

## Impact Of Jeera Water On Dysmenorrhea: An Interventional Study

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### ABSTRACT:

**INTRODUCTION:** Dysmenorrhea among adolescent girls is usually associated with normal ovulatory cycles and with no pelvic pathology. In around 10% of adolescents and young adults with severe dysmenorrhea symptoms, pelvic abnormalities may be found. One study reported that the prevalence was 60% in Karnataka. In view of high prevalence, the current study was undertaken.

**OBJECTIVE:** To know the effect of Jeera water on reducing pain severity in girls suffering from dysmenorrhea.

**METHODS:** Using a quasi-experimental design, 44 students were selected randomly for intervention who fulfill inclusion criteria. The purposive sampling technique was adapted to select subjects. The Pretest score was assessed, and subjects were provided with Jeera water on the first day of the menstrual cycle for 3 months. After 3 months using a visual analogue pain scale post-test was conducted. Pre and post-test scores were compared.

**RESULTS:** Most of the students were aged 19 years. Most of them were from the BSC nursing course. 75% of nursing students informed that pain is severe on 1<sup>st</sup> day of menstruation. There is a significant difference in the mean pre and post-intervention pain scores. This implies the effectiveness of Jeera water in reducing menstrual pain.

**CONCLUSION:** Jeera water is cost-effective and reduces the level of pain in dysmenorrhea. Jeera water is unlikely to cause side effects and is considered healthy for the body. It is not a time-consuming process.

**KEYWORDS:** Dysmenorrhea, Jeera water, Adolescence, Menstrual pain, Visual analogue scale

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### I. INTRODUCTION

Adolescence is a transition phase from childhood to adulthood and is characterized by changes in physical or emotional or endocrinal or mental growth.

Dysmenorrhea is a gynaecological condition characterized by severe uterine pain during menstruation. Most women experience mild pain Dysmenorrhea is diagnosed if the pain is very severe. In varying degrees, it affects 45-93% of reproductive-aged women, causing 3 days of incapacitating symptoms per month in 10-15% of women with untreated dysmenorrhea.<sup>1-2</sup> It is classified as primary and secondary based on the absence or presence an underlying cause. Dysmenorrhea can feature different kinds of pain including sharp throbbing, dull nauseating, burning or shooting pain. It may precede menstruation by several days or may accompany it, and it usually subsides as menstruation tapers off. It occurs when prostaglandin F<sub>2</sub> α causes menstrual cramping with or without associated symptoms of headache, nausea, anxiety, fatigue, diarrhea and bloating.<sup>3</sup> Dysmenorrhea among adolescent girls is usually primary and is associated with normal ovulatory cycles and with no pelvic pathology. In around 10% of adolescents and young adults with severe dysmenorrhea symptoms, pelvic abnormalities may be found.

In an epidemiological study done on the adolescent population Klein and Litt<sup>4</sup> reported a prevalence of dysmenorrhea of 59% of patients and 12% described it as severe; 37% described it as moderate and 49% as mild dysmenorrhea. One study reported that the prevalence was 60% in Karnataka.<sup>5</sup> In view of high prevalence, the current study was undertaken.

Nurses are appropriate for teaching adolescent girls about menarche, menstruation, dysmenorrhea, its management, sexual health, conception, and other health concept related to Female Reproductive Health. Their training and knowledge promote a more positive outlook on the physiological process associated.

### Objective:

To know the effect of Jeera water on reducing pain severity in girls suffering from dysmenorrhea.

## II. MATERIAL AND METHODS

A quasi-experimental design was used to accomplish the aim to evaluate the effectiveness of jeera water on dysmenorrhea. Initially, nursing students were selected using a purposive sampling technique based on inclusion criteria of age of the participants above 18 years and below 22 years.

**Study site:** Sri Siddhartha School and College of Nursing, Tumkur.

**Study duration:** Four weeks

**Sample size:** 44

**Type of Study:** Quasi-experimental study

### Inclusion criteria:

- The participants who are willing to participate in the study.
- Female nursing students who are having dysmenorrhea aged 18 to 22 years.

