



## Severity of Menstrual Problems in Early and Late Reproductive Years

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### ABSTRACT

*This was a descriptive cross sectional study. The objective of the study was to assess the problems/symptoms associated with menstruation. The subjects were interviewed for complaints/problems during and prior to the onset of menstruation. The responses to various complaints/problems were analyzed and categorized as somatic, psychological and urogenital domain. Results showed that in the somatic category, while none of the younger premenopausal subjects had the complaints of flushes, a fairly large percentage (38.70%) of older premenopausal women reported them. Depression and irritability was reported by more of the younger premenopausal subjects, while exhaustion was found to be more prevalent in older. Regarding urogenital domain, only change in sexual urge was reported by the subjects. Psychological problems related to menstruation were prevalent in the younger premenopausal women to a greater degree as compared to somatic and urogenital problems. While the psychological problems continue, the somatic and urogenital problems increase with increasing age.*

**Keywords : Premenopausal women, menstrual history, menstrual problems**

### Introduction

Women are vulnerable all through their lifecycle due to their health related problems. During reproductive years, it becomes more evident due to menstrual cycle, pregnancy, child birth and lactation. These are the natural physiological process/changes women go through in their reproductive years. It is a nature's endowed privilege for a woman to become mother, but the physiology of the process with increasing age leads to several health related complications and sometimes make life miserable.

A major physiological change a girl passes through to enter in to her adulthood is onset of menstruation. There are a large number of symptoms appear and reappear during and prior to the menstrual cycle, which is a cause of concern (Singh et al. 2004). Various studies have shown appearance of significant behavioral symptoms like depression, aggression, agitated depression and other symptoms like irritability etc (Singh et al. 2004). Prevalence of depressive symptoms of varying severity across the population and their relationship to various reproductive factors has been widely reported. The most common symptoms include irritability, breast tenderness, tearfulness, abdominal pain, depression or sadness, fatigue, nervousness, change in appetite and edema (Benton, 2002; Derman et al., 2004; Alexander et al., 2000). Premenstrual syndrome (PMS) is most common between the ages 20 to 40 years. Approximately 40% of women experience this syndrome in their life span and among 5 to 10% the severity is such that it disrupts the daily routine (Mahmoodi et al. 2010). Women believe that sometimes their personal relationship suffer as a result of premenstrual syndrome.

Further, with increasing age, decrease in the level of hormone like estrogen which signals onset of menopause in older premenopausal women, complicates the problem. Main cause of PMS is still unknown and may be complex and multifactorial (Derman et al. 2004). The present study was planned to assess and compare the occurrence of different symptoms/problems in younger and the older premenopausal women.

### Methods and Materials

#### Locale and Selection of the Subjects

The study was conducted in Rohini, the North West part of the metropolitan city of Delhi. The subjects of the study comprised of premenopausal women in the age range of 30 to 50 years. They were selected on the basis of the inclusion criteria and the willingness to cooperate. Inclusion criteria's were: 1. having regular menstrual cycle. 2. on regular normal diet. 3. not on any type of supplementation 4. not suffering from any metabolic disorder.

#### Sample size

The subjects included 70 premenopausal women purposively selected from North West Delhi. The premenopausal women were grouped as (a) those aged less than 4 years, hereafter referred to as younger premenopausal (YPM) and (b) those above or equal to 40 years referred as older premenopausal women (OPM). Due to attrition for varied reasons, a total of 61 subjects 30 YPM and 31 OPM could be finally covered.

#### Research Design

This was a descriptive cross - sectional study aimed at collecting data regarding prevalence and severity of different kinds of symptoms/problems associated with menstrual cycle in both the groups. Data included sociodemographic profile, menstrual history and problems/complaints related to menstruation. Sociodemographic profile included age, marital status, type of family, and educational qualification. Information regarding menstruation included age of start of menstbuation, duration of menstrual cycle, regularity of menstrual cycle, gap between the two menstrual cycles and the flow of blood for the subjects. Problems/Complaints related to menstruation included somatic, psychological and urogenital problems which had twelve items viz. hot flushes, heart problems, sleep problems, joint pains, skin problems, depression, irritability, anxiety, exhaustion, sexual urge, bladder complaints and vaginal dryness.

