



Original Research Article

Effectiveness of Pelvic Rocking Exercise on Primary Dysmenorrhea Among Adolescent Girls At Selected College in Chengalpattu District

Article History:

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Abstract: **Introduction:** Adolescence is a transition period from childhood to adulthood. During this time, adolescent girls face various challenges, during menstruation. Dysmenorrhea is characterized by painful abdominal cramps during the menstrual cycle. This study was done to assess the effectiveness of pelvic rocking exercise on primary dysmenorrhea among adolescent girls at selected college in Chengalpattu district. The objectives of the study were: 1) Assess the level of primary dysmenorrhea among adolescent girls in study and comparison group. 2) Evaluate the effectiveness of pelvic rocking exercise on primary dysmenorrhea among adolescent girls in study group. 3) Compare the level of primary dysmenorrhea among adolescent girls between study and comparison group. 4) Associate the post-test level of primary dysmenorrhea with selected demographic and clinical variables among adolescent girls between study and comparison group.

Methods: A quasi-experimental pre- and post-test design with a comparison group was chosen. A total of 100 adolescent girls were included by using purposive sampling technique. Data was collected through pre- and post-test assessments using a structured instrument and a standardized tool. The study group received pelvic rocking exercise training, while the comparison group only received routine care. Data analysis utilized both descriptive and inferential statistics. **Results:** In the study group, the pre-test mean pain score was 6.72 ± 1.604 , significantly decreasing to 4.86 ± 1.629 in the post-test. The calculated paired 't' test value of $t = 15.34$ was found to be statistically highly significant at $p < 0.001$. Additionally, the post-test pain score in the study group (4.86 ± 1.62) was significantly lower than the post-test score in the comparison group (6.98 ± 1.30) (independent t-test, $t = 7.19$, $p < 0.01$) was found to be statistically highly significant at $p < 0.01$. **Discussion:** The findings suggested that pelvic rocking exercise effectively reduced dysmenorrhea symptoms among adolescent girls, promoting positive clinical outcomes and potentially improving quality of life.

Keywords: pelvic rocking exercise, adolescent girls, primary dysmenorrhea, effectiveness.

INTRODUCTION

**“The art of life is the art of avoiding pain”
-Thomas Jefferson**

Adolescence is a transition period from childhood to adulthood. During this time, adolescent girls face various challenges, during menstruation. Dysmenorrhea, also known as painful menstruation, is characterized by painful abdominal cramps during the menstrual cycle. (Priyanka P. Kamble, Preeti Jain

and Hemendra Singh, 2021) These symptoms can occur soon before and/or during menstruation, and they typically last two days. Dysmenorrheal students experience lower sleep quality and are more likely to suffer from depression and anxiety. (Sami Alhoulaiby et al., 2020)

Dysmenorrhea is classified into two types are primary and secondary. Primary dysmenorrhea is defined as

recurring cramping pain that occurs during menstruation in the absence of identified pelvic disease. Menstrual pain caused by underlying pelvic diseases such as endometriosis, uterine myomas, pelvic inflammatory disease, ovarian cyst, intra-uterine adhesions, and cervical stenosis is referred to as secondary dysmenorrhea. Cramps, lower stomach discomfort, back pain, nausea/vomiting, and headache are the most typical symptoms of dysmenorrhea. (Mesfin Mammo, Mihiretu Alemayehu and Gizachew Ambaw, 2022)

Primary dysmenorrhea usually present during adolescences period, within three years of menarche, age between 17 to 20 years. Primary dysmenorrhea also occurs more frequently in unmarried women than in married women. (Moolraj Kural, naziya nagori noor)

Primary dysmenorrhea typically appears in adolescence, following the onset of ovulatory cycles. Primary dysmenorrhea is produced by myometrium activity, which causes uterine ischemia, which causes pain. Prostaglandin production modulates and augments myometrium activity. Uterine contractions can linger for several minutes and can result in uterine pressures higher than 60 mm Hg. A variety of different factors may influence pain perception and severity. (Asmaa Gomaa Awad, Entisar Mohmad Youness and Hoda Abd el aziam Mohamed, 2019)

Pelvic rocking exercises involve a deep contraction of the abdominal and pelvic muscles, which causes a modest movement of the uterine muscles and strengthens them. (Noha Mohamed Mahmoud Hassan, Kamlah Ahmed Al-Olaimat, Nefertiti Hassan Zaki, Noha M Al-Shdayfat and Neama Saad Mahmoud Shokhba, 2022)

