IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Effect Of Fenugreek Seeds On Premenstrual Syndrome Among Adolescent Girls In A Selected Community, Puducherry District.

[1]Jayasankari.S,[2]Kalaialagi.K, [3]Mrs. Catherine [4]Mrs. Leena L Raju, [5]Pon Princess Mano
[1]Professor ,[2]Nursing Officer, [3] Asst. Professor [4] Asst. Professor, [5]Asst. Professor
[1]Dept. of OBG Nursing,
[1]College of Nursing, Pondicherry Institute of Medical Sciences

Abstract: **This study evaluates the effect of fenugreek seeds on Premenstrual syndrome in teenage girls living in a chosen community** in south India.Fenugreek seeds soaked overnight in water was administered to adolescent girls with premenstrual syndrome for 13 days. The severity of premenstrual syndrome was determined using a prevalidated shortened premenstrual assessment form before and after administration of the intervention. The study findings showed a significant reduction in the level of premenstrual symptoms after the intervention among the adolescent girls at $p < 0.001$ (Z score -5.452).

Key words: Level Of Premenstrual Syndrome, Adolescent Girls, Fenugreek Seeds.

I. INTRODUCTION

Adolescents make up 1.2 billion people, or 16% of the world's population[1]. Premenstrual dysphoric disorder (PMDD) was found to affect 12.2% of Indian students. The risk factors for PMS in college students including the consumption of fast food, sugar-sweetened beverages, and deep-fried foods, lack of regular exercise and poor sleep quality, were significantly linked to the condition. In India the prevalence of PMS raises from 14.3% to 74.4% [2]. In Puducherry a study among 300 students reported the prevalence of PMS was 62.7%[3]. Premenstrual symptoms, particularly in adolescent girls, have been linked to academic performance issues like failing grades and absenteeism. The commonest premenstrual symptom among college girls was fatigue/lack of energy. Impairment of college efficiency or productivity was seen in 82.66% and 100% of students with moderate to severe PMS and PMDD respectively

Those taking contraceptive pills for PMS had adverse effects like nausea, breast pain, and breakthrough bleeding ("spotting"). There is also risk of DVT with harmonal Contraceptives. SSRIs are reported to have side effects like decreased libido, nausea, and sleep issues. Herbal remedies or dietary supplements including Ginkgo biloba, St. John's wort, saffron, evening primrose oil, pyridoxine (vitamin B6), calcium, and magnesium are also been used to treat PMS[4].

Several autopsy studies have also found significantly higher incidences of completed suicides during both the luteal and menses phases[5]. In order to decrease suicide attempts, it is crucial to recognise and address symptoms. Premenstrual syndrome and its effects must therefore be understood by nursing professionals in the current climate because adolescent girls are more likely to experience these symptoms due to a variety of factors, including stressful lifestyles, domestic violence, mood disorders, substance abuse, emotional trauma, etc. A practical and affordable solution is required to treat these children with PMS

Fenu greek which is an important ingredient in Indian cuisine available at all households at all times is found to have isoflavones with oestrogenic properties. Fenugreek seeds contain potassium, niacin, protein, vitamin C, and diosgenin a compound that has properties similar to estrogen[6]. It was been discovered that PMS symptoms including pain and menstrual cramps can be lessened by fenugreek[7]. Therefore, the current

study was undertaken with a primary objective to evaluate the impact of fenugreek seeds on Premenstrual syndrome in teenage girls living in a chosen community.

II. OBJECTIVES :

- To evaluate the Effect of fenugreek seeds on Premenstrual syndrome among adolescent girls.
- To determine the association between level of Premenstrual syndrome among adolescent girls with selected socio personal and clinical variables.

III. RESEARCH METHODOLOGY

The researcher adopted a quasi experimental one group pretest post test design for the study.

3.1 Population and Sample

The population includes all the adolescent girls residing in a rural community area covered by Murungapakkam PHC in Puducherry District, Pondicherry UT. Sample include any adolescent girl residing in Murungapakkam, Puducherry who fulfils the inclusion criteria. The calculated sample size was 40 including 10% attrition based previous study of Priya L, et al.in 2020 with pre-test level of severe menstrual discomforts 47.55% and post-test level of severe menstrual discomforts 35.29%[8]. Simple random sampling technique (Lottery method) was used to select the participants.

