



EFFECT OF STRETHING EXERCISE TO REDUCE PRIMARY DYSMENORRHOEA AMONG DEHRADUN COLLEGE GIRLS (URBAN, RURAL AND SLUM AREA)

¹ADITI, ¹RAUNAK KUMAR PRAJAPATI, JYOTI SAXENA², KANCHAN TARIYAL³,
³VIJAYLAXMI BIST, PRACHI SOOD⁴, ROSHAN KUMAR^{5****}

¹Research Scholar, Department of Pharmacy, Guru Nanak College of Pharmaceutical Sciences, Dehradun-248007, Uttarakhand, India

²Guru Nanak College of Pharmaceutical Sciences, Dehradun-248007, Uttarakhand, India.

³Department of Pharmaceutics, Guru Nanak College of Pharmaceutical Sciences, Dehradun-248007, Uttarakhand, India.

⁴Department of Pharmacy, Guru Nanak College of Pharmaceutical Sciences, Dehradun-248007, Uttarakhand, India

^{****5}Department of Pharmacology, Guru Nanak College of Pharmaceutical Sciences, Dehradun-248007, Uttarakhand, India.

Correspondence: Roshan Kumar

Department of Pharmacology, Guru Nanak College of Pharmaceutical Sciences, Dehradun-248007, Uttarakhand, India.

rjroshan244@gmail.com

Graphical Abstract



ABSTRACT

Objectives: It's not uncommon for adolescents to suffer from primary Dysmenorrhoea, which has the potential to disrupt their normal routines.

Aim: An evaluation of the effects of stretching exercise on primary Dysmenorrhoea is being conducted for Dehradun urban, rural, and slum area girls.

Working method: The study's goal is to examine the influence of home-based stretching exercises on lowering the intensity of primary Dysmenorrhoea in adolescents.

Result: Stretching exercise was found to have a statistically significant effect on Dysmenorrhoea.

Conclusion: Increase student awareness and understanding of the benefits of regular physical stretching by include this topic in school curricula.

INTRODUCTION

The menstrual cycle disrupts the lives of over half of women throughout their reproductive years. Primary dysmenorrhoea causes lower abdominal cramps that spread to the inner side of the legs few hours before menstruation^[1]. It lasts from 12 to 72 hours. At least half of people affected suffer symptoms that impact the full body. Prostaglandin activity is responsible for most of the symptoms of primary dysmenorrhoea. Physical activity and regular exercise have successfully prevented and treated dysmenorrhoea in the previous 20-30 years^[2]. Regular exercise reduces steroid hormone levels in pregnant women. As a result, the endorphin hormone rises, increasing pain tolerance. Stress activates the sympathetic nervous system, which controls uterine muscle contraction, perhaps exacerbating PMS symptoms (PMS). Because of this, Dysmenorrhoea symptoms are reduced^[3]. Despite the fact that exercise appears to relieve dysmenorrhoea symptoms, observational studies have given mixed results. Some research demonstrate that physical activity improves dysmenorrhoea symptoms while others show that it worsens them. Hightower's study found that active women had less dysmenorrhoea than sedentary ones. In a study of 67 sporty women by Dyusk, the intensity of dysmenorrhoea was found to be lower than in the non-athletic group^[4]. Jart et al. found no difference in dysmenorrhoea prevalence between women who exercised aerobically and those who did not. Metheny and Smith studied 179 nursing students and found that those who exercised regularly had far more severe dysmenorrhoea than those who did not. A 20-year randomized trial of 36 women indicated that aerobic exercise helped primary dysmenorrhoea. In a meta-analysis, Daley concluded that exercise had no effect on primary Dysmenorrhoea^[5,6]. However, given the various health benefits of regular exercise, the impact of exercise on dysmenorrhoea is controversial. However, new research on Iranian women's primary dysmenorrhoea shows that exercise can assist. Few clinical studies have examined the advantages of exercise and the two activities listed in primary Dysmenorrhoea^[7]. We want to see if stretching beats aerobic exercise at preventing and treating menstrual abnormalities (DMI).

Methodology

Data Study

Dehradun adolescent girls (11-20 years) who experienced menarche.

Study design

Multistage Stratified Sampling data

There are 58 sectors in Dehradun, of which 5 were chosen by lottery, namely District 58, Sector 42, District 30, District 20, Sector 30, and from 15 slums, 8 were chosen by lottery, including Doiwala, Doom Gaon, Harrawala, and Mokampur.

Inclusion criteria: Menarche-age girls.

Exclusion criteria: Those who haven't started menstruating, whose parents haven't consented. Mentally ill people were excluded.

