

# A Comparative Study to Assess the Effectiveness of oil Massage versus Pelvic Floor Exercise versus Jacobson's Relaxation Technique on Dysmenorrhea and Perceived Stress among Adolescent Girls Studying at Selected Colleges of Bengaluru, Karnataka

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## Abstract

**Background of the Study:** Adolescence is the time between the commencement of puberty and the start of adulthood. Menarche is a significant occurrence in the lives of adolescent females because it is one of the signals that puberty has begun. Puberty is marked by a series of physical and mental changes. Toward the end of adolescence, menstrual abnormalities are a regular occurrence. About 75% of females have some form of monthly problem, such as painful, irregular, delayed, or heavy menstrual bleeding.

**Materials and Methods:** Quantitative research approach was used in the study, 300 adolescent girls having problem of dysmenorrhea was selected as a samples. Quasi-experimental (comparative study) research design with three groups pre-test and post-test design approach was used as a research design. In this study probability, purposive sampling technique was utilized.

**Results:** The study results in pre-test mean 26.79 and SD5.55, post-test mean 12.1 and SD 5.99 for oil massage on dysmenorrhea level, pre-test mean 21.17 and SD 6.91, post-test 14.75 and SD 6. Oil massage on perceived stress. The results show significant Effectiveness ( $P < 0.05$ ). Pelvic floor exercise on dysmenorrhea pre-test shows mean 25.63 and SD 5.95, while post-test shows mean 7.74 and SD 6.45. The pre-test showed mean 21.96 and SD 6.43, while the post-test showed mean 13.12 and SD 6.49. Pelvic floor exercise on level of perceived stress, the results show significant effectiveness ( $P < 0.05$ ). For Jacobson's relaxation technique Pre-test showed mean 26.63 and SD 5.59, whereas post-test showed mean 8.65 and SD 6.90. Level of perceived stress, with pre-test mean 22.67 and SD 6.32 and post-test mean 11.86 and SD 6.66 results show significant Effectiveness ( $P < 0.05$ ).

**Conclusion:** This means that oil massage therapy, pelvic floor exercises, and Jacobson's relaxation techniques are effective ways to reduce Dysmenorrhea and Perceived Stress, even pelvic floor exercises are better than oil massage therapy and Jacobson's relaxation technique for reducing dysmenorrhea, oil massage therapy and Jacobson's relaxation technique are better for reducing stress in teenage girls than pelvic floor exercises and oil massage therapy.

**Keywords:** Dysmenorrhea, effectiveness, Jacobson's relaxation technique, oil massage, pelvic floor exercise, perceived stress

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## INTRODUCTION

Adolescence is the period of time between the onset of puberty and the beginning of adulthood. Being one of the signs that puberty has begun, menarche can be regarded as a major event in the lives of adolescent females. Puberty is characterized by a progression of physical and mental changes.

Menstrual disorders are a common occurrence by the time adolescence is nearing its end. Seventy-five percent of females

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experience some type of menstrual problem, such as painful, irregular, delayed, or heavy menstrual bleeding.

Dysmenorrhea is the medical term for the cramping and pain that can occur during menstruation. More over half of menstruating women report having 1–2 days of discomfort each month during their period. In most cases, the level of pain is about moderate. Despite this, some women experience pain that is so severe that it prohibits them from carrying out their regular responsibilities for few days per month.<sup>[1]</sup>

Using lavender oil as part of an aromatherapy massage routine can provide great relief from the misery and discomfort associated with menstrual cramps. In a study that was conducted in 2012, nursing students utilized either lavender oil or a placebo paraffin product in an effort to determine whether or not the essential oil offered any benefits. Users of lavender oil reported a considerable reduction in the frequency and severity of their cramps.