3.2 Sampling criteria:

INCLUSION CRITERIA:

- Adolescent girls, aged between 13 to 17 years with regular periods residing at Murungapakkam
- Who has one or more premenstrual symptoms - pain or tenderness of breast, enlargement or swelling of breasts, backache, joint and muscle pain, or joint stiffness, weight gain, relatively steady abdominal heaviness, discomfort or pain, water retention feeling bloated, feeling unable to cope or overwhelmed by ordinary demands ,emotional stress, feeling sad, outburst of irritability..

EXCLUSION CRITERIA:

- History of allergy to fenugreek seeds.
- Adolescent girls with haemorrhagic disorders [Fenugreek seeds are thermo genic and produces heat sensation in the body. Therefore, fenugreek seeds are contraindicated in haemorrhagic disorders because seeds may promote bleeding].
- Adolescent girls already on treatment for menstrual problem.

3.3 Variables

- Socio personal variables - It includes age, education, diet, type of family & family income.
- Clinical variables - It includes age of menarche, menstrual duration in days, history of dysmenorrhea, any medication taken and family history of premenstrual syndrome.
- Dependent variable – Change in the level of premenstrual syndrome a measured by the prevalidated Shortened Premenstrual Assessment Form
- Independent Variable is the consumption of Fenugreek seeds

3.4 Description of the Tool

The Shortened Premenstrual Assessment Form was given by Dr.Sharon S. Allen[9] The 10 items PAF SF is a reliable and valid instrument with high internal consistency (CVI: 0.94.) and reliability (α =0.998) to measure the physiological and psychological symptoms experiences premenstrually.

3.5Description of the Intervention:

Fenugreek seeds 2gm /day were administered to the participants in empty stomach for 13 days from 16th day – 28th day of menstrual cycle. 5 packets of 2gm pre-weighed fenugreek seeds distributed to the participants at their door step on 0, 5, 10th day and procedure to consume was explained to the participant infront of their parents.

Steps of the procedure:

- Cut open the packet with 2gm of pre-weighed fenugreek seeds into a bowl
- Add 100ml of warm water.
- Let it stand overnight.
- Next day morning drink the soaked water along with the fenugreek seeds on an empty stomach daily from the 16th day to 28th days of the menstrual period.

3.6Data collection Procedure:

Phase I: Survey & Pre-test : Received a list of 152 adolescent girls in the age group of 13 to 17 residing at Murugapakkam from Murungapakkam PHC. By door to door visit 83 adolescents with one or more premenstrual symptoms were identified as prospective participants. Using lottery method 40 adolescent girls were selected out of 83 and recruited into the study. The nature and purpose of the study was explained and informed consent from parents and assent from participants was obtained. The level of premenstrual syndrome was assessed using the Shortened Premenstrual Assessment Form by recalling the previous cycle by interview method.

Phase II: Intervention : Fenugreek seeds 2gm /day were administered in empty stomach for 13 days from 16th day – 28th day of menstrual cycle. Every 5th day the investigator met the participant in person and handed over the fenugreek packets for next 5 days. During direct observation family members were encouraged to motivate the adolescent girls for intervention. Attendance sheet was maintained for each participant by researcher and it was cross checked with the time on the participant's diary.

Phase III: Post level of premenstrual syndrome was assessed on 5th day of next cycle using the same Shortened Premenstrual Assessment Form.

3.7Data Analysis

- Frequency and percentage distribution was used to analyse the level of premenstrual syndrome perceived by the adolescent girls.
- The effect of fenugreek seeds on premenstrual syndrome among adolescent girls was analysed using Wilcoxon signed rank test
- The association between level of premenstrual syndrome among adolescent girls with selected socio personal and clinical variables.was determined by Chi square test
- $p < 0.05$ considered statistically significant.