### Exclusion criteria:

- Students who were already taking treatment for dysmenorrhea.
- Pregnant and lactating females

Pain was measured using visual analogue pain scale (VAS)<sup>6</sup>. Pretest were conducted and the participants are categorized into different categories (Mild, Moderate, Severe, very severe, worst) using a visual analogue pain scale. According to the visual analogue pain scale, each item in the scale has a different score range. From 0 to 5. score 1 is mild pain, score 2 is moderate pain, score 3 is severe pain, score 4 is very severe pain and score 5 is the worst pain.

Intervention was started after the pretest. Initially, the participants were provided with jeera water on the first day of menstruation for 3 months.

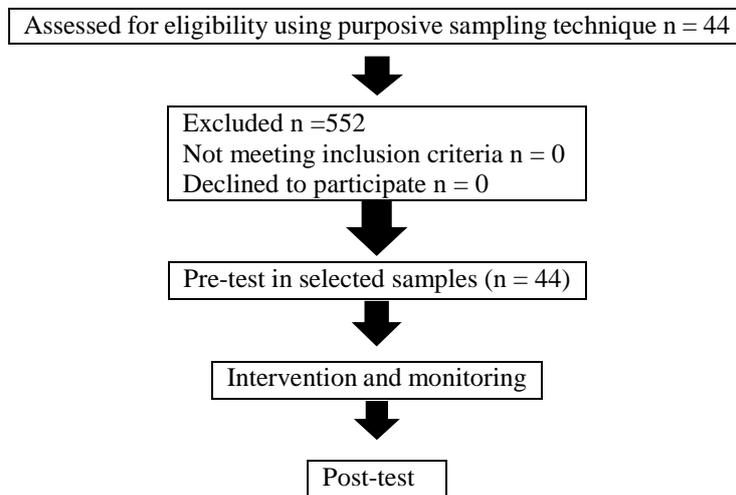


Fig. 1 Flow diagram of the methodology

## ETHICAL CONSIDERATIONS

Institutional review board approval (SSMC/MED/IEC-002/Jan-2023) was obtained from Sri Siddhartha Medical College ethics committee, Tumkur. Informed consent was taken from all participants.

## DATA ANALYSIS

The P value was calculated based on the students' t-test test. P value below 0.05 is considered significant.

## III. RESULTS

### Age distribution:

9.1% of students were aged 18 years. 40.9% of students were aged 19 years, 20.5% were aged 21 years.

Table 1: Age distribution of students

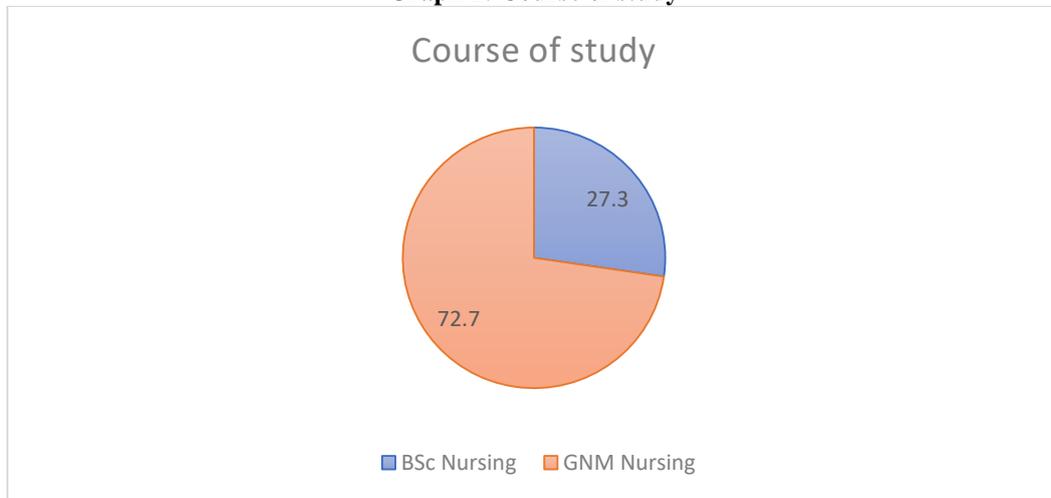
Age (in years)	Frequency	Percentage
18	4	9.1