Almond oil has been reformulated with the addition of these oils. The women who participated in the trial were given the instruction to massage the oil mixture into their abdominal areas. This study also indicated that women who used essential oils experienced less pain and bleeding during menstruation than women who received the placebo treatment. This difference was significant enough to warrant further investigation.<sup>[2]</sup>

When performed on a regular basis, PFMT has been demonstrated in the research to improve the function of the pelvic floor muscles. It is believed that this component, in conjunction with the increased functionality, will significantly improve the quality of life of Parkinson's disease (PD) patients. Because the pain associated with primary dysmenorrhea worsens during menstruation as a result of stress and hormonal changes, it is essential to learn whether or not PFM exercises reduce pain during the menstrual cycle in nulliparous females and also their effects on the quality of life of women. This is because the pain associated with primary dysmenorrhea worsens during menstruation. Physical activity is a non-medical method that has been advocated for the management of symptoms.<sup>[3]</sup>

The most frequent and straightforward approach to unwinding is called progressive muscle relaxation, or PMR for short. In the early 1920 s, Dr. Edmund Jacobson pioneered the now-common technique that bears his name. In 1938, Dr. Jacobson presented the concept of progressive relaxation therapy, which involves tensing and relaxing a total of 14 different muscle groups.

Even though estimates range from 45% to 93% of women of reproductive age, a large number of them are likely to have dysmenorrhea, and teen girls are thought to be the most likely to have it. Women do not tell anyone or go to the doctor about

it because it's seen as a normal part of the menstrual cycle and is not a big deal. Some women (3–33%) have such bad pain during their periods that they cannot do anything for 1–3 days. This means they have to miss work or school. Dysmenorrhea does have a big impact on a woman's life. It can make it hard to do everyday things, make it hard for teens to do well in school, make it hard to sleep, and make a woman feel sad and worried.<sup>[4]</sup>

## Objectives of the study

The objectives are as follows:

1. To assess the pre-interventional level of dysmenorrhea and perceived stress among adolescent girls in oil massage groups, pelvic floor exercise group, and Jacobson's relaxation technique group
2. To assess post-interventional level of dysmenorrhea and perceived stress, among adolescent girls in oil massage groups, pelvic floor exercise group, and Jacobson's relaxation technique group
3. To compare the pre-interventional and post-interventional level of dysmenorrhea and perceived stress between adolescent girls in study in all the groups
4. To determine the effectiveness of oil massage, pelvic floor exercise group, Jacobson's relaxation technique group on the level of dysmenorrhea and perceived stress among adolescent girls
5. To find out the association of dysmenorrhea and perceived stress with selected demographic variables.

## MATERIALS AND METHODS

Quantitative research approach was used in the study, 300 adolescent girls having problem of dysmenorrhea was selected as a samples. Quasi-experimental (comparative study) research design with three groups pre-test and post-test design approach was used as a research design. In this study probability, purposive sampling technique was utilized.

### Statistical analysis

#### Descriptive statistical analysis

- Frequency and percentage to explain demographic variables of samples and all variables
- Mean and standard deviation to explain variables and their dimensions.

#### Inferential statistical analysis

Inferential statistics were utilized to test the hypothesis formulated for the study. This includes:

- T-test for paired data
- Chi-square test used.

#### Level of significance

0.05 level to be used.

