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Prevalence of Premenstrual Syndrome and Its Determinants Among Adolescent Girls Studying in High Schools of Bagalkot

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Abstract | **Original Research Article**

***Background*:** Premenstrual Syndrome (PMS) is a common gynecological condition characterized by physical, emotional, and behavioral symptoms that occur during the luteal phase of the menstrual cycle. Adolescence is a vulnerable period, and PMS can significantly affect school performance, emotional well-being, and daily activities. Understanding its prevalence and determinants among high-school girls is essential for planning effective school-based interventions. ***Aims*:** The aim of the study was to assess the prevalence and the determinants of premenstrual syndrome and the association between the premenstrual syndrome and its determinants among adolescent girls. ***Methodology*:** Qualitative non-experimental approach with crass sectional descriptive survey research design was used for the study to accomplish the objectives. According to premenstrual scale where use collect data. a sample of 100 adolescent girls was selected by simple random sampling technique. The data collected where analyzed using descriptive inferential statistics. ***Findings*:** The association between the premenstrual syndrome and its determinants among adolescent girls reveals that, there was no significant association found between the premenstrual syndrome and its determinants among adolescent girls except the consumption of caffeine and sugar food and frequency of consumption of junk food, Age of start of menstruation(P=0.29), regular cycle (P=0.27), length of menstrual cycle(P= 0.47), number of days the bleeding last (P= 1), family history of PMS(P= 0.24), any medical condition (p=0.74),consumption of caffeine and sugar food(p=0.04), average number of hours of sleep at each night (p=0.88) frequency of consumption of junk food (p=0.04), frequency of exercise at each week (p=0.74). ***Conclusion*:** The overall findings reveal that a significant association found between premenstrual syndrome and its determinants among adolescent girls.

Keywords: Premenstrual syndrome, determinants, adolescent girls, prevalence.

1. INTRODUCTION

"A woman with a voice is by definition a strong woman"-Melinda French Gates.

Adolescence is the period of transition between puberty and adulthood. Menarche is one of the markers of puberty and therefore can be considered as an important event in the life of adolescent girls [1]. It is a unique time in a woman's life that represents the shift from youth to adulthood. Menstruation is an essential phenomenon in an adolescent girl's life. She undergoes various physiological and psychological changes during this phase of life [2].

Menstruation is the monthly shedding of the lining of your uterus. Menstruation is also known by the term's menses, menstrual period, menstrual cycle or period. Menstrual blood — which is partly blood and partly tissue from the inside of uterus, flows from uterus through cervix and out of body through vagina [3].

The diagnostic criteria for PMS according to the American College of Obstetrics and Gynecology (ACOG) is that at least 1 affective (angry outburst, depression, anxiety, confusion, irritability and social withdrawal) and somatic (abdominal bloating, headache, breast tenderness, swelling of extremities) symptom must be experienced 5 days before the onset of menses for 3 menstrual cycles in a row and ends within 4 days after the onset of menses [4].

According to epidemiological survey 75% suffer from symptoms of PMS and 3–8% suffer from severe symptoms of PMS [4]. The prevalence of PMS was found to be different in different countries, in China

it was found to be 34%, 71% in turkey, 80% in Pakistan and 92% in Jordan [5].

The exact cause of PMS is unknown. PMS is associated with various psychological, socio-demographic factors (age, living region, marital status). Dietary and lifestyle factors can cause the syndrome including habits like smoking, alcohol consumption, caffeine beverages, exercise and fat rich diet. Other factors include parents' income, being sexually active, long menstrual cycle and age at menarche [5-6].

Premenstrual syndrome (PMS) is a cyclic phenomenon occurring during the late luteal phase of the menstrual cycle. PMS is characterized by a group of physical, emotional, psychological symptoms of varying severity starting a week before the onset of the menstruation and ends after the onset of menstruation. Severe form of PMS is known as Premenstrual Syndrome Dysphoric Disorder (PMDD). PMS is one of the common menstrual disorders, affecting many young women [6].

In India a range of 14.3%–74.4% is the reported prevalence estimate of PMS [6].

