

Effect of Acupressure on Dysmenorrhoea Among Nursing Students

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Abstract

Dysmenorrhoea is the common gynaecological disorder among adolescents which interferes with daily activities, including school activities. Majority of the girls feel shy to discuss menstrual problems and wish to treat the pain and symptoms by self, without consulting a doctor. This study presents the effects of acupressure at the Sanyinjiao point on dysmenorrhoea. The study was carried out on BSc Nursing students of the Yenepoya Nursing College of Mangalore in 2012 among 70 participants with dysmenorrhoea and all were rating higher than five for pain on a Numerical Rating Scale. The experimental group (n=35) received acupressure at Sanyinjiao point while the control group (n=35) rested for 20 minutes. Three instruments were used to collect pre-test and post-test data (1) Baseline data for determining dysmenorrhoea, (2) Symptoms checklist dysmenorrhoea, and (3) Numerical Rating Scale. Data were analysed using chi-square, t test, and ANOVA. Result showed that there was a significant difference with respect to pain before and after the use of acupressure. The pre-test mean of the experimental group was 7.09 and the post-test I, post-test II, post-test III, showed an apparent decrease in the mean dysmenorrhoea score which was 4.80, 4.20, and 3.54, respectively. The ANOVA computed within the group showed the F value as 115.125, which was higher than the table value (2.70) at df of 3, 102. This shows that the post-test dysmenorrhoea score of the experimental group was significantly lower than the pre-test dysmenorrhoea score. Acupressure was effective in lowering the dysmenorrhoea.

Dysmenorrhoea is one of the most common gynaecologic complaints in young women who present to clinicians. Most teens experience dysmenorrhoea, which occurs in 60-93 percent of adolescents. About 15 percent of adolescents describe severe menstrual symptoms. More than 50 percent of post-pubescent menstruating women are affected by dysmenorrhoea, with 10-12 percent having severe dysmenorrhoea with incapacitation for 1-3 days each month. In the US, about 600 million working hours are lost annually because of incapacitating dysmenorrhoea if adequate relief is not provided. Women who continue to work or attend classes have been shown to have lower work output or scores during dysmenorrhoea.

Acupressure is a technique of giving pressure on a specific point which has definite effect on the particular organs. When pressure is applied at this point, the functioning of the corresponding internal organs could be rectified and regulated. This simple technique helps to maintain good health in vitality.

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An experimental study was conducted to assess the effects of acupressure at the Sanyinjiao point, on symptoms of primary dysmenorrhoea. The experimental group (n=35) received acupressure at SP6 for 20 minutes, while the control group (n=35) underwent rest for 20 minutes without receiving acupressure. Fifty participants (30 experimental, 20 control) completed the 4-6 follow-up sessions. Data were analysed using chi-square 't' test and two-way ANOVA. The study showed that acupressure at SP6 point significantly reduced menstrual pain, but not anxiety. Thirty-one (87%) of the 35 experimental participants reported that acupressure was helpful, and 33 (94%) were satisfied with acupressure in terms of pain relief and psychological support during dysmenorrhoea. The findings suggest that acupressure at Sanyinjiao can be effective, cost-free intervention for reducing pain, and anxiety during dysmenorrhoea, and recommend it for self-care of primary dysmenorrhoea.

Materials and Methods

Research design: Quasi-experimental pre-test post-test control group design was used (Table 1).

The study was conducted among BSc nursing students of the Yenepoya University, Mangalore who

Table 1: Research design of the study

	Pre-test	Treatment	Post-test
E	O ₁	X	O ₂ O ₃ O ₄
C	O ₁	—	O ₂ O ₃ O ₄

were experiencing dysmenorrhoea.