#### Tools and Techniques

Suitable questionnaire cum interview schedule were devel-

oped to garner information regarding sociodemographic profile and menstrual history. These were evaluated by nutrition experts and statistician for necessary suggestion. The interview schedules were pretested on 10 subjects to enhance the validity of the tool by depletion of inconsistent, ambiguous and lengthy items. Split half method was used to check the reliability of the tool.

A rating scale was developed to study the problems/complaints related to menstruation which was based on a scale used by Heinemann et al (2003). As per the rating scale, various problems/ complaints relating to menstruation were grouped in three domains as somatic, psychological and urogenital domains. Each domain had a number of sub domains/complaints. The somatic domain had five sub domains/problems viz. hot flushes, heart problems, sleep problems, joint pains and skin problems. The psychological domain included depression, irritability, anxiety and exhaustion. The urogenital domain included problems like sexual urge, bladder complaints and vaginal dryness. The explanation of each sub domain was given to the subjects for interpreting the responses correctly.

**Results**

Sociodemographic data shows that majority of the subjects were married and a fairly large number of subjects were well educated being postgraduates or with additional qualifications (Table 1). Despite this, majority of the subjects reported having family income less than 25,000/- month as many of them were not working outside home.

Table 1: Sociodemographic profile of the subjects

Groups profile		Premenopausal (Younger) N=30	Premenopausal (Older) N=31
Age (yrs)	Mean Age ± SD	32.9±2.25	43.7±3.07
	Age range	30-37	40-50
Marital Status	Married	30(100)	22 (70.96)
	Divorced	-	1 (3.22)
	Widow	-	6 (19.35)
	Unmarried	-	2 (6.45)
	Total	30 (100)	31 (100)
Type of Family	Nuclear	30(100)	24 (77.41)
	Joint	-	6 (19.35)
	Extended	-	1 (3.22)
	Total	30(100)	31(100)
Educational Qualification	Under graduate	-	6 (19.45)
	Graduate	11 (36.66)	7 (22.58)
	Post graduate & Higher Studies	19 (63.33)	18 (58.06)
	Total	30(100)	31(100)

Table 2 depicts the general characteristics of the menstrual cycle. The age of onset of menstruation was above 13 years for majority of the subjects in both the groups. The duration of the menstrual cycle was for 4 to 5 days for most of the subjects. While a fairly large number of younger premenopausal subjects reported the menstrual duration to be five days, older premenopausal women reported it to be 3 days indicating decline in the menstrual flow with age. Majority of the subjects in both the groups reported regular menstrual cycle and a gap of 26 to 30 days between two menstrual cycles. 19.35% of older premenopausal subjects reported menstruation to be irregular as compared to only 3.33% of the younger premenopausal subjects. A fairly large number of older premenopausal subjects reported the gap to be more than 30 days (38.70%). Mild and moderate blood flow during the menstrual cycle was reported by most of the subjects in both the groups. The relative number of women reporting heavy blood flow was higher

in the older premenopausal group.

Table 2: General Characteristics of Menstrual cycle of the Subjects

Characteristics		YPM N (%)	OPM N (%)
Age at start of menstruation (yrs)	11	-	3(9.67)
	12	4(13.33)	4(12.90)
	13	14(46.66)	11(35.48)
	14 and above	12(40.00)	13(41.93)
Duration of menstrual cycle(days)	3	6(20.00)	9(29.03)
	4	12(40.00)	14(45.16)
	5	9(30.00)	6(19.35)
	>5	3(10.00)	2(6.45)
Regularity of menstruation	Regular	29(96.66)	25(80.64)
	Irregular	1(3.33)	6(19.35)
Gap between two menstrual Cycles(days)	10-15	-	1(3.22)
	16-25	4(13.33)	5(16.12)
	26-30	26(86.66)	13(41.93)
	>30	-	12(38.70)
Flow of blood	Mild	9(30.00)	8(25.80)
	Moderate	15(50.0)	14(45.16)
	Heavy	6(20.00)	8(25.80)
	Any other	-	1(3.22)

Problems during menstruation: The premenopausal women, both younger and older, were interviewed for complaints/problems during and prior to the menstrual cycle. The responses to various complaints/problems were analyzed and categorized as somatic, psychological and urogenital domains. Table 3 shows the percentage prevalence of complaints as reported by the subjects in the three domains. In the somatic category, while none of the younger subjects had the complaint of flushes, a fairly large percentage of older subjects reported them (38.70%).

