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Effect of Massage and Progressive Relaxation on Intensity of Pain and Menstrual Symptoms among Adolescent Girls with Dysmenorrhea at Selected High Schools of Bagalkot: A Randomized Trial

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Abstract **Original Research Article**

Background*:** The review demonstrates that administration of Massages and relaxation techniques gradually decreases the intensity of pain and menstrual symptoms with dysmenorrhea. ***Methods: The current review is randomized trial study with 100 adolescent girls with high school students. ***Result*:** Findings related to the levels of pain among adolescent girls in experimental group depicts that most 52% adolescent, girls off were moderately pain 48% of them were severe pain. The levels of pain among adolescent girls of control group depicts that most 80% adolescent girls off were moderately pain 20% of them were severe pain. Findings related to assessment of levels of premenstrual syndrome among adolescents' girls of experimental group shows that highest percent (60%) of adolescents' girls had moderate premenstrual syndrome, 40% of them were severe premenstrual syndrome. The levels of premenstrual syndrome among adolescents' girls of control group shows that highest percent (66%) of adolescents' girls had moderate premenstrual syndrome, 34% of them were severe premenstrual syndrome. Findings related to assessment of levels of premenstrual syndrome among adolescents' girls of experimental group shows that highest percent 60% of adolescents' girls had moderate premenstrual syndrome, 40% of them were severe premenstrual syndrome. The levels of premenstrual syndrome among adolescents' girls of control group shows that highest percent 66% of adolescents' girls had moderate premenstrual syndrome, 34% of them were severe premenstrual syndrome. The experimental group reveals that the total mean percentage of pre-test premenstrual syndrome scores was 23.58% with mean and standard deviation 11.76±5.195. The total mean percentage of pre-test pain scores was 22.56% with mean and S11.28±7.322 and control group reveals that the total mean percentage of pre-test of premenstrual syndrome scores 32.98% with mean and standard deviation 16.49±6.07. The total mean percentage of pre-test pain scores was 20.22% with mean and standard deviation 10.11±3.20. ***Conclusion***: The study concluded that administration of massage and relaxation techniques on dysmenorrheal symptoms among adolescent girls with high school students was scientific, logical and cost effective.

Keywords: Adolescent girls, Dysmenorrhea, Effect, Intensity, Massage, Menstrual symptom, Progressive.

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INTRODUCTION

Every girl has a unique relationship with their "time of the month." As a person who bleeds every month, one of the things you're likely to dread about menstruation is the intense pain and cramping [1].

Dysmenorrhea or painful menstruation as a severe, painful, cramping sensation in the lower abdomen that is often accompanied by other symptoms, such as sweating, headaches, nausea, vomiting, Diarrhea, and tremulousness, all occurring just before or during the menses. It is associated with significant emotional & functional health impact and that hinders the teenage girls from engaging in their regular daily activities and lowers their productivity and quality of life, can also damage their academic performance [4, 2].

Up to 80% of women do not experience problems sufficient to disrupt daily functioning either during menstruation or in the days leading up to menstruation. Symptoms in advance of menstruation that do interfere with normal life are called premenstrual syndrome (PMS). Some 20 to 30% of women experience PMS, with 3 to 8% experiencing severe symptoms. Other symptoms some women experience include painful periods and heavy bleeding during menstruation and abnormal bleeding at any time during the menstrual cycle [2, 3].

The estimated prevalence of dysmenorrhea ranges from 45% to 93% of women of reproductive age, with adolescents having the highest rates of dysmenorrhea [6, 4]. An estimated 15% of adolescent girls describe their pain as severe, impacting on their quality of life. The national prevalence of dysmenorrhea is 70–90%, which is comparable to that reported worldwide. Indian studies reported that prevalence range between 50% to 87% other studies reported that dysmenorrhea affects up to 90% of women of child bearing age to varying [7, 5].

METHODS

A pre-experimental design with one group pre-test without control group design was used to assess the effectiveness of muscle relaxation techniques on dysmenorrhea symptoms among adolescent girls (13-16) of high school students in selected high schools at, Bagalkot. A structured questionnaire was administered and the data obtained was organized and analyzed by use of Descriptive study and Inferential statistics.

