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## Effectiveness of mint extract on dysmenorrhea related to pre-menstrual-symptoms among adolescent girls

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### Abstract

The purpose of this study is to explore the effectiveness of mint extract on dysmenorrhea related to pre-menstrual-symptoms among adolescent girls. There is effectiveness in giving mint extract to the level of pain in adolescent girls. Management of pain based on Evidence-Based Practice also needs to consider ways and methods in its implementation, not all treatments can be applied to pain. The limitation in this study is that it cannot conduct sample selection on the influential processes (not all influencing factors can be controlled). Factors that cannot be controlled include food intake, activity, psychology and hormonal imbalances. It is hoped that adolescent girls can use non-pharmacological therapies such as mint extract in reducing pain to reduce and treat pain so that it does not interfere with activity.

**Keywords:** Mint extract, dysmenorrhea, pre-menstrual-adolescent girls

### Introduction

A momentous event in a woman's life happens when she becomes sexually active. This is the place where the female gender becomes dominant. A moment to cherish is something that turns into a torment with the beginning of periods. There are times when it is inconvenient and times when it is humiliating. Instead of feeling relieved and grateful when their period arrives, women often feel anxious and embarrassed. The commencement of menarche, which is frequently accompanied by issues with irregular menstruation, heavy bleeding, and dysmenorrhea, is one of the most significant physiological changes that occur in adolescent girls. One of these issues that many adolescent females deal with frequently is dysmenorrhea. According to Nag (1982) [2], 33.5% of adolescent girls in India had dysmenorrhea. More than 50% of all menstrual women report some discomfort, according to a Swedish study. A renowned obstetrician has also stated that 5-10% of females in their late teens experience severe spasmodic dysmenorrhea, which interferes with their social and academic lives. In India, it is unclear what the exact incidence and prevalence of dysmenorrhea are. Recently, George and Bhaduri came to the conclusion that dysmenorrhea (87.87%) is a widespread issue in India. The prevalence ranged from >2-4% in Sweden. Similar results among rural married women of Andhra Pradesh had been reported by Jayashree and Jayalakshmi. According to estimates, the most common reason Americans miss time from work and school is dysmenorrhea. The severity of the issue would be demonstrated by research of the prevalence of dysmenorrhea and its related symptoms. The study was conducted to estimate the prevalence of dysmenorrhea and its typical symptoms, to ascertain the relationship between dysmenorrhea and specific physiological parameters like body surface area and overall health status, and to discover the relationship between the status of dysmenorrhea and pain intensity, as well as the association between these physiological symptoms. The researcher felt it was necessary to study the dysmenorrhea among adolescents with premenstrual symptoms. This study is proposing that a natural and safe treatment, instead of non-steroidal analgesics, be used for premenstrual symptoms in adolescent school-age girls.

### Objectives

1. To study the effect of mint extract on dysmenorrhea in adolescent girls.
2. To study the association of sociodemographic variables with dysmenorrhea.

**Methodology**

A comparative technique was used for the study. The settings for the study were senior secondary schools of Moga, Punjab. Only adolescent girls between 12 and 17 years, studying in the 6<sup>th</sup> to 12<sup>th</sup> class were included in the study. A probability sampling method sampling technique was used to select the sample subjects. The total sample size was 250 each in experimental and control groups. A visual analog scale was used for measuring the pain intensity.

**Results**

**I. Prevalence of dysmenorrhea**

**Table 1:** Pre-test Frequencies and percentage of adolescent girls experiencing dysmenorrhea N=500

Parameters	Experimental Group n=250		Control Group n=250		
	f	%	f	%	
<b>Pre-Test Level of Pain Score</b>					
No Pain	(0-1)	25	10	42	16.8
Mild Pain	(2-3)	77	30.8	77	30.8
Moderate Pain	(4-6)	73	29.2	75	30
Severe pain	(7-9)	69	27.6	48	19.2
Worst Pain	(10)	6	2.4	8	3.2

Table 1 summarizes the extent of pain among the adolescents as assessed on the numerical scale. The table denotes that during the pre-test, 30.8% of the adolescents of the experimental group had mild pain and 10% of the adolescents were found without pain. During the pre-test, 30.8% of the adolescents of the control group expressed they had mild pain and 16.8% of the adolescents were without pain.

