

Effect of Acupressure Vs Reflexology on Pre-Menstrual Syndrome among Adolescent Girls – A Pilot Study

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Abstract

Premenstrual syndrome is the most common of gynaecologic complaints. It affects half of all female adolescents today and represents the leading cause of college/school absenteeism among that population. It was sought to assess the effectiveness of acupressure Vs reflexology on premenstrual syndrome among adolescents. Two-group pre-test and post-test true experimental design was adopted for the study. Forty adolescent girls from Government Girls Secondary School, Erode with premenstrual syndrome fulfilling the inclusion criteria were selected by simple random sampling. A pre-test was conducted by using premenstrual symptoms assessment scale. Immediately after pre-test acupressure Vs reflexology was given once a week for 6 weeks and again post-test was conducted to assess the effectiveness of treatment. Collected data was analysed by using descriptive and inferential statistics. In post-test, the mean score of the experimental group I sample was 97.3 (SD= 2.5) and the group II mean score was 70.8 (SD = 10.71) with paired 't' value of 19.2 and 31.9. This showed that the reflexology was more effective than acupressure in enhancing the practice of the sample regarding pre-menstrual syndrome. Statistically no significant association was found between the post-test scores of the sample with their demographic variables. The findings imply the need for educating adolescent girls on effective management of pre-menstrual syndrome.

Pre-menstrual syndrome (PMS) is a set of physical, emotional and behavioural symptoms that start during the week preceding menstruation and are alleviated when the menstrual flow begins. The symptoms present a cyclic and recurrent character with variability in quality and intensity (Silva et al 2006).

Its prevalence ranges from 5-20 percent from moderate to severe clinically relevant premenstrual complaints and up to 75 percent of all women of fertile age may experience symptoms of premenstrual syndrome (Eriksson, 2008). This disorder is particularly common in the younger age groups and therefore represents a significant public health problem in young girls. The most common physical symptoms are headaches, breast tenderness, swelling, abdominal bloating, heaviness, low energy, tired and weak, back and muscle pain, more sleep or stay in bed, increased / decreased appetite, and food craving. Emotional symptoms are: depressed mood, sadness, loneliness, anxiety, nervousness, mood swings, trouble with relationships, irritability, anger, impatience, difficulty concentrating, feeling out of control, cannot cope, less productive in job or home and avoiding social activity (Mitchell et al, 2005).

Individual pre-menstrual symptoms were experi-

enced by 65.7 percent of the population. The most common somatic symptom was fatigue (29.9%) and affective symptom was feeling sad/hopeless (29.6%). Prevalence of PMS was 8.75 percent (95% CI: 6.43-11.07). Multivariate analysis revealed the presence of chronic physical illness ($p=0.001$); dysmenorrhea ($p<0.0001$), and regular menstrual cycles ($p=0.006$) as correlates of PMS. Presence of PMS significantly disturbed in-school activities, relationships and daily routines ($p<0.005$) indicating a high negative influence on adolescents' daily life. Only 9.7 percent sought help from allopathic medical practitioners for their pre-menstrual symptoms and a majority did not perceive it as a condition to report. Pre-menstrual syndrome is a common condition among adolescent school girls with a high negative influence on their daily life.

Abraham (2006) listed many remedies for PMS such as chiropractic, acupuncture, homoeopathy, yoga and meditation therapy which reduce negative emotions through cognitive restructuring and enhanced problem solving skills.

Objectives

This study aimed to: (i) assess the pre-menstrual syndrome among (a) experimental group I of adolescent girls before and after acupressure, and (b) experimental group II of adolescent girls before and after reflexology; (ii) compare the effectiveness of acupressure Vs reflexology on pre-menstrual syndrome among adolescent girls on both the groups; and (iii) find out the

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association between post-test scores of pre-menstrual syndrome among experimental group I and II of adolescent girls with their selected demographic variables.