Study Design: The research design adopted for this study was pre-experimental one group pre-test, post-test without control group design. Here one experimental group of adolescent girls were selected with simple randomization and no control group is used. A pre-test was conducted among adolescent girls of high school students using structured questionnaire on dysmenorrhea symptoms. Intervention was given in the form of Muscle Relaxation Techniques on dysmenorrhea symptoms.

Setting of the Study: Setting is the physical location and condition in which data collection in occur. The present study was conducted at B.V.V.S sangha's Vidyavardhak English Medium High School Vidyagiri, Bagalkot.

Participant: A sample consists of subject of units that comprise the population for the present study. In this study sample size is (n=100) adolescent girls of high school students who are studying in B.V.V.S Vidyavardhak English Medium High School Vidyagiri, Bagalkot.

Instruments: A standard scale was used. Data was collected by using 2 standard scale questionnaires, PMTS scale questionnaire of 11 items related to premenstrual syndrome symptoms and a seeking system developed for the item each correct answer is assigned a score of one and for wrong answer is zero, total score is 40. Mc Gill Pain questionnaire of 15 items related to dysmenorrheal different pain, these questionnaires were standard scales. A seeking system developed for the item each correct answer is assigned a score of one and for wrong answer is zero, total score is 45.

Data Collection: The main study was conducted for period of 10 days between 12/06/2023 to 22/06/2023 at high school, Bagalkot.

Variables of the study

Dependent variable: In this study, it refers to the intensity of pain and dysmenorrhea symptoms among adolescent girls of high school students. Independent: Muscle Relaxation Techniques on pain and dysmenorrheal symptoms among adolescent girls of high school students.

Statistical Analysis: The data was analyzed using numerical data obtained from the sample, was organized and summarized with help Descriptive statistics like percentage mean, and standard deviation. Association between post-test, PMTS premenstrual symptoms score and Mc Gill pain score among adolescent girls of high school students. Studying in selected high school at Bagalkot and Chi square were test were used to analyze association of pain with socio-demographic variables and premenstrual symptoms with socio-demographic variables.

ETHICAL CONSIDERATION

Ethical clearance certificate was obtained from B.V.V.S Sajjalashree Institute of Nursing Sciences, institutional ethical committee. Written consent was obtained from each participant.

RESULT

Descriptive and inferential statistics was used to analyze the data. The numerical data obtained from the sample was organized and summarized with the help of descriptive statistics like percentages, mean, median and standard deviation. Karl Pearson's coefficient correlation formula was used to find out significance of post-test intensity of pain and premenstrual symptoms among adolescent girls. Chi square test is used to find out the association.

Table 1: Frequency and percentage distribution of socio demographic characteristics of sample with Experimental group

Variables	Frequency	Percentage
Age in years		
a). 13	15	30%
b). 14	22	44%
c). 15	11	22%
d). 16	02	4%
Religion		
a). Hindu	46	92%
b). Muslim	04	08%
c). Christian	0	0%
d). Others	0	0%
Year of education		
a). 8^{th}	24	48%
b). 9^{th}	26	52%
c). 10^{th}	0	0%
Residence		
a). Urban	48	96^%
b). Rural	02	4%
Place of residence		
a). At family home	50	100%
b). At dormitory	0	0%
c). With others	0	0%
Mother educational status		
a). Illiterate	3	6%
b). Primary school	9	18%
c). Secondary school	16	32%
d). College and above	22	44%
Mother occupation		
a). Govt. Employ	42	84%
b). House wife	03	6%
c). Business	5	10%
Father occupation		
a). Labor worker	0	0%
b). Agriculture	03	6%
c). Employed	27	54%
d). Self-employed	20	40%
Family monthly income		
a). <10,000	34	68%
b). >10,000	16	32%
Age at menarche		
a). 12-13	20	40%
b). 13-14	29	58%
c). 14-15	01	2%
d). 15-16	00	0%
Regularity of Menstruation		
a). Regular	38	76%
b). Irregular	12	24%
Duration of Menstrual period		
a). ≤3	1	2%
b). 4-5	42	84%
c). 6-8	06	12%
d). >8	1	2%
Flow of menstrual period		
a). Mild	06	12%
b). Moderate	30	60%
c). Heavy	9	18%
d). Heavy with clots	5	10%

Did you have pain with your menstrual periods?		
a). Yes, always	14	28%
b). Yes, often	3	6%
c). Yes, sometimes	28	56%
d). Yes, rarely	2	4%
e). Never	3	6%