19	18	40.9
20	9	20.5
21	8	18.2
22	5	11.4
Total	42	100

**Course of study:**

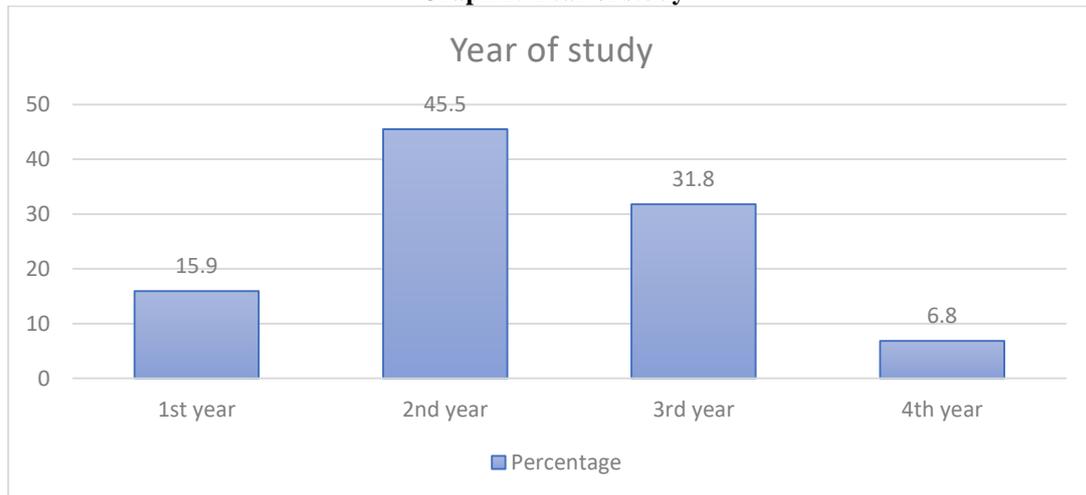
72.7% of students were in BSC nursing course

**Graph 1: Course of study**



**Year of study:** 45.5% of students belonged to 2<sup>nd</sup> year in the course of their study.

**Graph 2: Year of study**



**History and pattern of menstruation:** The following table shows a questionnaire on menstruation history and pattern among study participants. Most of the students said mother as the source of knowledge about menstruation.

**Table 2: Menstruation history and pattern**

Variable	Category	Frequency	Percentage
At what age did you have first menstrual cycle	10-12	5	11.4
	13-15	32	72.7
	16-18	7	15.9
Source of knowledge about menstruation	Physician or nurse	2	4.5
	Mother	39	88.6
	Friends	1	2.3
	Sister	1	2.3
	Nobody	1	2.3
	Do you have any menstrual problem	No	1

	Yes	43	97.7
Do you have taken any physician consult	No	37	84.1
	Yes	7	15.9
Do you use any medicine during menstruation	No	38	86.4
	Yes	6	13.6

**Clinical features:** The following table shows clinical features of study participants. 75% of nursing students informed that pain is severe on 1<sup>st</sup> day of menstruation.

**Table 3: Clinical features among participants**

Variable	Category	Frequency	Percentage
Do you feel any cramps during your menstruation	Yes, some menstrual cycle	27	61.4
	Yes, Every menstrual cycle	17	38.6
Do you feel pain in your lower belly when you exercise or play sports?	No	16	36.4
	Yes	28	63.6
Location of pain	Back	9	20.5
	Foreleg	10	22.7
	Lower back	16	36.4
	Inguinal region	6	13.6
	Lower back	3	6.8
The most severe day of pain	1 <sup>st</sup> day before menstruation	11	25.0
	1 <sup>st</sup> day of menstruation	33	75.0
How frequent you experienced during menstruation	Most of the time	21	47.7
	Always	19	43.2
	Occasionally	4	9.1
Did dysmenorrhea affect daily activities and college life	No	18	40.9
	Yes	26	59.1