Hypotheses

H₁: There will be a significant level of pre-menstrual syndrome among experimental group I and II of adolescent girls before and after acupressure Vs reflexology.

H₂: There will be a significant effectiveness of acupressure Vs reflexology on pre-menstrual syndrome among adolescent girls in experimental group I than experimental group II.

H₃: There will be a significant association between post test scores of pre-menstrual syndrome among experimental group I and II of adolescent girls with their selected demographic variables.

Review of Literature

Related to pre-menstrual syndrome: Karout et al (2012) stated that menstrual disorders frequently affect the quality of life of adolescents and young women and can be indicators of serious underlying problems. They found that the most common menstrual disorders were irregular frequency of menstruation (80.7%), pre-menstrual syndrome (54.0%), irregular duration of menstruation (43.8%), dysmenorrhoea (38.1%), polymenorrhoea (37.5%) and oligomenorrhoea (19.3%). Dysmenorrhoea and pre-menstrual symptoms were serious enough to affect daily activities.

According to Tamilselvi (2012) the pre-menstrual syndrome is more common among adolescent girls, but the degree of pre-menstrual syndrome may vary. About 55.3 percent suffered from pre-menstrual syndrome. The major syndromes include white discharge and pains of various natures. Incidences of pre-menstrual syndromes are comparatively high in urban areas. The incidence of pre-menstrual syndrome is more common among adolescents than among urban adolescent girls.

El-Hamid et al (2013) found that pre-menstrual syndrome is a common health problem affecting females and because of its cyclic occurrence it is postulated to have different effects on quality of life. Their study revealed that the mean age $\pm$ SD of the studied sample was 31.7 ± 9 years, 84.96 percent of the studied samples were at normal age of menarche, 61.95 percent of the females obtained information about PMS from mothers, 63.72 percent of the studied samples had an effect on work. The most common reported physical symptom of PMS (79.64%) was backache while the most common reported psychiatric symptom (76.99%) was worry. The measures practiced by the studied sample to overcome symptoms of PMS were warm drinks, warm bathing, sports and activities, com-

fortable and rest period and medications. PMS had an effect on work and daily life activities of female.

Related to acupressure on premenstrual syndrome: Rekha (2012) in her study on effect of acupressure on pre-menstrual symptoms among adolescent girls at Vidyakirana Public School, Bangalore showed that the pre- and post-test values of mean percentage and standard deviation are $m_1=50.02$ $m_2=36.5$ and $SD=5.32$, 8.2 respectively. The df is 49, and the obtained "t" value (22.14) was highly significant at $p<0.001$ level. The author concluded that the acupressure was effective in reducing pre-menstrual symptoms among adolescent girls.

Related to reflexology on premenstrual syndrome: In their randomised controlled study of pre-menstrual symptoms treated with ear, hand and foot reflexology, Oeson Flocco (2012) revealed that analysis of variance for repeated measures demonstrated a significantly greater decrease in pre-menstrual symptoms for the women given true reflexology treatment than for the women in the placebo group. These clinical findings support the use of ear, hand, and foot reflexology for the treatment of PMS.

Methodology

An evaluative research approach using true experimental design (2 group pre- and post-test design) was adopted. Adolescent girls with premenstrual syndrome studying at Government Higher Secondary Schools, Erode, were covered. Simple random sampling was used. There were 40 samples, 20 each in experimental group I and group II.

Variables: Independent variable was acupressure Vs reflexology. Dependent variable was pre-menstrual syndrome among adolescent girls.

Tools used contained two sections: Section A: Demographic variables, and Section B: Premenstrual Syndrome Scale (PMSS). Based on the percentage of scores the levels of pre-menstrual syndrome were graded in four categories: "No symptoms", "Mild", "Moderate" "Severe" and "Very Severe" symptoms (Table 1).

Data collection procedure

Pre-test was conducted by using Premenstrual Syndrome Scale to assess the level of premenstrual symptoms. Implementing the acupressure in experimental group I and reflexology in experimental group II for the duration of 20 minutes once in a week for 6 weeks (7-10 days before the menstrual cycle acupressure for experimental group I and reflexology for experimental group II was implemented).

