

A Randomized Control Trial To Assess And Evaluate The Effectiveness Of Pelvic Rocking Exercises In Reducing Dysmenorrhea Among Girls Of Selected Colleges Of Nursing In New Delhi.

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I. Introduction

Menstruation is a normal physiological phenomenon for women indicating her capability for procreation. However this normal phenomenon is not an easy one. It is often associated with some degree of sufferings and embarrassment. The prevalence of menstrual disorders has been recorded as high as 87%⁽¹⁾. Among the menstrual disorders, dysmenorrhea is the most common one being reported in half of the women of child bearing age and of these 10% experience incapacitating pain for 1-3 days, every month⁽²⁾. In 60-90% of adolescent girls in India, dysmenorrhea is a major cause for absenteeism from school or restriction of activities of daily living or social interaction⁽³⁾. Exercise today is an integral part of normal life for many women. It is clear that there are many health benefits for women who exercise regularly and in moderation. Exercise improves cardiovascular status, increases bone mineral content; improves dysmenorrhoea and premenstrual syndrome symptoms^(4,5,6). Dysmenorrhoea is by far the most common & arguably the least understood & addressed complaint.

A systematic review of studies in developing countries reported that 25% to 50% of adult women and 75% of adolescents experienced dysmenorrhoea and that participation in usual activities was adversely affected in 5% to 20% of these women⁽⁷⁾. In one study, 98% of adolescents used non-pharmacological methods such as heat, rest, or distraction with a perceived effectiveness of 40% or less. There is increasing evidence that exercising at home may help reduce the pain and discomfort felt during menstrual cycle. Exercise is an accessible and convenient form of pain relief for women with primary dysmenorrhea, or pain during periods⁽⁸⁾.

II. Methodology

Present study used the Quantitative experimental research approach: Two group pre-test post-test design. The conceptual framework used for the study was based on the supportive educative system of the Dorothea Orem. For the present study first survey was conducted on 390 students in Ruffaida College of Nursing and Laxmi Bai Batra College of Nursing to find out study subjects. Out of 390 students surveyed, 130 were found to be fulfilling the inclusion criteria that is having moderate to unbearable dysmenorrhoea for three consecutive cycles, age between 17-27 years and not having pelvic pathology. 60 subjects were selected through systematic random sampling. 30 were assigned in experimental group and 30 in control group. Subjects in experimental group were from Ruffaida college of Nursing, New Delhi and in control group were from Laxmi Bai Batra College of Nursing, New Delhi. Pilot study was conducted from November 2011 to Dec 2011, in Ruffaida College of Nursing and Laxmi Bai Batra College of Nursing. Final study was conducted in Ruffaida College of Nursing and Laxmi Bai Batra College of Nursing in New Delhi from December 2011 to February 2012. The tool used for the present study were Semi- structured questionnaire to assess the menstrual pattern, Structured questionnaire to assess the symptoms associated with dysmenorrhoea, Verbal Descriptor Scale to assess the intensity of pain during menstruation.

Semi- structured questionnaire consisted of two sections: Section A and Section B. Section A had items on sample characteristics such as age, religion, marital status, type of family and dietary pattern. Section B comprised of 14 open ended questions to assess the menstrual pattern.

Structured questionnaire comprised of 21 symptoms grouped under four areas, such as, gastrointestinal symptoms (GI), psychological symptoms (PS), elimination symptoms (ES), and other physical symptoms. Reliability of the structured questionnaire was established by KR-20 and was found to be 0.7. Verbal Descriptor Scale for assessing pain during menstruation was standardized and its reliability was already established. Reliability of Pelvic Rocking Exercises was established by Inter-rater reliability method and was found to be 1 (100%).

Ethical approval was taken from the Institutional Review Board Jamia Hamdard University, New Delhi. Written Informed consent was taken from the sample subjects. Confidentiality of information given by study subjects maintained. While carrying out the study, subjects were empowered with full autonomy to participate in the research and withdrawn.

Procedure of the study:

Menstrual pattern and menstrual symptoms assessed by using questionnaire. Intensity of pain assessed during menstruation by using Verbal Descriptor Scale. Pelvic Rocking Exercises practiced from the last day of menstruation till the next menstruation starts. Exercises practiced for 20 minute daily, 5 times in a week. Again intensity of pain assessed by using Verbal Descriptor Scale.