Pelvic rocking exercise relieves back pain by strengthening stomach muscles and increasing blood flow to the uterus. Lie on your hands and knees. Maintain your arms straight; tuck your hips under while you tense your pelvic muscles, gently hunching your back. Lie down on your back, feet flat on the floor. Tighten your buttocks and lower abdominal muscles. While pressing your lower back on the floor. Hold position for 7 seconds, then relax for 30 seconds. Repeat 5 times. (Beautily V and Laila Khatoon, 2021)

NEED FOR THE STUDY

The most prevalent gynaecological and menstrual problem is primary dysmenorrhea. It affects a substantial number of reproductive-age women. During their reproductive year, millions of women are affected. Previous epidemiological studies have found that the prevalence of dysmenorrhea ranges from 41.7% to 94% worldwide. The prevalence of primary dysmenorrhea in Sub-Saharan Africa ranges from 51.1% to 88.1%. The prevalence of primary

dysmenorrhea in Ethiopia ranges from 62.3% to 85.4%. (Mesfin Mammo, Mihiretu Alemayehu and Gizachew Ambaw, 2022)

According to the prevalence of primary dysmenorrhea in India, the true incidence and prevalence of dysmenorrhea in India are unknown. According to studies from various parts of India, the prevalence of dysmenorrhea ranges between 50 and 87.8%. (Amal Suzanne Y, Annie Annal, M and Renuka, K, 2018)

Prevalence was higher than in other parts of India, such as Tamil Nadu, Andhra Pradesh, Karnataka, and Madhya Pradesh (MP), where prevalence rates were 51%, 56.2%, 65%, 67.5%, and 73.8%, respectively. (Priyanka P. Kamble, Preeti Jain and Hemendra Singh, 2021)

In Thrivallur 2021, the experimental group's post-test't' test result of $t=6.983$ was judged to be statistically significant at $p=0.001$. As a result, the current study's findings showed that there was a considerable improvement in the post test. The amount of pain in school-age girls is reduced after intervention, implying that the pelvic rocking exercise is beneficial for dysmenorrhea in females. (Beautily V and Laila Khatoon, 2021)

STATEMENT OF THE PROBLEM

Effectiveness of pelvic rocking exercise on primary dysmenorrhea among adolescent girls at selected college in Chengalpattu district

OBJECTIVES OF THE STUDY

Assess the level of primary dysmenorrhea among adolescent girls in study and comparison group.

Evaluate the effectiveness of pelvic rocking exercise on primary dysmenorrhea among adolescent girls in study group.

Compare the level of primary dysmenorrhea among adolescent girls between study and comparison group. Associate the post-test level of primary dysmenorrhea with selected demographic and clinical variables among adolescent girls between study and comparison group.

OPERATIONAL DEFINITION

Effectiveness

It refers to the outcome of pelvic rocking exercises on dysmenorrhea among adolescent girls. It is measured in terms of the variation in pain score between the pretest and post -test.

Pelvic rocking exercise

Pelvic rocking exercise refers to an exercise that contracts deep abdominal muscles and buttocks by taking deep breaths so that small movements take

place inside the uterus. On the 7 day of the menstrual cycle the exercise begins, until the next cycle starts. It includes 10 minutes of warm-up followed by 15 minutes of pelvic rocking exercise consisting of pelvic tilt, cat and camel exercises. Hold each position for 7 seconds, then relax for 30 seconds. Repeat 10 times in the morning and evening.

Primary Dysmenorrhea

The adolescent girls who are having menstrual pain in the absence of any pathological condition.

Adolescent girls

It refers to the college girls between the age group of 17-19 years. Who had attained menarche with complains of primary dysmenorrhea.

HYPOTHESES

- ❖ H1- There is a significant difference in the level of primary dysmenorrhea among adolescent girls before and after the intervention of pelvic rocking exercise in study group.
- ❖ H2- There is a significant difference between the level of primary dysmenorrhea among adolescent girls in study and comparison group.
- ❖ H3- There is a significant association between post-test levels of primary dysmenorrhea among adolescent girls in selected demographic and clinical variables in study and comparison group.

MATERIALS AND METHOD

RESEARCH APPROACH

A quantitative research approach was used to evaluate the effectiveness of pelvic rocking exercise on primary dysmenorrhea among adolescent girls.

RESEARCH DESIGN

A quasi-experimental pre- and post-test with a comparison group method was chosen for this study

VARIABLES

- ❖ Independent variable: Pelvic rocking exercise
- ❖ Dependent variable: Primary dysmenorrhea

POPULATION

TARGET POPULATION

All the adolescent girls with primary dysmenorrhea with the age group 17-19 years

ACCESSIBLE POPULATION

All the adolescent girls with primary dysmenorrhea are studying at Arts and science college , Chengalpattu district.

SAMPLE

The study sample were adolescent girls with primary

dysmenorrhea age group between 17-19 years, who fulfil the inclusion criteria of the study.

