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A Study to Evaluate the Effectiveness of Acupressure on Dysmenorrhea among Nursing Students at Shri Vinoba Bhave College of Nursing, Silvassa, Dadra and Nagar Haveli

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ABSTRACT

INTRODUCTION

Menstruation is the normal process that occurs in all healthy adult. Menstrual pain or dysmenorrhea is the pain in the lower abdomen before or during menstruation. India has one of the fastest growing youth populations in the world, with an estimated 190 million adolescents. Girls below 19 years of age comprising 21% of India's total population. In India 67.2% adolescent girls suffer from dysmenorrhea and 60% of them have disrupted daily routines.The incidence of menstrual pain to women in the world is relatively high on the average of more than 50% in every country.Acupressure is an ancient healing art that uses fingers to press key points on the surface of the skin to stimulate body's natural self-curative abilities. Acupressure release tension, increases circulation, reduces pain, and develops vibrant health, with a view to this; the study was conducted to assess the effectiveness of acupressure on dysmenorrhea among nursing student at Shri Vinoba Bhave College of Nursing, Silvassa.

AIM

Aim of the study is to evaluate the effectiveness of acupressure on reduction of pain during menstruation among nursing students at Shri Vinoba Bhave College of Nursing, Silvassa, Dadra and Nagar Haveli.

METHODOLOGY

Quasi experimental, time series non-equivalent control group design with Non probability purposive sampling technique was used to select 60 nursing students, 30 experimental and 30 control group. Dysmenorrhea is assessed by WaLIDD scale. Tool was used for data collection were Numerical pain intensity scale, socio-demographic variable, baseline clinical data. Pretest was done before intervention in experimental group and control group. Acupressure therapy was given to experimental group and pain was assessed after 30 min, 60 min, and 120 min in both groups.

RESULT

Result shown that the mean score (8.10±0.84, 6.88±0.68, 6.49±0.69, 5.82±0.65) of experimental group is apparently lower than the mean score (8±0.83, 4.78±0.52, 3.83±0.47, 3.06±0.49) of control group except for the mean pretest score. The level of pain score status between the different time intervals pre and post observations in experimental group shows that the obtained F Value 207.2968(df=9) and the p value was 0.0001. the p value is <0.05 level of significance so it shows that statistical significance was very high in the experimental group respectively, compare than control group, hence research hypothesis (H1) is

accepted and inferred that acupressure therapy is very effective in reducing the pain during menstruation and providing comfort.

CONCLUSION

Study proved that SP6 acupressure can be used as an effective intervention to decrease menstrual pain. Acupressure is a very effective means of decreasing dysmenorrhea. It can be assumed that applying acupressure with the same intensity for a shorter time is effective in reducing menstrual pain.

KEYWORDS: Acupressure, dysmenorrhea, complimentary and alternative therapy.

INTRODUTION

Menstruation is the normal process that occurs in all healthy adult girls. Dysmenorrhea is derived from three words 'dys' 'men' and 'Rhein'. 'Dys' mean difficulty/ painful/ abnormal. 'men' means month and 'Rhein' means to flow. The term dysmenorrhea originates from Greek and can be translated as "abnormal monthly flow:". Menstrual pain or dysmenorrhea is the pain in the lower abdomen before or during menstruation. The pain sometimes radiates to the lower back or thigh area and can range from mild to severe.

According to data from the World Health Organization (WHO) in 2017, data on the incidence of dysmenorrhea was found at 1,769,425 people (90%) of women who experienced severe dysmenorrhea, 10-16%. The incidence of dysmenorrhea in the world is very large, on average almost more than 50% of women experience it.

According to the studies from India, 70.2% of women experience dysmenorrhea. Most patient experienced pain for one to two days during their period. Pain persisted for 1-2 days for 23.2% of the dysmenorrhea girls.

A national survey conducted among adolescent girls showed that 40% of the students frequently missed their school and college because of severe menstrual cramps. Dysmenorrhea is responsible for significant absenteeism from work and it is the most common reason for school absence among adolescent's girls.

Acupressure is a natural science, philosophy and a rational method of therapy based on an inbuilt mechanism provided in the human body by the nature (Tao). Treatment is given by acupressure in human body are called acupoints or shu-xue-xue points.

Acupressure widely used in China for more than 2000 years, is one of the oldest known medical therapies. The philosophy of this treatment is based on the self-repair of the human body.

Acupressure is an ancient healing art that uses fingers to press key points on the surface of the skin to stimulate body's natural self-curative abilities. When these points are pressed, they release muscular tension and promote the circulation of blood and body's life force to aid healing. Acupressure releases tension, increases circulation, reduces pain, and develops vibrant health.[14] Hormonal changes in the body during menstruation can cause severe pain and increased menstrual blood flow. To ease these 3 symptoms, acupressure is applied on the specific points to have a strong influence on blood flow and help to stop the pain. Shu means move, transfer, transmit, transport or induced the bio- energy (Qi) and the body fluids (Xue) and it includes supplying bio-energy at the location where these are deficient from the location where these are in excess in the human body thereby balancing the energy and fluids.

Acupoint Sanyinjiao (SP6) was selected for the study because it is the acupoint of choice in gynaecology and easy for girls to locate and apply pressure to without medical assistance.