Post-test was conducted with same pre-test tool after 6 weeks.

Validity and Reliability: The content validity of the demographic variables and Pre-menstrual Syndrome Scale was validated in consultation with guide and experts. The tool was modified according to the suggestions and recommendations of the experts. Inter-rater reliability (Cronbach's Alpha) was used to find out the reliability of the Premenstrual Syndrome Scale ($r^1 = 0.97$).

Plan for data analysis: Descriptive Statistics - Percentage, Mean and Standard Deviation; Inferential Statistics : 't' test and Chi-square test

Results and Discussion

Section A: Percentage distribution of adolescent girls according to their demographic variables

Experimental group I and II shows that: (a) Highest percentage (60% and 50%) of adolescent girls were in the age group of 15-16 years (b) 40 percent and 45 percent of them were in 10th and 9th standard (c) Similar percentage (30% and 35%) of the parents were educated up to primary and secondary education (d) 65 percent and 80 percent of the parents were non-professionals (e) 45 percent and 50 percent percentage of the adolescent girls were Hindu (f) Similar percentage (45% and 50%) of them were 13-16 years of age at menarche and 24 & 28 days duration of menstrual cycle

Table 1: Scoring procedure & findings

Level of symptoms	Actual scores	Percentage of scores
No symptoms	1- 40	< 20
Mild symptoms - only slightly apparent	41 - 80	21 -40
Moderate symptoms - aware of symptom, but it doesn't affect daily activity at all	81 – 120	41-60
Severe - continuously bothered by symptoms	121 - 160	61 -80
Very severe - symptom is overwhelming and / or interferes with daily activity	161 -200	> 80

Table 2: Frequency and percentage distribution of post-test scores of pre-menstrual syndrome among adolescent girls in experimental Group I & II (N1= 20, N2 = 20)

Level of Pre-menstrual syndrome	Post-test score			
	Experimental group I		Experimental group II	
	Frequency (N ₁)	Percentage (%)	Frequency (N ₂)	Percentage (%)
No symptoms	-	-	-	-
Mild	3	15	15	75
Moderate	17	85	5	25
Severe	-	-	-	-
Very sever	-	-	-	-

(g) Highest percentage (60% and 50%) of adolescent girls were having 3-5 days menstrual flow (h) 75 percent and 90 percent of them were not having family history of PMS (i) 65 percent and 70 percent of adolescent girls were using home remedies (j) Similar percentage (45% and 45%) of them every cycle observing the premenstrual problems.

Section B: Percentage distribution of adolescent girls as per their demographic variables.

The result of post-test scores showed (Table 2) that in experimental group I, most (85%) had moderate syndrome whereas in experimental group II most (75%) had mild syndrome. It shows reflexology is more effective than acupressure.

The paired 't' test score for overall was 19.2 in experimental group I whereas in experimental group II score was 31.9, when compared to table value (2.093) it was high (Table 3). It seems that reflexology is more effective than acupressure among adolescents girls with pre-menstrual syndrome.

The unpaired 't' test total score was 13.4, when compared to table value (2.02) it was high. It depicts that reflexology is more effective than acupressure among adolescents' girls with pre-menstrual syndrome.

Conclusion

Post-test score in experimental group I and II depicts that in experimental group I most (85%) of them were having moderate symptoms whereas in experimental group II most (75%) had mild symptoms. It seems that reflexology was more effective than acupressure among adolescent girls with pre-menstrual syndrome. The overall mean percentage in experimental group I was 49 percent whereas in experimental group II it was 35 percent revealing the difference of 14 percent. The paired 't' test value in experimental group I was 19.2 whereas in experimental group II it was 31.9. Oleson, Flocco (2012) demonstrated a significantly greater decrease in pre-menstrual symptoms for the women given true reflexology treatment than for the women in the placebo group.