Study Period:

10 September 2022 to 8 March 2023

Data collection Chart

Self-made interview plan This included the following. Profiles of people, families, Period history, Dysmenorrhoea symptoms Symptoms of chronic pain, Scales, Dysmenorrhoea practises, menstruation beliefs

Pilot Study Design:

The study included 15 adolescent girls aged 11 to 20, 7 from sector, 8 from slum and 10 from village. This study does not include pilot study results.

Ethical measurement

Prior to recruitment, the girls' parents/guardians gave informed verbal consent, and the respondent gave written consent. The study was fully disclosed. The study subjects' privacy will be protected.

Workouts advised were:

1st Stretching exercise: Stand with your feet hip-width apart and bend your trunk forward from your hip joint until your shoulders and back are parallel to the floor. Repeat 10 times for 5 seconds each time (Fig 1).

2nd Stretching exercise: When asked to stand, the participants were instructed to lift one heel off the floor and then alternate lifting the other heel off the floor. There were 20 repetitions of the exercise (Fig 2).

3rd Stretching exercise: The patients were instructed to stand with their feet shoulder width apart, to stretch their trunks and hands forward, and then to squat for five seconds before raising their bodies and performing the same movements ten times (Fig 3).

4TH Stretching exercise: Extend your feet out wider than your shoulders in order to complete the experiment Bending and touching her left ankle with her right hand, she was then instructed to do the same thing with the other foot. This was done by placing her left hand in a stretched posture in a position where her head was in the middle and she moved her head to look for her

left hand. Every 10 repetitions on each side of the body, we did the exercises in the same order (Fig 4 and 5).

Group B (core strengthening)

There was a survey and then the participants were told that if they completed the exercises for 20 minutes each day, they would be eligible to participate in the study (8 weeks). Elbows and toes lift the body upward for 5 seconds and 5 repetitions of this pose (Fig 6).

Pose like Cat-Camel: Prone kneeling, subjects were instructed to inhale from the nose while hunching their backs (cat) and exhale from the mouth while curving their spine (camel) for five seconds, ten times per session (Fig 7).

Curl up: Positioned supine and mildly knee-flexed, the individuals were instructed to clasp their hands behind each other and slowly bring their bodies nearer the knee. 10 times in 5 seconds (Fig 8).



FIG: (1) Stretching Exercise for Hip



FIG: (2) Stretching Exercise for Hip



FIG: (3) Stretching Exercise leg

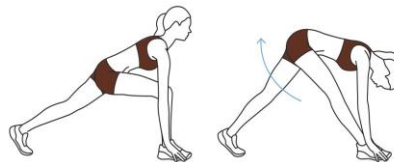


FIG: (4) Stretching Exercise back

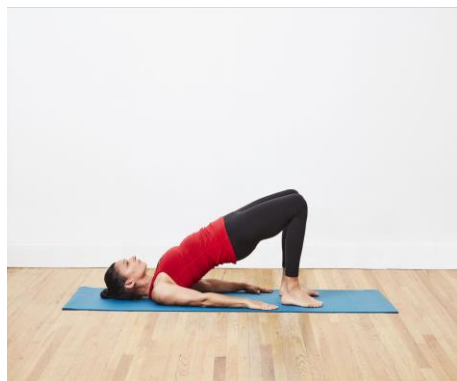


FIG: (5) Pelvic bridging.



FIG: (6) Plank



FIG: (7) Cat and Camel



FIG: (8) Curl up.

TABLE 1: DEMOGRAPHIC PROFILE OF DEHRADUN LOCAL AND URBAN GIRLS

Personal Characteristics	
School Type	
General secondary school	✓
Technical secondary school	✓
Age: (years)	
15	✓
16	✓
17-19	✓
Academic year	
First	✓
Second	✓
Third	✓

Section A-Research paper

Residence	
Urban	✓
Rural	
Fathers' education	
Illiterate	✓
Read & write	✓
Primary	✓
Preparatory	✓
Secondary	
University	
Mother' education	
Illiterate	✓
Read & write	
Primary	
Preparatory	
Secondary	
University	
Father's occupation:	
Governmental employee	✓
Free business	
Skilled worker	✓
Mother 's occupation:	
Housewife	✓
Employee	

TABLE 2: MENSTRUAL PROFILE OF STUDENTS WITH DYSMENORRHOEA

Characteristics	Dysmenorrhoea		
	No	Yes	Total
Age in menarche	35	95	130
< 12			
13	54	111	165
>15	28	58	86
Menstrual regularity	139	278	417
Regular			
Irregular	32	89	121