The spleen 6 point is the junction point of the liver, spleen, and kidney meridians and is located above the ankle, on the backside of the shinbone (lower tibia). It is about the distance of four finger widths above the inner ankle bone and this point is considered as a selective point in treating women's diseases. Acupressure on this point was used to reduce many disorders, including gynaecological conditions.
Nursing demands academic excellence and clinical expertise. To attain this, students have to be regular in both their clinical and theory classes. Due to dysmenorrhea, there was increased the absenteeism in clinical and theory classes. And investigator have some knowledge regarding acupressure.

STATEMENT OF THE STUDY

"A Study to evaluate the effectiveness of acupressure on dysmenorrhea among nursing Students at Shri Vinoba Bhave College of Nursing,Silvassa,Dadra and Nagar Haveli."

OBJECTIVES OF THE STUDY

- To assess the level of pain during menstruation among nursing students.
- To determine the effectiveness of acupressure on reduction of pain during menstruation among nursing students.
- To find out the association between level of pain score with their selected socio-demographic variables and selected baseline clinical data.

HYPOTHESES:

- H1: There is a significant difference in level of pain during menstruation among nursing students between experimental and control group 0.05 level of significance.
- H2: There is a significant association between level of pain score with their selected demographic variables and selected baseline clinical data0.05 level of significance.

OPERATIONAL DEFINITION

- **Acupressure:** Applying pressure to specific points along certain energy pathways of the body called meridians. A form of treatment based on the theories of Chinese medicine. In this study application of pressure in the SP6 situated in the midpoint four fingers above the tip of medial malleolus bone for 5 minutes on each leg in four cycles for a total period of twenty minutes for first three days of menstruation in which for each pressure cycle, on each side pressure was applied for six seconds and released for two seconds during application of pressure among nursing students.
- **Dysmenorrhea:** In this study dysmenorrhea refers to the subjective experience of moderate to severe pain in the lower abdomen during menstruation which may sometimes radiates to the lower back or thigh which was assessed by Numerical pain rating scale and level of dysmenorrhea was assessed by WaLIDD scale.
- **Effectiveness:** In this study effectiveness refers to the extent to which acupressure has achieved the effects in reducing dysmenorrhea as evidence by post test score. It is observed by Numerical pain rating scale.
- **Nursing students:** In this study nursing students refers to students who are studying at Shri Vinoba Bhave College of Nursing, Silvassa and staying in hostel.

ASSUMPTION

The study assumes that:

1. The level of dysmenorrhea is different in each nursing student.
2. Acupressure reduces dysmenorrhea.
3. The student may be intended to received acupressure and will be ready to use it as a remedy.

RESEARCH METHODOLOGY

Research Approach: Quantitative Research Approach

Research Design: Quasi Experimental, Time Series Non-Equivalent Control Group Design

Variables:

- **Independent variable:** Acupressure therapy
- **Dependent variable:** Dysmenorrhea
- **Demographic variables:** age in years, dietary pattern, course of studying, marital status, previous knowledge, source of information.

Research Setting: Shri Vinoba Bhave College of Nursing, Silvassa, Nursing Hostel, Dadra and Nagar Haveli

Population And Sample:

Population: Nursing students who are having moderate and severe dysmenorrhea

Sample: 60 (30 for control group and 30 for experimental group) nursing students who are having moderate and severe dysmenorrhea

Sampling Technique: Non-probability purposive sampling technique.

Inclusion criteria:

In this study inclusion criteria includes;

a. Students who have moderate and severe dysmenorrhea which is assessed by WaLIDD scale.
b. Students who are studying B.Sc. and M.Sc. Nursing programme.
c. Students who are willing to participate in the study.
d. Students who are staying in hostel.
e. Students who are available at the time of data collection.

Exclusion criteria:

In this study exclusion criteria includes;

a. Students who are dependent on treatment for the management of dysmenorrhea.
b. Students who have previous exposure of acupressure.
c. Students who undergone with alternative and complementary therapy for dysmenorrhea.
d. Students who are taking home remedies for dysmenorrhea.
e. Students who are having gynaecological disorder like PCOS, pelvic infection, endometriosis, ovarian cyst, uterine myoma, adhesions in fallopian tube.

DESCRIPTION OF TOOL:

Section I: Socio- Demographic Variables

It consisted of 6 items for obtaining information regarding the socio demographic variables such as Age in years, Dietary pattern, Course of studying, Marital status, Previous knowledge, Source of information.

SECTION II: Baseline clinical data

The tool consists of 11 items. It includes Age of menarche, Days of menstrual cycle, Duration of menstrual flow, Pattern of menstruation cycle, Number of pads required on 1st day of menstruation, Number of pads required on 2nd day of menstruation, Number of pads required on 3rd day of menstruation, Time of starting pain before menstruation, most painful day of menstruation, Duration of pain, do you experience any other associated symptoms during menstruation.

SECTION III: Numerical Pain Intensity scale

This includes;

Researcher will ask the students to rate her intensity of pain between 0-10 before and after the treatment. This numerical pain scale consists of 5 items.

Pain intensity interpretation is

0: No pain

1-3: Tolerable and pain does not prevent any activities (Mild pain)

4-6: Tolerable and pain prevent some activities (Moderate pain)

7-9: Intolerable pain prevent the activities of reading and writing(Severe pain)

10: Intolerable pain prevent the verbal communication(Worst possible pain).