Table 1.2: Frequency and percentage distribution of socio demographic characteristics of sample with control group

Variables	**Frequency**	**Percentage**
Age in years		
a). 13	06	12%
b). 14	30	60%
c). 15	13	26%
d). 16	1	2%
Religion		
a). Hindu	45	90%
b). Muslim	04	8%
c). Christian	1	2%
d). Others	0	05
Year of education		
a). 8th	25	50%
b). 9th	25	50%
c). 10th	0	0%
Residence		
a). Urban	44	88%
b). Rural	06	12%
Place of residence		
a). At family home	44	88%
b). At dormitory	01	2%
c). With others	05	10%
Mother educational status		
a). Illiterate	7	14%
b). Primary school	16	32%
c). Secondary school	17	34%
d). College and above	10	20%
Mother occupation		
a). Govt. Employ	35	70%
b). House wife	12	24%
c). Business	03	6%
Father occupation		
a). Labor worker	11	22%
b). Agriculture	06	12%
c). Employed	15	30%
d). Self-employed	18	36%
Family monthly income		
a). <10,000	24	48%
b). >10,000	26	52%
Age at menarche		
a). 12-13	14	28%
b). 13-14	28	56%
c). 14-15	06	12%
d). 15-16	02	4%
Regularity of Menstruation		
a). Regular	30	60%
b). Irregular	20	40%
Duration of Menstrual period		
a). ≤3	02	4%
b). 4-5	35	70%
c). 6-8	12	24%
d). >8	01	2%

Flow of menstrual period		
a). Mild	02	4%
b). Moderate	33	66%
c). Heavy	09	18%
d). Heavy with clots	06	12%
Did you have pain with your menstrual periods?		
a). Yes, always	25	50%
b). Yes, often	09	18%
c). Yes, sometimes	9	18%
d). Yes, rarely	02	4%
e). Never	05	10%

The Table 1.1 reveals that majority 44% of subjects belonging to age group of 14 years. 92% of subjects belongs to Hindu religion. 52% of subjects had belonged to 9th std. 96% of subjects belongs to urban. 100% of subjects had belonged to, at family home. 44% of subjects were belonged to college and above. 84% of subject belong to Govt employ. 54% of subject belong employed. 68% of subject belong to <10,000 family income. 58% of subject belong to 12-13 age at menarche .76% of subject belong to regular menstruation. 84% of subject belong to 4-5 days of duration of menstruation. 60% of subject belong to Moderate flow of menstruation. 56% of subject belong to yes, sometimes pain with your menstrual period.

Table 1.2 revels that 60% of subjects were belonging to age group of 14 years. 90% of subjects were belongs to Hindu religion. 50% of subjects had belonged to 8th & 9th std. 88% of subjects belongs to urban. 88% of subjects had belonged to a family home. 34% of subjects were belonged to secondary school. 70% of subject belong to Govt employ. 36% of subject belong self-employed. 52% of subject belong to >10,000 family income. 56% of subject belong to 13-14 age at menarche .60% of subject belong to regular menstruation. 70% of subject belong to 4-5 days of duration of menstruation. 66% of subject belong to Moderate flow of menstruation. 50% of subject belong to yes, always pain with your menstrual period.

Table 2.1: Comparison of level of pre-test & post-test pain scores of adolescent girls in both experimental group and control group, N=50+50

Level of Pain	**Experimental group**				**Control group**			
	Pre-test		**Post-test**		**Pre-test**		**Post-test**	
	No. of Responders	%	No. of Responders	%	No. of Respondent	%	No. of Respondents	%
Mild Pain	0	0%	44	88%	0	0%	0	0%
Moderate pain	26	52%	6	12%	40	80%	49	98%
Severe pain	24	48%	0	0	10	20%	1	2%

Results about the comparison of level of pre & post-test pain scores of subject, in experimental group shows that in pre-test 52% subjects had moderate, 48% of subject had severe pain. In post-test 88% subject had mild and 12% had moderate pain. Were in control group, 80% of subject had moderate, 20% had severe pain. In post-test 98% of the subject had moderate and 2% had severe pain.

Hence, experimental group has reduced in pain scores compare to control group in post intervention assessment. Thus, Administration of relaxation techniques to experimental group was successful in reducing the level of pain.

