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## Effectiveness of mint extract on pre-menstrual: Symptoms among adolescent girls

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### Abstract

Mint extract is a useful herb with antibacterial, antipyretic, and anti-spasmodic properties. The researcher decided to assess the effectiveness of mint extract on PMS among adolescent girls. This was an experimental study with a control group pretest-posttest design. 250 Subjects were selected for the control group and experimental group each by simple random sampling technique. Pre-menstrual symptoms questionnaire based on sensory and affective symptoms by Chesney and Tasto was used to assess PMS. It was observed that during the pre-test, pre-test mean score of experimental group was 56.08 with standard deviation of 15.28 of PMS score. During the pre-test, pre-test mean score of control group was 54.76 with standard deviation of 17.84 of the PMS score. The mean difference was 1.324 of the experimental and control groups. This difference was not found statistically significant at  $p \leq 0.05$ . The table denotes that during the post-test, mean pain score of adolescents was  $56.08 \pm 15.277$  and post-test mean PMS score of adolescents was  $54.756 \pm 17.840$ . This difference in the mean scores was statistically significant at  $p \leq 0.05$  level.

**Keywords:** Mint extract, PMS, adolescent girls

### Introduction

The concept of women's health has a greater scope. In terms of women's health, the health of the country where they live actually represents the health of the country as a whole. Women are the primary breadwinners, educators and caretakers of the next generation. They are the centre of our society. Our destiny lies with the well-being of women's health, and we need to do everything we can to ensure that it is improved. The onset of menstruation signifies that a girl has stepped across a biological threshold into puberty. Some women find menstruation to be an inconvenience, but others enjoy the process. Others dread the time during which they will die. The later are usually women who are plagued by premenstrual syndrome (PMS). This syndrome was first recognized and given this name in 1931, and it has been a problem for women for centuries. The physical, psychological and behavioural changes that happen during menstruation and menopause are usually cyclical. It is estimated that up to 75 percent of women will experience symptoms of premenstrual tension syndrome in their adult life. Additionally, up to 20 to 40 percent of women will seek medical help for this condition (WHO, 1981). Premenstrual syndrome is a common condition that occurs during the premenstrual phase of a woman's menstrual cycle. The prevalence of premenstrual syndrome in France and Iran was reported to be 12.2% and 98.2%, respectively. The global prevalence of the premenstrual syndrome is about 47.8% (95% CI: 32.6-62.9) (A D.M., *et al*, 2014) [2]. The researcher felt it was necessary to study the prevalence of premenstrual symptoms in 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.

### Methodology

The researcher was clear about the study variables and investigating aim, hence the comparative study design was most suited. The adolescent girls from different schools of Moga, Punjab were recruited as subjects. The total 500 study participants were recruited by simple random sampling technique and 250 participants were allotted in experimental group and 250 participants were allotted in control group. To assess the pain, numerical pain scale was identified, which was having 10 items to evaluate the pain.

While to assess the PMS and stress level, Pre-menstrual symptoms questionnaire based on sensory and affective symptoms by Chesney and Tasto (1975) [9]. The reliability of tools was assessed by Cronbach's Alpha method and found highly reliable.

**Results**

It was observed that 46% of the adolescents of experimental group were in the age group of 16-17 years and the rest were below 16 years whereas 43% of the adolescents of control group were within 14-15 years of age. It was observed that 25% of the adolescents of experimental group were in the 10<sup>th</sup> standard, followed by 12<sup>th</sup> Standard (24%), 11<sup>th</sup> Standard (23%) and the whereas 26% of the adolescents of control group were in the 8<sup>th</sup> standard, followed by 10<sup>th</sup> Standard (25%) and 12<sup>th</sup> Standard (18%). It was observed that 38% of the adolescents of experimental group were had menarche in the age of 12 years and the rest were below 13 years whereas 44% of the adolescents of control group were had menarche in the age of 12 years and the rest were below 13 years. 44% of the adolescents of experimental group were had 4 days of menstrual flow and the rest were below 34% had 5 days of menstrual flow and rest were had less than 4 days of menstrual flow whereas 46% of the adolescents of control group were had 4 days of menstrual flow and the rest were below 35% had 5 days of menstrual flow and rest were had less than 4 days of menstrual flow.

