Research Paper | **Medical Science**

A quasi-experimental study to assess the effectiveness of acupressure on pain perception and menstrual distress syndrome among the adolescent girls with primary dysmenorrhoea at selected schools, Ariyalur district, Tamil nadu, south India

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ABSTRACT

The aim of the study was to determine the effectiveness of acupressure on pain perception and menstrual distress syndrome among adolescent girls with dysmenorrhoea. The study was conducted using Quantitative approach, applying a quasi-experimental pre-test & post-test research design. Acupressure was independent variable, Pain perception and menstrual distress syndrome (MSD) were assessed as dependent variables. The Study was conducted in selected 6 schools in Ariyalur district. Schools were allocated on basis of random allocation i.e. 3 schools for study group and 3 for control group to avoid contamination of samples. Purposive sampling technique was used to select samples of 207. The tools used were (i) Screening tool for dysmenorrhoea, (ii) Questionnaire for demographic variable, Personal variable and Clinical variable,(iii) Short form Mc Gill pain questionnaire (SF-MPQ) (Melzack 1975) and (iv) Moos menstrual distress questionnaire (MOOS 1968). The data was analyzed using SPSS 22, both descriptive statistics and inferential statistics. The results revealed that the acupressure is effective with regard to level of pain perception and menstrual distress syndrome which are statistically significant at p<0.001 level among adolescent girls with dysmenorrhoea in study group. The positive outcome of the study findings indicate that the acupressure is an effective non-pharmacological and cost effective strategy in reducing pain perception and MSD in adolescent girls with dysmenorrhoea.

KEYWORDS : Acupressure, menstrual distress syndrome, dysmenorrhoea, adolescent girls, non-pharmacological management

Introduction

Adolescence is a time of moving from the immaturity of childhood into the mature adulthood. Period of life from puberty to adulthood characterized by marked physiological changes, development of sexual feelings, efforts towards the construction of identity and a progression from concrete to abstract though.

Menstruation is a normal physiological phenomenon for women indicating her capability for procreation. However this normal phenomenon is not an easy one. It is often associated with some degree of sufferings and embarrassment. The prevalence of menstrual disorders has been recorded as high as 87 %. Among the menstrual disorders, dysmenorrhoea is the most common one being reported in half of the women of child bearing age and of these 10% experience incapacitating pain for 1-3 days, every month. In 60-90% of adolescent girls in India, dysmenorrhoea is a major cause for absenteeism from school or restriction of activities of daily living or social interaction. The prevalence of dysmenorrhoea was 85.15%. Most of the girls (63.95%) had dysmenorrhoea of grade 3–4 according to visual analogue scale and 70.93% girls did not take pain medication. Primary dysmenorrhoea is inexorably common. Women suffer from cramping pain in the lower abdomen that starts with menstruation and lasts for 24-72 h. Up to 90% of adolescent girls and more than 50% of menstruating women worldwide report suffering from it. Ten to 20% of PDM women describe their suffering as severe and distressing.

The problem

A quasi-experimental study to assess the effectiveness of acupressure on pain perception and menstrual distress syndrome among the adolescent girls with primary dysmenorrhoea at selected schools, Ariyalur district, Tamil nadu, south India.

Objectives

- To determine the effectiveness of acupressure on pain perception and menstrual distress syndrome among adolescent girls with dysmenorrhoea in study group and control group.
- To associate the post-test level of acupressure on pain perception and menstrual distress syndrome among adolescent girls with dysmenorrhoea with their demographical, personal and clinical variables in study group.

Materials and Methods

The study was conducted using Quantitative approach, applying a quasi-experimental pre-test & post-test research design. Acupressure was independent variable, Pain perception and menstrual distress syndrome (MSD) were assessed as dependent variables**.** The Study was conducted in selected 6 schools in Ariyalur district.

Schools were allocated on basis of random allocation i.e. 3 schools for study group and 3 for control group to avoid contamination of samples. Purposive sampling technique was used to select samples of 207. The tools used were (i) Screening tool for dysmenorrhoea, (ii) Questionnaire for demographic variable, Personal variable and Clinical variable,(iii) Short form Mc Gill pain questionnaire (SF-MPQ) (Melzack 1975) and (iv) Moos menstrual distress questionnaire (MOOS 1968). The data was analyzed using SPSS 22, both descriptive statistics and inferential statistics.