The common premenstrual symptoms are irritability, lack of concentration, depression, abdominal bloating, abdominal cramps, breast tenderness, anger, general aches, nausea, vomiting, fatigue, decreased concentration, mood swings, headache, anxiety, sleep disturbance, appetite changes. These symptoms affect social and interpersonal relationship; health related quality of life, academic performances, daily living activities, occupational productivity and increased hospital visits [7-8].

Many studies have focused on menstruation and menstrual hygiene management but very few studies have been conducted on PMS which is more important. Globally the prevalence of PMS reported around 20%-40%. In India a range of 14.3% -74.4% is the reported prevalence estimate of PMS. In Karnataka estimated prevalence of PMS is around 31.11% [9]. As there is scarcity of studies on PMS, it is need of the hour to conduct more studies on PMS as these studies will help in easy diagnosis and improve knowledge about Premenstrual syndrome and its risk factors. This will help in reducing the severity and prevalence of Premenstrual syndrome and will also act as baseline data to conduct interventional studies.

2. METHODS

Non experimental Descriptive approach was used to find the association between premenstrual syndrome and its determinants among adolescent girls studying in high school of Bagalkot.

Study participants: The study participants were adolescent girls studying in high school of Bagalkot. The data was collected from 100 adolescent girls.

Setting of the study: The study was conducted at high school of Bagalkot

Sampling technique: Simple random sampling technique was used to select the schools and subjects who were available and willing to participate, by giving consent

Data Collection Instrument: A structured closed ended questionnaire was prepared by extensive review of literature and on the basis of suggestions of guide and experts, with an aim to assess prevalence and determinants of premenstrual syndrome. The tool was modified according to the suggestions of the experts before implementing to the adolescent girls.

Data Analysis

- Descriptive Statistics such as Frequency and percentage distribution was used for analysis of socio demographic variables of adolescence girls and Frequency, Percentage distribution, mean and standard distribution for analysis of prevalence of PMS.

3. RESULTS

Table No.1: Demographic characteristics of study subjects.

Sl No	Socio Demographic	Frequency	Percentage
1	**Age in year**		
	a) 12-13 year	0	0
	b) 14-15 year	100	100%
	c) 16-17year	0	0
2	**Education**		
	a)8th std	0	0
	b)9th std	100	100%
	c)10th std	0	0
3	**Religion**		
	a) Hindu	96	96%
	b) Muslim	3	3%
	c)Christian	1	1%

4	**Type of family**		
	a) Nuclear	41	41%
	b) Joint	40	40%
	c) Extended family	19	19%
5	**Education status of father**		
	a) No formal education	33	33%
	b) Primary education	22	22%
	c) SSLC/PUC	32	32%
	d)Graduation and above	13	13%
6	**Education status of mother**		
	a) No formal education	32	32%
	b) Primary education	35	35%
	c) SSLC/PUC	28	28%
	d)Graduation and above	5	5%
7	**Family monthly income**		
	a) less than 10000	40	40%
	b) 10000-20000	39	39%
	c) 20000 and above	21	21%
8	**Occupation of father**		
	a) Coolie	12	12%
	b) Agriculture	47	47%
	c) Self employee	11	11%
	d) Other	30	30%
9	**Occupation of mother**		
	a) House wife	45	45%
	b) Agriculture	37	37%
	c) Self employee	7	7%
	d) Coolie	11	11%
10	**Dietary pattern**		
	a) Vegetarian	44	44%
	b) Mixed	56	56%
11	**Place of residence**		
	a) Rural	95	95%
	b) Urban	1	1%
	c) Semi urban	4	4%
12	**Source of information**		
	a) Mass media	2	2%
	b) Friends	8	8%
	c) Family members	5	5%
	d) By health professionals	85	85%