## RESULTS

Table 1 shows the demographic variable age - In Group 1 majority of 55% respondents belongs to the 17–19 years of age, in Group 2 majority of 57% respondents belongs to 17–19 years, and Group 3 majority of 51% belongs to 17–19 years. Demographic Variable Age of attaining menarche in Group 1 majority of 55% attaining menarche in 15–16 years in Group 2 majority of 52% attaining menarche at 15–16 years of age in Group 3 majority of 49% respondents attaining menarche at 13–14 years. Demographic Variable Class of studying in group 1 majority of 38% respondents studying at degree college in Group 2 majority of 41% respondent are studying in degree collage in Group 3 majority of 45% are studying in degree college. Demographic Variable Type of family in Group 1 majority of 80% respondents belongs to the nuclear family In group 2 majority of 65% respondents belongs to nuclear family In group 3 majority of 83% belongs to nuclear family. Demographic Variable Religion in group 1 majority of 63% respondents belongs to Hindu religion. In Group 2 majority of 57% belongs to Hindu Religion in Group 3 majority of 43% belongs to the Hindu religion. Demographic Variable Type of food intake in Group 1 majority of 58% respondent take mixed type of diet in Group 2 majority of 51% were take non-vegetarian diet in Group 3 majority of 48% taking vegetarian type of diet. Demographic Variable Habit of junk food consumption in Group 1 majority of 50% of respondents had habit of junk food consumption in Group 2 majority of 52% respondents does not had habit of junk food consumption in Group 3 majority of 62% respondents does not had habit of junk food consumption. Demographic Variable body mass index (BMI) in Group 1 majority of 39% respondents were overweight in Group 2 majority of 46% respondents were overweight in Group 3 majority of 35% were overweight. Demographic Variable Duration of dysmenorrhea in Group 1 majority of 48% having dysmenorrhea in Group 2 majority of 51% having dysmenorrhea <6 months in Group 3 majority of 63% had <6 months. Demographic Variable Family history of dysmenorrhea in Group 1 majority of 68% had the family history of dysmenorrhea in Group 2 majority of 55% respondent does not had the family history of dysmenorrhea in Group 3 majority of 77% respondents does not having family history of dysmenorrhea. Demographic Variable History of pelvic pathology in Group 1 majority of 98% respondents does not have the history of pelvic pathology in Group 2 majority of 95% respondents does not having the history of pelvic pathology in Group 3 majority of 95% respondents does not having the history of pelvic pathology. Demographic Variable Onset of pain in Group 1 majority of 61% respondents having onset of pain during the blood flow in group 2 majority of 58% had pain onset during blood flow in Group 3 majority of 65% had onset during blood flow.

Table 2 shows, pre-interventional level of dysmenorrhea among adolescent girls in oil massage group majority of 85% respondents having sever dysmenorrhea, pelvic floor

**Table 1: Distribution of respondent according to demographic data**

Demographic variables	Group 1		Group 2		Group 3	
	n	%	n	%	n	%
Age in years						
14–16 years	45	45	43	43	49	49
17–19 years	55	55	57	57	51	51
Age of attaining menarche						
10–12 years	12	12	10	10	8	8
13–14 years	33	33	38	38	49	49
15–16 years	55	55	52	52	43	43
Class of studying						
11 <sup>th</sup> standard	10	10	8	8	11	11
12 <sup>th</sup> standard	35	35	19	19	28	28
Degree	38	38	41	41	45	45
Diploma	17	17	32	32	16	16
Type of family						
Nuclear	80	80	65	65	83	83
Joint	20	20	35	35	17	17
Religion						
Hindu	63	63	57	57	43	43
Christian	8	8	12	12	10	10
Muslim	29	29	22	22	32	32
Others	00	00	9	9	15	15
Type of food intake						
Vegetarian	10	10	25	25	48	48
Non-vegetarian	32	32	51	51	32	32
Mixed	58	58	24	24	20	20
Habit of junk food consumption						
Yes	50	50	48	48	38	38
No	50	50	52	52	62	62
BMI						
Normal	25	25	30	30	30	30
Underweight	12	12	9	9	12	12
Overweight	39	39	46	46	35	35
Obese	24	24	15	15	23	23
Duration of dysmenorrhea						
<6 months	31	31	51	51	63	63
6–12 months	48	48	23	23	25	25
>12 months	21	21	26	26	12	12
Family history of dysmenorrhea						
Yes	68	68	45	45	23	23
No	32	32	55	55	77	77
History of pelvic pathology						
Yes	2	2	5	5	5	5
No	98	98	95	95	95	95
Onset of pain						
Before flow of blood	26	26	33	33	35	35
During blood flow	61	61	58	58	65	65
After flow has stopped	13	13	09	09	00	00

