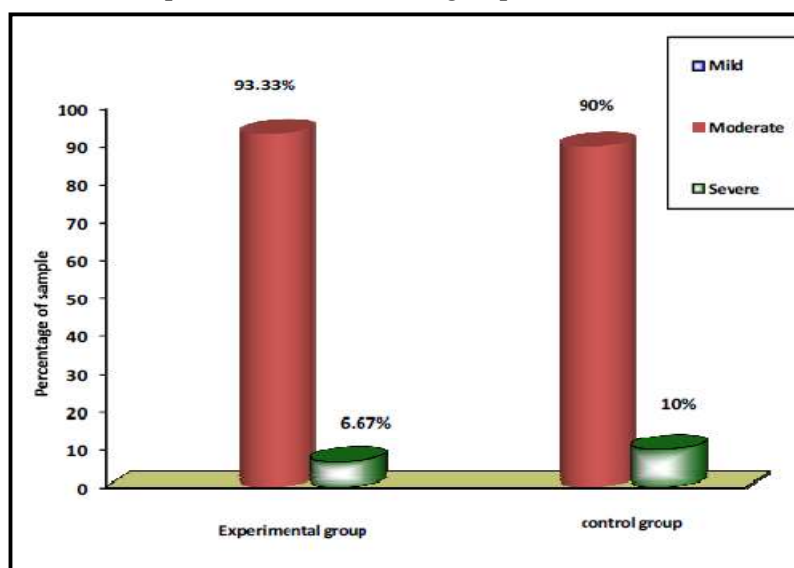
**Table -1 Distribution of pretest level of premenstrual syndrome among adolescent girls (16-18 yrs) in the experimental and control group.**

(N = 30+30)

Pre test level of premenstrual syndrome in different aspects	Level of PMS in experimental group					
	Mild (<33%)		Moderate (34-67%)		Severe (>67%)	
	No.	%	No.	%	No.	%
Anxiety	3	10	19	63.3	8	26.6
Craving	2	6.6	20	66.6	8	26.6
Depression	0	-	25	83.3	5	16.6
Hydration	0	-	25	83.3	5	16.6
Other symptoms	2	6.6	28	93.3	0	-
Overall	0	-	28	93.3	2	6.6

Pre test level of premenstrual syndrome in different aspects	Level of PMS in control group					
	Mild (<33%)		Moderate (34-67%)		Severe (>67%)	
	No.	%	No.	%	No.	%
Anxiety	3	10	21	70	6	20
Craving	1	3.3	23	76.6	6	20
Depression	0	-	23	76.6	7	23.3
Hydration	0	-	23	76.6	7	23.3
Other symptoms	1	3.3	26	86.6	3	10
Overall	0	-	27	90	3	10

The overall pre test level of PMS among adolescent girls (16-18yrs) in the experimental group shows that most of the 28(93.33%) girls had moderate level of premenstrual syndrome and 2(6.67%) girls had severe level of premenstrual syndrome and no one had mild level of PMS. In control group most of the 27(90%) girls had moderate level of premenstrual syndrome and only 3(10%) girls had severe level of premenstrual syndrome and no one had mild level of PMS. It depicts that the pre test level of PMS score was similar in both the experimental and control group.



**Fig-1: Percentage distribution of pretest level of premenstrual syndrome among adolescent girls (16-18yrs) in the experimental and control group.**

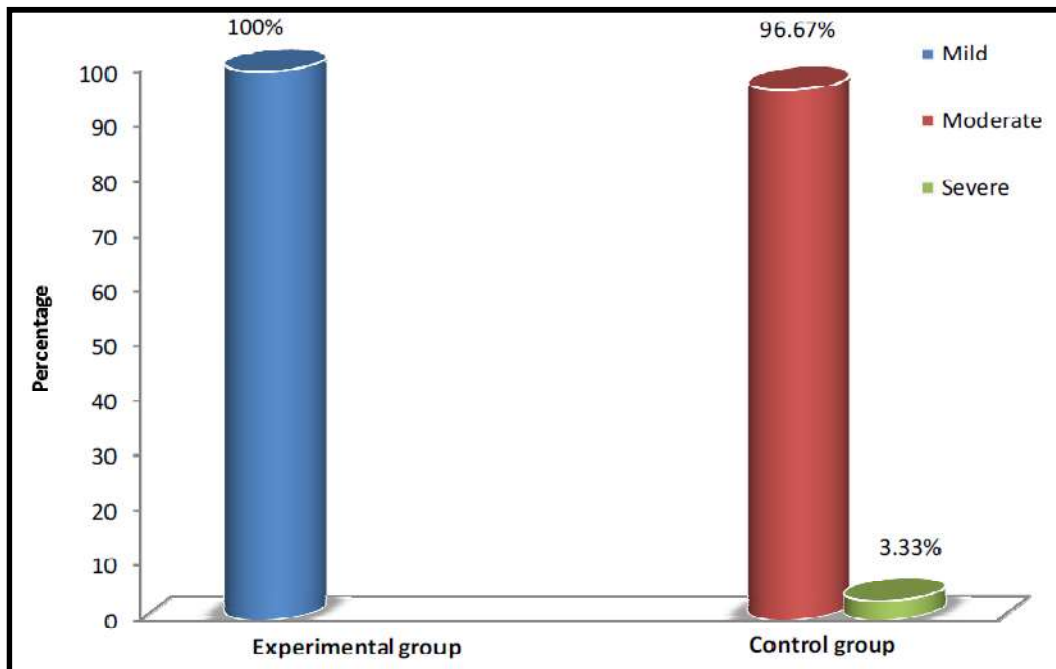
**Table -2: Distribution of post test level of premenstrual syndrome among adolescent girls (16-18 yrs) in the experimental and control group.**