The number of students with history of dysmenorrhoea in the first year was three, second year 24, third year 14 students, and in the fourth year

Table 2: Sampling plan

Number of students in the class		Students with dysmenorrhoea	
		*Available	Selected
I year	60	32	3
II year	86	29	24
III year	43	19	14
IV year	92	40	29

*Available during the data collection period

Figure 1: Description of the procedure for acupressure

Steps	Acupressure procedure
Steps I	The subject was made to lie down comfortably with pillows under her head
Steps II	The location is the point that lies four finger width (women's) above the bone at the border of tibia. Apply firm deep strokes of pressure in upward direction.
Steps III	Acupressure was given to the alternative legs at the Sanyinjiao (SP6) acupoints. Two complete 5-minute cycle of pressure were performed on each leg for a total of 20 minutes. For each pressure cycle on each side, SP6 was pressed with a thumb for 6 seconds and released for 2 seconds. This was continued for 5 minutes on each leg, and repeated four times to bring the total treatment time to 20 minutes.

29 students (Table 2).

Sample size: The sample consisted of 70 nursing students with dysmenorrhoea 35 each in experimental group and control groups.

Purposive sampling technique was used. The

Table 3: Representing the procedure of data collection

Group	Instruments	Pre-test	Intervention	Post-test
Experimental group (n=35)	Dysmenorrhoea Assessment Tool Part I: Baseline data for determining dysmenorrhoea	Dysmenorrhoea assessment tool Symptoms checklist of dysmenorrhoea	Acupressure at SP6 point	Post I: The effect was measured immediately, Post II:
Control group (n=35)	Part II: Symptom checklist dysmenorrhoea Part III: Numerical Rating Scale	Numerical Rating Scale	No intervention (Rest)	One hour and Post III: Three hours by Numerical Rating Scale

data collection tool used in this study was the 3-part Dysmenorrhoea Assessment Tool - Part I: Baseline data for determining dysmenorrhoea – 18 items; Part II: Symptoms checklist dysmenorrhoea – 10 items; Part III: Numerical Rating Scale (NRS) for assessing dysmenorrhoea in terms of pain score

Method of data collection: The data collection was done from 2 to 17 December 2011 at Yenepoya Nursing College and Yenepoya Zulekha girl's hostel, in Yenepoya University Campus, Mangalore. The subjects were assigned to experimental group (n=35) and control group (n=35). The participants who were scored higher than three for pain on NRS were selected. The total number of sample was 70. The study was conducted first for the control group (n=35). After completing the pre-test and post-test of control group, the study was conducted to the experimental group.

All the subjects had a rating higher than five and no one lower than three. The pre-test was given on day 1 of menstruation by administering the Dysmenorrhoea Assessment Tool and Numerical Rating Scale. Post-test I was conducted immediately after acupressure, post-test II 1 hour after acupressure and post-test III, 3 hours after acupressure for the experimental group, whereas for the control group Post-test I was conducted immediately after rest, post-test II, 1 hour after rest, and post-test III, 3 hours after rest. The data collection procedure is represented schematically in Fig 1 and Table 3.

Results

The demographic and menstrual data were summarised with descriptive statistics such as frequencies, percentages, and means (Tables 4-11). ANOVA was used to test the interaction of group (experimental vs control) and time (pre-test vs post-test). The accepted level of significance for all analyses was $p < 0.05$. Data analyses were carried out using the Statistical Software Package for the Social Science (SPSS).

The symptoms experienced during menstruation were analysed in terms of

Table 4: Frequency and percentage description and ranking of symptoms during dysmenorrhoea

Sl. No.	Symptoms	Experimental (n=35)		Rank	Control (n=35)		Rank
		f	%		f	%	
1.	Abdominal pain	35	100.0	1.0	35	100	1.0
2.	Cramps	10	28.6	8.0	17	48.6	5.0
3.	Diarrhoea	14	40.0	6.0	6	17.1	8.0
4.	Constipation	2	5.7	9.5	2	5.7	1.0
5.	Headache	17	46.6	5.0	11	31.4	6.0
6.	Fainting	14	40.0	6.0	9	25.7	7.0
7.	Disorientation	2	5.7	9.5	3	8.6	9.0
8.	Irritability	23	65.7	3.0	27	77.1	2.5
9.	Backache	28	80.0	2.0	27	77.1	2.5
10.	Lack of concentration	19	54.3	4.0	18	51.4	4.0