Results and Discussion

The study findings were analysed using SPSS version 22. The data pertaining to demographic variables considering the age in year the majority of adolescent girls 22(21%) belongs to 17 years in study group and 22(21.6%) belongs to 17 years in control group; Regarding the educational status, 40(38.1%) belongs to higher secondary in study group and in control group 45(44.1%) belongs to higher secondary; Considering the type of family,63(60%) belongs to nuclear family in both study and control group; Regarding the religion, in study group 78(74.3%) belongs to Hindu religion in both study and control group; Considering the diet, in study group most of the adolescent girls 95(90.5%) were non-vegetarian diet in both study and control group; Regarding the BMI, in study group most of the adolescent girls 48(45.75%) had to normal weight In control group most of the adolescent girls 41(40.2%) had normal weight; Considering the age at menarche in years, in study group most of the adolescent girls 42(40%) attained menarche at 11years.In control group most of the adolescent girls 37(36.3%) attained menarche at 11years; Considering no of years after attainment of Menarche, in study group most of the adolescent girls 27(25.7%) attained menarche 1&2years ago, in control group most of the adolescent girls 26(25.5%) attained menarche 1 &2 years ago; Regarding frequency of menstrual cycle, in study group most of the adolescent girls 89(84.8%) belongs to more than 35 days, in control group most of the adolescent girls 83(81.4%) belongs to more

than 35 days; Regarding utilization of pads, in study group most of the adolescent girls 93(88.6%) use 4 pads per day, in control group most of the adolescent girls 90(88.2%) use 4 pads per day.

Table 1 Frequency and percentage distribution of pre-test level of pain perception and menstrual distress syndrome (MSD) among adolescent girls in study groupand control group

N = 207

Test	Variables	Level	Group				
			Study groupn=105		Control groupn=102		
			n	%	n	%
Pre-test	Pain perception	Mild	-	-	-	-
		Moderate	27	25.71	23	22.54
		Severe	78	74.28	79	77.45
	Menstrual distress syndrome	Mild	12	11.42	14	13.72
		Moderate	78	74.28	76	74.51
		Severe	15	14.28	12	11.76

The table 1 describes that frequency and percentagedistribution of pre-test level of pain perception and menstrual distress syndrome (MSD) among adolescent girls in study groupand control group. The result reveals that majority 78(74.28%) adolescent girls had severe pain and 27(25.71%) had moderate pain in study group. 79(77.45%) adolescent girls had severe pain and 23(22.54%) had moderate pain in control group. Regarding menstrual distress syndrome (MSD) majority 78(74.28%) adolescent girls had moderate MSD, 15(14.28%) had severe MSD and 12(11.42%) had Mild MSD in study group. In control group 76(74.51%) adolescent girls had moderate MSD, 12(11.76%) had severe MSD and 14(13.72%) had Mild MSD.

Table 2 Comparisonof pre-test level of painperception and menstrual distress syndrome (MSD)among adolescent girls betweenstudy groupand control group

N = 207

Test	Variables	Group				Unpaired t-test t-value
		Study group n=105		Control groupn=102		
		Mean	SD	Mean	SD	
Pre-test	Pain perception	39.91	4.79	39.8	4.85	t=0.162
	Menstrual distress syndrome	25.10	3.95	24.91	4.28	t=0 p=1

Thetable 2 reveals comparison of pre-test level of painperception and menstrual distress syndrome (MSD)among adolescent girls in study groupand control group**.** The analysis indicates that thepre-testlevelof painperception and menstrual distress syndrome (MSD) among adolescent girls in study groupand control group were not statistically significant.

Table 3Frequency and percentage distribution of post-test level of pain perception and menstrual distress syndrome (MSD) among adolescent girls in study groupand control group

N = 207

Group	Level	Pain perception						MSD	
		Post-test 1		Post-test 2		Post-test 3		Post test	
		n	%	n	%	n	%	n	%
Study groupn=105	Mild	14	13.33	23	21.9	88	83.81	57	55.88
	Moderate	37	35.23	58	58.23	17	16.19	46	45.09
	Severe	54	51.42	24	22.85	2	1.9	2	1.96
Control groupn=102	Mild	2	1.96	7	6.66	14	13.7	19	18.62
	Moderate	27	257	32	31.37	37	36.27	75	73.52
	Severe	73	69.52	63	61.76	51	50	8	7.84

The table 3 shows the results of frequency and percentage distribution of post-test level of pain perception and menstrual distress syndrome (MSD) among adolescent girls in study groupand control group.The analysis reveals that the level pain perception in post-test-1 majority 54(51.42%) adolescent girls had reported severe pain, 37(35.23%) had moderate pain and 14(13.33%) had mild

pain in study group. In control group 73(69.5%) had severe pain, 27(25.7%) had moderate pain and 2(1.96%) had mild pain. Regarding the level pain perception in post-test-2 majority 58(58.23%) adolescent girls had reported moderate pain, 24(22.85%) had severe pain and 23(21.9%) had mild pain in study group. In control group majority 63(61.76%) had severe pain, 32(31.37%) had moderate pain and 7(6.66%) had mild pain.Regarding the level pain perception in post-test-3 majority 88 (83.81%) adolescent girls had reported mild pain, 17(16.19%) had moderate and 2(1.9%) had severe pain in study group.

In control group majority 51(50%) had severe pain, 37(36.27%) had moderate pain and 14(13.7%) had mild pain.Regarding MSD majority 57 (55.88%) adolescent girls had reported mild MSD, 46(45.09%) had moderate MSD and 2(1.96%) had severe MSD in study group. In control group majority 75(73.52%) had moderate MSD, 19(18.62%) had mild MSD and 8(7.84%) had severe MSD.