(N = 30+30)

Post test level of premenstrual syndrome in different aspects	Level of PMS in experimental group					
	Mild (<33%)		Moderate (34-67%)		Severe (>67%)	
	No.	%	No.	%	No.	%
Anxiety	28	93.3	2	6.6	0	-
Craving	30	100	0	-	0	-
Depression	27	90	3	10	0	-
Hydration	30	100	0	-	0	-
Other symptoms	29	96.6	1	3.3	0	-
Overall	30	100	0	-	0	-
Post test level of premenstrual syndrome in different aspects	Level of PMS in control group					
	Mild (<33%)		Moderate (34-67%)		Severe (>67%)	
	No.	%	No.	%	No.	%
Anxiety	4	13.3	22	73.3	4	13.3
Craving	2	6.6	22	73.3	6	20
Depression	0	-	27	90	3	10
Hydration	0	-	28	93.3	2	6.6
Other symptoms	4	13.3	26	86.6	0	-
Overall	0	-	29	96.6	1	3.3

The overall post test level of PMS among adolescent girls (16-18yrs) in the experimental group shows that all girls (30,100%) had mild level of premenstrual syndrome and no one had moderate and severe level of premenstrual syndrome. Regarding control group, 29(96.67%) girls had moderate level of premenstrual syndrome, only 1 (3.33%) girl had severe level of premenstrual syndrome and no one else had mild level of pre menstrual syndrome. The above findings shows that there is a significant difference in the post test

level of PMS in experimental and control group which indicates that acupressure is effective in reducing PMS symptoms in experimental group.



**Fig 2: Percentage distribution of post test level of premenstrual syndrome among adolescent girls (16 – 18 yrs) in the experimental and control group.**

**Table-3: Determine the Effectiveness of Acupressure on Premenstrual syndrome among adolescent girls (16-18 yrs) in experimental group**

(N=30)

Level of Pre Menstrual Syndrome	Mean	S.D	Paired 't' Value	Level of significant
Pretest	42.83	5.85	t = 20.790	Highly significant
Post Test	21.47	2.06		

\*\*\*p<0.001,



The pretest mean score was 42.83 with S.D 5.85 and the post test mean score was 21.47 with S.D 2.06. The calculated 't' value of  $t = 20.790$  was statistically highly significant at  $p < 0.001$  level which clearly shows that the acupressure given to the adolescent girls (16 – 18 yrs) had significant reduction on their post test level of premenstrual syndrome among experimental group.

## Discussion

The post test level of PMS mean score was 21.47 with S.D 2.06 in the experimental group and in the control group the post test mean score was 43.47 +/- 4.82. The calculated 't' value ( $t = -22.99$ ) was highly significant ( $p < 0.001$ ) which clearly shows that acupressure given to the adolescent girls (16 – 18 yrs) in the experimental group had shown significant reduction in the post test level of premenstrual syndrome than the control group which is similar to the study conducted by Margaret (2011) on acupressure and physical stress among high school students at Karnataka. The findings revealed that acupressure was effective in reducing physical stress among students within the study group<sup>6</sup>. Hence the first hypothesis (H1) stated that there is significant difference in the post test level of PMS score among adolescent girls between experimental and control group was accepted.

The pre test mean score was 42.83 ±5.85 and the post test mean score was 21.47 ±2.06. The calculated 't' value ( $t = 20.79$ ) shows highly significant ( $p < 0.001$ ) which clearly shows that the acupressure given to the adolescent girls (16 – 18 yrs) had significant reduction on their post test level of premenstrual syndrome among experimental group. Bazarganipour F (2010) conducted a study on applying simple acupressure to the Taichong point in relieving dysmenorrhea on 194 students for 5 days before menstruation. Study found that acupressure is an effective and inexpensive way in decreasing the severity of dysmenorrhea<sup>1</sup>. Hence the second hypothesis (H2) stated that there is significant reduction in the post test level of PMS score after application of acupressure among adolescent girls in experimental group was accepted.

In control group the demographic variable like area of residence had shown statistically high significant association at  $p < 0.001$  level with the post test level of PMS and the other demographic variables are age, type of family, religion, menstruation, age of menarche, period of experiencing PMS, severity of PMS, history of illness and premedication during PMS had not shown any statistical significance. These findings were supported by Gurates et.al., (2008) who conducted a study among 350 adolescent school going girls,

between 10-18 years of age, from urban and rural school in Ambajogai, Maharashtra. In that study maximum girls of 13 years were randomly selected. Fullness in breast and abdomen, headache and irritability were the common premenstrual symptoms among them. Significantly more rural girls (28.57%) were free from premenstrual symptoms than urban girls (6.82%) ( $z=3.60$ ,  $P<0.05$ ). Average premenstrual symptoms per girl was higher in urban than in rural girls<sup>4</sup>.

### Conclusion:

The investigator concludes that the acupressure on pre menstrual syndrome among the adolescent girls (16 – 18 yrs) is highly effective. Thus it encompasses commitment by child health nurse to create awareness about acupressure and promote their personal safety.

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