In the psychological domain, depression and irritability were reported by more of the younger subjects, while exhaustion was found to be more prevalent in older women. The differences between the two groups, however, were not significant as tested by chi square. Regarding urogenital domain, none of the complaints other than change in sexual urge was reported by the subjects in both the groups. Most of the subjects reported that there was a decrease in the sexual urge during or just prior to the menstrual cycle.

Table 3: Percentage prevalence of menstrual complaints of the subjects

Domain	Sub-domain/ complaints	YPM N=30		OPM N=31		Chi sq value
		Yes N (%)	No N (%)	Yes N (%)	No N (%)	
Somatic	Flushes	-	30(100)	12(38.70)	19(61.29)	14.15***
	Heart	8(26.67)	22(73.33)	2(6.45)	29(93.54)	4.64
	Sleep	2(6.67)	28(93.33)	3(9.67)	28(90.32)	0.41
	Joint & Muscle Pain	6(20.0)	24(80.0)	23(74.19)	8(25.80)	17.95
	Skin	5(16.67)	25(83.33)	-	31(100)	5.82
Psychological	Depression	7(23.33)	23(76.67)	2(6.45)	29(93.54)	3.57
	Irritability	25(83.33)	5(16.67)	24(77.41)	7(22.58)	0.34
	Anxiety	17(56.67)	13(43.33)	18(58.06)	13(41.94)	0.01
	Exhaustion	23(76.66)	7(23.33)	30(96.77)	1(4.19)	5.41

Urogenital	Change in sexual urge	29(96.67)	1(3.33)	31(100)	-	2.03
	Bladder complaints	-	30(100)	-	31(100)	-
	Vaginal dryness	-	30(100)	-	31(100)	-

\*\*\* P <.001

To study more precisely the health related quality of life during the menstrual cycle, a scoring pattern was used for responses to the complaints in the three domains viz somatic, psychological and urogenital. Each of the twelve complaints/sub domains reported as 'Yes' or 'No' by the subjects were given a score of 1 for 'No' and 2 for 'Yes'. Accordingly, total scores and mean scores were calculated for each sub domain. Further, the total scores and mean scores of each sub domain were added up to get a composite total and composite mean score for each corresponding domain. This scoring pattern was designated as the Menstrual Rating Scale which was adapted from the scale used by Heinemann et al (2003).

Table 4: Scoring of complaints/complaints/sub domains of premenopausal subjects

Domain	Sub domain/ Complaint	YPM N=30				OPM N=31			
		Yes	No	Total	Mean score	Yes	No	Total	Mean Score
Somatic	Flushes	-	30	30	1.00	24	19	43	1.70
	Heart	16	22	38	1.26	4	29	33	1.06
	Sleep	4	28	32	1.06	6	28	31	1.09
	Joint& muscle pain	12	24	36	1.20	46	8	54	1.74
	Skin	10	25	35	1.16	-	31	31	1.0
	Composite total and Composite mean score		42	129	171	1.16	80	115	195
Psychological	Depression	14	23	37	1.23	4	29	33	1.06
	Irritability	50	5	55	1.80	48	7	55	1.77
	Anxiety	34	13	47	1.56	36	13	49	1.58
	Exhaustion	46	7	53	1.76	60	1	61	1.96
Composite total and Composite mean score		144	48	192	1.6	148	50	198	1.56
Urogenital	Sexual	48	6	54	1.96	62	0	62	2.0
	Bladder	-	30	30	1.00	-	31	31	1.0
	Dryness	-	30	30	1.00	-	31	31	1.0
Composite total and Composite mean score		48	66	114	1.31	62	62	124	1.33

Table 4 gives total and mean scores for each sub domain as well as composite total and composite mean scores in each domain. Data indicates that the composite total score of the somatic domain was higher for older premenopausal women as compared to the younger (195 vs. 171). This difference was due to higher scores for flushes as well as joint & muscle pain in the older women. Hence, the composite mean score of older premenopausal subjects was also higher than that of younger premenopausal women (1.28 vs 1.16). Further, the difference in the composite mean scores was found to be significant as tested by t test (p<0.05) (Table 5).

