

A Study To Assess The Effectiveness Of Pelvic Rocking Exercise On Dysmenorrhea Among Nursing Students In Selected College's, Bangalore.

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Abstract

Dysmenorrhea is still an important public health problem which may have a negative impact on female health, social relationships, school or work activities and psychological status. Primary dysmenorrhea is the most common cyclic pelvic pain affecting quality of life. These problems significantly lower the quality of life in adolescents. Studies have reported that awareness and practice of pelvic rocking exercises is an important method of reducing dysmenorrhea among adolescent as it is one of the females health problem. **Aims:** The main aim of the study was to assess the effectiveness of pelvic rocking exercises on dysmenorrhea among nursing students. **Materials and Methods:** A quasi experimental pretest and post-test design with experimental and control group was used to accomplish the objectives. A sample of 140 dysmenorrhea nursing students between the age group of 17-21 years were selected by using purposive sampling technique and 70 students each were assigned randomly to the control and experimental group. The tool used for the study was baseline proforma, numerical pain rating scale to obtain the data from the subjects. **Results:** The mean pain score of subjects in the Experimental group pre-test was 6.243 with S.D of 1.6280 and the mean post-test pain score was 4.257 with S.D of 1.5102. The calculated paired 't' value is 18.959 at the level of 0.05 level of significant.

The significance of difference between mean post test scores among experimental and control group was tested using unpaired 't' test and it found to have significant difference (-16.249) at 0.05 level significant, which shows that there was a significant difference between experimental and control group. **Conclusion:** The pelvic rocking exercise was effective in reducing the pain during menstruation.

Keywords: Pelvic rocking exercise, dysmenorrhea, menstruation, nursing students.

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I. Introduction

Dysmenorrhea is one of the most recurrent issues among adolescent girls. It is chronic, cyclical pelvic pain associated with menstruation. Typically it is characterized by cramping lower abdominal pain occurring just before and during menstruation, usually starting soon after menarche, once regular ovulation is established. Painful menstruation is a cyclic painful condition that adversely affects the woman's wellbeing for a large part of her life. Its pathogenesis is not always understood. Prostaglandins seem to be intimately involved in primary dysmenorrhea, although it is difficult to understand the underlying cause for their excessive secretion.[1]

Dysmenorrhea is one of the most common medical conditions and complaints voiced by women during their reproductive life. It is also a leading cause of absenteeism from school, college and work. "Dysmenorrhea is defined as the difficult menstrual flow or painful menstruation. Pain during or few hours before menstruation is one of the most common gynecological problems in women. Many adolescent girls have severe dysmenorrhea in the first three years of menarche. This conditions are affecting as many as 50% of menstruating women, and it usually takes place after 6-24 months of menarche.[2]

In India systematic study was conducted on 2014 it shows that, 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 to 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.[3]

There are so many ways to treat dysmenorrhea like non-steroidal anti-inflammatory drugs, birth control pills, injections or patches, heating pad or soaked towel in a hot water over the abdomen to relieve the pain of menstrual cramps. Now a days, exercises are an integral part of normal life for many women. Exercises help in reducing pain, relieving stress, elevating mood and improving health and also reduces menstrual cramps and

improves associated symptoms. So the health care providers suggest some forms of aerobic exercises such as pelvic rocking and tilting, walking and bicycling beneficial for dysmenorrhea. [4]

Study was conducted on Dysmenorrhea in adolescents and young adults in different countries. The prevalence of dysmenorrhea varied from 34 % (Egypt) to 94% (Oman), 0.9 (Korea) to 59.8 % (Bangladesh). Adolescent who missed school due to dysmenorrhea range from 7.7 to 57.8% and 21.5% of students 53.7%-47.4% reported a family history of dysmenorrhea. Incidence of dysmenorrhea was 0.97 times lower as age increased. And from 21% to 96% practiced self-medication, either by pharmacological or non-pharmacological interventions. [2]

A cross sectional study was conducted on prevalence, impact and management of primary dysmenorrhea and menstrual symptoms in Indian student at urban in major city of south India in 2015. One thousand healthy female aged 11-28 years were selected by purposive sampling technique. Standardized self-reporting questionnaires were used to obtain relevant data. The numerical pain scale was used to assess the pain intensity of dysmenorrhea. The result concluded approximately 25.6% of dysmenorrhea girls were managed their pain by taking analgesic tablets. Majority 70.2% of the participant experienced menstrual pain for 1-2 days during menstruation. The most common symptoms reported in both dysmenorrheic and non-dysmenorrheic girls during menstrual pain was tiredness and back pain. [5]