BMI: Body mass index

**Table 2: Assessment of pre-interventional level of dysmenorrhea among adolescent girls in oil massage group, pelvic floor exercise group, Jacobson's relaxation technique group**

Pre-interventional level of dysmenorrhea	Oil massage		Pelvic floor exercise		Jacobson's relaxation technique	
	n	%	n	%	n	%
No dysmenorrhea	00	00	00	0	00	0
Mild dysmenorrhea	03	3	05	5	03	3
Moderate dysmenorrhea	12	12	19	19	17	17
Severe dysmenorrhea	85	85	76	76	80	80

exercise group, majority of 76% respondents having severe dysmenorrhea, Jacobson's relaxation technique group majority of 80% respondents having severe dysmenorrhea.

Table 3 shows pre-interventional level of perceived stress among adolescent girls in oil massage group majority of 63% respondents having the perceived stress, in pelvic floor exercise group majority of 70% respondents having perceived stress, in Jacobson's relaxation technique group majority of 74% respondents having perceived stress.

Table 4 shows post-interventional level of dysmenorrhea among adolescent girls in oil massage group majority of 56% respondent having moderate dysmenorrhea, in pelvic floor exercise group majority of 49% of respondents have mild dysmenorrhea, in Jacobson's relaxation technique group majority of 52% respondents having mild dysmenorrhea.

Table 5 shows post-interventional level of perceived stress among adolescent girls in oil massage group majority of 42% respondents having the perceived stress, pelvic floor exercise group majority of 43% respondents having moderate stress,

**Table 3: Assessment of pre-interventional level of perceived stress among adolescent girls in oil massage group, pelvic floor exercise group, Jacobson's relaxation technique group**

Pre-interventional level of perceived stress	Oil massage		Pelvic floor exercise		Jacobson's relaxation technique	
	n	%	n	%	n	%
Low stress	13	13	10	10	9	9
Moderate stress	24	24	20	20	17	17
Perceived stress	63	63	70	70	74	74

**Table 4: Assessment of post-interventional level of dysmenorrhea among adolescent girls in oil massage group, pelvic floor exercise group, Jacobson's relaxation technique group**

Post-interventional level of dysmenorrhea	Oil massage		Pelvic floor exercise		Jacobson's relaxation technique	
	n	%	n	%	n	%
No dysmenorrhea	01	1	15	15	13	13
Mild dysmenorrhea	38	38	49	49	52	52
Moderate dysmenorrhea	56	56	35	35	30	30
Severe dysmenorrhea	05	5	01	01	5	5

**Table 5: Assessment of post-interventional level of perceived stress among adolescent girls in oil massage group, pelvic floor exercise group, Jacobson's relaxation technique group**

Post-interventional level of perceived stress	Oil massage		Pelvic floor exercise		Jacobson's relaxation technique	
	n	%	n	%	n	%
Low stress	29	29	35	35	43	43
Moderate stress	42	42	43	43	39	39
Perceived stress	29	29	22	22	16	16

Jacobson's relaxation technique group majority of 43% having low stress.

Table 6 shows the effectiveness of oil massage on level of dysmenorrhea were findings pre-test shows mean 26.79 and SD 5.55, whereas post-test shows mean 12.1 and SD was 5.99, respectively. The "t" test value was 17.97 with df was 99 and  $P < 0.00001$ . The results show significant effectiveness ( $P < 0.05$ ).

The effectiveness of oil massage on level of perceived stress were findings pre-test shows mean 21.17 and SD 6.91, whereas post-test shows mean 14.75 and SD was 6.81, respectively. The "t" test value was 6.6129 with df was 99 and  $P < 0.00001$ . The results show significant effectiveness ( $P < 0.05$ ).

Table 7 shows the effectiveness of pelvic floor exercise on level of dysmenorrhea were findings pre-test shows mean 25.63 and SD 5.95, whereas post-test shows mean 7.74 and SD was 6.45 respectively. The "t" test value was 20.38 with df was 99 and  $P < 0.00001$ . The results show significant effectiveness ( $P < 0.05$ ).