SECTION IV:WaLIDD SCALE

It includes;

Researcher will ask the students to rate according to the working ability, location, intensity of pain, days of pain between 0-12. The WaLIDD scale consist of 4 items

Dysmenorrhea interpretation is Score;

0: without dysmenorrhea

1-4: mild dysmenorrhea

5-7: moderate dysmenorrhea

8-12: severe dysmenorrhea

RESULTS

DATA ANALYSIS AND INTERPRETATION

SECTION 1: FREQUENCY AND PERCENTAGE DISTRIBUTION OF NURSING STUDENTS ACCORDING TO THE DEMOGRAPHIC VARIABLES IN CONTROL AND EXPERIMENTAL GROUP

Table 1: Frequency And Percentage Distribution Of Nursing Students According To The Demographic Variables In Control And Experimental Group

SR. No.	Demographic variable	Control group n=30		Experimental group n=30	
		F	%	f	%
1	**Age in years:**				
	17-18	10	33.3	9	30
	19-20	13	43.3	10	33.3
	21-22	4	13.3	3	10

SR. No.	Demographic variable	Control group n=30		Experimental group n=30	
		F	%	f	%
	Above 22	3	10	8	26.7
2	**Dietary pattern:**				
	Vegetarian	8	26.7	12	40
	Non vegetarian	22	73.3	17	56.7
	Eggiterian	0	0	1	3.3
3	**Course of studying:**				
	B.Sc. Nursing	27	90	22	73.3
	M.Sc. Nursing	3	10	8	26.7
4	**Marital status:**				
	Married	0	0	3	10
	Unmarried	30	100	27	90
5	**Previous Knowledge regarding acupressure:**				
	Yes	5	16.7	13	43.3
	No	25	83.3	17	56.7
5.1	**Source of information:**				
	Television	0	0	0	0
	Radio	0	0	1	6.25
	Webinar	0	0	0	0
	Friends	0	0	2	12.5
	Social Media	1	20	5	31.25
	Health Team	4	80	7	43.75
	Other source	0	0	1	6.25

SECTION 2: FREQUENCY AND PERCENTAGE DISTRIBUTION OF BASELINE CLINICAL DATA IN CONTROL AND EXPERIMENTAL GROUP

Table 2: Frequency And Percentage Distribution Of Baseline Clinical Data In Control And Experimental Group

N=60

BASELINE CLINICAL DATA	Control Group (n=30)		Experimental group (n=30)	
	F	%	f	%
1.Age of menarche in years:				
10-12	4	13.3	4	13.3
13-15	24	80	22	73.3

BASELINE CLINICAL DATA	Control Group (n=30)		Experimental group (n=30)	
	F	%	f	%
Above 15	2	6.7	4	13.3
2.Days of menstrual cycle:				
<28 days	8	26.7	7	23.3
28-32 days	16	53.3	17	56.7
32-35 days	2	6.7	3	10
Above 35 days	4	13.3	3	10
3.Duration of menstrual flow:				
<3 days	5	16.7	2	6.7
3-4 days	16	53.3	15	50
5-6 days	8	26.7	10	33.3
>6 days	1	3.3	3	10
4.Pattern of menstrual cycle:				
Regular	24	80	24	80
Irregular	6	20	6	20
5.Number of pads required on 1st day of menstruation:				
2-3 pads	26	86.7	21	70
4-5 pads	4	13.3	8	26.7
5-6 pads	0	0	0	0
6-7 pads	0	0	1	3.3
6. Number of pads required on 2nd day of menstruation:				
2-3 pads	29	96.7	26	86.7
4-5 pads	1	3.3	4	13.3
5-6 pads	0	0	0	0
6-7 pads	0	0	0	0
7. **Number of pads required on 3rd day of menstruation**:				
2-3 pads	30	100	30	100
4-5 pads	0	0	0	0

BASELINE CLINICAL DATA	Control Group (n=30)		Experimental group (n=30)	
	F	%	f	%
5-6 pads	0	0	0	0
6-7 pads	0	0	0	0
8. **Time of starting pain before menstruation**:				
Before 24 hours	23	76.7	25	83.3
before 48 hours	7	23.3	5	16.7
9. Most painful day of menstruation:				
1st day	26	86.7	26	86.7
2nd day	4	13.3	3	10
3rd day	0	0	1	3.3
10.Duration of pain:				
1-2 hours	8	26.7	6	20
3-4 hours	11	36.7	7	23.3
More than 4 hours	11	36.7	17	56.7
11. Do you experience any other associated symptoms during menstruation:				
Yes	8	26.7	10	33.3
No	22	73.3	20	66.7

SECTION 3: DISTRIBUTION OF NURSING STUDENTS IN CONTROL AND EXPERIMENTAL GROUP ACCORDING TO THE LEVEL OF PAIN

Table 3: Frequency And Percentage Distribution Of Nursing Students According To The Level Of Pain In Experimental Group And Control Group Before Intervention.

Level of Pain	Control group		Experimental group	
	Pre test		Pre test	
	f	%	F	%
Moderate	1	3.3	1	3.3
Severe	29	96.7	29	96.7

Table 4: Frequency And Percentage Distribution Of Nursing Students According To The Level Of Pain Score After Intervention At Different Time Interval In Experimental Group And Control Group.