A study was conducted to determine the effect of pelvic rocking exercises in reducing pain of dysmenorrhea in adolescent girls. They engaged 60 female volunteer who complained of primary dysmenorrhea. Pelvic rocking exercises were initiated in each adolescent girl on next day after she completed her menstrual period, daily in the morning for 20 minutes for 21 days regularly. After the intervention Pain intensity rating scale was used to assess the dysmenorrhea among adolescent's girls. The comparison of pre-interventional and post-interventional dysmenorrhea was found to be statistically significant with 't' value 12.443 at $p < 0.05$ level of significance. [3]

The researcher came across many of her friends in school and college who experienced dysmenorrhea during their menstrual cycle and had absenteeism. Hence the investigator was interested to take this study by demonstrating pelvic rocking exercises for reduction of dysmenorrhea as it is cost effective and can be done independently.

II. Materials And Methods

The objective of the current study is:

- a. To assess the pre-test score of dysmenorrhea among nursing students in experimental and control group.
- b. To find out the effectiveness of pelvic rocking exercise on dysmenorrhea among experimental group.
- c. To compare between pre test and post test score of dysmenorrhea between experimental and control group.
- d. To find out the association between the pretest score of experimental group with their demographic variables.

To fulfill the objective of the current study following hypothesis were formulated

H1: There will be statistically significant difference between the mean pretest and post- test pain score of dysmenorrhea among nursing students in experimental group.

H2: There will be statistically significant difference between mean post test pain score of dysmenorrhea among nursing students in experimental and control group.

H3: There will be statistically significant association between pretest pain score of dysmenorrhea with their demographic variables of nursing students in experimental group.

RESEARCH APPROACH

In order to accomplish the objectives of determining the level of knowledge and assessing the effectiveness of pelvic rocking exercises on dysmenorrhea among nursing student, evaluative research approach was adopted for the study and the subjects was selected by using purposive sampling technique.

RESEARCH DESIGN

The research design selected for this study was quasi experimental pretest post-test design with experimental and control group.

Setting of study: The present study was conducted in East Point College of Nursing and South East Asia College of nursing at Bangalore

Population: The population in this study consisted of nursing student in selected colleges who were having dysmenorrhea.

Sample:The sample size of the present study consisted of 140 dysmenorrhea students who were selected from the two nursing college in which 70 subject in each group were assigned to the experimental group and control

Sample size calculation

SAMPLING TECHNIQUE

In this study, purposive sampling technique was used to select the subject.

VARIABLE:In this study, three types of variables are identified

1. Independent Variable:

In this study the independent variable is pelvic rocking exercises.

2. Dependent Variable:

In this study, the dependent variable is intensity of pain.

3. Extraneous Variable:

Any uncontrolled variable that greatly influence the result of the study is called as extraneous variables.

In this study the extraneous variables are:

- a) Age
- b) Age of menarche
- c) Length of menstrual cycle
- d) Duration of menstrual flow
- e) Regulation of period from past three month
- f) When do you feel the pain during menstruation
- g) Last menstrual period
- h) Do you experience pain during your period?

INCLUSION CRITERIA:The criteria that specify the characteristics that people in the population must possess are referred to as inclusion criteria in this study inclusion criteria consisted of nursing students

- a) With the age group of 17-21 years and who were having regular menstrual cycle.
- b) Who had dysmenorrhea during each menstrual period.
- c) Who were available during the data collection.

EXCLUSION CRITERIA: Nursing students who were

- a. Having gynecological problem.
- b. Having the history of surgery especially on the back and pelvic region.

DATA COLLECTION INSTRUMENT

Data collection tools are the procedures or instruments used by the researcher to observe or measure the key variables in the research problem. The data collection instrument for the present study consisted of Numerical pain scale to assess the level of pain in the subject.

Instruments used for the study

Section 1: Baseline data

Section 2: Numerical pain rating scale

Content validity of the tool: content validity of the tool was established by 10 expert in the field of nursing, 1 Obstetrician and 1 statistician. All the items of pain rating scale receive 100 % agreement from the expert.

