



International Journal of Innovative Research in Health Science

Published: March 31, 2026

Volume 2, Issue 3, Pages 26-29

Research Article

DOI: <https://doi.org/10.63349/ijirhs.202616>

A pre-experimental study to assess the effectiveness of pelvic rocking exercise on dysmenorrhea among school girls at selected schools in Krishnagiri.

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Abstract:

Background: Dysmenorrhea is a common gynecological problem among adolescent girls, significantly affecting their academic performance, daily activities, and quality of life. **Objectives:** This study aimed to assess the effectiveness of pelvic rocking exercise in reducing dysmenorrhea among schoolgirls. **Methods:** A quantitative pre-experimental one-group pretest–posttest design was adopted. The study was conducted among 60 schoolgirls aged 11–18 years with a history of dysmenorrhea, selected using purposive sampling from Crescent Matric and CBSE School, Krishnagiri. Data were collected using a demographic questionnaire and the Modified McGill Pain Questionnaire. **Results:** The pretest findings revealed that 41.66% of participants had moderate pain, 35% had mild pain, and 23.33% had severe pain, with none reporting no pain. Following the intervention, pelvic rocking exercise was administered daily for four weeks. Posttest results showed that 40% of participants reported no pain, 28.33% had mild pain, 30% had moderate pain, and only 1.66% had severe pain. The mean pain score decreased from 4.6 (SD = 2.26) in the pretest to 2.25 (SD = 1.93) in the posttest, with a mean difference of 2.35. The paired t-test value ($t = 23.42$, $df = 59$) indicated a statistically significant reduction in dysmenorrhea. **Conclusion:** The study concludes that pelvic rocking exercise is an effective, simple, and cost-effective non-pharmacological intervention for reducing menstrual pain among adolescent girls. It can be recommended as a routine practice to improve their well-being and daily functioning.

Keywords: Dysmenorrhea, adolescent girls, academic performance

INTRODUCTION

Schools provide structured environments for learning and development under formal education systems. Adolescence (10–20 years) is a critical developmental phase marked by physical, psychological, and social changes, including the onset of menstruation. Menstruation is a normal physiological process; however, many adolescent girls experience dysmenorrhea, characterized by painful menstrual cramps and associated symptoms such as nausea, fatigue, and back pain. The prevalence of dysmenorrhea is high, affecting up to 80% of adolescents, with a significant proportion experiencing severe pain that impacts daily activities and quality of life. It is also a leading cause of school absenteeism among adolescent girls. Non-pharmacological interventions, particularly pelvic rocking exercises, have been shown to reduce menstrual pain.

Dysmenorrhea is a significant public health issue affecting adolescent girls, leading to poor academic performance, absenteeism, and reduced daily functioning. Many rely on analgesics with limited relief and lack awareness of effective non-pharmacological methods. Cultural taboos and inadequate menstrual education further hinder proper management.

Evidence suggests that exercises such as pelvic rocking can significantly reduce pain intensity and improve well-being. However, awareness and utilization of such interventions remain limited, especially among schoolgirls. Therefore, there is a need to explore and promote simple, safe, and cost-effective methods like pelvic rocking exercises to manage dysmenorrhea and improve the quality of life of adolescent girls.

OBJECTIVES

- To assess the pretest and post-test level of dysmenorrhea among schoolgirls
- To assess the effectiveness of pelvic rocking exercise among school girls
- To determine the association between the pre-test and post-test level of dysmenorrhea with their selected demographic variables

METHODOLOGY

A quantitative pre-experimental (one-group pretest–posttest) design was used to evaluate the effectiveness of pelvic rocking exercise on dysmenorrhea among schoolgirls. The study included 60 participants selected through purposive sampling from Crescent Matric and CBSE School, Krishnagiri. Data were collected using demographic variables and the Modified McGill Pain Questionnaire. After pretest assessment, pelvic rocking exercises were administered daily for four weeks, followed by posttest evaluation. Validity was ensured through expert review, and reliability was established using the test–retest method. Ethical approval and informed consent were obtained. Data were analyzed using descriptive and inferential statistics, including mean, standard deviation, chi-square, and t-test to determine effectiveness and associations.

RESULTS:

The table 1 shows that most participants (35%) were aged 13–14 years. A majority (43.33%) attained menarche between 14–16 years. Most belonged to nuclear families (80%). Regarding income, 38.33% had a family income above Rs.20,000, followed by 35% in Rs.15,001–20,000. The majority were Hindu (53%), followed by Muslim (26.66%) and Christian (20%). Most fathers were engaged in skilled work (46.66%), while 33.33% were in unskilled occupations.