III. Results

Table-1 Frequency and Percentage Distribution of the Population by their Demographic Characteristics. N=390

Sample Characteristics	Frequency	Percentage (%)
Age in years		
17-22	345	88.46
23-27	35	8.97
28 and above	10	2.56
Religion		
Hindu	136	34.87
Muslim	116	29.74
Marital status		
Unmarried	380	97.43
Married	10	2.564
Family type		
Joint	65	16.66
Nuclear	325	83.33
Dietary habit		
Vegetarian	99	25.38
Non-vegetarian	291	74.61

Table-2 Frequency and Percentage Distribution of Population as per the Age of Menarche, Duration of their Menstrual Cycle and Duration of their Menstruation. N=390

S.No.		Frequency	Percentage (%)
1	Age at menarche (in years)		
1.1	10-12	57	14.615
1.2	13-15	315	80.769
1.3	16-17	18	4.615
2	Duration of menstrual cycle (in days)		
2.1	<20	3	0.769
2.2	20-25	53	13.589
2.3	26-31	285	73.076
2.4	32-42	43	11.025
2.5	>42	6	1.538
3	Duration of menstrual flow (in days)		
3.1	1-2	12	3.0769
3.2	3-5	303	77.692
3.3	6-8	75	19.230

Table-3 Frequency and Percentage Distribution of Population according to the Persistence of Dysmenorrhoea for Three Consecutive or More Than Three Consecutive Menstrual Cycles, Number of Pads they Use in a Day and Day of Onset of Menstrual Pain. N=390

	Frequency	Percentage (%)
Dysmenorrhoea persisting for 3 consecutive or more than three consecutive menstrual cycles		
Yes	153	39.230
No	237	60.769
No of pads per day during menstruation		
1-2	264	67.692
3-4	121	31.025
5-6	5	1.282
Day of onset of menstrual pain		
1 st	290	74.358
2 nd	56	14.358
3 rd	4	1.025
1 day before	6	1.538
3-4 days before	1	0.256

Table-4 Frequency and Percentage Distribution of Population by the Site of Menstrual Pain. N =390

S.No.	Site of menstrual pain	Frequency	Percentage
1	Lower abdomen	192	49.230
2	Lower abdomen and back	87	22.307
3	Lower abdomen, back and thighs	12	3.076
4	Back	18	4.615
5	Knees	1	0.256
6	Lower abdomen and knees	1	0.256
7	Lower abdomen and legs	8	2.057
8	Lower abdomen back and legs	11	2.820
9	Back and legs	3	0.769
10	Thighs and legs	3	0.769
11	Lower abdomen and thigh	14	3.589
12	Thigh	2	0.512
13	Perineal area	1	0.256
14	Groin	1	0.256
15	Legs	1	0.256
16	Epigastric	1	0.256
17	Lower abdomen and body pain	1	0.256

Table-5 Frequency And Percentage Distribution Of Population By The Duration Of Their Menstrual Pain, Treatment They Take For The Relief From Menstrual Pain And The Investigation They Have Undergone To Diagnose Problems Related To Menstruation. N=390

		Frequency	Percentage
1	Duration of menstrual pain (days)		
1.1	1-3	342	87.69
1.2	3-5	14	3.589
1.3	5-6	1	0.256
2	Treatment taken for pain		
2.1	Allopathic	63	16.153
2.1	Homeopathic	1	0.256
2.3	Ayurvedic	3	0.769
2.4	Yoga	2	0.512
2.5	Home remedies	11	2.82
3	Investigations		
3.1	Yes (USG)	21	5.384
3.2	No	369	94.165

Table-6 Frequency and Percentage of Girls in Terms of Diagnostic Findings of Ultrasonography Which They Had Undergone n=21

Diagnostic findings of ultrasonography	Frequency	Percentage (%)
NAD	18	4.615
Cyst	2	0.512
Uterine fibroid	1	0.256

Table-7 Frequency And Percentage Distribution Of Population According To Their Inability To Attend College During Menstruation, Particular Diet Regimen Followed During Menstruation And The Information They Already Had About Pelvic Rocking Exercises N=390

	Frequency	Percentage
Unable to attend college during menstruation		
Yes	153	39.230
No	211	54.102
Sometimes	26	6.660
Particular diet regimen followed during menstruation		
More fluid	29	7.435
Avoid rice pickle and curd	5	1.282
Avoid oily and spicy food	7	1.794
Avoid ice cream and Chocolates	1	0.256
More protein and iron	2	0.512
Fruits	1	0.256