In our study, highly significant association was found between post-test scores of pre-menstrual syndrome among both the groups, while no significant association was found between post-test and their demographic variables of both the groups among adolescent girls.

Implications

The findings of the study have implications in Nursing service, Nursing administration and Nursing research.

Nursing service: Acupressure and reflexology can be used by the Nursing professionals who are working in hospital and clinical settings.

Table 2: Area wise comparison of mean, SD, and mean percentage of experimental group I and II post-test pre-menstrual syndrome scores (N1 = 20, N2 = 20)

S. No	Pre-menstrual symptoms	Max. scores	Post-test score						Difference in mean (%)
			Experimental group I			Experimental group II			
			Mean	SD	Mean (%)	Mean	SD	Mean (%)	
1.	Physiological	80	38.9	1.81	47	29.4	4.09	37	10
2.	Psychological	60	29.4	1.05	49	21.3	3.50	36	13
3.	Behavioural	60	28.9	1.82	48	21	3.36	35	13
Total		200	97.3	2.5	49	70.8	10.71	35	14

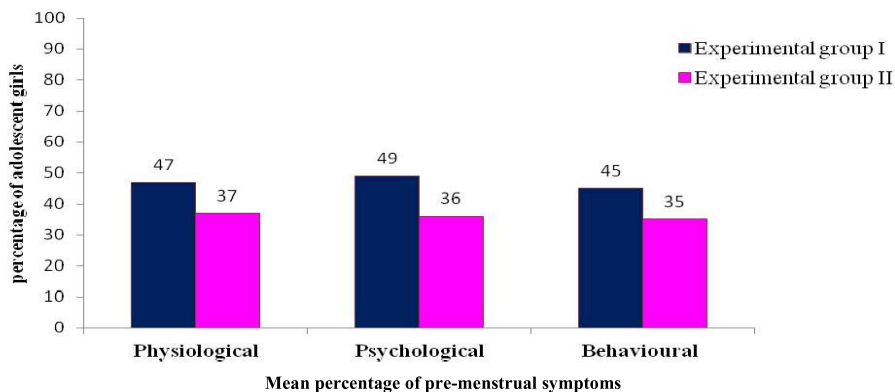


Fig 1: Post-test scores of pre-menstrual symptoms among experimental group I & II of adolescent girls

Table 3: Significance of Pre- and Post-test scores of Experimental Group I & II

Sl. No.	Premenstrual symptoms	Paired 't' value		Level of Significance
		Experimental group I	Experimental group I	
1	Physiological	18.8	30.6	p< 0.05 Significant
2	Psychological	13.4	29.9	p< 0.05 Significant
3	Behavioural	12.2	21.9	p< 0.05 Significant
Total		19.2	31.9	p< 0.05 Significant

df = 19 (n-1) Table value = 2.093 (p<0.05 Significant)

Table 4: 't' values of physiological, psychological and behavioural symptoms

S. No	Areas	Unpaired 't' value	Level of significance
1.	Physiological	10.98	p<0.05 Significant
2.	Psychological	11.71	p<0.05 Significant
3.	Behavioural	10.26	p<0.05 Significant
Total		13.4	p<0.05 Significant

df =38 Table value=2.02; significant at p<0.05

Nursing Education: Nurse educator should (a) educate the students and adolescent girls regarding significance of acupressure and reflexology in pre-menstrual syndrome; (b) encourage the Nursing personnel to practice the acupressure and reflexology on pre-menstrual syndrome in their clinical and community settings.

Nursing Administration: Nurse administrator can support the researcher to conduct the research on various reproductive health problems faced by the adolescent girls.

Nursing Research: The study may be issued for further reference. Further large scale study can be done in different settings.

Recommendation

A similar study can be undertaken (a) with a large sample size for wider generalisation, (b) among nursing personnel working in different wards.

A comparative study can be conducted among urban and rural adolescent girls; married and unmarried women.

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