Pilot study: After obtaining permission from the concerned authority, pilot study was conducted on 20 nursing student having dysmenorrhea during their menstruation period. In Krupanidhi college of Nursing, Bangalore. The investigator introduced herself and purpose of study was explained to the subject. Confidentiality was maintained and written consent was obtained from subject. The subject was asked to give the baseline information after which, the assessment was done by using pain rating scale. The results was presented before the research committee on 8/11/2019. The study was found to be feasible, practicable and acceptable. Based on this information the investigator was permitted by the guide to proceed with the actual data collection for the main study. Base on this information the investigator was permitted by the guide to proceed with the actual data collection for the main study.

DEVELOPMENT OF TOOL

The tools were prepared on the basis of the objectives of the study. The researcher did an extensive review of literature to collect the relevant materials and based on it, the tool was selected for the study.

The following steps were undertaken to prepare the final tool:

- Tool was developed based on the related literature and experts suggestions.
- Demographic data was developed to obtain baseline characteristics of the nursing students having dysmenorrhea.
- Numerical pain scale was used to assess the pain level of the nursing student having dysmenorrhea.

DESCRIPTION OF THE TOOL

TOOL 1: BASELINE DATA.

It consists of base line data of age in year, age of menarche, age at onset of dysmenorrhea, last menstruation, family history of dysmenorrhea, course of study, religion, type of family, use of any alternative remedies for menstrual pain relieving and dietary pattern.

TOOL II: PAIN RATING SCALE.

A pain rating scale was used for the study to assess the pain level of the student during the time of dysmenorrhea.

The investigator explained the use of pain rating scale to the students and to make the number on the line provided according to the level of pain that they experienced, which range from 0-10, 0-no pain, 1-3 mild pain, 4-6 moderate pain and 7-10 severe pain

CONTENT VALIDITY

Content validity of the tool was established by 12 experts, 10 in the field of Nursing, 1 Obstetrician and 1 statistician. The tool was given along with the objectives of the study. Modifications were made based on the suggestions given by the experts, after consulting with guide. Almost all the items were agreed from the experts, when the tool was sent for content validity.

DATA COLLECTION METHOD

The data collection for the main study was done on 140 adolescent girls in East Point College and South East Asia College of Nursing, Bangalore. Formal written permission was obtained from the concerned authorities before data collection. The setting of the study was selected randomly for experimental group and control group. The subjects were selected based on inclusion and exclusion criteria and informed written consent were obtained from the subjects after explaining about the study. Based on inclusion criteria, 140 samples were selected for main study 70 were assigned to the experimental group and 70 were assigned to the control group. Pre-test was done by using numerical pain rating scale. The pelvic rocking exercises such as heel rise calf stretching exercise, bent over row back stretch, lateral stretching exercise, squat stretch–mini squat, calf raise, cat and camel, stretching the pelvic muscle were used in this study. Administration of pelvic rocking exercises of each step was practiced five second, 10 times every day morning and evening for 20 minutes to the experimental group.

Standard care was given to the subjects in the control group and post-test was conducted in second cycle of the menstrual period in both the experimental group and control group by using the same tool.

The investigator observed that many subjects were motivated to participate in the study. The data collection was completed by thanking the subjects for their participation and co-operation. The data collection was compiled for analysis.

PLAN FOR DATA ANALYSIS

Analysis is the systemic organization and synthesis of research data and testing of research hypothesis by using those data [6]. A master sheet was prepared by the investigator to organize and compute the data. The data collected from the nursing students were analyzed by using descriptive and inferential statistics method based on the study objectives and the hypothesis stated and organized under the following sections:

Section1: Description of baseline characteristics of subject.

Section2: Description of level of pain during menstruation.

Section3: Effectiveness of pelvic rocking exercises by comparing pre-test and post-test

Section4: Association between the pre-test score of experimental groups with their demographic variables

III. Results

The result deals with the description of the subjects characteristics, analysis and interpretation of the data collected from 140 subjects who have dysmenorrhea during menstrual period in selected colleges at Bangalore. The data was processed and analyzed on the basis of the objectives and hypothesis formulated for the purpose of the study.