**Intervention:**

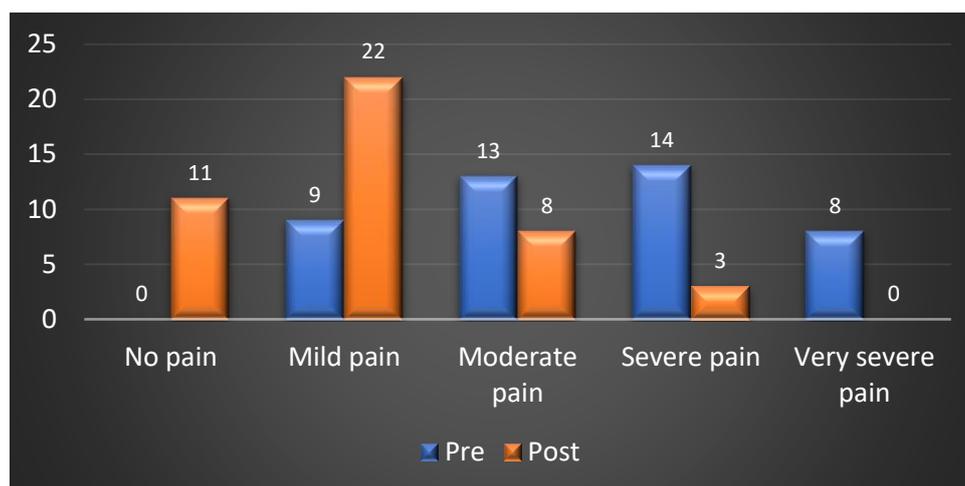
The following table shows details on intervention among study participants. Most of the nursing students have taken intervention on 1<sup>st</sup> day of menstruation.

**Table 4: Details on intervention**

Variable	Category	Frequency	Percent
On what day did you take an intervention?	1 <sup>st</sup> day of menstruation	41	93.2
	2 <sup>nd</sup> day of menstruation	3	6.8
Did you take any medication along with intervention?	No	43	97.7
	Yes	1	2.3
Did you experience any side effects after the intervention?	No	44	100.0
	Yes	0	0.0
Did you consult any doctor to treat side effects	No	44	100.0
	Yes	0	0.0
What are the lifestyle changes that help to relive dysmenorrhea?	Exercise	22	50.0
	Dietary changes	9	20.5
	Meditation	3	6.8
	Others	10	22.7

**Pre and post scores comparison:** After the 3 months of the intervention there is a significant difference in pre-test and post-test level of dysmenorrhea. This implies that the jeera water is effective in reducing the pain level in dysmenorrhea. The pain level in dysmenorrhea is gradually reduced in study participants and the p value of <0.001 indicates that the jeera water is effective.

Graph 3: Pre and post score comparison



## II. DISCUSSION

The result of current study demonstrated that 3 months of jeera water intervention is effective in reducing the level of dysmenorrhea. The present study was statistically significant.

According to pain theory, the arrangement of pain is cyclic and includes the following order: pain /tension /fear/pain. Since drinking jeera water plays a significant role in the reduction of vasopressin contraction, it seems that taking jeera water can be effective in reducing uterine contractions, diminishing tension and fear and can be considered as a natural painkiller in the body. We found that recommended amount of jeera water intake decreases the pelvic pain of dysmenorrhea after the intervention. Results also showed that the intervention group did not consume any pain relievers during dysmenorrhea after the intervention, but their length of menstrual bleeding did not change participants did not encourage any side effects during the intervention.

We believe the findings could contribute to existing knowledge on the topic and perhaps helps young women to overcome the pain of dysmenorrhea. However, the data for this study was self-reported and obtained from females, studying at SSSCON in Tumkur, which therefore restricted the extrapolation of the result to the wider population. In addition, one should note that we collect limited information for the study while there might be other confounding variables such as diet and alcohol consumption that potentially could influence dysmenorrhea.

Chen CX described the role of oral ginger for dysmenorrhea previously.<sup>7</sup>

One clinical trial showed the efficacy of Dill seed in relieving dysmenorrhea pain. They showed that Dill seed and cumin showed a significant reduction in cold sweats, backache, fatigue and cramps in dysmenorrhea patients.<sup>8</sup>

Many other previous studies and systematic reviews<sup>9-15</sup> showed the role of various ayurvedic medications in treating dysmenorrhea but probably ours is the 1<sup>st</sup> study as far as know to know the effect of Jeera water in reducing menstrual pain.

## III. CONCLUSION

Jeera water is cost-effective and reduces the level of pain in dysmenorrhea. Jeera water is unlikely to cause side effects and is considered healthy for the body. It is not a time-consuming process.

The study is sponsored by RGUHS, Karnataka. There were no conflicts of interest.

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