Level of Pain	Control group						Experimental group					
	30th Min		60th Min		120th Min		30th Min		60th Min		120th Min	
	F	%	F	%	f	%	F	%	f	%	f	%
No	0	0	0	0	0	0	0	0	0	0	0	0
Mild	0	0	0	0	0	0	0	0	8	26.7	26	86.7
Moderate	8	26.7	10	33.3	26	86.7	30	100	22	73.3	4	13.3
Severe	22	73.3	20	66.7	4	13.3	0	0	0	0	0	0

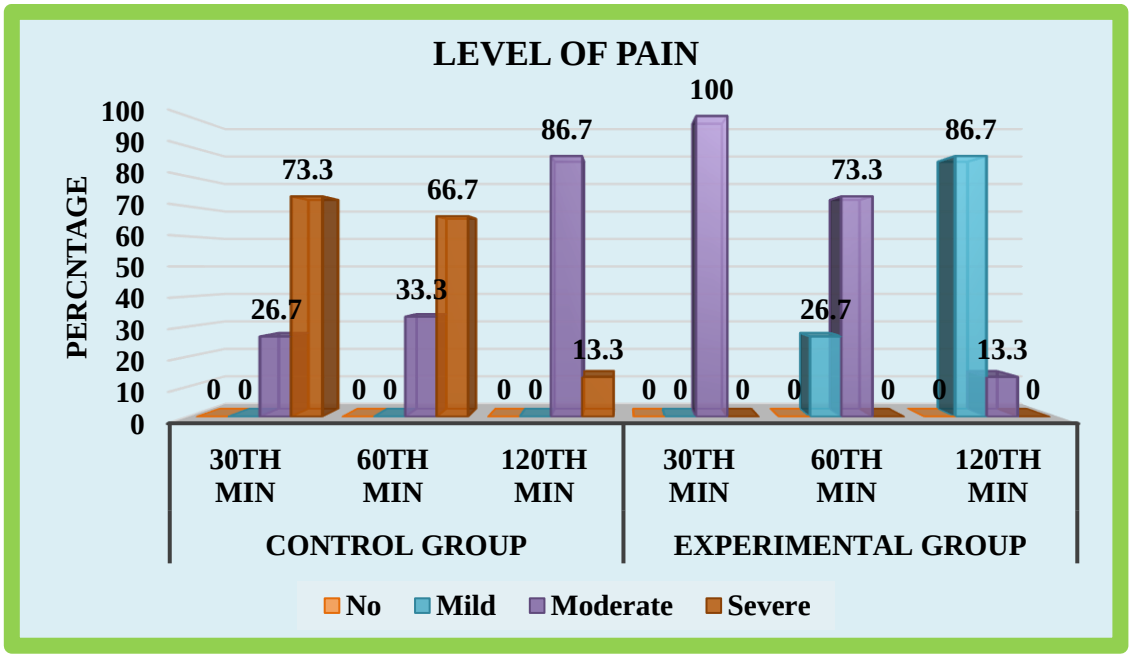

Table 5: Comparison Of Mean, Standard Deviation, Mean Percentage And Mean Difference Of Pre-Test And Post-Test Of Pain Score Between Experimental Group And Control Group

Pain	Control group – Post test			Experimental group – Post test			Difference in mean %
	Mean	SD	Mean%	Mean	SD	Mean%	
Pre test	8.10	0.84	81	8	0.83	80	1
30th Minpost test	6.88	0.68	69	4.78	0.52	48	21
60th Min post test	6.49	0.69	65	3.83	0.47	38	27
120th Min post test	5.82	0.65	58	3.06	0.49	31	27

Post test	6.40	0.66	64	3.89	0.44	39	25

Data presented in the table shows that, the mean score (8.10±0.84, 6.88±0.68, 6.49±0.69, 5.82±0.65) of experimental group is apparently lower than the mean score (8±0.83, 4.78±0.52, 3.83±0.47, 3.06±0.49) of control group except for the mean pretest score.

SECTION 4: EVALUATE THE EFFECTIVENESS OF ACUPRESSURE ON REDUCTION OF PAIN DURING MENSTRUATION AMONG NURSING STUDENTS.

Table 6: Effectiveness Of Acupressure On Reduction Of Pain During Menstruation Among Nursing Students In Control And Experimental Group Through Independent "T" Test

Level of pain	Control group		Experimental group		MD	't'-value	P-value
	Mean±SD	Mean %	Mean±SD	Mean %			
Pre test	8.10±0.84	81	8±0.83	80	0.1	0.1625	**0.435703 P<0.05 NS**
30th Minpost test	6.88±0.68	69	4.78±0.53	48	2.10	13.354	**P<0.001 (HS)**
60th Min post test	6.49±0.69	65	3.83±0.47	38	2.65	17.278	**P<0.001 (HS)**
120th Min post test	5.82±0.66	58	3.06±0.49	31	2.76	18.369	**P<0.001 (HS)**
Post test	6.40±.65	64	3.89±0.44	39	2.51	17.388	**P<0.001 (HS)**

The data presented in the table show that effectiveness of acupressure therapy by unpaired t test. It shows there is significant difference of the level of pain score on dysmenorrhea at 30 min post-test (t=13.354; p<0.001,), at 60 min (t=17.278, p< 0.001), at 120 min (t=18.369, p< 0.001). For overall (t=17.388, p<0.001) so calculated value of 't' at various time intervals are very much higher than the table value T58= 2.00, at p<0.05 respectively, hence research hypothesis is accepted and inferred that acupressure therapy is very effective in reducing the pain during menstruation and providing comfort. Hypothesis (H1) is accepted.