**Table 2:** Post-test Frequencies and percentage of adolescent girls experiencing dysmenorrhea N=500

Parameters	Experimental Group n=250		Control Group n=250		
	f	%	f	%	
<b>Post-Test Level of Pain Score</b>					
No Pain	(0-1)	40	2.8	18	2.6
Mild Pain	(2-3)	84	18	77	37.6
Moderate Pain	(4-6)	74	29.6	77	30.8
Severe pain	(7-9)	45	33.6	94	22
Worst Pain	(10)	7	16	6	7.2

Table 2 summarizes the extent of pain among the adolescents as assessed on the numerical scale. The table denotes that during the post-test, 33.6% of the adolescents of the experimental group had severe pain and 10% of the adolescents were found without pain. During the pre-test, 30.8% of the adolescents of the control group expressed they had mild pain and 16.8% of the adolescents were without pain.

**Table 3:** Comparison of Pre-Test Pain Score of Experimental and Control Group N=500

Pre-Test Pain Score	Experimental Group	Control Group
Mean Score	4.75	4.26
Standard Deviation	2.68	2.68
Mean Difference	0.488	
Unpaired t Test	2.037	
P Value	0.0421	
Table Value at 0.05	1.96	
Result	Significant	

Table 3 denotes that during the pre-test, pre-test mean score of experimental group was 4.75 with standard deviation of 2.68 of pain score. During the pre-test, pre-test mean score of control group was 4.26 with standard deviation of 2.68 of pain score. The mean difference was 0.488 of the experimental and control groups. This difference was found statistically significant at  $p \leq 0.05$ .

**Table 4:** Comparison of Post-Test Pain Score of Experimental and Control Group N=500

Post-Test Pain Score	Experimental Group	Control Group
Mean Score	4.16	5.46
Standard Deviation	2.60	2.64
Mean Difference	-1.292	
Unpaired T Test	5.514	
P Value	0.0000	
Table value at 0.05	1.96	
Result	Significant	

Table 4 explains that during the post-test, post-test mean score of experimental group was 4.16 with standard deviation of 2.60 of pain score. During the pre-test, pre-test mean score of control group was 5.46 with standard deviation of 2.64 of pain score. The mean difference was -1.292 of the experimental and control groups. This difference was found statistically significant at  $p \leq 0.05$ .

**Table 5:** Comparison of Extent of Pain as Assessed on a Numerical Scale among Adolescents of the Experimental and Control Group N=500

Group	N	Pain Score				Paired T Test		
		Pre-test		Post-test		df	T	Result
		Mean	SD	Mean	SD			
Experimental Group	250	4.75	2.677	4.16	2.604	249	2.492	Significant
Control Group	250	4.264	2.679	5.46	2.636	249	5.135	Significant
Unpaired T Test	df	498		df	498			
	T	2.037		T	5.514			
	Result	Significant		Result	Significant			

Table 5 summarizes the extent of pain among the adolescents as assessed on the numerical scale. The table denotes that during the pre-test, mean pain score of adolescents was  $4.75 \pm 2.677$  and post-test mean pain score of adolescents was  $4.264 \pm 2.679$ . This difference in the mean scores was statistically significant at  $p \leq 0.05$  level. Hence it was inferred that there was a decrease in level of pain during PMS after administration of mint extract.

**Discussion**

The objective of the study is to assess the level of pain among adolescent girls. The result indicates that during the pre-test, mean pain score of adolescents was  $4.75 \pm 2.677$  and post-test mean pain score of adolescents was  $4.264 \pm 2.679$ . This difference in the mean scores was statistically significant at  $p \leq 0.05$  level. Similar findings were found in a study conducted by Grandi *et al.* (2012) [8] who had reported menstrual pain reported by 84.1% of women, with 43.1% reporting that pain occurred during every period, and 41% reporting that pain occurred during some periods.

## Conclusion

There is effectiveness in giving mint extract to the level of pain in adolescent girls. Management of pain based on Evidence-Based Practice also needs to consider ways and methods in its implementation, not all treatments can be applied to pain. The limitation in this study is that it cannot conduct sample selection on the influential processes (not all influencing factors can be controlled). Factors that cannot be controlled include food intake, activity, psychology and hormonal imbalances. It is hoped that adolescent girls can use non-pharmacological therapies such as mint extract in reducing pain to reduce and treat pain so that it does not interfere with activity.

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