IV. RESULTS AND ANALYSIS

4.1 Descriptive Statistics of Study Variables

Table 4.1 Distribution of study participants according to socio personal variables

N=40

Sl. no	Demographic variables	Frequency	Percentage (%)
1.	AGE (in years)		
	a.≤ 15years	30	75.0
	b. > 15years	10	25.0
2.	EDUCATIONAL STATUS		
	a.High school	30	75.0
	b. Higher secondary school	10	25.0
3.	DIET		
	a.Vegetarian	9	22.5
	b. Non Vegetarian	31	77.5
4.	FAMILY TYPE		
	a) Nuclear	12	30.0
	b) Joint	28	70.0
5.	FAMILY INCOME (per month) in Rupees		
	a) ≤ 10000	18	45.0
	b) >10000	22	55.0
6	Menstrual Duration		
	a.3-5 days	33	82.5
	b. >5 days	7	17.5

7	H/o of Dysmenorrhoea		
	a.Present	34	85
	b. Absent	6	15

Table 1 denotes the frequency and percentage distribution of study participants according to socio-personal variable. Among the adolescent girls 75% of them were less than or equal to 15years. Majority 75% (30) of the study participants were studying high school. Most of them 77.5% (31) were non vegetarians. Most of them 70% (28) belongs to joint family and 55% (22) of the study participants had a family income of Rs >10,000.

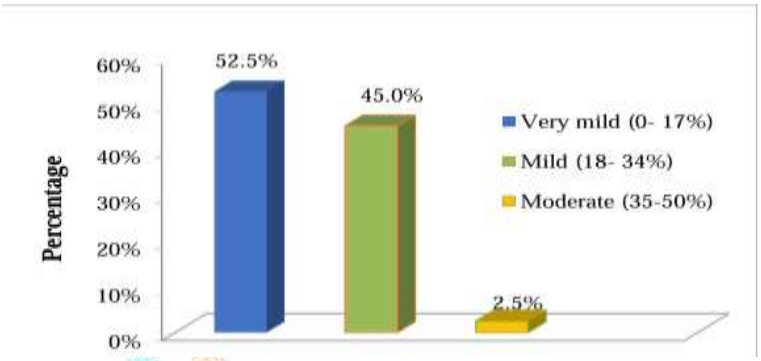

Fig 4.1 Level of Premenstrual syndrome among the participants

Fig 4.1 depicts that before intervention 52.5% of the participants had very mild level of PMS and 45.0% of them had mild and 2.5% of them had moderate level of premenstrual syndrome. None of them had severe level of premenstrual syndrome.

TABLE 4.2: Distribution of study participants according to level of premenstrual syndrome

N=40

S.No	Level of Premenstrual Syndrome	Pretest		Post Test	
		Frequency	**Percentage**	**Frequency**	**Percentage**
1	Very Mild	21	52.5	40	100
2	Mild	18	45.5	0	
3	Moderate	1	2.5	0	

Table 4.2 depicts that before intervention among adolescent girls 52.5% (21) of them had very mild level of PMS and 45.0% (18) of them had mild and 2.5% (1) of them had moderate level of premenstrual syndrome and after intervention all of them 100.0% (40) had very mild level of PMS.

TABLE 4.3: Effect of fenugreek seeds on level of premenstrual syndrome among adolescent girls

N=40

S.No	**Level of Premenstrual Syndrome**	**Mean**	Standard Deviation	**Median**	Interquartile Range	Z value	P value
1	Before Intervention	10.48	4.79	10.0	7.0-13.0	-5.452	<0.001*
2	After Intervention	5.18	1.89	5.0	4.0-6.0		

*: Significant at p< 0.05

Table 4.3 shows the comparison between the pre and post- test mean scores of premenstrual syndrome. The pre- test mean score of premenstrual syndrome was 10.48 with standard deviation 4.79 and post- test mean score of premenstrual syndrome was 5.18 with standard deviation 1.89. In pre-test the median score of premenstrual syndrome was 10.0 with Inter Quartile Range 7.0-13.0 and post-test the median score of premenstrual syndrome was 5.0 with Inter Quartile Range 4.0-6.0. Wilcoxon signed rank test was applied to analyse. The difference between pre-test and post-test level of premenstrual syndrome was statistically significant at p < 0.001 (Z score -5.452). So it showed that intervention on level of premenstrual syndrome was effective.

