

# Pre-menstrual Syndrome and Health Related Quality of Life among Young Adult Females at Northern India: A Cross-Sectional Study

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## Abstract

Pre-menstrual syndrome is a cyclic recurrence of distressing somatic and affective symptoms in the luteal phase of menstrual cycle. Emerging of these symptoms during young age can complicate their interpersonal relationship, social and educational performance in a negative way resulting in poor self-esteem and sense of dissatisfaction and inadequacy. The study was carried out to assess the prevalence of pre-menstrual syndrome among the young adult female students of AIIMS Rishikesh and their health related quality of life and also the correlation between the pre-menstrual syndrome and health related quality of life. In this a descriptive cross sectional study was conducted in College of Nursing, AIIMS Rishikesh on the students of B.Sc (Hons.) Nursing first year, second year, third year and fourth year. Total 235 subjects were selected by total enumerated sampling technique and data was collected by self-administer questionnaire. Data was analysed using descriptive and inferential statistics. The result shown that mean age of subjects was  $21 \pm 1.65$ . Out of 235 subjects, 21% subjects had very severe, 27% severe, 35% moderate and 17% had mild PMS. Similarly out of total subjects 51% had very good followed by 29% excellent, 17% had good health related quality of life and only 3% had very poor health related quality of life. Moderately negative correlation ( $r=-0.63$ ) was found between PMS and health related quality of life that shows with increase in score of PMS health related quality of life decreases.

**Keywords:** Premenstrual syndrome; Health related quality of life; Young adult females

## Introduction

### Background of the study

Menstruation is the regular shedding of mucosal tissue and blood from the uterus through the vagina. The typical length of time between two successive periods is 21-45 days in young women and 21-31 days in adults. Bleeding usually last around

2-7 days. The four phases of menstruation cycle are bleeding phase, follicular phase, ovulation phase and luteal phase. The first phase is a follicular phase (1-14 days) in which the ovarian follicles mature and gets ready to release an egg. Ovulation (14th day) is the second phase of the ovarian cycle in which a mature egg is released from the ovarian follicle into the oviduct. The luteal phase (14-28 days) starts from the time of ovulation and ends at the onset of menses. It corresponds to the secretory phase of uterine cycle [1].

Among the gynaecological problem, menstrual problems are said to be major ones specially among adolescent and young adult females. Some women experiences the variety of disturbing symptoms during their luteal phase and beginning of the menstrual bleeding that are known as Pre-menstrual syndrome (PMS) Oestrogen and progesterone can cause transitory fluid retention, as can excess aldosterone and ADH in the body which may be one of the contributing factor of PMS [2].

Pre-menstrual syndrome is a cyclic recurrence of distressing somatic and affective symptoms in the luteal phase of menstrual cycle PMS is group of physical, cognitive, affective and behavioural symptoms that occur cyclically during the luteal phase of few days of the onset of menstruation. About seven to four days prior to and in some cases even during menstruation some females have clearly defined manifestations of certain symptoms with somatic and psychological components. The symptoms like anger, depression, anxiety, and rejection adversely affect the social and work related activities of women. Emerging of these symptoms during young age can complicate their interpersonal relationship, social and educational performance in a negative way resulting in poor self-esteem and sense of dissatisfaction and inadequacy. PMS in young adults might particularly affect college function and social and interpersonal relationship in a negative way [3-5].

PMS is associated with reduction in health related quality of life and women with PMS have greater work productivity impairment than women without PMS. PMS is commonly encountered complaint among women and may affect women's quality of life and reduce their occupational productivity. Despite of various physical, psychological and behavioural symptoms, true prevalence of PMS is difficult to

determine because of self-treatment, difference in availability and access to medical care, definition and diagnostic criteria and cultural practices. Most young adult females of reproductive age have some physical discomfort in the week before dysmenorrhea called Pre-menstrual Syndrome. About 5-8% of young adult females suffer from PMS. In young females, it affects the educational function and social interaction in a negative way. Hence, the purpose of present study is to identify the females who suffer from PMS and to assess the health related quality of life. It is hope that this preliminary study could contribute to existing knowledge on the topic and provide information for future interventions [6,7].