The effectiveness of pelvic floor exercise on level of perceived stress were findings pre-test shows mean 21.96 and SD 6.43, whereas post-test shows mean 13.12 and SD was 6.49, respectively. The "t" test value was 9.66 with df was 99 and  $P < 0.00001$ . The results show significant effectiveness ( $P < 0.05$ ).

Table 8 shows the effectiveness of Jacobson's relaxation technique on level of dysmenorrhea were findings pre-test shows mean 26.63 and SD 5.59, whereas post-test shows mean 8.65 and SD was 6.90, respectively. The "t" test value was 20.23 with df was 99 and  $P < 0.00001$ . The results show significant effectiveness ( $P < 0.05$ ).

The effectiveness of Jacobson's relaxation technique on level of perceived stress were findings pre-test shows mean 22.67 and SD 6.32, whereas post-test shows mean 11.86 and SD was 6.66, respectively. The "t" test value was 11.77 with df was 99 and  $P < 0.00001$ . The results show significant effectiveness ( $P < 0.05$ ).

Table 9 shows comparison of effectiveness of oil massage versus pelvic floor exercise versus Jacobson's relaxation technique on dysmenorrhea among the adolescent girls. The result shows Group 1 (oil massage) where "t" test was 17.97, df 99,  $P < 0.00001$  was found to be significant effect. In Group 2 (pelvic floor exercise) where "t" test was 20.38, df was 99,  $P < 0.0001$  was found to be significant. Whereas, in Group 3 (Jacobson's relaxation technique) where "t" test was 20.23, df 99,  $P < 0.00001$  was found to be significant effect. So as per the above results it is concluded that the pelvic floor exercise is more effective than Jacobson's relaxation technique and oil massage on level of dysmenorrhea among adolescent girls.

Table 10 shows comparison of effectiveness of oil massage versus pelvic floor exercise versus Jacobson's relaxation technique on perceived stress level among the adolescent girls. The result shows Group 1 (oil massage) where "t" test was 6.612, df 99,  $P < 0.00001$  was found to be significant effect.



**Table 6: Determine the effectiveness of oil massage on level of dysmenorrhea and perceived stress among adolescent girls**

Variables	Test	Mean	SD	T-test	DF	P-value	Result
level of dysmenorrhea	Pre test	26.79	5.55	17.97029	99	<0.00001	$P < 0.05S$
	Post-test	12.1	5.99				
level of perceived stress	Pre test	21.17	6.91	6.6129	99	<0.00001	$P < 0.05S$
	Post-test	14.75	6.81				

**Table 7: Determine the effectiveness of pelvic floor exercise on level of dysmenorrhea and perceived stress among adolescent girls**

Variables	Test	Mean	SD	T-test	DF	P-value	Result
Level of dysmenorrhea	Pre test	25.63	5.95	20.38013	99	<0.00001	$P < 0.05S$
	Post-test	7.74	6.45				
Level of perceived stress	Pre test	21.96	6.43	9.66	99	<0.00001	$P < 0.05S$
	Post-test	13.12	6.49				

**Table 8: Determine the effectiveness of Jacobson's relaxation technique on level of dysmenorrhea and perceived stress among adolescent girls**

Variables	Test	Mean	SD	T-test	DF	P-value	Result
Level of dysmenorrhea	Pre test	26.63	5.59	20.2303	99	<0.00001	$P < 0.05S$
	Post-test	8.65	6.90				
Level of perceived stress	Pre test	22.67	6.321	11.77	99	<0.00001	$P < 0.05S$
	Post-test	11.86	6.66				

**Table 9: Comparison of effectiveness of oil massage versus pelvic floor exercise versus Jacobson's relaxation technique on dysmenorrhea**

Group	t-test	df	P-value	Result
Group 1 (oil massage)	17.97	99	<0.00001	S
Group 2 (pelvic floor exercise)	20.38	99	<0.00001	S
Group 3 (Jacobson's relaxation technique)	20.23	99	<0.00001	S