Table 2.2: Comparison of level premenstrual syndrome scores of adolescent girl's pre-test and post-test of both experimental and control group, N=50+50

Level of PMS	**Experimental group**				**Control group**			
	Pre-test		**Post-test**		**Pre-test**		**Post-test**	
	No. of Responders	%	No. of Responders	%	No. of Responders	%	No. of Respondents	%
Mild PMS	0	0%	30	60%	0	0%	30	60%
Moderate PMS	30	60%	20	40%	33	66%	19	38%
Severe PMS	20	40%	0	0%	17	34%	1	2%

Findings about the comparison of level of pre-post-test premenstrual syndrome scores among subjects, in experimental group of pre-test 60% of subjects had a moderate, 40% of had a severe premenstrual syndrome. In post-tests 60% of subject had mild, 40% had a moderate premenstrual syndrome. In control group of pre-test 66% of subject had moderate and 34% had severe premenstrual syndrome. In post-test 60% had

mild and 38% of them had moderate and 2% of them had severe premenstrual syndrome.

Hence in experimental group had experienced reduction in post intervention assessment compared to control group. Thus, the administration of selected relaxation techniques to the experimental group was successfully in reducing the level of premenstrual syndrome.

Table 3.1: Mean, SD and mean percentage and Effectiveness of selected relaxation technique on intensity of pain scores in pre and post-test dysmenorrheal symptoms among adolescent girls

Pain	Max. Score	Pre-test (O_1)		Post-test(O_2)		Effectiveness (O_2-O_1)	
		Mean± SD	Mean %	Mean± SD	Mean %	Mean± SD	Mean %
Experimental Group	**45**	11.28±7.322	22.56%	16.86±3.47	48.6%	5.58±3.852	26.04%
Control Group	**45**	10.11±3.20	20.22%	8.51±3.28	30.79%	1.6±0.08	10.57%

Findings related to comparison of mean percentage of the pain scores of adolescent girls of experimental group in pre-test Post-test reveals a decrease of 26.04% after implementation of relaxation technique. Whereas comparison of mean percentage of the pain scores of adolescent girls of control group in pre-post-test reveals a decrease of 10.57% in the mean pain scores of the adolescent girls.

Hence, administration of relaxation techniques to the experimental group has decreased their pain more effectively as compared with control group.

Table 3.2: Mean, SD and mean percentage and Effectiveness of selected relaxation technique on premenstrual syndrome symptoms scores in pre and post-test dysmenorrheal symptoms among adolescent girls

PMS	Max. Score	Pre-test (O_1)		Post-test(O_2)		Effectiveness (O_2-O_1)	
		Mean± SD	Mean %	Mean± SD	Mean %	Mean± SD	Mean %
Experimental Group	**45**	11.79±5.195	20.22%	13.49±4.41	43.32%	1.7±0.785	23.1%
Control Group	**45**	16.49±6.07	32.98%	4.40±5.52	27.22%	12.09±0.55	5.16%

Findings related to comparison of mean percentage of the premenstrual syndrome scores adolescent girl's premenstrual syndrome of experimental group in pre-test and post-test reveals a decrease 23.1% in the mean premenstrual syndrome scores of the adolescent girls after administration of selected relaxation Techniques. Whereas comparison of the mean percentage of the premenstrual syndrome scores of adolescent girls of control group in pre-test and post-test reveals a decrease of 5.16% in the mean premenstrual syndrome scores of the adolescent girls after administration of selected relaxation techniques.

Thus, does it concluded that the implementation of selected relaxation techniques to the experimental group has decreased their premenstrual syndrome effectively as compared to control group.

Table 4.1: Significance of the difference between pre-test & post-test pain and PMS scores of the adolescent girls in both experimental and control group

Group	Variables	Mean Difference	Difference SD	Mann-Whitney's test	'Z' value	'p' value
Pain	**Experimental group**	5.58	3.852	23.00	8.485	0.000*
	Control group	1.6	0.08			
PMS	**Experimental group**	1.7	0.78	11.20	0.895	0.371
	Control group	12.09	0.55			

P<0.01 P*<0.05

Findings revealed that a statistically significant difference was found between the post-test pain and PMS Scores of experimental group and control group adolescent girls Mann-Whitney's test is 23.00 and 11.20 respectively, p<0.05

Hence it is concluded that relaxation technique is an effective tool to decrease pain and not the premenstrual syndrome of adolescent girls.