Section A-Research paper

Length of menstrual cycle	28	58	86
Short			
Normal	126	636	762
Long	70	14	84
Duration of menstrual flow	56	19	75
Short			
Normal	44	145	189
Long	12	32	44
Uses of drug for menstrual cycle			
No	16	145	161
Yes	159	36	195
Family history of Dysmenorrhoea			
No	156	147	303
Yes	46	179	225
Total	1001	2042	3043

TABLE 3: DISEASES ASSOCIATED WITH PSYCHOLOGICAL SYMPTOMS

PSYCHOLOGICAL SYMPTOMS	NOT AT ALL	MILDLY	MODERATELY	SEVERELY
• Menstrual migraines	-	18	18	19
• Depression	-	-	18	19
• Irritability/easily agitated		18	18	-
• Rapid mood changes	18	18	18	19
• Poor concentration	-	18	18	19
• Anxiety	19	-	-	19
• Insomnia	-	-	-	18
• Hypersomnia	-	19	-	19
• Over eating/food craving	18	18	189	18
• Tension/nervousness	-	19	19	19
• Feeling of inferiority	18	18	-	-
• Lack of self confidence	-	18	18	-
• Difficulty in remembering	-	19	19	18

• Not able to do critical thinking	-	19	19	18
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TABLE 4: REGULARITY OF MENSTRUAL IN GROUPING OF GIRL

Diseases pain	Yes	NO	Sub total	P. Value
Regularity of menstrual				
Timely	110	84	194	0.10
Gapping	75	32	107	0.05

Table 5: Common mental disorder of dysmenorrhoea experience by girls

Mentally symptoms	AREA		
	Town (110)	Village(110)	Slum Area(120)
Anxiety Disease	6	4	10
Irritation	18	10	18
Difficulty in concentrating	4	3	6
Insomnia	6	6	3
Forget	0	0	2
Headache	12	7	6