**Table 10: Comparison of effectiveness of oil massage versus pelvic floor exercise versus Jacobson's relaxation technique on perceived stress level**

Group	t-test	df	P-value	Result
Group 1 (oil massage)	6.612	99	<0.00001	S
Group 2 (pelvic floor exercise)	9.66	99	<0.00001	S
Group 3 (Jacobson's relaxation technique)	11.77	99	<0.00001	S

In Group 2 (pelvic floor exercise) where “*t*” test was 9.66, df was 99,  $P < 0.0001$  was found to be significant. Whereas, in Group 3 (Jacobson's relaxation technique) where “*t*” test was 11.77, df 99,  $P < 0.00001$  was found to be significant effect. So as per the above results it is concluded that the Jacobson's relaxation technique is more effective than pelvic floor exercise and oil massage on level of perceived stress among adolescent girls.

The calculation of Chi-square value there has been a significant association between Religion (25.35), type of food intake (10.83), History of pelvic pathology (19.21) Checking at the 0.05 level, the Chi-squared values were higher than the table values; hence, it is interpreted as these demographic variables have a significant association with the level of dysmenorrhea among adolescent girls, the calculation of Chi-square value there has been a significant association between age of attaining menarche (12.90), religion (10.55) checking at the 0.05 level, the Chi-squared values were higher than the table values, hence it is interpreted as these demographic variables

has a significant association with the level of perceived stress among adolescent girls, the calculation of Chi-square value there has been a significant association between age in years (7.27), type of food intake (10.63), duration of dysmenorrhea (11.044), checking at the 0.05 level, the Chi-squared values were higher than the table values, hence it is interpreted as these demographic variables has a significant association with the level of dysmenorrhea among adolescent girls, The Chi-square value calculation there has been a significant association between age in years (7.99) and history of pelvic pathology (15.03) checking at the 0.05 level, the Chi-squared values were higher than the table values; hence, it is interpreted as these demographic variables has a significant association with the level of perceived stress among adolescent girls, The Chi-square value calculation there has been a significant association between age in years (11.48), age of attaining menarche (18.297), class of studying (20.48), type of family (15.06), religion (21.25), type of food intake (20.26), BMI (17.30), duration of dysmenorrhea (16.74), history of pelvic pathology

(25.09) checking at the 0.05 level, the Chi-squared values were higher than the table values; hence, it is interpreted as these demographic variables has a significant association with the level of dysmenorrhea among adolescent girls. The Chi-square value calculation there has been a significant association between Age of attaining menarche (18.22), class of studying (36.35), type of family (41.27), religion (19.09), type of food intake (10.479), BMI (13.26), duration of dysmenorrhea (12.95), history of pelvic pathology (17.31) checking at the 0.05 level, the Chi-squared values were higher than the table values, hence it is interpreted as these demographic variables has a significant association with the level of perceived stress among adolescent girls. Therefore, the null hypothesis is rejected and the alternative hypothesis accepts.

## DISCUSSION

A comparable study, The Aromatherapy Massage with Lavender Oil Impact on PD severity in Arsanjan Students, by Bakhtshirin *et al.*, reported a considerable reduction in VAS score following lavender massage compared to placebo massage. There is a statistically significant difference between the VAS scores obtained after the placebo massage and those obtained before it. Furthermore, compared to placebo massage, lavender massage had a statistically significant impact on the severity of PD. The study's findings showed that lavender oil massage can lessen PD and is an effective herbal treatment.<sup>[5]</sup>

Adiputri *et al.*, examined the benefits of lavender oil therapy utilizing the effleurage massage technique on the frequency and intensity of dysmenorrhea in female students at the Kartini Bali Midwifery School. 42 female students participated in the outcomes. The majority (95.2%) of the samples exhibited low dysmenorrhea after the treatment, while nearly all (83.3%) of the samples had intermediate pain intensity before the effleurage massage therapy. Effleurage massage had an impact on the severity of dysmenorrhea with a  $P = 0.00$  value. Using lavender oil therapy and the effleurage massage technique, the intensity of dysmenorrhea has been greatly decreased, going from 4.7 to 2.6 on the pain scale.<sup>[6]</sup>