Hence, H_1 is accepted and H_2 is rejected.

Table 5.1: Association between the pre-test pain score of adolescent girls and their socio demographic variables of both experimental and control group, n=50+50

Sl. No	Socio-demographic variables	DF	Chi square value	P value	Significant
1	Age	3	8.121	0.044	Significant
2	Religion	1	1.087	0.297	Not significant
3	Year of education	1	0.321	0.571	Not significant
4	Residence	1	0	1.00	Not significant
5	Place of residence	2	0	0	Not significant
6	Mother education	3	2.172	0.538	Not significant
7	Mother occupation	2	0.533	0.766	Not significant
8	Father occupation	2	0.867	0.648	Not significant
9	Family monthly income	1	5.882	0.015	Significant
10	Age at menarche	2	1.034	0.596	Not significant
11	Regularity of menstruation	1	3.947	0.048	Significant
12	Duration of menstrual period	3	2.095	0.553	Not significant
13	Flow of menstrual period	3	3.867	0.276	Not significant
14	Did you have pain with menstruation	4	7.003	0.136	Not significant

There was a significant association found between the pre-test pain with the age, family monthly income and regularity of menstruation of adolescent girls with their selected socio demographic variables of both experimental group and control group. And there was no association between pre-test pain scores of subjects with their selected socio demographic variables for other variables

Hence, **H_3** stated is accepted for age, family monthly income and Regularity of menstruation and **H_3**is rejected for other variables.

Table 5.2: Association between the pre-test premenstrual syndrome score of adolescent girls and their socio demographic variables of both experimental and control group, n=50+50

Sl. No	Sociodemographic value	Df	Chi-square	P-value	Significance
1	Age	3	3.175	0.365	Not significant
2	Religion	1	0.52	0.820	Not significant
3	Education	1	0.244	0.621	Not significant
4	Residence	1	0.893	0.345	Not significant
5	Place of residence	1	0	0	Not significant
6	Mother education	3	5.059	0.168	Not significant
7	Mother occupation	2	1.677	0.432	Not significant
8	Father occupation	2	2.624	0.269	Not significant
9	Family monthly income	1	0.030	0.863	not significant
10	Age at menarche	2	2.784	0.249	Not significant
11	Regularity of menstruation	1	0.01	0.979	Not significant
12	Duration of menstrual period	3	3.867	0.276	Not significant
13	Flow of menstrual period	3	0.921	0.820	Not significant
14	Pain during menstrual period	4	2.387	0.665	Not significant

There was no significant association between pre-test premenstrual syndrome. Hence, **H_3** is rejected for all the socio demographic variables.

DISCUSSION

This section examines the significant discoveries of the review and audits then comparable to discoveries from the consequences of different investigation. There should be some significant difference found between pain with socio-demographic variables and there is no significance between PMS with socio-demographic variables. Massage relaxation technique is an effective tool to decrease pain and not the premenstrual syndrome of adolescent girls.

A cross-sectional study design conducted to determine 'Prevalence of primary dysmenorrhea, its intensity, impact and associated factors among female students at Gondar town Preparatory School'. The sample size 459 participant and data were collected by using random sampling technique and self-structured questionnaire. The result shows that total participant in study with a response rate of 96.29%. The prevalence of primary dysmenorrhea among participants was found to be 64.7%. 61% reported moderate intensity of pain and 50.7% complain lower abdominal pain. Around 65%of participant reported that absenteeism from school was the impact of menstrual pain. Having irregular monthly menstrual cycle and positive family history of dysmenorrhea were significantly associated with primary dysmenorrhea. The study concluded that prevalence of primary dysmenorrhea was found to be high. Having an irregular monthly menstrual cycle and a positive family history of dysmenorrhea were determinants of primary dysmenorrhea [6].