TABLE 4.4: Association between Levels of Premenstrual Syndrome among Adolescent Girls with Selected Clinical Variables.

S.No	Demographic Variables	Level of Premenstrual Syndrome						p value (Fisher Exact)
		Very Mild (0-17%)		Mild (18-34%)		Moderate (35-50%)		
		f	%	f	%	f	%	
1	Age in years							
	. ≤ 15years	19	90.5	11	61.1	0	0	0.022
	. > 15years	2	9.5	7	38.9	1	100	**S**
2	Educational Status							
	. High School	19	90.5	11	61.1	0	0	0.022
	. Hr Sec School	2	9.5	7	38.9	1	100	**S**
3	Diet							
	. Vegetarian	7	33.3	2	11.1	0	-	0.266
	. Non vegetarian	14	66.7	16	88.9	1	100	**NS**
4	Family Type							
	. Nuclear family	10	47.6	1	5.6	0	-	0.003
	. Joint Family	11	52.4	17	94.4	1	100	**S**
5	Family Income/ Month	10	47.6	7	38.9	0	-	0.624
	. ≤ 10000 Rs	11	52.4	11	61.1	1	100	**NS**
	. > 10000 Rs							

*: Significant at p< 0.05

This table 4.4 depicts that among the study participants there is statistically significant association between the level of premenstrual syndrome with demographic variables like age, Educational status, and type of family. No association with dietary pattern and other clinical variables like age at menarche and duration of menstruation with the level of premenstrual syndrome.

V. DISCUSSION

5.1 **. The first objective was to assess the level of premenstrual syndrome among the adolescent girls**

The level of PMS assessed using Shortened Premenstrual Assessment Form. The adolescent girls perceived very mild (52%), mild (45%) and moderate (3%) level of PMS. With regard to physical symptoms, most of them 97.5% (39) expressed that they don't have any breast symptoms. 70% (28) had moderate backaches, joint and muscle pain, or joint stiffness, and 7.5% (3) of them had severe muscle and joint pain. Only 2.5% (1) of them had mild weight gain during premenstrual period. 70% (28) of them had moderate to very severe abdominal heaviness. 37.5% (15) of the participants had mild to moderate level of bloated feelings.

With regards to emotional symptoms 15% (6) of the participants experienced mild to moderate level of stress. Half of them 50% (20) had mild to moderate level of overwhelmed feelings towards ordinary demands during premenstrual period. Most of them 75%(30) had sad/ blue feelings. 62.5% (25) had mild to severe level of irritability and bad temper during premenstrual period.

Similar findings were reported in a non experimental descriptive study conducted to assess the prevalence of premenstrual syndrome (PMS) among 60 nursing students of a reputed nursing college at

Thrissur using cluster sampling technique. The results showed that, out of 60 samples, 10% has PMS, 75% were having mild PMS, 15% were having moderate PMS and no one is experiencing severe PMS[10]. A cross-sectional study among 207 medical students in a tertiary care institute in Pondicherry also presented similar findings. The results showed that 155 (74.87%) students were found to have premenstrual syndrome.60.6% had mild 38.4% moderate 4.5% had severe premenstrual syndrome. Mood swings 81.9% was common among the participants followed by anxiety 80% and fatigue. Depression was found in 52.9% of the students.[11]

A cross sectional study was conducted to assess the PMS and its impact on health related quality of life among randomly selected 235 young student nurses studying in institute of national importance in Uttarakhand, India. 7. 21% participants were reported very severe PMS followed by 27% severe, 3% moderate and 17% mild level PMS symptoms. PMS had moderately negative impact on health-related quality of life among participants (r= -0.63)[12].