Table 7: Effectiveness Of Acupressure On Reduction Of Pain During Menstruation Among Nursing Students In Control Group Through Repeated Measures Anova Test

CONTROL GROUP		
OBSERVATION	**MEAN**	**SD**
O1	8.133	0.711967
O2	7.834	0.74664

O3	7.4	0.8136
O4	6.734	0.691492
O5	6.9	0.844863
O6	6.5	0.731083
O7	5.867	0.7760
O8	5.9	0.75885
O9	5.567	0.8976
O10	4.867	0.86036

CONTROL GROUP		**SS**	**df**	**VARIANCE**	**F**	**Significant**
LEVEL OF PAIN	**Between groups**	291.6300	9	32.4033	**52.2344**	**0.00001**
	Within groups	179.9000	290	0.6203		
	TOTAL	471.5300	299			

The level of pain score between the different time interval in control group shows that obtained f value was 52.234(df=9) and p value is 0.000001. The p value is <0.05 level of significance. It shows that there is a difference in the level of pain score values of different time interval in pre and post phases. This shows that in control group has a difference in level of pain score. Hence research hypothesis(H1) is accepted.

Table 8: Effectiveness Of Acupressure On Reduction Of Pain During Menstruation Among Nursing Students In Experimental Group Through Repeated Measures Anova Test

EXPERIMENTAL GROUP		
OBSERVATION	**MEAN**	**SD**
O1	8.0667	0.7396
O2	6.4	0.77013
O3	5.24	0.6260
O4	4.367	0.6686
O5	4.74	0.7396
O6	3.8	0.76112
O7	3.034	0.8808
O8	3.24	0.8583
O9	2.47	0.6288
O10	1.767	0.5683

EXPERIMENTAL GROUP		**SS**	**df**	**VARIANCE**	**F**	**Significant**
LEVEL OF PAIN	**Between groups**	972.9367	9	108.1041	**207.2968**	**0.00001**
	Within groups	151.2333	290	0.5215		
	TOTAL	1124.1700	299			

The level of pain score between the different time interval in experimental group shows that obtained f value was 207.2968(df=9) and p value is 0.000001. The p value is <0.05 level of significance. It shows that there is a wide difference in the level of pain score values of different time interval in pre and post observations and as the time interval increased there was remarkable improvement in the experimental group and there was reduction of pain among the subject This shows that in experimental group there was statistically significance because of the effect of acupressure on dysmenorrhea compare than control group. It helped in reducing level of pain score at different time interval of pre and post observations.
Hence the research hypothesis(H1) is accepted, the statistical significance was very high in the experimental group (p<0.001) respectively, hence research hypothesis (H1) is accepted and inferred that acupressure therapy is very effective in reducing the pain during menstruation and providing comfort.

SECTION 5: ASSOCIATION BETWEENLEVEL OF PAIN SCORE WITH SELECTED DEMOGRAPHIC VARIABLE IN CONTROL GROUP.

Table 9: Association Between Level Of Pain Score With Selected Demographic Variable In Control Group.

Demographic variables	Moderate		Severe		χ^2 (df)	p-value (N/NS)
	F	%	F	%		
1.Age in years:						
17-18	0	0	10	33.3		
19-20	0	0	13	43.3	9.31	**0.025***
21-22	0	0	4	13.3	(df=3)	**S**
Above 22	1	3.33	2	6.7		
2.Dietary pattern:						
Vegetarian	0	0	8	26.7	0.376	**P=0.540**
Non vegetarian	1	3.3	21	70	(df=2)	**NS**
Eggiterian	0	0	0	0		
3.**Course of studying:**						
B.Sc Nursing	0	0	27	90	9.31	**0.002****
M.Sc. Nursing	1	3.3	2	6.7	(df=1)	**HS**
4.**Marital status:**						
Unmarried	0	0	29	96.7	0	**1**
Married	1	3.3	0	0	(df=1)	**NS**
5. **Previous Knowledge regarding acupressure:**						
Yes	1	3.3	4	13.3	5.17	**0.023***
No	0	0	25	83.3	(df=1)	**S**

Demographic variables	Moderate		Severe		χ^2 (df)	p-value (N/NS)
	F	%	F	%		
5.1. **Source of information:**						
Television	0	0	0	0	0.312	**0.576**
Radio	0	0	0	0	(df=2)	**NS**
Webinar	0	0	0	0		
Friends	0	0	0	0		
Social Media	0	0	1	20		
Health Team	1	20	3	60		
Other source	0	0	0	0		

Present study shows that there is significant association between level of pain score with age in years ($\chi2_{(3,0.05)}$ =9.31, 0.025: p<0.05), previous knowledge regarding acupressure ($\chi2_{(1,0.05)}$ = 5.17, 0.023), shows significance.

Present study shows that there is significant association between level of pain score with course of studying ($\chi2_{(1,0.05)}$ =9.31, 0.002; p <0.05), shows high significance.

Hence, research hypothesis(H2) was accepted as the calculated value is more than table value at 0.05 level of significance for level of dysmenorrhea with their selected demographic variables which include age in years, previous knowledge regarding acupressure, course of studying.