Section 1: Description of baseline characteristics of subject in experimental group and control group.
Table 1 (a): Frequency and percentage distribution of experimental and control group by their demographic variables

SL No	Demographic Variables	Experimental Group		Control Group	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1	Age in Year				
	17	10	14.3	5	7.1
	18	14	20	11	15.7
	19	14	20	18	25.7
	20	15	21.4	17	24.3
2	Duration of Menstrual Flow				
	1-2 Days	14	20	14	20
	3-4 Days	31	44.3	34	48.6
	5-6 Days	23	32.9	22	31.4
	7 Days and above	2	2.9	-	-
3	Regulation of Period from past three months				
	Yes	65	92.9	69	98.6
4	Do you experience pain during you period?				
	Yes	70	100	70	100
5	Do you have any past or present history of illness?				
	Yes	-	-	-	-
	No	70	100	70	100

Table 1(a) shows that (24.3%) of the subjects from the experimental group and (27.1%) were from the control group, at the age of 21 years. Duration of menstrual flow between 3-4 days in the experimental group (44.3%) and (48.6%) in the control group. Regularity of menstrual period from the past three month in the experimental group (92.9%) and (98.6%) in the control group. Both the groups had pain during the menstrual period (100%). There was no Past and present history of illness in both the groups.

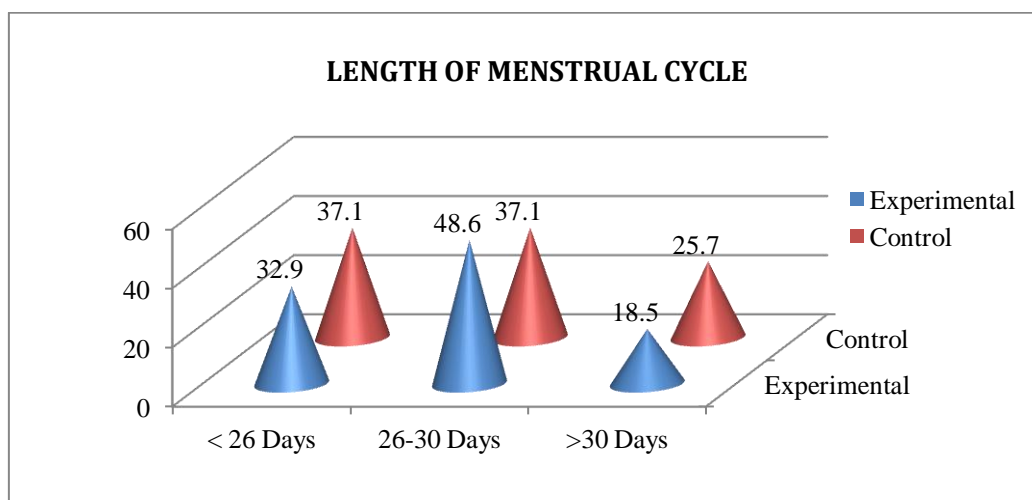


Figure 1: Distribution of subject according to length of menstrual cycle.

Figure 1, reveals that the majority of subjects length of menstrual cycle in experimental group was (41.8%) was between 26-30 days and control group was (37.1 %) less than 26 days and