Table 1. shows that the Majority (100%) of adolescent girls were in the age group of 14-15years old and (0%) of adolescent girls were between the age group of 12-13 years, (0%) were between the age group of 16-17 years. Majority of adolescent girls were (100%) in 9th std and (0%) in 8th and in 10th std. majority of the subjects were Hindu (96%) and Muslim were (3%) and remaining (1%) were Christian. The majority of adolescent girls were of nuclear family and (40%) were of joint family and remaining were of extended family. The percentage wise distribution of adolescent girls according to their education status of father their occupation depicts that that the Majority (33%) has no formal education, (32%) were of SSLC/PUC (22%) were of primary education and remaining (13%) were of graduation and above. The percentage wise distribution of adolescent girls according to their education status of mother depicts that shows that the Majority (33%) were of primary education, (32%) has no formal education, (28%) were of SSLC/PUC, (5%) were of graduation and above. the majority of the subject's income according to their family monthly were (40%) were less than 10000, (39%) were between 10000-20000, (21%) were between 20000 and above. the majority of adolescent girls according to their occupation of father (47%) were in agriculture and other (13.3%), (12%) were coolie and (11%) were self-employee. The percentage wise distribution of adolescent girls according to their occupation of mother. reveals that majority of mothers (45%) were house wife, (37%) were in agriculture, (11%) were coolie and (7%) were self-employee. The percentage wise distributions of adolescent girls according to their occupation of mother (45%) were house wife, (37%) were in agriculture, (11%) were coolie and (7%) were self-employee. the

majority of adolescent girls according to their dietary pattern (44%) were vegetarian, and (56%) were mixed. the majority of adolescent girls according to their place of residence (95%) were rural, (4%) were semi urban and (1%) were in urban**.** The percentage wise distributions of adolescent girls according to their source of information (85%) were by health professionals, (8%) were friends, (5%) were family members and (2%) were mass media.

To assess the prevalence of premenstrual syndrome among adolescents

Table 2: Description the categories of PMS scale according to their symptoms, N=100

Sl no	PMS scale categories	score	frequency	Percentage
1	No symptoms	1-40	0	0
2	Mild symptoms	41-80	5	5%
3	Moderate symptoms	81-120	85	85%
4	Sever symptoms	121-160	10	10%
5	Very severe symptoms	161-200	0	0

Table 2. Shows that the categories of PMS scale according to their symptoms. Majority of the study subjects 85 (85%) were having moderate symptoms, 10 (10%) study subjects were having severe symptoms, 5 (5%) were having mild symptoms and 0 (0%) were having severe and no symptoms.

To assess the determinants of premenstrual syndrome among adolescent girl

Table 3: Description of determinants of premenstrual syndrome among adolescent girl, N=100

SI NO	Determinates of PMS	frequency	percentage
1	**what age did you start menstruating**		
	a) Less than 10 yrs	0	0
	b) 10-14	93	93%
	c) 15 and above	7	7%
2	**Is your menstrual cycle regular (occurring at consistent intervals**		
	a) Yes	39	39%
	b) No	50	50%
	c) Not sure	11	11%
3	**How long is your menstrual cycle**		
	a) Less than 21 days	8	8%
	b) 21 to 35 days	75	75%
	c) More than 35 days	14	14%
	d)Not sure	3	3%
4	**How many days does your menstrual bleeding usually last**		
	a) 1-3 days	34	34%
	b) 4-6 days	59	59%
	c) more than 6 days	7	7%
5	**Do you have a family history of PMS**		
	a) Yes	27	27%
	b) No	44	44%
	c) Not sure	29	29%
6	**Do you suffer from any medical condition**		
	a) Diabetes	1	1%
	b) Iron deficiency anemia	21	21%
	c) Thyroid	10	10%
	d) Anxiety	7	7%
	e) UTI	2	2%
	f) PCOD	7	7%
	g) PCOS	2	2%
	h) No any medical history	50	50%
7	**How often do you consume caffeine or high sugar food**		
	a) Several times a day	37	37%
	b) once a day	52	52%
	c) A few times a week	6	6%

	d) rarely and never	5	5%
8	**On average how many hours of sleep do you get each night**		
	a) 7- 9 hours	37	37%
	b) 5- 6 hours	44	44%
	c) Less than 5 hours	6	6%
	d) More than 9 hours	13	13%
9	**How frequently do you consume junk food**		
	a) daily	36	36%
	b) once a week	36	36%
	c) several time a week	26	26%
	d) rarely and never	2	2%
10	**How frequently do you exercise each week**		
	a) More than 5 times a week	1	1%
	b) 3- 4 times a week	5	5%
	c) 1- 2 times a week	49	49%
	d) rarely and never	45	45%

Table 3. shows the determinates of premenstrual syndrome among adolescent girl. According to the age majority of subjects started menstruation 93(93%) were in the age group of 10-14 years of age, 7(7%) were of 15 and above and 0(0%) were of less than 10 years of age. According to the regularity of menstrual cycle 50(50%) were having irregular menstrual cycle, 39(39%) were having regular menstrual cycle and 11(11%) were unsure.