### Objectives

- To assess pre-menstrual syndrome among young adult females.
- To assess the health related quality of life among young adult females.
- To assess relationship between PMS and health related quality of life

### Materials and Methods

A cross sectional descriptive study design was used to assess pre-menstrual syndrome and health related quality of life among young adult female students in AIIMS Rishikesh. The study was conducted in All India Institute of Medical Science (AIIMS) Rishikesh, Uttarakhand. Institute operates autonomously under Ministry of Health and Family Welfare, Government of India. It is tertiary care institute with near about 900 beds to provide multi-speciality healthcare services and research based medical and nursing care in centre.

Present study was conducted in College Of Nursing, AIIMS Rishikesh. College of Nursing, AIIMS, Rishikesh has been started in 2013 and first of 60 B.Sc. (Hons) which was conducted by AIIMS, New Delhi. Presently, College of Nursing, is running B.Sc. (Hons) Nursing; M.Sc. Nursing; Diploma in Peri-operative Nursing and PhD programs. Target population involved all the students (as per inclusion criteria) studying in BSc. (Hons) Nursing 1st, 2nd, 3rd, 4th year of College of Nursing, AIIMS, Rishikesh and present at the time of data collection. Total enumeration sampling technique was used. The students in the age group of 18-25 years and those who are unmarried were included and students with gynaecological, medical and psychiatric problem and having ammenorrhea were excluded from this study. Ethical consideration was taken from Institutional Ethical Committee (IEC) of AIIMS Rishikesh. Self structured questionnaires were prepared for data collection which includes socio demographic profile sheet, clinical profile sheet, menstrual profile sheet, pre-menstrual syndrome assessment scale, health related quality of life assessment scale. Validity was checked through expert's opinion and reliability was checked by test-retest method by using Karl Pearson's correlation coefficient formula. And the reliability was found 1 for pre-menstrual syndrome assessment scale and 0.9 for health related quality of life assessment scale. Data was analysed using descriptive and inferential statistics and various statistical measures were used to find the statistical significance and SPSS software version-23 was used for data analysis [8-10].

### Results

All the results are mentioned below in Tables 1-8.

**Table 1:** Socio-demographic profile sheet of subjects N=235.

Variables	f (%)
<b>Academic year</b>	
First year	96 (41)
Second year	47 (20)
Third year	49 (21)
Fourth year	43 (18)
<b>Age (in years)</b>	
18-21	163 (69)
22-25	72 (30)
Mean age $\pm$ SD	20.7 $\pm$ 1.26
<b>Habitat</b>	
Rural	69 (29)
Urban	139 (59)
Semi urban	27 (12)
<b>Religion</b>	

Hindu	193 (82)
Muslim	14 (6)
Sikh	14 (6)
Christian and others	14 (6)
<b>Dietary habits</b>	
Vegetarian	152 (65)
Non vegetarian	83 (35)
<b>Mother's level of education</b>	
Illiterate	25 (11)
Low education	54 (23)
Middle education	76 (32)
High education	80 (34)
<b>Socio economic status*</b>	
Upper middle	47 (20)
Lower middle	179 (76)
Upper lower	09 (4)
*Kuppuswamy socio-economic scale, 2018.	

**Table 2:** Clinical profile of the subjects N=235.

Variables	f (%)
<b>Height (in cm)</b>	
140-155	86 (36)
156-165	116 (50)
166-175	33 (14)
<b>Weight (in kg)</b>	
34-55	164 (70)
56-83	71 (30)
<b>BMI (in kg/m<sup>2</sup>)</b>	
Underweight (<18)	30 (13)
Normal (18.5-24.5)	182 (77)
Over weight (25-30)	19 (8)
Obesity (>30)	04 (2)

**Table 3:** Menstrual profile of the subjects N=235.

Variables	f (%)
<b>Age at menarche (in years)</b>	
10-12	58 (24)
13-15	159 (68)
16-18	18 (8)