Present study shows that there is significant association between level of pain score with socio demographic variable such as dietary pattern of the students($\chi2_{(2,0.05)}$ = 0.376,0.540, p>0.05), marital status($\chi2_{(1,0.05)}$ =0, 1, p>0.05), source of information($\chi2_{(2,0.05)}$ = 0.312, 0.576, p>0.05) shows non significance.

Hence, research hypothesis(H2) was rejected as the calculated value is less than table value at 0.05 level of significance for level of dysmenorrhea with their selected demographic variables which include dietary pattern, marital status, source of information.

SECTION 6: ASSOCIATION BETWEEN LEVELS OF PAIN SCORE WITH SELECTED DEMOGRAPHIC VARIABLE IN EXPERIMENTAL GROUP.

Table 10: Association Between Levels Of Pain Score With Selected Demographic Variable In Experimental Group.

Demographic variables	Moderate		Severe		χ^2 (df)	p-value (N/NS)
	F	%	f	%		
1.Age in years:						
17-18	0	0	9	30		
19-20	0	0	10	33.3	**2.84**	**0.416**
21-22	0	0	3	10	**(df=3)**	**NS**
Above 22	1	3.3	7	23.3		

Demographic variables	Moderate		Severe		$\chi 2$ (df)	p-value (N/NS)
	F	%	f	%		
2.Dietary pattern:						
Vegetarian	0	0	12	40	**0.79**	**P=0.673**
Non vegetarian	1	3.3	16	53.3	**(df=2)**	**NS**
Eggiterian	0	0	1	3.3		
3.**Course of studying:**						
B.Sc Nursing	0	0	22	73.3	**2.84**	**0.094**
M.Sc. Nursing	1	3.3	7	23.3	**(df=1)**	**NS**
4.**Marital status :**						
Unmarried	0	0	26	86.7	**0.11**	**0.735**
Married	1	3.3	3	10	**(df=1)**	**NS**
5. **Previous Knowledge regarding acupressure:**						
Yes	0	0	13	43.3	**0.79**	**0.374**
No	1	3.3	16	53.3	**(df=1)**	**NS**
5.1**. Source of information:**						
Television	0	0	0	0		
Radio	0	0	1	6.25		
Webinar	0	0	2	12.5	**0**	**1**
Friends	0	0	0	0	**(df=4)**	**NS**
Social Media	0	0	5	31.5		
Health Team	0	0	7	43.7		
Other source	0	0	1	6.25		

Table no.10 shows that association between the experimental group level of pain score and selected sociodemographic variables which are assessed by chi- square test.

Present study shows that there is significant association between level of pain score with age in years ($\chi 2_{(3, 0.05)}$ =2.84, 0.416; p>0.05), dietary pattern of students,($\chi 2_{(2,0.05)}$=0.79,0.673, p>0.05), course of studying($\chi 2_{(1,0.05)}$=2.84, 0.094, p>0.05), marital status of the students($\chi 2_{(1,0.05)}$=0.11, 0.735, p>0.05), previous knowledge regarding acupressure($\chi 2_{(1,0.05)}$= 0.79, 0.374, p>0.05), source of information($\chi 2_{(4,0.05)}$=

0,1, p>0.05), there was no any significant association between level of pain score and demographic variables. Hence, the study does not have adequate support to accept the hypothesis.

SECTION 7: ASSOCIATION BETWEENLEVEL OF PAIN SCORE LEVEL OF WITH SELECTED BASELINE CLINICAL DATA IN CONTROL GROUP

Table 11: Association Between Level Of Pain Score Level Of With Selected Baseline Clinical Data In Control Group

Demographic variables	Moderate		Severe		$\chi 2$ (df)	p-value (N/NS)
	f	%	f	%		
1.Age of menarche in years:						
10-12	0	0	4	13.3	14.48	0.001***
13-15	0	0	24	80	(df=2)	HS
Above 15	1	3.3	1	3.3		
2.Days of menstrual cycle:						
<28 days	0	0	8	26.7		
28-32 days	1	3.3	15	50	0.905	P=0.824
32-35 days	0	0	2	6.7	(df=3)	NS
Above 35 days	0	0	4	13.3		
3.**Duration of menstrual flow:**						
<3 days	0	0	5	16.7	0.905	0.824
3-4 days	1	3.3	15	50	(df=3)	NS
5-6 days	0	0	8	26.7		
>6 days	0	0	1	3.3		
4.**Pattern of menstrual cycle:**					0.258	0.611
Regular	1	3.3	23	76.7	(df=1)	NS
Irregular	0	0	6	20		
5. **Number of pads required on 1st day of menstruation:**						
2-3 pads	1	3.3	25	83.3		
4-5 pads	0	0	4	13.3	0.152	0.690
5-6 pads	0	0	0	0	(df=3)	NS

Demographic variables	Moderate		Severe		$\chi 2$ (df)	p-value (N/NS)
	f	%	f	%		
6-7 pads	0	0	0	0		
6. Number of pads required on 2nd day of menstruation:						
2-3 pads	1	3.3	28	93.3	0.034	0.850
4-5 pads	0	0	1	3.3	(df=3)	NS
5-6 pads	0	0	0	0		
6-7 pads	0	0	0	0		
7. **Number of pads required on 3rd day of menstruation**:						
2-3 pads	1	3.3	29	96.7		
4-5 pads	0	0	0	0	0	1
5-6 pads	0	0	0	0	(df=3)	NS
6-7 pads	0	0	0	0		
8. **Time of starting pain before menstruation**:						
Before 24 hours	0	0	23	76.7	3.39	0.065
before 48 hours	1	3.3	6	20	(df=1)	NS
9. Most painful day of menstruation:						
1st day	1	3.3	25	83.3	0.159	0.691
2nd day	0	0	4	13.3	(df=2)	NS
3rd day	0	0	0	0		
10.Duration of pain:						
1-2 hours	0	0	8	26.7	1.786	0.409
3-4 hours	1	3.3	10	33.3	(df=2)	NS
More than 4 hours	0	0	11	36.7		