According to the length of menstrual cycle 75(75%) were having 21 to 35 days, 14(14%) were having more than 35 days, 8(8%) were having less than 21 days and 3(3%) were not sure.

According to the days of menstrual bleeding 59(59%) were having 4-6 days, 34(34%) were having 1-3 days and 7(7%) were having more than 6 days.

According to the family history of PMS 44(44%) were not having family history of PMS, 29(29%) were unsure and 27(27%) were having history of PMS.

According to the any medical condition 50(50%) were not having any medical condition, 21(21%) were having iron deficiency anemia, 10(10%) were having thyroid, 7(7%) were having anxiety and PCOD, 2(2%) were having UTI and PCOS and 1(1%) were having diabetes.

According to the consumption of caffeine and high sugar food, 52(52%) were having once a day, 37(37%) were having several times a day,6(6%) a few times a week,5(5%) were having rarely and never. According to the average hours of sleep at each night 44(44%) were having 5- 6 hours of sleep, 37(37%) were having 7- 9 hours, 13(13%) were having more than 9 hours,6(6%) were having less than 5 hours. According to the frequency of consumption of junk food 36(36%) were having daily and once a week, 26(26%) were having several time a week and 2(2%) were having rarely and never.

According to the frequency of exercise each week 49(49%) were having 1- 2 times a week,45(45%) were having rarely and never,5(5%) were having 3- 4 times a week and 1(1%) more than 5 times a week.

Table 4: Assessment of Mean, Median, range and SD score of PMS scale among adolescent girls, N=100

Variables	Mean	Median	Range	Standard deviation
PMS Scale	104.98	104.5	82	13.61

The table Represents assessment of Mean, Median, range and SD score of PMS scale among adolescent girls. The mean score was 104.98 with standard deviation of 13.61, median was 104.5 and range of 82.

Table 5. To determine the association of premenstrual syndrome and its determinants among adolescent girls, N=100

Sl No	Determinates of PMS	df	chi square value	p value	Interpretation
1	what age did you start menstruating	1	1.09	0.29	Not significant
2	Is your menstrual cycle regular (occurring at consistent intervals	1	1.2	0.27	Not significant
3	How long is your menstrual cycle	1	0.5	0.47	Not significant

4	How many days does your menstrual bleeding usually last	1	0.1	1	Not significant
5	Do you have a family history of PMS	1	1.38	0.24	Not significant
6	Do you suffer from any medical condition	1	0.11	0.74	Not significant
7	How often do you consume caffeine or high sugar food	1	3.86	0.04	significant
8	On average how many hours of sleep do you get each night	1	0.02	0.88	Not significant
9	How frequently do you consume junk food	1	4.08	0.04	significant
10	How frequently do you exercise each week	1	0.11	0.74	Not significant

Findings related to the association between the premenstrual syndrome and its determinants among adolescent girls reveals that, there was no significant association found between the premenstrual syndrome and its determinants among adolescent girls except the consumption of caffeine and sugar food and frequency of consumption of junk food, Age of start of menstruation(P=0.29), regular cycle (P=0.27), length of menstrual cycle(P= 0.47), number of days the bleeding last (P= 1), family history of PMS(P= 0.24), any medical condition (p=0.74),consumption of caffeine and sugar food(p=0.04), average number of hours of sleep at each night (p=0.88) frequency of consumption of junk food (p=0.04), frequency of exercise at each week (p=0.74)