A descriptive study to evaluate the effect of menstrual pain duration and severity on education performance and attitudes towards family and friends among female adolescents of 26 high schools located in Erzurum, North-eastern Turkey. Sample size was about 1951 single female adolescents, aged 13 to 18 years. The result shows that the prevalence of dysmenorrhea was high among female adolescents (68.1–72.2%). Pain lasted for 1-3days (56.6%) lowed by less than 1 day (23.5%) and more than 4 days (14.9%). Due to dysmenorrhea adolescents has inability to focus on the courses, absenteeism from school, and missing exams and also they had problems with their families and friends. Statistically significant correlations were observed between pain duration and severity, and school performance ($P < 0.0001$), relationships with their families ($P < 0.001$) and friends ($P < 0.0001$). The study concluded that dysmenorrhea prevalence was high among female adolescents. The duration and intensity of pain adversely affected school and social attitudes towards their families and friends [7].

A Quasi-experimental study aimed to assess the effect of progressive muscle relaxation technique on pain intensity and fatigue associated with primary dysmenorrhea among female adolescents in two governmental secondary schools in Port Said City. Sample size was about 150 students and data were collected by multi-stage sample technique by using self-administered questionnaire method and analyzed by modified behavioral Pain Scale, fatigue assessment scale. The result revealed that statistically significant differences were detected between the study and control groups regarding their pain intensity post-intervention. A significant reduction in pain scores in the study group as compared to the control group post-intervention (p-0.0001). The study concluded that Progressive muscle relaxation technique had a positive effect on reducing pain intensity and fatigue among femaleadolescents [8].

Pre-experimental studies to determine the effect of therapy massage effleurage on primary dysmenorrhea pain in adolescent girls at Posyandu Kenanga 2 Bojong Rawalumbu Bekasi in 2021. Sample size was about 25 young women and data were collected by purposive sampling technique and by using one-group pre-test-post-test design. The data will be analyzed using univariate and bivariate analysis with the Wilcoxon test. The study results showed that massage effleurage on dysmenorrhea pain in adolescent girls significantly affected dysmenorrhea pain in adolescent girls, with a p-value = 0.000. Study concluded that there is an effect of Massage Effleurage on reducing primary dysmenorrhea pain in adolescent girls at Posyandu Kenanga 2 Bojong Rawalumbu Bekasi [9].

The Quantitative experimental study to analyze the effect of acupressure to reduce dysmenorrhea among adolescents in University Ngudi Waluyo, Semarang, Indonesia. Sample size was about 26 adolescents (Intervention and control group) and data were measured by visual analogue scale before and after intervention. The acupoint are SP6, Li4, and PC6. Intervention group got acupressure for 2 days in early period with 30times massage for each acupoint twice a day. The result showed that, there is differences in pain severity after acupressure to intervention group with mean 2,43 and p value 0.027($p<0,005$). The study concluded that, Acupressure at the SP6, Li4 and PC6 can reduce pain severity of dysmenorrhea in adolescents [10].

A randomized controlled trial was conducted to compare the effect of massage and isometric exercise on dysmenorrhea at the dormitories of Shiraz University. Sample size was about 102 students and samples were randomly divided into massage, isometric exercise, and control group and samples were collected by using Spielberg's questionnaire and measured by using visual analogue scale. The result shows that Pain intensity had significantly reduced in the massage and exercises groups. The study concluded by based on the present findings, it seems that massage therapy and isometric exercises were effective in reducing some symptoms of dysmenorrhea [11].

Pre-Experimental study was conducted to assess the effectiveness of aerobic exercise on primary dysmenorrhea among adolescent girls in PSG College of Nursing Coimbatore. The sample size was about 40 adolescents and data were collected by using Purposive sampling technique. The result shows that there was no correlation in the duration of menstrual cycle (r=0.32) and number of days of menstruation (r=-0.08). There was no significant association between the degree of dysmenorrhea and selected demographic variables. Study concluded that Aerobic exercise was a one of the effective, inexpensive measure to reduce the primary dysmenorrhea among adolescent girls [12].

CONCLUSION

The review was useful to find out the viability of Massage and progressive relaxation on intensity of pain and menstrual symptoms among adolescent girls with dysmenorrhea. Table 2.1 & 2.2 showed that experimental group has reduced in pain and premenstrual syndrome scores compare to control group in post intervention assessment. Thus, Administration of relaxation techniques to experimental group was successful in reducing the level of pain and symptoms. Table 4.1 concluded that relaxation technique is a more effective tool to decrease pain and less the premenstrual syndrome of adolescent girls. Hence, $\mathbf{H_1}$ is accepted and $\mathbf{H_2}$ is rejected. Table 5.1 and 5.2 concluded that pain with socio-demographic variables $\mathbf{H_3}$ stated is accepted for age, family monthly income, Regularity of menstruation and $\mathbf{H_3}$ is rejected for other variables and premenstrual syndrome with socio-demographic variables $\mathbf{H_3}$ is rejected for all the variables.