<b>Duration of menstruation (in days)</b>	
<3	15 (6)
03-05	184 (78)
>5	36 (16)
<b>Duration of menstrual cycle (in days)</b>	
<24	03 (1)
24-28	157 (67)
>28	75 (32)
<b>Amount of flow</b>	
Heavy	23 (10)
Medium	204 (87)
Scanty	08 (3)
<b>Menstrual regularity</b>	
Regular	169 (72)
Irregular	66 (28)
<b>Amount of flow</b>	
Heavy	23 (10)
Medium	204 (87)
Scanty	08 (3)
<b>Type of sanitary product used</b>	
Self-made	03 (1)
Readymade	232 (99)
<b>Dysmenorrhea</b>	
Absent	24 (10)
Mild pain	123 (52)
Moderate pain	54 (23)
Severe pain	34 (15)
<b>Relief measures</b>	
Pharmacological method	08 (3)
Non pharmacological method	177 (75)
Both	44 (19)
None	06 (3)
<b>Pharmacological method</b>	
Mefal spas	39 (17)
PCM	10 (4)
None of the above	186 (79)
<b>Non pharmacological method</b>	
Yoga	14 (6)
Home remedies	24 (10)

Hot application	79 (35)
Taking rest	76 (32)
Any other	06 (4)
More than one	27 (13)

**Table 4:** Distribution of subjects as per levels of PMS: N=235.

PMS Levels	f (%)
Mild (31-60)	40 (17)
Moderate (61-90)	83 (35)
Severe (91-120)	62 (27)
Very severe (121-150)	50 (21)

**Table 5:** Distribution of subjects as per domains includes in PMS assessment scale N=235.

Domains	Mean $\pm$ SD
Physiological	32 $\pm$ 8.5
Behavioural	19 $\pm$ 6.8
Psychological	24 $\pm$ 8.1

**Table 6:** Distribution of subjects as per the levels of health related quality of life (HQOL) score: N=235.

HQOL Levels	f (%)
Poor (1-25)	08 (3)
Good (26-50)	39 (17)
Very good (51-75)	119 (51)
Excellent (76-100)	69 (29)

**Table 7:** Distribution of subjects as per domains of the Health related quality of life assessment scale N=235.

Domains	Mean $\pm$ SD
Physical	18 $\pm$ 4.24
Psychological	16 $\pm$ 4.56
Social support	20 $\pm$ 4.09
Activities of daily living	20.7 $\pm$ 12.57

**Table 8:** Relation between PMS and Health Related Quality of Life among subjects.

Relationships	Mean +SD	r	p
PMS	76 $\pm$ 20.32		
HRQOL	75 $\pm$ 14.14	-0.63*	0.01S

\*Moderately negative correlation, S statistically significant.

## Discussion

The study was undertaken to assess the prevalence of PMS and health related quality of life among young adult females

which includes 235 students of College Of Nursing, AIIMS Rishikesh. Higher level of PMS is related to poor health related quality of life which may interfere with their interpersonal relationship, social and educational performances in a

negative way resulting in poor self-esteem and sense of dissatisfaction and inadequacy.

Majority of subjects 163 (69%) were of age group of 18-21 and majority 154 (68%) had menarche at 13-15 years of age. 157 (67%) had time interval of menstrual cycle between 24-28 days and only 66 (20%) were having irregular menstrual cycle. Majority of subjects 184 (78%) had menstrual cycle of 3-5 days. Same study was conducted by Kaur et al. conducted a descriptive study to assess the PMS and coping behaviour among the entire nursing students. This study involved 248 students and self-administered questionnaire was used for data collection. The results showed that most of the students had abdominal pain, irritability, fluctuation of mood, lower work performance efficacy, difficulty in concentration and avoiding social activities. Most of the students used adaptive behaviour and healthy coping strategies [10-13].

In the present study, Majority of subjects 177 (75%) used non pharmacological relief measures followed by 8 (3%) pharmacological measures. In non-pharmacological relief measures majority of subjects 35% used hot application, 32% taking rest/leave from college, 10% used home remedies, 6% used yoga and 13% used more than 1 method Similar study was conducted by Nagashekhara et al. in their study, most frequently used coping strategies to alleviate PMS symptoms were sleeping (63%), resting (62.3%) followed by listening to music (38.7%) and hot pack utilisation (32%) [10].

In the present study mean age of subjects was 20.7±1.26 and in present study majority of subjects had moderate 83 (35%) level of PMS 27% severe, 21% had very severe, 29% had excellent and 17% had good and poor in 3%. In more than half of the subjects psychological and physical components was the most affected, however health related quality of life score mean in social support and activities of daily living domain was normal.