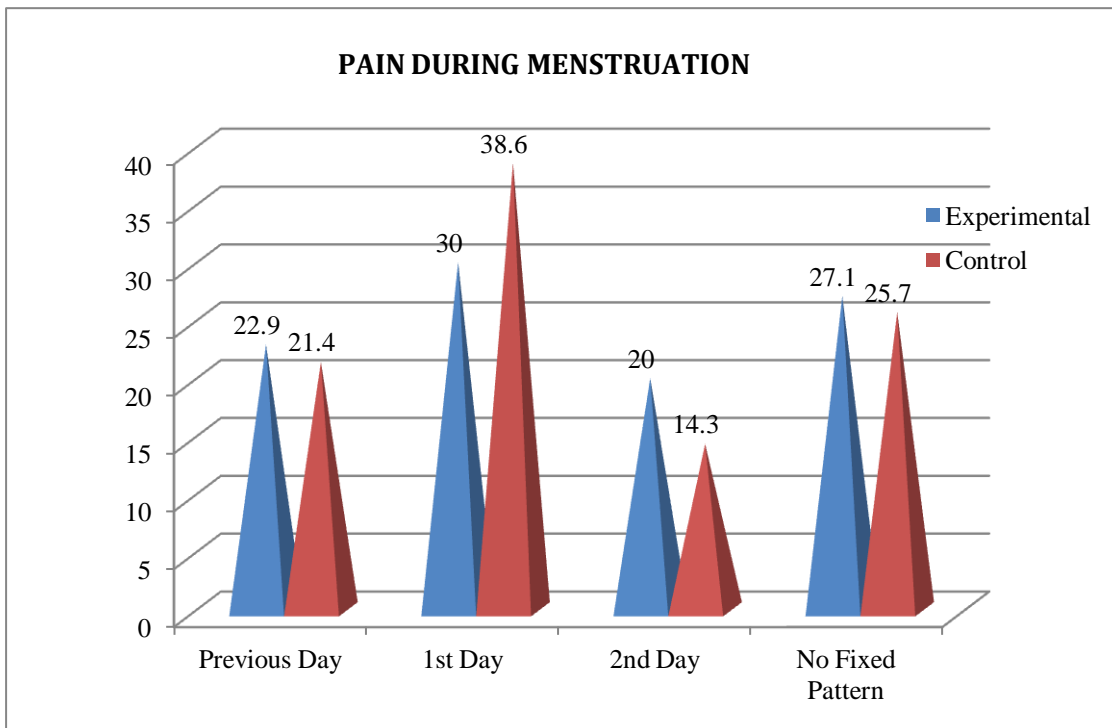


Figure 2: Distribution of subject according to pain during menstruation

Figure 2 reveals that the majority of subjects pain during menstruation in experimental group (30%) and in control group (38.6) were having pain in first day of flow

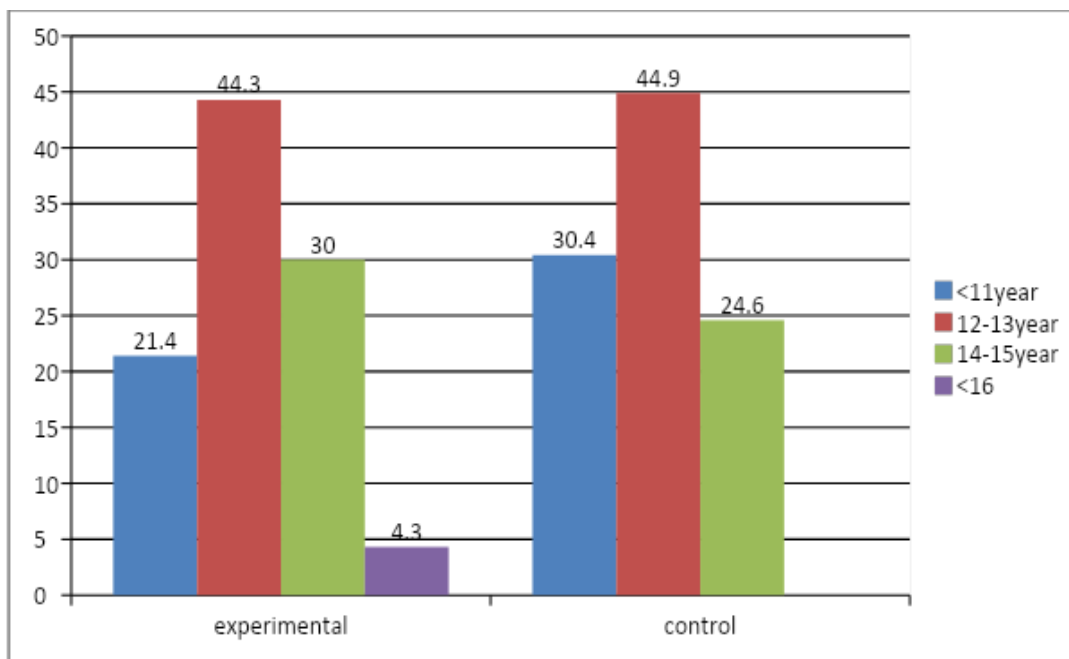


Figure3: distribution of subject according to age of menarche.

Figure 3 reveals that the majority of subjects age of menarche in the experimental group (44.3%) and in the control group (44.9%) belonging to 12-13 years of age group.

Table 1(b): Frequency and percentage distribution of experimental and control groups by their demographic variable

n1=70, n2=70

Sl..No.	Demographic variable	Experimental Group		Control group		
		Frequency	Percentage (%)	Frequency	Percentage (%)	
1	Family history of Dysmenorrhea	Yes	32	45.71	39	55.7
		No	38	54.28	31	44.3
2	Course of study	GNM	37	52.9	26	37.17
		B.sc	33	47.1	44	62.85
3	Religion	Hindu	34	48.6	34	48.6
		Muslim	12	17.1	9	12.9
		Christian	24	34.3	27	38.6
		other				

Table 1(b), shows that (54.28%) of the subjects from experimental group are not having family history of dysmenorrhea and (55.7%) from control group are having family history of dysmenorrhea and with regard to course of study in experimental group (52.9%) were in GNM and (62.85%) of subject are from control group in B.Sc. In religion, most of the subjects are from experimental group (48.6%) and control group (48.6%) were Hindu