Table 4 Comparisonof pre-test and post-test 3 level of painperception and menstrual distress syndrome (MSD) among adolescent girls in study group N = 105

Variables Mean		Study Group		Paired t test t-value
			SD	
Pain perception	Pre-test	39.91	4.79	t=57.9 p<0.001***
	Post-test 3	8.71	2.74	
MSD	Pre-test	25.10	3.95	t=1.655 p<0.001***
	Post-test	15.95	4.06	
*** very highsignificanceat P≤0.001				

Thetable 4showsthatComparisonof pre-test and post-test 3 level of painperception and menstrual distress syndrome (MSD)among adolescent girls in study group. The results indicate that in the study group the level of painperception was statistically significant at t=57.9 p<0.001 level and menstrual distress syndrome (MSD) was statistically significant at t=1.655 p<0.001 level.

Table 5 Comparison of pre-test and post-test 3level of painperception and menstrual distress syndrome (MSD) among adolescent girls in control group N=102

Variables Mean		Control Group		Paired t-test
			SD	
Pain perception	Pre-test	39.8	4.85	t=0.1 p=62
	Post-test 3	38.55	4.57	
MSD	Pre-test	24.91	4.28	t=0 p=1
	Post-test	23.38	4.58	

Thetable 5showsthatComparisonof pre-test and post-test 3 level of painperception and menstrual distress syndrome (MSD)in adolescent girls in control group. The results indicate that in the control group the level of painperception and menstrual distress syndrome (MSD) among adolescent girls with dysmenorrhoea were not statistically significant.

Table 6 Comparison of pre-test and post-test 3level of painperception and menstrual distress syndrome (MSD) among adolescent girls between study group and control group N = 207

Variables		Group				Unpaired t-Test
		Study group n=105		Control groupn=102		
		Mean	SD	Mean	SD	
Pain perception	Pre-test	39.91	4.79	39.8	4.85	t=0.162
	Post-test 3	8.71	2.74	38.55	4.57	t=56.98 p<0.001***
MSD	Pre-test	25.10	3.95	24.91	4.28	t=0 p=1
	Post-test	15.95	4.06	3.38	4.58	t=12.35 p<0.001***
*** very highsignificanceat P≤0.001						

Thetable 6 showsthatComparison of pre-test and post-test 3level of painperception and menstrual distress syndrome (MSD)among adolescent girls between study group and control group. The results

revealed that the acupressure is effective with regard to level of pain-perception which is statistically significant at t=56.98 (p<0.001) and menstrual distress syndrome (MSD) statistically significant at t=12.35 (p<0.001) among adolescent girls with dysmenorrhoea in study group. In the control group level of painperception and menstrual distress syndrome (MSD) among adolescent girls with dysmenorrhoea were not significant.

Table 7: Associationofpost-testlevelofacupressure on pain perception amongadolescentgirlswiththeirpersonal and clinicalvariablesin study group   n=105

Demographic variables Mild		Pain level post-test-3			Chi-square test
		Moderate	Severe		
Diet	Vegetarian	0	8	2	χ^2=8.29 df=2 p=0.016**
	Non vegetarian	5	88	2	
BMI	Underweight	0	10	3	χ^2=20.23 df=6 p=0.003**
	Normal weight	2	45	1	
	Overweight	3	20	0	
	Obese	0	21	0	
No of years after attainment of Menarche	1	2	23	2	χ^2=22.53 df=10 p=0.013**
	2	1	26	0	
	3	1	23	0	
	4	1	19	0	
	5	0	3	2	
	More than 5	0	2	0	
* significant atP≤0.05 ** highly significant atP≤0.01					

Thetable 7showsthat the associationofpost-testlevelofacupressure on pain perception amongadolescentgirlswiththeirpersonal and clinicalvariablesin study group. Theresultsrevealedthattherewasasignificantassociationofpost-testlevel of acupressure on pain perception withtheirdiet significant atp<0.05 level, BMI significant at p<0.01 level and no of years after attainment of Menarchep<0.05 levelvariables amongadolescentgirlsin studygroup.

Conclusion

The results revealed that the acupressure is effective with regard to level of painperception and menstrual distress syndrome which are statistically significant at p<0.001 level among adolescent girls with dysmenorrhoea in study group. Theresultsrevealedthattherewasa statistically significantassociationofpost-testlevel of acupressure on pain perception withtheirdiet and no of years after attainment of Menarche atp<0.05, BMI significant at p<0.01 level whereas the other variables were not associated

amongadolescentgirlsin studygroup. The positive outcome of the study findings indicate that the acupressure is an effective non-pharmacological and cost effective strategy in reducing pain perception and MSD in adolescent girls with dysmenorrhoea. Hence the researcher concluded that, nursing curriculum should include acupressure as non-pharmacological and cost effective strategy in reducing pain perception and MSD in adolescent girls with dysmenorrhoea.

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