Results of PMS and their severity suggest that they adversely affect some domains of health related quality i.e. physical and psychological. In the present study there was moderately negative relationship found between PMS and health related quality of life ( $p=0.63$ ) which shows that with increase in PMS score, the health related quality of life was decreased. The subjects who had mild PMS had a very good quality of life. These findings were similar to the study done by Eslamlau et al. [12]. As per their study 56 out of 142 (39.4%) female medical students had PMS. In PMS group majority of girls i.e. 60.6% had mild, 25% had moderate and 14.2% had severe PMS. Quality of Life score was low in more than half of medical students especially in psychological and social components ( $p<0.5$ ) and quality of life score in mental and environmental health was decreased as PMS Score averages increases [11-13].

## Limitations

- Because of time constraint the study data was collected only from one setting i.e. College of Nursing, AIIMS, Rishikesh.
- Randomisation was not done as sample was taken from single setting, hence, it was not possible to include some of

the subjects of College of Nursing, AIIMS, Rishikesh and exclude other one.

## Conclusion

The present study concluded the prevalence of PMS and health related quality of life among young adult female students in AIIMS Rishikesh. It was found that subjects having mild, moderate, severe and very severe level of PMS and excellent, very good, good and poor health related quality of life respectively. In the present study, moderately negative relationship was found between health related quality of life and PMS that shows with increase in score of PMS health related quality of life decreases.

## Recommendations

- Similar study could be planned on large sample and setting to generalized the findings.
- Nurses can be trained to deal with the pre-menstrual syndrome among young adult students.
- Present study was mainly focus on assessing the pre-menstrual syndrome so that an intervention study can be planned in future studies for the young adult females so that they can minimise the stimuli that are responsible for provoking the PMS.

## References

1. Buddhabunyakn N, Kaewrudee S, Chongsomchai C, Soontrapa S, Sombooneorn W, et al. (2017) Premenstrual syndrome among high school students. *Int J Women Health* 9: 501-505.
2. Jehan S, Auguste E, Hussain M, Merumal SR, Brzezinski A, et al. (2016) Sleep and premenstrual syndrome. *J Sleep Med Disord* 3:1061.
3. Zegeye DT, Megabiaw B, Mulu A (2009) Age at menarche and the menstrual pattern of secondary school adolescents in northwest Ethiopia. *Biomed Central Women's Health* 9:29.
4. Freeman EW, Halberstadt SM, Rickels JM, Lin H, Sammel MD (2011) Core symptoms that discriminate premenstrual syndrome. *J Women Health* 20:29-35.
5. Rapkin AJ, Winer SA (2009) Premenstrual syndrome and premenstrual dysphoric disorder; quality of life and burden of illness. *Expert Review of Pharmacoeconomics and Outcomes Research* 9:157-170.
6. Delara M, Ghofranipour F, Azadfallah P, Tavafian SS, Kazemnejad A, et al. (2012) Health related quality of life among adolescent with premenstrual disorder: A cross sectional study. *Health & quality of life outcome* 10:1.
7. Abirami P, Ambika S (2017) Assess the prevalence of premenstrual syndrome among adolescent girls at SRM College of Nursing, SRM University, Kattankulathur. *Asian J Pharmaceutical Clin Res* 10:202-205.
8. Tolossa FW, Bekele ML (2014) Prevalence, impacts and medical management of premenstrual syndrome among female students: cross sectional study in college of health sciences, Mekelle University, Mekelle, Northern Ethiopia. *Women Health* 14:52.

9. Mandal R, Sarkar AP, Ghorai S (2015) A study on premenstrual syndrome among adolescent girls students in urban area of West Bengal. *Int J Reprod, contraception, obstetric and gynecology* 4:1012-1015.
10. Nagashekhara M, Tumkur A, Nilugal KC (2015) Study of premenstrual syndrome among future health care professionals in Master skills global College.
11. Siahbazi S, Montazeria A, Taghizadeh Z, Masoomie R (2018) The consequences of premenstrual syndrome on the quality of life from the prespective of affected women: a qualitative study. *J Res Med Dent Sci* 6:284-292.
12. Eslamlau H, Oshnovu S, Heshmatian B, Akbari E (2014) Premenstrual syndrome & quality of life in Irarian medical students. *Sexual Reprod Health care*.
13. Kaur N, Thakur R (2009) A descriptive study to assess the pre menstrual syndrome and coping behaviour among Nursing students, NINE PGIMER Chandigarh. *Nursing and Midwifery research journal*.