Table 1(c): Frequency and percentage distribution of experimental and control group by their demographic variable

n1=70, n2=70

S.NO	Demographic variable	Experimental Group		Control group		
		Frequency	Percentage (%)	Frequency	Percentage (%)	
1	Type of Family	Joint	16	22.9	17	24.3
		Nuclear	31	44.3	36	51.4
		Extended	23	32.9	17	24.3
2	Do you follow any alternative remedies for menstrual pain relieving measure	Yes	-	-	-	-
		No	70	100	70	100
3	Dietary Pattern	Vegetarian	16	22.9	40	57.12
		Non-Vegetarian	-	-	-	-
		Mixed	54	77.1	30	42.84

Table1(c): shows that from the nuclear family subjects (44.3%) from the experimental group and (41.4%) subjects from the control group. Regarding alternative remedies for menstrual pain relieving measures (100%) in both the experimental group and control group subjects were not following any remedies. Dietary patterns in the experimental group (77.1%) were having a mixed diet and in the control group (57.12%) of subjects were vegetarian.

Section II: Description of level of pain during menstruation:

This section deals with the distribution of subjects according to the level of pain both before and after administration of pelvic rocking exercises .The severity of pain is categorized into mild, moderate severe levels and summarized in terms of frequency and percentage

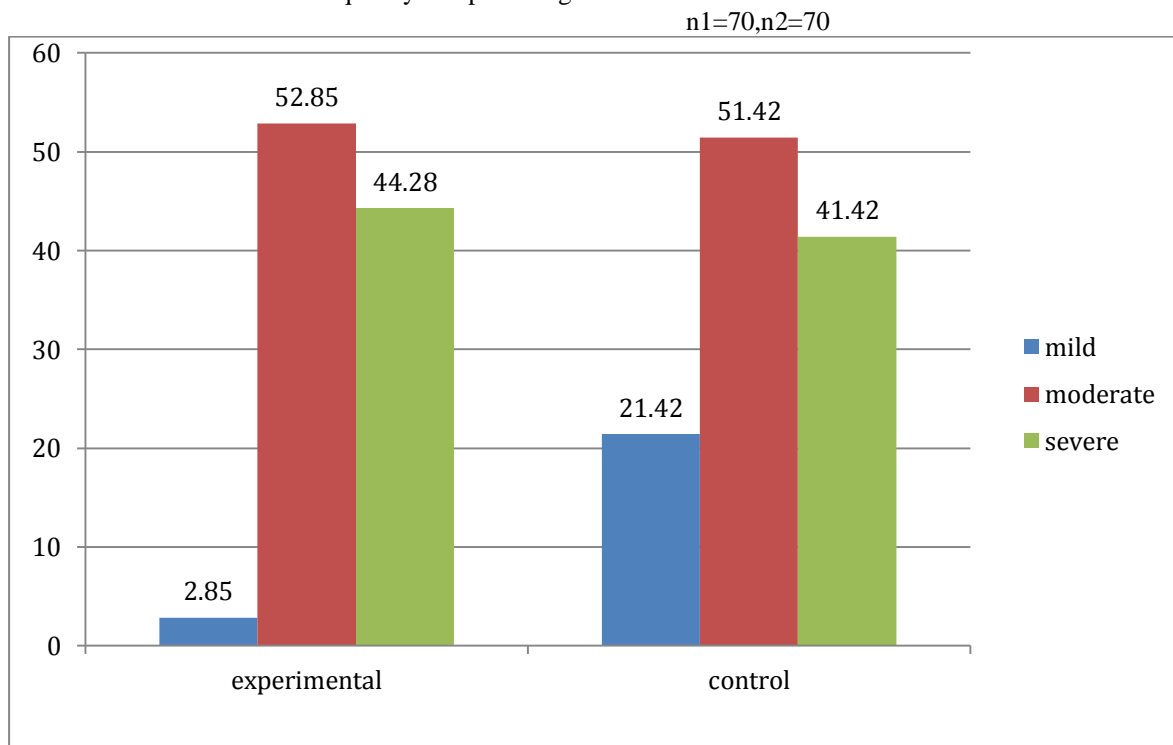


Fig 1: Distribution of subjects according to pain level.

Fig 1 depicts that both the experimental group (52.85%) and control group (51.42%) had moderate levels of pain.