Demographic variables	Moderate		Severe		χ2 (df)	p-value (N/NS)
	f	%	f	%		
11. Do you experience any other associated symptoms during menstruation:						
Yes	0	0	8	26.7	0.376	0.540
No	1	3.3	21	70	(df=1)	NS

Table no 11shows that association between the control group level of pain score and selected baseline clinical data which are assessed by chi- square test.

Present study shows that there is significant association between level of pain score with age at menarche in years ($\chi2_{(2,0.05)}$=14.48, 0.001; p<0.05), shows high significance.

Hence, research hypothesis (H2) was accepted as the calculated value is more than table value at 0.05 level of significance for level of pain score with their baseline clinical data which include age at menarche in years.

Present study shows that there is significant association between level of pain score with baseline clinical data such as days of menstrual cycle($\chi2_{(3,0.05)}$= 0.905,0.824, p>0.05),duration of menstrual flow($\chi2_{(3,0.05)}$=0.905,0.824, p>0.05),pattern of menstrual cycle($\chi2_{(1,0.05)}$= 0.258, 0.611, p>0.05), number of pad required on 1st day of menstruation ($\chi2_{(3,0.05)}$= 0.152, 0.690, p>0.05), number of pads required on 2nd day of menstruation($\chi2_{(3,0.05)}$= 0.034, 0.850, p>0.05), number of pads required on 3rd day of menstruation ($\chi2_{(3,0.05)}$= 0,1, p>0.05), time of starting pain before menstruation ($\chi2_{(1,0.05)}$=3.39, 0.065, p>0.05), most painful day of menstruation ($\chi2_{(2,0.05)}$=0.159,0.691, p>0.05), duration of pain($\chi2_{(2,0.05)}$=1.786, 0.409, p>0.05), experienced any other associated symptoms during menstruation ($\chi2_{(1,0.05)}$= 0.376, 0.540, p>0.05) shows non significance.

Hence, research hypothesis(H2) was rejected as the calculated value is less than table value at 0.05 level of significance for level of pain score with their selected baseline clinical data which include days of menstrual cycle, duration of menstrual flow, duration of menstrual flow, pattern of menstrual cycle, number of pads required on 1st day of menstruation, number of pads required on 2nd day of menstruation, number of pads required on 3rd day of menstruation, time of starting pain before menstruation, most painful day of menstruation, duration of pain, experienced any other associated symptoms.

SECTION 8: ASSOCIATION BETWEEN LEVEL OF PAIN SCORE WITH SELECTED BASELINE CLINICAL DATA IN EXPERIMENTAL GROUP

Table 12: Association Between Level Of Pain Score With Selected Baseline Clinical Data In Experimental Group

Demographic variables	Moderate		Severe		χ2 (df)	p-value (N/NS)
	f	%	f	%		
1.Age of menarche in years:						
10-12	0	0	4	13.3	0.372	0.935

Demographic variables	Moderate		Severe		$\chi 2$ (df)	p-value (N/NS)
	f	%	f	%		
13-15	1	3.3	21	70	(df=2)	NS
Above 15	0	0	4	13.3		
2.Days of menstrual cycle:						
<28 days	0	0	7	23.3		
28-32 days	0	0	17	56.7	9.31	P=0.025*
32-35 days	0	0	3	10	(df=3)	S
Above 35 days	1	3.3	2	6.7		
3.**Duration of menstrual flow:**						
<3 days	0	0	2	6.7		
3-4 days	0	0	15	50	9.31	0.025*
5-6 days	0	0	10	33.3	(df=3)	S
>6 days	1	3.3	2	6.7		
4.**Pattern of menstrual cycle:**						
Regular	1	3.3	23	76.7	0.25	0.611
Irregular	0	0	6	20	(df=1)	NS
5. **Number of pads required on 1st day of menstruation:**						
2-3 pads	1	3.3	20	66.7		
4-5 pads	0	0	8	26.7	0.44	0.801
5-6 pads	0	0	1	3.3	(df=2)	NS
6-7 pads	0	0	0	0		
6**. Number of pads required on 2nd day of menstruation:**						
2-3 pads	1	3.3	25	83.3		
4-5 pads	0	0	4	13.3	0.159	0.690
5-6 pads	0	0	0	0	(df=1)	NS
6-7 pads	0	0	0	0		

Demographic variables	Moderate		Severe		$\chi 2$ (df)	p-value (N/NS)
	f	%	f	%		
7. **Number of pads required on 3rd day of menstruation**:						
2-3 pads	1	3.3	29	96.7		
4-5 pads	0	0	0	0	0	1
5-6 pads	0	0	0	0	(df=0)	NS
6-7 pads	0	0	0	0		
8. **Time of starting pain before menstruation**:						
Before 24 hours	1	3.3	24	80	0.206	0.649
before 48 hours	0	0	5	16.7	(df=1)	NS
9. Most painful day of menstruation:						
1st day	1	3.3	25	83.3	0.159	0.924
2nd day	0	0	3	10	(df=2)	NS
3rd day	0	0	1	3.3		
10.Duration of pain:						
1-2 hours	0	0	6	20	0.791	0.673
3-4 hours	0	0	7	23.3	(df=2)	NS
More than 4 hours	1	3.3	16	53.3		
11. Do you experience any other associated symptoms during menstruation:						
Yes	1	3.3	9	30	2.06	0.150
No	0	0	20	66.7	(df=1)	NS

Table no 12 shows that association between the experimental group level of pain score and selected baseline clinical data which are assessed by chi- square test.