DISCUSSION

The present study was conducted to find out the Prevalence of premenstrual syndrome and its Determinants among adolescent girls studying in High schools of Bagalkot. In order to active the objectives of the study, non-experimental descriptive research design was adoptive a sample of 100 adolescence girls for present study was selected using simple random sampling technique. Findings depict that, there was a significant association found between the consumption of caffeine and sugar food and frequency of consumption of junk food and no significant association found between the remaining variables. The findings of the present study are supported by several studies conducted in India. A study among adolescent girls in the Garhwal region of Uttarakhand reported that high consumption of junk food and skipping breakfast were significantly associated with menstrual problems, including PMS (Garhwal Study, 2018). Similarly, a study conducted in West Bengal on school-going adolescent girls found that frequent intake of fast foods, fried snacks and sugary drinks was positively associated with menstrual abnormalities, particularly PMS-related symptoms such as mood swings and abdominal pain (West Bengal Study, 2014). The results of our study also agree with the findings from Navi Mumbai, where unhealthy dietary habits such as consumption of street food, processed food and high-fat snacks were significantly related to PMS and dysmenorrhea among adolescent girls (Navi Mumbai Study, 2021).

Furthermore, an Indian study assessing dietary habits and PMS among young women reported that higher intake of sugary foods, fried snacks, salty items and high-calorie foods was significantly associated with increased PMS scores, while consumption of healthier foods like nuts and seeds showed a protective effect (Indian PMS Study, 2022). These consistent findings across various regions of India reinforce the conclusion that unhealthy dietary practices—particularly frequent consumption of junk food, high-sugar items and caffeinated beverages—play a major role in increasing PMS symptoms among adolescent girls

CONCLUSION

On the basis of the findings of the study ,there is an association found between premenstrual syndrome and its determinants among adolescent girls. Findings depict that, there was a significant association found between the consumption of caffeine and sugar food and frequency of consumption of junk food and no significant association found between the remaining variables.

Recommendation:

A similar study can be replicated on a large scale for the purpose of generalization. A case control study is recommended for future researchers. Intervention can be provided to improve the quality of life among adolescent girls.Present study basis for future experimental study.

Ethical Clearance:

Ethical clearance was obtained from the institutional ethical committee of BVVS Sajjalashree Institute of Nursing Sciences, Bagalkot.

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Conflict of Interest: Nil

REFERENCES

1. Kaplowitz P. Pubertal development in girls: Secular trends. CurrOpinObstetGynecol: 2006;18: AVAILABLE ON PAGE NO :487–91.
2. Sonali K Borkar, AvinashBorkar, The Journal of cureus: Study of Menstrual Hygiene Practices

Among Adolescent Girls in a Tribal Area of Central India, DOI:10.7759/cureus.30247: PMID:36381734

3. American Pregnancy Association:Menstruation:A Journey Through Your cycle:https://www.plannedparenthood.org.
4. R. Abu Alwafa, M. Badrasawi, R. Haj Hamad:Prevalence of premenstrual syndrome and its association with psychosocial and lifestyle variables: a cross-sectional study from Palestine: 21 January 2021: Available on page no 1-2
5. Shah RS, Christian DS. Association of socio-demographic, dietary and lifestyle factors with Premenstrual Syndrome (PMS) among undergraduate medical students of a tertiary care institute in Ahmedabad, Gujarat. J Fam Med Prim Care. 2020 Nov;9(11): 5719.
6. Dutta A, Sharma A. Prevalence of premenstrual syndrome and premenstrual dysphoric disorder in India: a systematic review and meta-analysis. Health Promot Perspect. 2021;11(2):161.
7. Geta TG, Woldeamanuel GG, Dassa TT. Prevalence and associated factors of premenstrual syndrome among women of the reproductive age group in Ethiopia: systematic review and meta-analysis. Palos One. 2020 Nov 6;15(11), e0241702.
8. Seedhom AE, Mohammed ES, Mahfouz EM. Life Style Factors Associated with Premenstrual Syndrome Among El-Minia University Students. Egypt: International Scholarly Research Notices; 2013, 2013.
9. Abhijit Dutta and Avinash Sharma: Prevalence of premenstrual syndrome and premenstrual dysphoric disorder in India:Available on DOI:10.34172/HPP.2021.20: PMID:34195039