SAMPLING TECHNIQUE

A non-probability type of purposive sampling technique was used to recruit samples from an accessible population.

SAMPLE SIZE

The sample size for this study was 100, which includes 50 participants in each groups.

CRITERIA FOR SAMPLE SELECTION

INCLUSION CRITERIA

- ❖ Adolescent girls who have a regular menstrual cycle (28–35 days)
- ❖ Adolescent girls with primary dysmenorrhea
- ❖ Adolescent girls who are in the age group of 17–19 years
- ❖ Adolescent girls who are willing to participate
- ❖ Adolescent girls who can understand and speak both Tamil and English

EXCLUSION CRITERIA

- ❖ Adolescent girls who were in an irregular menstrual period
- ❖ Adolescent girls who are having pathological dysmenorrhea
- ❖ Adolescent girls who were not willing to participate
- ❖ Adolescent girls who were under treatment and complaints

DEVELOPMENT AND DESCRIPTION OF THE TOOL

The tool was developed by the investigator after an extensive related literature review and with the guidance of experts.

The structured instrument included

- **Part-A: Demographic** Variables: A Structured Interview
- **Part B: Clinical** Variables: A Structured Interview
- **Part C: Assessment** of Intensity of Pain: Numerical Pain Rating Scale practical problems encountered during the course of study.

DATA COLLECTION PROCEDURE:

Formal written permission and institutional ethical committee permission was obtained from the professor and head of the department of obstetrics and gynecological nursing, Karpaga Vinayaga Institute of Medical Science and Research Centre, Chengalpattu District, and the principal of arts and science College, respectively. The data collection was done for the main study from 11/05/2023 to 08/07/2023. The

data was collected for a period of one and a half months. A total of 100 adolescent girls who have primary dysmenorrhea and meet the inclusive criteria were selected by using the non-probability type of purposive sampling technique. Among them, 50 were assigned to the study group and 50 were in the comparison group, respectively.

Written consent were obtained from all the participants before conducting the study, and a brief self-introduction and explanation regarding the nature and purpose of the intervention was given to the students. A pre-test was done. On the day of menstruation, adolescent girls were screened for the

level of dysmenorrhea by using a numerical pain scale. On the 7th days of menstrual cycle, pelvic rocking exercise was administered to the adolescent girls in study group and same exercises was practiced twice a day in morning and evening under the supervision of investigator.

Until the next menstrual cycle. The duration of the exercise was 25 minutes for the study group, and routine care was given to the comparison group. The post-test was conducted among adolescent girls for both study and comparison group participants on the next menstrual cycle. Using the same scales, and the data were analyzed.

RESULT

Table 1 : Frequency and percentage distribution of demographic variables of adolescents girls in study and comparison group. N = 100(50+50)

S. No	Demographic Variables	Study Group		Comparison Group		Chi-Square Value for Homogeneity
		No.	%	No.	%	
1.	Age (in year)					$\chi^2=1.05$
	17 years	8	16	7	14	d.f=2
	18 years	17	34	13	26	p=0.59
	19 years	25	50	30	60	N.S
2.	Religion					$\chi^2=0.00$
	Hindu	32	64	32	64	d.f=2
	Christian	15	30	15	30	p=1.00
	Muslim	3	6	3	6	N.S
	Others	0	0	0	0	
3.	Family Income per month					$\chi^2=8.76$
	Less than 5000 Rs	15	30	7	14	d.f=3
	5,001- 7,000 Rs	7	14	19	38	p=0.033
	7,001 – 9,000 Rs	12	24	10	20	**S
	More than 9,001 Rs	16	32	14	28	
4.	Type of family					$\chi^2=0.06$
	Nuclear family	39	78	40	80	d.f=1
	Joint family	11	22	10	20	p=0.806
						N.S
5.	Educational status of mother					$\chi^2=0.68$
	Non formal	3	6	2	4	d.f=3
	Primary level	18	36	17	34	p=0.877
	Secondary level	20	40	19	38	N.S
	degree holder & other	9	18	12	24	
6.	Occupational status of mother					$\chi^2=2.45$
	Home Maker	37	74	35	70	d.f=5
	Daily wages	4	8	6	12	p=0.78
	Govt employees	2	4	2	4	N.S
	Private employees	6	12	6	12	
	Business	1	2	1	2	
7.	Place of residence					$\chi^2=5.33$
	Urban	14	28	5	10	d.f=2
	Semi – urban	13	26	15	30	p=0.07
	Rural	23	46	30	60	N.S
8.	Dietary pattern					$\chi^2=0.317$
	Vegetarian	3	6	2	4	d.f=2
	Non – vegetarian	8	16	7	14	p=0.854

S. No	Demographic Variables	Study Group		Comparison Group		Chi-Square Value for Homogeneity
		No.	%	No.	%	
	Mixed	39	78	41	82	N.S

***p<0.001, S – Significant, N.S – Not Significant

The table 1 shows that in study group, most of the adolescents girls, 25(50%) were aged 19 years, 32(64%) were Hindus, 16(32%) had family monthly income of more than Rs.9001, 39(78%) belonged to nuclear family, Educational status of mother 20(40%) were Secondary level, Occupational status of mother 37(74%) were Home maker, 23(46%) were residing in rural area and 39(78%) had mixed food habits.