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Materials- All researchers
Data collection- All researchers
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REFERENCE

1. https://mycarmesi.com/blogs/f/home-massages-for-period-relief.
2. Barati, A. A., Farhadi, L., & Khalily, M. (2021). Comparison of the effect of stretching exercises and combination of massage-stretching exercises on primary dysmenorrhea of female students of Razi University of Kermanshah. *Journal of Clinical Research in Paramedical Sciences*, *10*(1), 1-8.
3. Else-Quest, N., & Hyde, J. S. (2021). Psychology, gender, and health: psychological aspects of the menstrual cycle. The Psychology of Women and Gender: Half the Human Experience + (10th ed.). Los Angeles: SAGE Publishing. ISBN 978-1-544-39360-5. https://en.m.wikipedia.org/wiki/Menstruation.
4. Janssen, E. B., Rijkers, A. C. M., Hoppenbrouwers, K., Meuleman, C., & d'Hooghe, T. M. (2013). Prevalence of endometriosis diagnosed by laparoscopy in adolescents with dysmenorrhea or chronic pelvic pain: a systematic review. *Human reproduction update*, *19*(5), 570-582. https//pm.amegroups.com/article/view/4941/html# Volume 45, Issue 11, November 2016 Vol 2 (July 2019) / Dysmenorrhea in adolescents. Received: 03 June 2019; Accepted: 17 June 2019; Published: 22 July 2019. Doi: 10.21037/pm.2019.06.09
5. Agarwal, A. K., & Agarwal, A. (2010). A study of dysmenorrhea during menstruation in adolescent girls. *Indian journal of community medicine*, *35*(1), 159-164. Doi: 10.5539/gjhs. v8n8p135; https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5016343/
6. Azagew, A. W., Kassie, D. G., & Walle, T. A. (2020). Prevalence of primary dysmenorrhea, its intensity, impact and associated factors among female students' at Gondar town preparatory school, Northwest Ethiopia. *BMC women's health*, *20*(1), 1-7. Doi: 10.1186/s12905-019-0873-4. PMID: 31906945; PMCID: PMC6945628.
7. Eryilmaz, G., Ozdemir, F., & Pasinlioglu, T. (2010). Dysmenorrhea prevalence among adolescents in eastern Turkey: its effects on school performance and relationships with family and friends. *Journal of pediatric and adolescent gynecology*, *23*(5), 267-272. Doi: 10.1016/j.jpag.2010.02.009. Epub 2010 May 21. PMID: 20493741.
8. Kamlah Ahmed Al-Olaimat, Noha Mohamed Mahmoud Hassan, Assistant Professor Obstetric & Gynecologic Nursing department, Faculty of Nursing, Alexandria University. Effect of Kegel versus Pelvic Rocking Exercise on Primary Dysmenorrhea Intensity among Adolescents at Secondary Female's Schools in al-Mafraq Jordanian city.
9. Sholihah, N. R., & Azizah, I. (2020). The Effect of effleurage massage on primary dysmenorrhea in female adolescent students. *Jurnal Info Kesehatan*, *18*(1), 9-17. https://doi.org/10.31965/infokes.Vol18.Iss1.310
10. Karampour, E., Khoshnam, E., Khoshnam, M. S., Mohammadi, H. R., Jahromi, F. Z., & Nikseresht, A. A. (2012). The effect of massage training on primary dysmenorrhea. *Adv Environ Biol*, *6*, 3040-3042. Gale Academic OneFile, link.gale.com/apps/doc/A336176048/. Accessed 10 May 2023.
11. Veena, M., & Jinu, K. R. Department of Nursing, Malwanchal University, Indore, Madhya Pradesh, India. 2023 International Journal of Nursing Research. ISSN No: 2454-4906. Website: http://innovationalpublishers.com/Journal/ijnr.
12. Roy, B., Yadav, M., Sharma, S., Dharora, S., Bansal, M., Yadav, N., ... & Roy, M. (2021). Postmenopausal Symptoms and Management by Women in Delhi–NCR. *Indian Journal of Gender Studies*, *28*(2), 262-275.