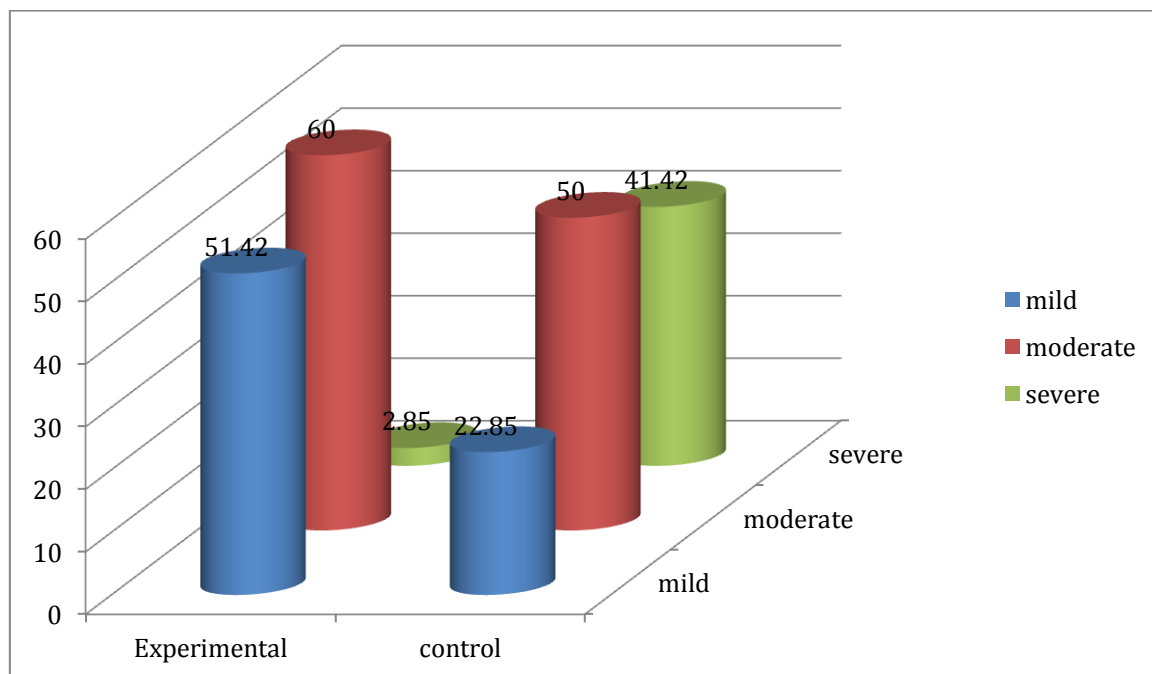


Fig2:distribution of subject according to pain level after administration of pelvic rocking exercises.

Fig 2 depicts that severity of pain in the experimental group is reduced to (2.85%) and in the control group the severity of pain remains the same as pre-test score (41.42%).

Section III: Effectiveness of pelvic rocking exercises on dysmenorrhea in experimental group

a. The effect of pelvic rocking exercise on dysmenorrhea among experimental group

				n=70
Group	Mean	SD	t' Value	Inference
pre-test	6.243	1.6280		
Post test	4.257	1.5102	18.959	S

This implies that the pelvic rocking exercises was effective in reducing the pain during menstruation **S=significant p<0.05**

The data present in the above table III (a): shows that the pre-test mean pain score is 6.243 with S.D of 1.6280 and post-test mean pain score is 4.257with S.D of 1.5102 indicating a decrease in pain level during post-test. The paired “t” test value is (18.959) show that there was a significant difference between pre-test and post-test pain score at 0.05.

b. Comparison of Post-test pain score in experimental group and control group

n1=70, n2=70

Group	Mean	SD	“t” value	Inference
experimental	0.11	.401		
Control	1.99	.876	-16.249	S

S=significant p<0.05

Table III(b): shows that the mean post test score of experimental group (0.11) was lower than the control group score (1.99). Unpaired “t” test shows that there is a significant difference between post-test pain score of experimental and control group (-16.249). It shows that pelvic rocking exercises was effective in reducing dysmenorrhea. There was significant difference between experimental and control group score at 0.05 level. This implies that the pelvic rocking exercise was effective in reducing the pain during menstruation.

Section IV: Association between the pre-test score of experimental groups with their demographic variables

The study concluded that there was no significant association in demographic variables in experimental group. The study shows that computed ‘p’ value was greater than 0.05 level of significant, hence null hypothesis was accepted. It was inferred that there was no significant difference between pre-test level score on selected demographic variable.