The table 1 shows that in comparison group, most of the adolescents girls, 30(60%) were aged 19 years, 32(64%) were Hindus, 19(38%) had family monthly income of Rs 5,001- 7,000, 40(80%) belonged to nuclear family, Educational status of mother 19(38%) were Secondary level, Occupational status of mother 35(70%) were Home worker, 30(60%) were residing in rural area and 41(82%) had mixed food habits.

The calculated chi-square value was not found to be statistically significant for all the demographic variables except for the demographic variable family Income per month which infers that homogeneity has been maintained between the groups.

Table 2 : Frequency and percentage distribution of pretest and post test level of primary dysmenorrhea among adolescents girls in study and comparison group. N = 100(50+50)

S.NO	Test	Level of Pain	Study Group		Comparison Group	
			No.	%	No.	%
1.	Pretest	No pain (0)	0	0	0	0
		Mild pain (1 – 3)	0	0	0	0
		Moderate pain (4 – 6)	25	50	22	44
		Severe pain (7 – 9)	23	46	28	56
		Un bearable pain (10)	2	4	0	0
2.	Post Test	No pain (0)	0	0	0	0
		Mild pain (1 – 3)	13	26	0	0
		Moderate pain (4 – 6)	30	60	18	36
		Severe pain (7 – 9)	7	14	32	64
		Un bearable pain (10)	0	0	0	0

The table 2 shows that in the pretest of study group, 25(50%) had moderate level of pain, 23(46%) had severe pain and 2(4%) had unbearable pain whereas in the post test, 30(60%) had moderate level of pain, 13(26%) had mild level of pain and 7(14%) had severe pain.

The table 2 shows that in the pretest of comparison group, 28(56%) had severe pain and 22(44%) had moderate level of pain whereas in the post test, 32(64%) had severe pain and 18(36%) had moderate level of pain.

Table 3 : Comparison of pretest and post test level of primary dysmenorrhea among adolescent girls between study and comparison group. N = 100(50+50)

Test	Group	Mean	S.D	Mean Difference	95% Confidence Interval for Mean		Student Independent 't' Test value	'p' VALUE
					Lower	Upper		
Pretest	Study	6.72	1.60	0.1	0.68	0.48	0.33	0.737 NS
	Comparison	6.82	1.35					
Post Test	Study	4.86	1.62	2.12	2.70	1.53	7.19	0.000 S***
	Comparison	6.98	1.30					

**p<0.01, S – Significant, N.S – Not Significant

The table 3 shows that in the pretest of study group, the mean score of pain in study group was 6.72±1.60 and the mean score in the Comparison group was 6.82±1.35. The mean difference score was 0.1. The calculated student independent 't' test value of t=0.33 was not found to be statistically significant which shows that there was no significant difference in the level of pain between the groups in the pretest.

The table 3 also depicts that in the post test of study group, the mean score of pain in study group was 4.86 ± 1.62 and the mean score in the Comparison group was 6.98 ± 1.30 . The mean difference score was 2.12. The calculated student independent 't' test value of $t = 7.19$ was found to be statistically highly significant at $p < 0.01$ level which shows that there was a significant difference in the level of pain scores between the groups in the post test.

DISCUSSION

Based on the study findings research hypothesis H1 and H2 was accepted.

The research hypothesis H3 is a statistically significant association with post-test level of primary dysmenorrhea among adolescent girls in study group, the demographic variable of family income per month, the clinical variables of weight in kilograms, onset of menstrual pain, and nature of menstrual pain at $p < 0.05$ level, and in the comparison group, the clinical variable Mention the flow of menstruation during dysmenorrhea at $p < 0.05$ level are accepted. And the other demographic and clinical variables in study and comparison group were not statistically significant at level $p < 0.05$.

CONCLUSION

It was concluded that pelvic rocking exercise is a physical exercise that is used to reduce dysmenorrhea by strengthening the abdominal muscles and smoothing the blood circulation. Pelvic rocking exercises was effective in reducing the level of pain among adolescent girls having primary dysmenorrhea. The regular doing of pelvic rocking exercise will reduce the intensity of pain during dysmenorrhea. It is a cost-effective measure for pain reduction.

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