5.2. The second objective was to evaluate the Effect of fenugreek seeds on Premenstrual syndrome among adolescent girls.

In this present study before administration of fenugreek seeds the level of premenstrual syndrome among adolescent girls 52.5% (21) of them had very mild level of PMS and 45.0% (18) of them had mild and 2.5% (1) of them had moderate 73 level of premenstrual syndrome and after intervention all of them 100.0% (40) had very mild level of PMS. In pre-test the median score of premenstrual syndrome was 10.0 (IQR- 7.0-13.0) and post-test the median score was 5.0 (IQR- 4.0-6.0) and the difference was statistically significant at $p < 0.001$ (Z score -5.452

The findings were similar to the double-blind, randomized, placebo controlled study at Shahid Beheshti University (Tehran, Iran). Systemic discomforts (fatigue, headache, nausea, vomiting, lack of energy, syncope) decreased in the fenugreek seed group ($p < 0.05$).[13]Similar findings reflected in another randomized, controlled clinical trial conducted at Hamadan University of Medical Sciences, Iran.Thet mean duration and severity of menstrual symptoms decreased significantly at the end of the first and second cycle of the intervention ($P<0.01$).[14]

Therefore H1 stating there is a significant difference in the level of PMS before and after administration of fenugreek seeds is supported.

5.3**. The third objective was to determine the association between level of Premenstrual syndrome among adolescent girls with selected socio personal and clinical variables**.

In this present study there was no statistically significant association between the level of Premenstrual syndrome among adolescent girls with selected socio personal variables and clinical variables except age, educational status, family type. None of them took medication for PMS.

Similar findings noted in the non-experimental descriptive study done to determine the association between level of Premenstrual syndrome among adolescent girls with selected socio demographic variables among 100 adolescent girls at SRM University, Tamilnadu.[15]

A cross-sectional study among 300 students in UAE showed that smoking was associated with increased risk of reporting psychological (OR 2.5, 95% CI 1.1–5.8; $p < 0.05$) and behavioral symptoms (OR 2.2, 95% CI 1.0–4.9; $p < 0.05$), while high calorie/fat/sugar/salt foods intake was associated with increased risk of reporting physical symptoms (OR 3.2, 95% CI 1.4–7.3; $p < 0.05$)[16]. Another cross-sectional descriptive study conducted to estimate the proportion of premenstrual syndrome among 278 school students and the factors associated with premenstrual syndrome at a Kolkata city, showed that there was no statistical significance observed with age at menarche, duration of cycle and nature of flow.

The difference in the study findings can be due to difference cultures, dietary habits pertaining to the settings. ThereforeH2 stating there is a significant association between the pre-test level of premenstrual syndrome with selected socio personal and clinical variables is partially supported.

VI. IMPLICATIONS OF THE STUDY

The findings of the study has implications in different branches of nursing profession like nursing practice, nursing education, nursing research , nursing administration.

a. Implications for Nursing Practice

- The expanded role of professional nurses must emphasis on the important of administration of cost effective modalities for management of premenstrual syndrome including administration of fenugreek seeds. Being non pharmacological method safe, cost effective and easy to implement without any side effect, Nurses can educate the school teachers and children on management of PMS

b. Implications for Nursing Education:

- A module on evidence based complementary / alternative management of menstrual problem including PMS can be added in the nursing curriculum.Nursing students can be encouraged to explore various practices followed in the community regarding home remedies for menstrual problems.

c. Implications for Nursing Research

- Projects to explore various factors contributing to the development of PMS can be proposed. Research studies on various alternative therapies for PMS can be encouraged. A cohort study can be conducted for at least 3 cycle of menstruation to determine the effect of fenugreek seeds on PMS

VII. CONCLUSION

The study showed that there is a significant difference in mean and standard deviation in pre -test and post- test level of premenstrual syndrome among adolescent girls. Hence the study shows that there is an effect of intervention on level of Premenstrual syndrome. It was significant at p-value < 0.05

VIII. ACKNOWLEDGMENT

We thank Sr. Dr. Mony K, Former Principal , College of Nursing, PIMS who provided insight and expertise that greatly assisted the research. We thank Dr. Ravichandran, Biostatician, PIMS for assistance with statistical analysis

REFERENCES

[1] Unicef for every child. Adolecent Demographics. Available from:https:// www.unicef.org/adolescence

[2] Dutta A, Sharma A. Prevalence of premenstrual syndrome and premenstrual dysphoric disorder in India: A systematic review and meta-analysis. Health PromotPerspect [Internet]. 2021 [cited 2022 Sep 28];11(2):161–70

[3] Bhuvaneswari K, Rabindran P, Bharadwaj B. Prevalence of premenstrual syndrome and its impact on quality of life among selected college students in Puducherry. Natl Med J India [Internet]. 2019 [cited 2022 Sep 28];32(1):17–9.