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IV. Discussion

The study findings revealed that majority of subjects (24.3%) were from the experimental group and (27.1%) were from the control group, at the age of 21 year. Duration of menstrual flow is between 3-4 days in the experimental group (44.3%) and (48.6%) in the control group. Regularity of menstrual period from the past three month in the experimental group (92.9%) and (98.6%) in the control group. Both the groups had pain during the menstrual period (100%). There was no past and present history of illness in both the groups were (100%).

The study findings revealed that the majority of subjects length of menstrual cycle in experimental group was (41.8%) were between 26-30 days and control group was (37.1 %) were less than 26 days and 30

days

In study reveals that severity of pain in the experimental group was reduced to (2.85%) and in the control group the severity of pain remains the same as pre-test score (41.42%).

The study finding shows that the pre-test mean pain score is 6.243 with S.D of 1.6280 and post-test mean pain score is 4.257 with S.D of 1.5102. It indicating that there was a decrease in pain level during post-test.

Hence the paired “t” test value was (18.959) its reveals that there was a significant difference between pre-test and post-test pain score at 0.05 level.

This implies that the pelvic rocking exercises was effective in reducing the pain during menstruation.

The majority of the subjects in mean post-test score of experimental group was (0.11) lower than the control group score (1.99). Unpaired “t” test shows that there was

The study concluded that there was no significant association in demographic variables in experimental group. And its shows that computed ‘p’ value was greater than 0.05 level of significant, hence null hypothesis was accepted.

It was inferred that there was no significant difference between pre-test level score on selected demographic variable

V. Conclusion:

Administration of pelvic rocking exercises was effective in reducing the level of pain among nursing students having dysmenorrhea. And this intervention can be practiced as a routing care of physical activities during menstrual period to relieve dysmenorrhea

LIMITATIONS: The study was limited to the students who were having dysmenorrhea during menstrual periods and it was limited to two Nursing Colleges.

IMPLICATIONS IN THE FIELD OF NURSING: The findings of the present study have several implications in the field of nursing education, nursing administration, nursing practice and nursing research.

- From this study, nurse and health personals would be able to understand the effectiveness of pelvic rocking exercises to prevent the dysmenorrhea during menstruation.
- Since the nurses are the first source of knowledge regarding health of the women, they have to be patient and educate the girls about the dysmenorrhea during menstruation.
- This study finding would be able to prevent the menstruation pain during their periods and to participate in their daily activities.

RECOMMENDATIONS:

On the basis of the study findings the following recommendations are offered for future research.

- The study can be replicated on a larger sample in different settings there by improving the chances for generalization of findings.
- A similar study can be conducted for a longer duration.
- A study can be conducted on other age groups.
- A similar study can be conducted in a community area for large group.
- A similar study can be conducted in a different geographical area.

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CONFLICT OF INTEREST

There are no conflicts of interest

References

- [1]. Ghada E. El-Refaye, Asmaa M. El-Bandrawy: effect of aerobic combined with pelvic rocking exercises on quality of life in primary dysmenorrhea bull. Fac. Ph. Th. Cairo Univ., Vol. 19, Issue No. (2) Jul. 2014, 86-220
- [2]. Vlachou E, Owens D, Lavdaniti M, Kalemikerakis J, Evagelou E, Margari N, Fasoi G, Evangelidou E, Govina O, Tsartsalis A. Prevalence, Wellbeing, and Symptoms of Dysmenorrhea among University Nursing Students in Greece. *Diseases*. 2019 Mar;7(1):5.
- [3]. Verma A. 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. *Hindu*. 2014;136:34-87
- [4]. Linda R. How to treat menstrual cramps. 2013 Aug 16
- [5]. Omidvar S, Bakouei F, Amiri FN, Begum K. Primary dysmenorrhea and menstrual symptoms in Indian female students: prevalence, impact and management. *Global journal of health science*. 2016 Aug;8(8):135
- [6]. Polit D E, Hungler BP. *Nursing research principles and methods* . 6th ed. Philadelphia: Lippincott publications; 2005. P. 109, 79, 115-24, 706-12.)
- [7]. Kapoor J. A study to assess the effectiveness of pelvic rocking exercises on dysmenorrhea among adolescent girls. *IJAR*. 2017;3(3):431-4..
- [8]. D.C Dutta, “Textbook of Gynaecology”, 2ndDed, New Central Book of Agency (P) ltd:495