FIG (8): DISTRIBUTION OF THE STUDIED STUDENTS REGARDING THEIR SUFFERING FROM DYSMENORRHOEAL DEHRADUN GIRLS

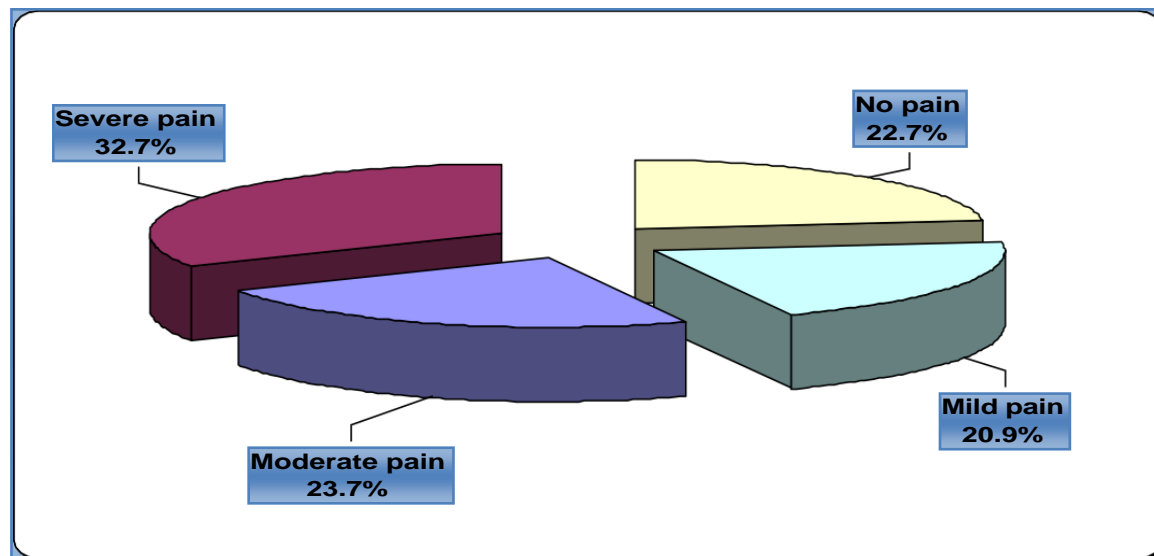


FIG (9): DEGREE OF PAIN RELATED DYSMENORRHOEA AMONG STUDIED STUDENTS FROM DEHRADUN

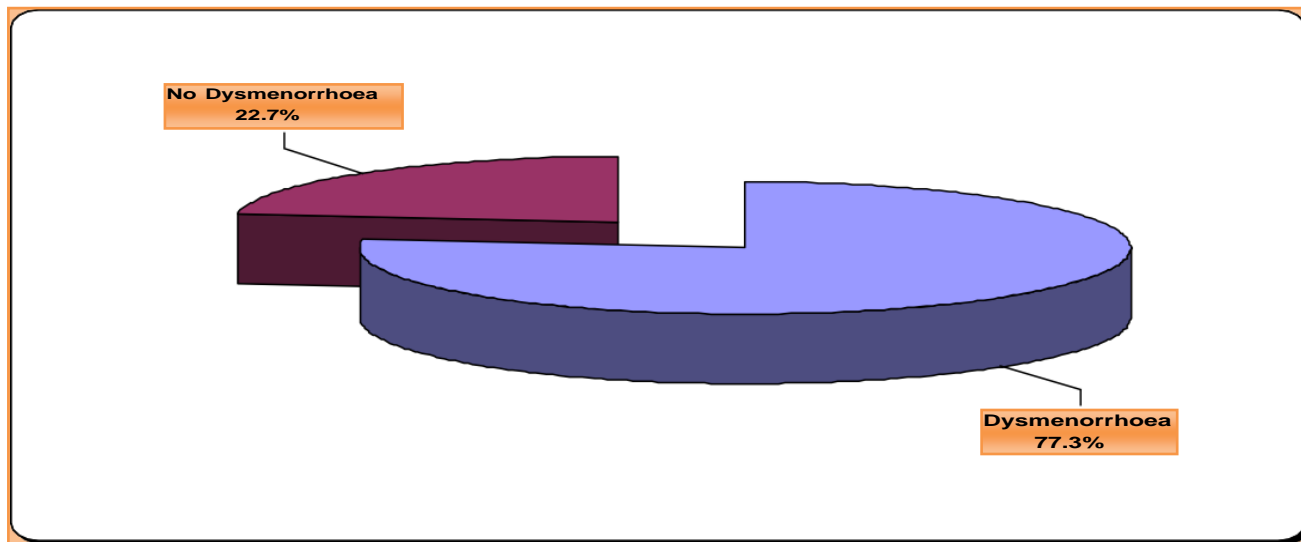


FIG (10): TOTAL SCORE OF KNOWLEDGE REGARDING MENSTRUATION AND DYSMENORRHOEA AMONG DEHRADUN GIRLS

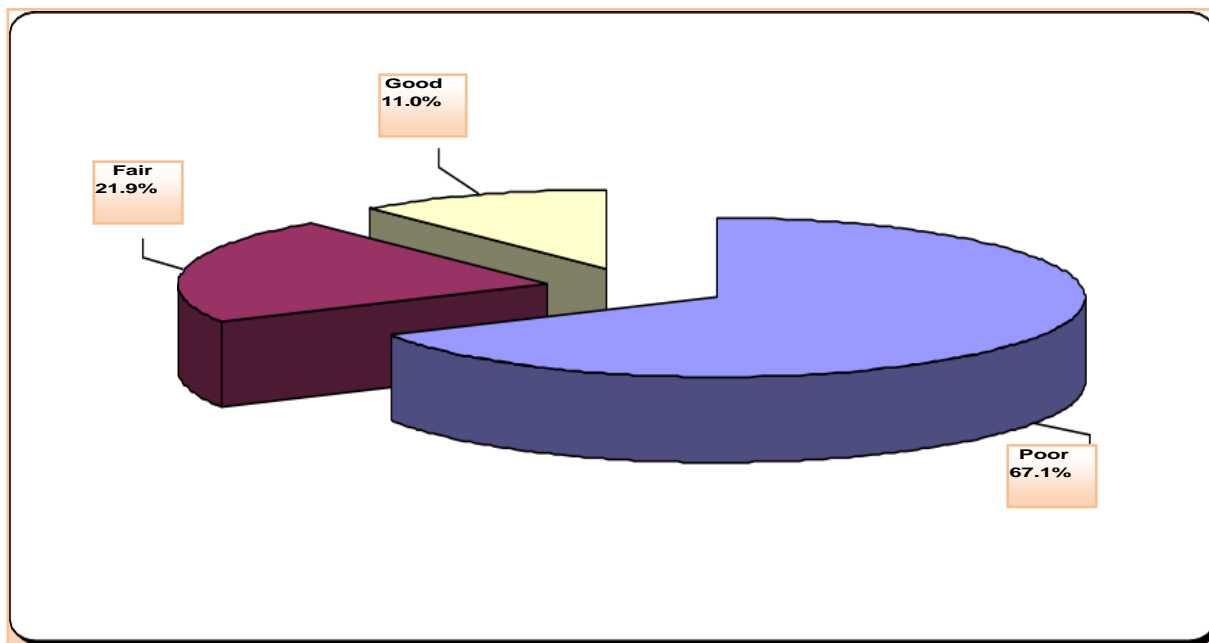


Figure (8): Dispersal of research subjects by degree of dysmenorrhoea is seen in the graph below. It was shown that (77.3 percent) of the students had Dysmenorrhoeal symptoms.