The table 2 shows a clear reduction in dysmenorrhea after the intervention. In the pretest, most schoolgirls had moderate (41.66%) and severe pain (23.33%), with none reporting no pain. In the posttest, 40% reported no pain, while severe pain decreased to 1.66%. Mild and moderate pain levels also reduced, indicating improvement after the intervention.

The table 3 shows that the mean dysmenorrhea score decreased from 4.6 (SD = 2.26) in the pretest to 2.25 (SD = 1.93) in the posttest, with a mean difference of 2.35. The calculated paired t-value ($t = 23.42$, $df = 59$) indicates a statistically significant reduction in pain after the intervention.

DISCUSSION

The study findings show that most participants were aged 13–14 years (35%), attained menarche at 14–16 years (43.33%), belonged to nuclear families (80%), and had higher family income above Rs.20,000 (38.33%). Majority were Hindu (53%) and most fathers were engaged in skilled work (46.66%). Regarding dysmenorrhea levels, in the pretest, the majority had moderate pain (41.66%), followed by mild pain (35%) and severe pain (23.33%), with no participants reporting no pain.

After the intervention, 40% reported no pain, 28.33% had mild pain, 30% had moderate pain, and only 1.66% had severe pain. The mean pain score decreased from 4.6 (SD = 2.26) in the pretest to 2.25 (SD = 1.93) in the posttest, with a mean difference of 2.35. The paired t-test value ($t = 23.42$, $df = 59$) indicates a statistically significant reduction in dysmenorrhea.

Table 1: Distribution of Variables of School Girls (N = 60)

S. No	Demographic Variables	Category	Frequency	Percentage
1	Age in years	11–12 years	12	20%
		13–14 years	21	35%
		15–16 years	17	28.33%
		17–18 years	10	16.66%
2	Age at menarche	Below 11 years	6	10%
		11–13 years	18	30%
		14–16 years	26	43.33%
		Above 16 years	10	16.66%
3	Type of family	Nuclear family	48	80%
		Joint family	12	20%

4	Family income	< Rs.10,000	4	6.66%
		Rs.10,001–15,000	12	20%
		Rs.15,001–20,000	21	35%
		> Rs.20,000	23	38.33%
5	Religion	Christian	12	20%
		Hindu	32	53%
		Muslim	16	26.66%
6	Fathers' occupation	Unemployed	2	3.33%
		Unskilled work	20	33.33%
		Skilled work	28	46.66%
		Professional work	10	16.66%
7	Mothers' occupation	Housewife	18	30%
		Unskilled work	19	31%
		Skilled work	12	20%
		Professional work	11	18.3%
8	Body built	Thin	27	45%
		Moderate	23	38.33%
		Obese	10	16.66%
9	Family history of dysmenorrhea	Yes	21	35%
		No	39	65%

Table 2: Distribution of students according to their level of dysmenorrhea among school girls

PAIN SCORE	Pretest		Posttest	
	Frequency	Percentage	Frequency	Percentage
No pain	0	0	24	40%
Mild pain	21	35%	17	28.33%
Moderate Pain	25	41.66%	18	30%
Severe Pain	14	23.33%	1	1.66%

Table 3: Mean, SD, mean difference, and paired 't' test for school girls' dysmenorrheal before and after intervention.

Dysmenorrhea level	Mean	Standard deviation	Mean difference	Df	Paired 't'
Pretest	4.6	2.26	23.5	59	23.42
Posttest	2.25	1.93			

Significant at $p < 0.001$

Table 4 : Chi-square test on dysmenorrhoeal among school girls and their selected demographic variables.

S. No	Demographic Variables	DF	χ^2 (Chi-Square Value)	Table Value
1	Age in year	9	23.89	2.26
2	Age at menarche	9	153.80	2.26
3	Type of family	3	90.297	3.38
4	Family income	9	62.72	2.26
5	Religion	6	17.756	2.45
6	Father occupation	9	132.16	2.26
7	Mother occupation	9	6.92	2.26
8	Body built	6	10.23	2.45
9	Family history of dysmenorrhoea	4	38.98	2.78

Significant at $p < 0.05$

CONCLUSION

The study concludes that pelvic rocking exercise is an effective, simple, and non-pharmacological method in reducing dysmenorrhoea among schoolgirls. There was a significant decrease in pain levels from pretest to posttest, with many participants shifting from moderate and severe pain to no pain or mild pain. The statistical findings ($t = 23.42$) further confirm the effectiveness of the intervention. Hence, pelvic rocking exercise can be recommended to improve the well-being and daily functioning of adolescent girls.

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Cite this article as: E.Munilakshmi et al. (2026). A pre-experimental study to assess the effectiveness of pelvic rocking exercise on dysmenorrhoea among school girls. *International Journal of Innovative Research in Health Science*, 2(3), 26-29.