**Table 1:** Pre-Test Frequency Percentage Of Pre-Menstrual Symptoms (PMS) As Assessed On Pre-Menstrual Symptoms Questionnaire Based On Sensory And Affective Symptoms Among Adolescents Of The Experimental And Control Group Maximum Score = 100 Minimum Score = 20

| Parameters                       | Experimental Group n = 250 f % | Control Group n = 250 f % |
|----------------------------------|--------------------------------|---------------------------|
| <b>Pre-Test PMS Score NO PMS</b> |                                |                           |
| (20-40)                          | 41 16.4                        | 62 24.8                   |
| Mild PMS (41-60)                 | 137 54.8                       | 101 40.4                  |
| Moderate PMS (61-80)             | 49 19.6                        | 59 23.6                   |
| Severe PMS (80-100)              | 23 9.2                         | 28 11.2                   |

Table 1 summarizes in experimental group, it shows that 41 (16.4%) adolescent girls had no PMS, 137 (54.8%) adolescent girls had mild PMS, 49 (19.6%) adolescent girls had moderate PMS and 23 (9.2%) adolescent girls had severe PMS. In control group, it shows that 62 (24.8%) adolescent girls had no PMS, 101 (40.4%) adolescent girls had mild PMS, 59 (23.6%) adolescent girls had moderate PMS and 28 (11.2%) adolescent girls had severe PMS. Hence, it can be said that adolescent girls in control group had mild PMS.

**Table 2:** Comparison of Pre-Test PMS Score of Experimental and Control Group

| Pre-test PMS score  | Experimental group | Control group |
|---------------------|--------------------|---------------|
| Mean score          | 56.08              | 54.76         |
| Standard deviation  | 15.28              | 17.84         |
| Mean difference     | 1.324              |               |
| Unpaired t test     | 0.891              |               |
| P value             | 0.3732             |               |
| Table value at 0.05 | 1.96               |               |
| Result              | Non-Significant    |               |

Table 2 denotes that during the pre-test, pre-test mean score of experimental group was 56.08 with standard deviation of

15.28 of PMS score. During the pre-test, pre-test mean score of control group was 54.76 with standard deviation of 17.84 of PMS score. The mean difference was 1.324 of the experimental and control groups. This difference was not found statistically significant at  $p \leq 0.05$ . Thus, there was no relative difference between the pre-test mean score of PMS among the adolescents of the experimental group and control group.

**Table 3:** Post-test Frequency Percentage of PMS among Adolescents of the Experimental and Control Group

| Parameters                    | Control Group N = 250 f % | Control Group N = 250 F % |
|-------------------------------|---------------------------|---------------------------|
| <b>Post-Test Level of PMS</b> |                           |                           |
| No PMS (20-40)                | 16 6.4                    | 3 1.2                     |
| Mild PMS (41-60)              | 23 9.2                    | 129 51.6                  |
| Moderate PMS (61-80)          | 150 60                    | 75 30                     |
| Severe PMS (80-100)           | 61 24.2                   | 43 17.2                   |

Table 3 explained that in experimental group, it shows that 16 (6.4%) adolescent girls had no PMS, 137 (54.8%) adolescent girls had mild PMS, 49 (19.6%) adolescent girls had moderate PMS and 23(9.2%) adolescent girls had severe PMS. In control group, it shows that 62 (24.8%) adolescent girls had no PMS, 101 (40.4%) adolescent girls had mild PMS, 59 (23.6%) adolescent girls had moderate PMS and 28 (11.2%) adolescent girls had severe PMS.

**Table 4:** Comparison of Post-Test PMS Score of Experimental and Control Group

| Post-test PMS score | Experimental group | Control group |
|---------------------|--------------------|---------------|
| Mean score          | 71.00              | 62.85         |
| Standard deviation  | 12.82              | 13.52         |
| Mean difference     | 8.152              |               |
| Unpaired t test     | 6.919              |               |
| P value             | 0.0000             |               |
| Table value at 0.05 | 1.96               |               |
| Result              | Significant        |               |

Table 4 denotes that during the post-test, post-test mean score of experimental group was 71.00 with standard deviation of 12.82 of PMS score. During the post-test, post-test mean score of control group was 62.85 with standard deviation of 13.52 of PMS score. The mean difference was 8.152 of the experimental and control groups. This difference was found statistically significant at  $p \leq 0.05$ .

**Discussion**

Present study indicates that mean PMS score of students was  $56.08 \pm 15.277$  and post-test mean PMS score of adolescents was  $54.756 \pm 17.840$ . This difference in the mean scores was statistically significant at  $p \leq 0.05$  level. These findings are supported by a study conducted by Nayana S. George *et al.* (2014) [7] to assess characteristics and symptoms experienced during menstruation. Study was conducted among 233 adolescent girls and the prevalence of PMS in adolescent girls was found to be 146 (62.70%). Out of 233 samples 28 (12%) had mild pain, 77 (33%) had moderate pain and 41 (17.6%) had severe pain during menstruation.

**Conclusion**

There is effectiveness in giving mint extract to the level of PMS in adolescent girls. Management of PMS based on

Evidence-Based Practice also needs to consider ways and methods in its implementation, not all treatments can be applied to PMS. 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 PMS to reduce and treat PMS so that it does not interfere with activity.

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