Figure (9): Roughly a third (32.7 percent) of the students with dysmenorrhoea felt severe discomfort, while just about a quarter (20.9 percent) said they had mild pain, according to the research.

Figure (10): These results show how well students understand the relationship between menstruation and dysmenorrhoea. Only 21.9 percent of the pupils studied had fair understanding, while more than two-thirds (67.1 percent) had inadequate knowledge.

Primary dysmenorrhoea is a critical health issue that affects young women's daily activities, as well as their physical and emotional well-being. It also affects one's general health^[8]. This study looked into whether stretching can help relieve dysmenorrhoea pain in adolescent girls. The age range of the students in this study was 15 to 19, with a mean of 16.31 ± 0.91 , which is in line with a prior study in Amritsar that assessed adolescent girls' awareness and concern about primary dysmenorrhoea^[9]. This aligns with a Manipur study on dysmenorrhoea in high school girls: Students aged 15-19 had a mean age of 16.78 ± 0.90 . Almost half of the students were in their first year of college, and only a fifth were in their third year^[10]. As a result of their dedication to study during their initial years, students were more inclined to participate in monthly assessments of their work. A study in Iran found that symptoms of dysmenorrhoea were associated with BMI in female teenagers, with the majority of students in their first and third years of college^[11]. The current study's menorrhagia mean age was 12.70 ± 1.10 . This is in line with those who found the average age of menarche to be 12.37 ± 0.871 . Females reported high levels of annoyance, anxiety, and worry (5.6 percent). Our findings demonstrate that dysmenorrhoea sufferers have varied symptoms. The most frequent medical condition causes stomach pain. The most prevalent symptoms were stomach cramps (75%) and backaches (58%) (56.9 percent) (51.9%) Menstruation kept many of the women out of school^[12-14]. Some girls said they skip school to change sanitary napkins. This study also identified the quality of student attendance, particularly their level of concentration and attention during class activities. It's been linked to absenteeism that women can't get basic necessities like clean water and a private restroom during their period. 275 women (90.34%) said they felt sad or nervous throughout their menstruation. In fact, only 4.81 percent of females have sought medical assistance for a menstrual-related disease^[15]. As a result, adolescent reproductive awareness is low. Only 6.3 percent of women in Dehradun sought medical care for dysmenorrhoea, whereas 32% used OTC drugs, 62% self-treated, and 7.7% utilized complementary therapies. In this study, 52 ladies (17%) preferred mefenamic acid. Most girls don't use sanitary pads owing to cost and reactivity^[16]. No one could control their heavy periods. menstruation. In an Indian study, adolescent girls did not utilize menstrual absorbents due to expense and lack of knowledge. Participants chose sanitary pads to cloth when given the alternative. Disposable pads are more absorbent than reusable pads and are more sanitary. Reusing the cloths too often may cause pelvic infections. They decided that drying techniques were imperfect because the cloth had to be hidden from view^[17]. The consultation rate was low (11.33%) and there was a time lag. Women believe health issues, particularly reproductive issues, are inevitable. A shame culture exacerbates this. This cycle affects women's health and quality of life^[18]. A study in State found that the average age of menarche was 12.5 ± 2.08 years old, which agrees with this study's findings. The current survey indicated that most students used sanitary ready towels and that the

number of pads changed daily ranged from three to one. This may be related to media exposure raising women's knowledge of sanitary pads. In a cross-sectional study of schoolgirls' attitudes, knowledge, and behavior about the menstrual cycle and the challenges it causes, over a quarter reported exclusively using sanitary pads^[19]. A recent study found that almost a third of college students have dysmenorrhoea. In Ethiopian secondary school students, more than 75% had dysmenorrhoea and its causes. Unlike studies in India that indicated less than two-thirds of pupils had dysmenorrhoea, these findings show that ethnicity, socio-cultural characteristics, cultural background, and geographic location all have a role. In terms of pain intensity. According to the survey, a third of students felt severe pain, a fifth moderate discomfort, and a quarter light pain. This contradicts data on dysmenorrhoea in high school girls^[20].

CONCLUSION

More than three-quarters of the students studied had dysmenorrhoea. Pretest knowledge of menstruation and dysmenorrhoea was low for more than two-thirds of the students, but after execution of the education programe, their knowledge increased. Statistically significant differences were found between pre- and post-test knowledge of the students. Dysmenorrhoea pain was reduced more effectively by stretching exercise.

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