Present study shows that there is significant association between level of pain score with days of menstrual cycle($\chi2_{(3,0.05)}$=9.31, 0.025; p<0.05), duration of menstrual flow ($\chi2_{(3,0.05)}$=9.31, 0.025; p<0.05), shows significance.

Hence, research hypothesis(H2) was accepted as the calculated value is more than table value at 0.05 level of significance for level of pain score with their baseline clinical data which include days of menstrual cycle and duration of menstrual flow.

Present study shows that there is significant association between level of pain score with baseline clinical data such as age at menarche in years ($\chi2_{(2,0.05)}$= 0.372,0.935, p>0.05), pattern of menstrual cycle($\chi2_{(1,0.05)}$= 0.258, 0.611, p>0.05), number of pad required on 1st day of menstruation ($\chi2_{(2,0.05)}$= 0.44, 0.801, p>0.05), number of pads required on 2nd day of menstruation($\chi2_{(1,0.05)}$= 0.159, 0.690, p>0.05), number of pads required on 3rd day of menstruation ($\chi2_{(0,0.05)}$= 0,1, p>0.05), time of starting pain before menstruation ($\chi2_{(1,0.05)}$=0.206, 0.649, p>0.05), most painful day of menstruation ($\chi2_{(2,0.05)}$=0.159,0.924, p>0.05), duration of pain($\chi2_{(2,0.05)}$= 0.791, 0.673, p>0.05), experienced any other associated symptoms during menstruation ($\chi2_{(1,0.05)}$=2.06, 0.150, p>0.05) shows non significance.

Hence, research hypothesis(H2) was rejected as the calculated value is less than table value at 0.05 level of significance for level of pain score with their selected baseline clinical data which include age at menarche in years, pattern of menstrual cycle, number of pads required on 1st day of menstruation, number of pads required on 2nd day of menstruation, number of pads required on 3rd day of menstruation, time of starting pain before menstruation, most painful day of menstruation, duration of pain, experienced any other associated symptoms.

DISCUSSION

The finding of the study shows that in the experimental group the initial mean pain (pre-test) (8) was higher than the mean pain score of post-tests (after the intervention) (3.89) with further reduction on the mean pain score at various time interval. In present study show that effectiveness of acupressure therapy by unpaired t test. It shows there is significant difference of the level of pain score on dysmenorrhea at 30 min post-test (t=13.354; p<0.001,), at 60 min (t=17.278, p< 0.001), at 120 min (t=18.369, p< 0.001). For overall (t=17.388, p<0.001) so calculated value of 't' at various time intervals are very much higher than the table value T58= 2.00, at p<0.05 respectively, hence research hypothesis is accepted and inferred that acupressure therapy is very effective in reducing the pain during menstruation and providing comfort. Hypothesis (H1) is accepted. In this present study the level of pain score between the different time interval in control group shows that obtained f value was 52.234(df=9) and p value is 0.000001. The p value is <0.05 level of significance. It shows that there is a difference in the level of pain score values of different time interval in pre and post phases. This shows that in control group has a difference in level of pain score. Hence research hypothesis(H1) is accepted. The level of pain score between the different time interval in experimental group shows that obtained f value was 207.2968(df=9) and p value is 0.000001. The p value is <0.05 level of significance. It shows that there is a wide difference in the level of pain score values of different time interval in pre and post observations and as the time interval increased there was remarkable improvement in the experimental group and there was reduction of pain among the subject This shows that in experimental group there was statistically significance because of the effect of acupressure on dysmenorrhea compare than control group .It helped in reducing level of pain score at different time interval of pre and post observations. Kaul Pooja Rana, Akoijam Mamta Devi, et al., conducted study to assess the effectiveness of acupressure on dysmenorrhea among students at Shree Guru

Gobind Singh Tricentenary University, Gurugram. The result shows that according to Numerical Pain Rating Scale the pain score before intervention was mean score 3.5 and SD 0.5713 and after it was reduced to 2.033 and SD 0.3198. there is significant difference between the mean scores before and after the intervention($p<0.001$) ANOVA findings shows that significant difference in the mean pain score ($p<0.001$) respectively

CONCLUSION

Most of the students suffer from moderate to severe dysmenorrhea. Acupressure is cost effective, simple, non-pharmacological measure to reduce dysmenorrhea. Acupressure is effective in restoring harmony and balance with in the body, which in turn will motivate and enhance feelings of the nursing student. finding revealed that students experienced significant amount of dysmenorrhea during menstruation and acupressure is effective in reducing dysmenorrhea. The study assessed the effectiveness of acupressure on dysmenorrhea among nursing students and conclude that acupressure was effective in reducing the dysmenorrhea.

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