Table 5: Comparison of the levels of the symptoms in experimental and control groups

Range of symptoms scores	Level of symptoms	Experimental group (n=35)		Control group (n=35)	
		F	%	f	%
0-3	Mild	10	28.6	9	25.7
4-7	Moderate	19	54.3	23	65.7
8-10	Severe	6	17.1	3	8.6

Maximum score=10

Table 6: Frequency and percentage distribution of nursing students on pre-test level of pain in the experimental and control groups

Range of scores	Level of pain	Experimental group (n=35)		Control group (n=35)	
		f	%	f	%
0-3	Mild	-	-	-	-
4-7	Moderate	1	2.9	-	-
8-10	Severe	34	97.1	35	100.0

Maximum possible score=10

Table 7: Mean, standard deviation, mean percentage of pre-test and post-test in experimental and control group

Pain level at	Experimental group (n=35)			Control group (n=35)		
	Mean	SD	Mean %	Mean	SD	Mean %
Pre-test	7.09	1.17	70.86	6.69	1.05	66.86
Post-test I	4.80	0.96	48.0	6.83	1.29	68.29
Post-test II	4.20	1.15	42.0	6.31	1.36	63.14
Post-test III	3.54	1.40	35.4	5.91	1.65	59.14

Maximum possible score=10

Table 8: The ANOVA showing the effectiveness of acupressure in experimental group (n=35)

Dysmenorrhoea score (pain)	Mean	Standard deviation	ANOVA F value	df
Pre-test	7.09	1.17	115.125	3, 102
Post-test I	4.80	0.96		
Post-test II	4.20	1.15		
Post-test III	3.54	1.40		

Table value of ANOVA: 2.700, p<0.05 * Significant

frequency and percentage (Table 4).

Conclusions

Acupressure is an effective and safe form of therapy for adolescents with dysmenorrhoea. Application of single acupoint pressure at Sanyinjiao (SP6) is cost-free and easy to learn. It can be integrated into clinical practice and health education to enhance the quality of life for adolescents with dysmenorrhoea. In this study, the investigator delivered acupressure treatment to lower dysmenorrhoea.

Table 9: Mean difference, standard deviation of difference, 't' value of the pre-test and post-test I, post-test II, and post-test III of the experimental group (n=35)

Test	Paired differences		
	Mean diff.	SE diff.	't' value
Pre-test – post-test-I	2.28	1.10	12.293*
Pre-test – post-test-II	2.88	1.25	13.604*
Pre-test – post-test-III	3.54	1.50	13.950*

Table value: $t_{34}=1.690$, p<0.05 * Significant

Table 10: The mean, standard deviation, mean difference and 't' value of the pre-test of experimental and the control groups (n=35+35)

Dysmenorrhoea score value (pain)	Mean	Standard deviation	Mean difference	't' value
Experimental	7.09	1.173	0.40	1.503
Control	6.69	1.051		

Table value: $t_{34}=2.000$, p<0.05

Table 11: Mean difference, standard deviation, and 't' value of the pre-test and post-test of the experimental and control groups (n=35+35)

Pre-test/post-test	Group	Mean	SD	Mean diff.	SE diff.	't' value
Pre-test–Post-test I	Experimental	2.28	1.10	2.42	0.21	11.253*
	Control	-0.14	0.64			
Pre-test–Post-test II	Experimental	2.88	1.25	2.51	0.25	9.714*
	Control	0.37	0.87			
Pre-test–Post-test III	Experimental	3.54	1.50	2.77	0.32	8.488*
	Control	0.77	1.21			

Table value: $t_{68}=1.670$, p<0.05 * Significant

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