**Table -8 Frequency and Percentage Distribution of Population by the Severity of Dysmenorrhoea
N=390**

Severity of dysmenorrhoea	Frequency	Percentage (%)
None	33	8.461
Mild	77	19.473
Moderate	157	40.256
Severe	93	23.840
Unbearable	30	7.692

Table-9 Percentage and Frequency Distribution of Demographic Characteristics of Girls n1+n2 =60

S.No	Sample characteristics	Experimental group (n1=30)		Control group (n2=30)	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1	Age in years				
1.1	17-22	27	90	30	100
1.2	23-27	3	10	0	0
2	Religion				
2.1	Hindu	6	20	20	66.66
2.2	Muslim	14	46.66	0	0
2.3	Christian	10	33.33	7	23.33
2.4	Buddhist	0	0	1	3.33
2.5	Sikh	0	0	2	6.66
3	Marital status				
3.1	Unmarried	30	100	30	100
4	Type of family				
4.1	Nuclear	22	73.33	25	83.33
4.2	Joint	8	26.66	5	16.66
5	Dietary habit				
5.1	Vegetarian	7	23.33	15	50
5.2	Non-vegetarian	23	76.66	15	50

**Table-10 Frequency and Percentage Distribution of Other Problems in Girls during Menstruation
n1+ n 2=60**

	Problems during menstruation	Frequency	Percentage
1	Gastrointestinal symptoms		
1.1	Decreased appetite	32	53.33
1.2	Nausea/vomiting	22	36.66
1.3	Anorexia	9	31.66
1.4	Gaseous distention of abdomen	30	50
2	Psychological symptoms		
2.1	Depression easily	23	38.33
2.2	Irritable	43	71.66
2.3	Difficulty in concentrating on work	45	75
2.4	Feel nervous	16	26.66
3	Elimination symptoms		
3.1	Constipation	15	25
3.2	Diarrhea	10	16.66
3.3	Increased micturition	15	25
3.4	Profuse sweating	11	18.33
4	Other physical symptoms		
4.1	Feel lethargic	40	66.66
4.2	Headache	17	28.33
4.3	Sleeplessness	25	41.66
4.4	More sleep	18	30
4.5	Tenderness or fullness in breast	22	36.33
4.6	Heaviness in lower abdomen	42	70
4.7	Swelling in ankle or knee	1	1.66
4.8	Backache	47	78.33

Psychological symptoms in girls during menstruation occur the most followed by gastrointestinal symptoms, other physical symptoms (which include headache, sleeplessness, more sleep, tenderness or fullness in breast, heaviness in lower abdomen, swelling in ankle or knee joint, backache and lethargic feeling) and elimination symptoms.

Table-11 Range, Mean, Median and Standard Deviation of Pre-Test and Post-Test Scores of Study Subjects in Experimental Group. n1=30

Pain score on VDS	Max Possible Score	Range of obtained score	Mean	Median	Standard deviation
Pre-test	5	3-5	3.63333	3.5	0.7184
Post-test	5	3-5	2.66667	2	0.99424

Data given in table-11 shows that:

The mean post-test pain score (2.66667) is less than mean pre-test pain score (3.63333). There is increase in standard deviation from pre-test (0.7184) to post-test (0.99424). The mean and median are closer to each other in both pre-test and post-test. It is inferred that there is a marked reduction in pain of girls during menstruation.

IV. Discussion:

Findings of the study revealed that very few girls were using Pelvic Rocking Exercises for the management of dysmenorrhoea. Findings of the study are found to be consistent with the study done by Abbaspour Z.(2006)⁽⁹⁾. This study was a randomized clinical trial of 150 high school girl students in MasgedSolayman city suffering from severe dysmenorrhea. Students were separated in two "exercise "and "non exercise "groups. Then the "exercise "group was given some exercises and the results of the two periods after the exercise were registered. The descriptive statistics and repeated measure design were used for analyzing the statistical information. The results showed that the intensity of the pain in the exercise group declined from 8.59 to 4.63 in the third period and 2.84 in the fourth period ($P<0.01$). The average of using sedative tablets also decreased from 1.13 to 0.35 tablets in the third period and 0.0 tablets in the fourth period ($P<0.01$). This indicates that exercise can decrease the duration and severity of dysmenorrhea and also using of the sedative tablets in high school girls. Although in the present study the effect of pelvic Rocking Exercises were effective in reducing dysmenorrhoea.

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