[4]Zaka M, Mahmood KT. PRE-MENSTRUAL SYNDROME- A REVIEW. [cited 2022Sep28]; Availablefrom :https: // citeseerx .ist.psu.edu /viewdoc/summary?doi=10.1.1.227.7250.

[5] M SRC, U SS, J.h N. Effectiveness of STP on knowledge regarding prevalence and Management of Pre-menstrual syndrome among adolescent girls. IP Journal of Paediatrics and Nursing Science [Internet]. 2021 Apr 15 [cited 2022 Sep 28];4(1):14–20.

[6] Negi V. Fenugreek: A home remedy for PMS (premenstrual syndrome) [Internet]. Vedicus. [cited 2022 Sep 28].

[7] What is the truth regarding the benefits of the Fenugreek seeds? [Internet]. Quora. [cited 2022 Sep 30].

[8] PriyaL,et al. Assessment of the effectiveness of trigonellafoenumgraecum (Fenugreek seeds) on management of dysmenorrhea among late adolescent girls at selected villages, Tamil Nadu, India. Ann Trop Med & Public Health.2020 [cited 5 December2021];23(S23):SP232323.

[9] Allen S, et al. The shortened premenstrual assessment form.J Reprod.1991;36(11):76972.

[10] Tibin Joseph M, Nandini P, Sabira M, Professor A, Dept. Prevalence of Premenstrual Syndrome (PMS) Among Adolescent Girls. IOSR Journal of Nursing and Health Science [Internet]. 2016 [cited 2022 Oct 21];5(1):24–7.

[11] Varghese J, Koothan V, Sujaritha V. Study of the magnitude of premenstrual syndrome in a tertiary care institute in Pondicherry, India. Int J Reprod Contracept Obstet Gynecol [Internet]. 2019;8(6):2188. Available from: http://dx.doi.org/10.18203/2320-1770.ijrcog20192130

[12] Malhotra P, Sharma S, Kaur R, Urvashi, Vanshika R, Gaur S, et al. Pre menstrual syndrome and health related quality of life among young adult females at Northern India: A cross-sectional study. Available from: www.primescholars.com/articles/premenstrual-syndrome-and-health-related-quality-of-life-among-young-adult-females-at-northern-india-a-crosssectional-study.pdf

[13] Younesy S, Amiraliakbari S, Esmaeili S, Alavimajd H, Nouraei S. Effects of fenugreek seed on the severity and systemic symptoms of dysmenorrhea. Journal of reproduction&infertility[Internet].2014;15(1):418.

[14] Masoumi SZ, Shayan A, Ahmadinia H, Ebrahimi R, Ahmadi Niyatabesh R, Moradkhani S, et al. Effects of Fenugreek Seeds on the Severity and Duration of Pain in Primary Dysmenorrhea in the Students at Hamadan University of Medical Sciences, Iran (2016). The Iranian Journal of Obstetrics, Gynecology and Infertility [Internet]. 2018 Jun 22 [cited 2022 Oct 10];21(4):25–33.

[15] Karnamurthy AN. Assess the prevalance of premenstrual syndrome among adolescent girls at srm College of Nursing , srm University, Kattankulathur. Asian J Pharm Clin Res 10(5):202.

[16] Sima Younesy S. Amiraliakbari S, Esmaeili S, Alavimajd H, Nouraei S. Effects of Fenugreek Seed on the Severity and Systemic Symptoms of Dysmenorrhea [Internet]. PubMed Central (PMC). J ReprodInfertil.2017 [cited 5 December 2021];15(1):41-48.
[17] Hashim MS, Obaideen AA, Jahrami HA, Radwan H, Hamad HJ, Owais AA, et al. Premenstrual Syndrome Is Associated with Dietary and Lifestyle Behaviors among University Students: A Cross-Sectional Study from Sharjah, UAE. Nutrients 2019 Aug 17;11(8):1939. Avail from. https://www.ncbi.nlm.nih.gov/pmc/articles/ PMC6723319.