There are 40 samples in the study on the effectiveness of pelvic rocking exercise on dysmenorrhea in adolescent girls, with pretests completed before intervention and post-tests conducted after intervention. In the pretest, a numerical rating pain scale and demographic information are employed, however in the  $P$  intervention, only the numerical rating pain scale is used. The post-test " $t$ " test value for the experimental group,  $t = 6.983$  post-intervention, was found to be statistically significant at  $P = 0.001$ . The results of one study show that pelvic rocking exercise is effective in treating dysmenorrhea in young women, showing a significant improvement in the post-test and a decrease in discomfort in school-going girls after intervention.<sup>[7]</sup>

Goda *et al.* According to a study on the benefits of stretching exercises on PD among secondary girl students in Assiut city, the subjects' average age was 16.31 years (SD: 0.91).

(15.0–19.0). Among the study's more than 75% (77.3%) of participants with dysmenorrhea, stretching exercises were found to have a statistically significant relationship with the severity of the condition.<sup>[8]</sup>

A study on how the Jacobson's Relaxation technique affects dysmenorrhea in adolescent girls in a select few schools. Day 2 observation shows that, previous to intervention, 19 of the 41 adolescent girls who experienced severe pain also experienced moderate pain. (4) 56.3% of the teenage girls felt significant discomfort, compared to 5.7% who reported light pain (rating 1–4) (score 5–7). Teenage females made up 48.3% of the group who reported mild pain on Day 3 of the observation (29) and 31.7% of the group who reported significant pain. All of the teenage girls had slight pain on the 4<sup>th</sup> day of the observations. It was evident that after using Jacobson's relaxation method, teenage girls' dysmenorrhea symptoms considerably diminished.<sup>[9]</sup>

According to a study on the connection between the condition and stress in female students at the Kathmandu Medical College, 92 (53.8%) out of 171 students had dysmenorrhea. Although students with dysmenorrhea performed worse than those with regular periods on the perceived stress scale, this difference was not statistically significant ( $P > 0.05$ ). A scale of stress intensity and dysmenorrhea did not connect. Further research is required to determine whether there are other factors that affect menstrual function because a connection between a high stress score and dysmenorrhea was not able to be established.<sup>[10]</sup>

About 18.21% of the students were majoring in art and science, 27.15% were majoring in medicine, 31.62% were majoring in nursing, 23.02% were majoring in physiotherapy, and 18.21% were majoring in art and science, according to a study on the relationship between dysmenorrhea and perceived stress. Furthermore, non-medical students showed signs of dysmenorrhea as well as premenstrual and menstrual symptoms. Students in their 1<sup>st</sup> and 2<sup>nd</sup> years make up 53.26%. The average weight, height, and BMI of the pupils are 54.92 kg, 157.18 cm, and 22.28 kg/m<sup>2</sup>, respectively. Early detection and slowing of the primary reasons may be a superior preventive strategy. One possible preventive intervention to minimize the prevalence of dysmenorrhea and associated issues is to offer stress management programmers to women of reproductive age, especially those with a history of the condition.<sup>[11]</sup>

## CONCLUSION

The study finding were conclude that all of the groups in the study showed a significant decrease in both dysmenorrhea and perceived stress. This means that oil massage therapy, pelvic floor exercises, and Jacobson's relaxation techniques are effective ways to reduce both. Even though pelvic floor exercises are better than Jacobson's relaxation technique for reducing dysmenorrhea, oil massage therapy and Jacobson's relaxation technique are better for reducing stress in teenage girls than pelvic floor exercises and oil massage therapy.

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## CONFLICT OF INTEREST

No.

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