In the psychological domain, although the mean scores for anxiety and exhaustion were higher in older premenopausal women as compared to the younger premenopausal women that of irritability were higher for younger premenopausal subjects (Table 4). The composite mean scores were almost simi-

lar (1.6 and 1.56) and the difference was not significant. In the urogenital domain, the mean score for change in sexual urge was higher for older premenopausal subjects as compared to younger premenopausal subjects (2 vs 1.96). Thus the composite mean score was higher for older premenopausal women (1.33 vs 1.31). Further, the difference was significant as tested by t test (p<0.001) (Table 5).

Table 5: Composite mean score of complaints of premenopausal subjects

Domain	YPM	OPM	t value
Somatic	1.16±0.19 <sup>a</sup>	1.28±0.18	2.43*
Psychological	1.6±0.28 <sup>b</sup>	1.56±0.20	0.58
Urogenital	1.26±0.13 <sup>a</sup>	1.33±0	2.72***
F value	33.72*	1.11	

Means with different superscripts are significantly different as tested by Tukey's HSD.

\*significant at p<.05, \*\*\*significant at p<.001

Besides studying the significance of differences between the two premenopausal groups, ANOVA was further applied to study the significance of difference between various domains for each group of subjects. As indicated in Table 5, it was found that the difference was highly significant between the somatic and psychological and also between psychological and urogenital domain for younger premenopausal women. There was no significant difference found between the domains for older premenopausal women (Table 5).

As the mean scores may not project a true picture, the data was analyzed for all the problems in the three domains for each subject individually. As per the scoring patterns of 1 for a 'No' response and 2 for a 'Yes' response to each complaint/sub domain, the total scores were computed for each subject for all the twelve complaints in the three domains. The total scores ranged from a minimum of 12 to a maximum of 24 for the twelve complaints. The subjects were accordingly classified as having mild, moderate and severe degree of complaints as per the classification based on the scores.

Table 6 shows that majority of the premenopausal subjects (both younger and older) had a moderate degree of the complaints. However, the number with moderate degree was much higher in case of the older premenopausal subjects and that with a mild degree of complaints was much lesser than the younger premenopausal subjects. This analysis is again indicative of an increase in the degree of menstruation related problems with increasing age which in turn may be attributed to a transitional phase towards menopause. Further, the difference was significant as tested by chi.square (p<0.05). None of the subjects had a severe degree of complaints.

Table 6: Percentage prevalence of degree of complaint of premenopausal subjects

Degree of complaints		YPM N=30	OPM N=31
Total score (12-24)	Mild	13(43.33)	5(16.12)
	Moderate	17(56.66)	26(83.87)
	Severe	-	-

χ<sup>2</sup> = 5.42\*, p<0.05

**Discussion**

Prevalence and severity of the menstrual problems in both the groups was studied by using percentage prevalence and by rating and scoring the presence and the severity of the problems. The findings of the present study are in line with those of others done in this respect. This study reports similar findings for the interval between the menstrual cycle, days of menstrual flow and for the regularity of menstruation as reported by Bernard et al. 1999. As per the study older premenopausal women showed increased gap between menstrual

cycle, lesser number of days of menstrual flow and more irregular menstruation.

Menstrual problems: Varied problems grouped as somatic, psychological and urogenital problems were reported by the premenopausal women. They were hot flushes, heart problems, sleep problems, joint pains, skin problems, depression, irritability, anxiety, exhaustion, sexual urge, bladder complaints and vaginal dryness. Evidence exists for behavioral and somatic changes across the menstrual cycle. As per the study by Aganoff and Boyle 1994, mood changes such as anxiety, depression, confusion, emotional lability, irritability, loss of concentration, lethargy and aggression have been associated with the menstrual cycle. Physical symptoms reported mainly during the menstrual cycle include skin disorders, edema, pelvic pain, breast tenderness, headaches, muscle pain, weight increase and vomiting.

While somatic, psychological and urogenital problems were reported by both the groups, type and the severity of the problems were different. Analysis of the present study showed that in the somatic category, significantly large percentage of older premenopausal subjects reported hot flushes as compared to younger one. Psychological problems like depression and irritability were reported by more of the younger premenopausal subjects, while exhaustion was found to be more prevalent

in older premenopausal women though not significant. Study by Joyce et al. 2003 also reveals that psychological behaviour like mood changes was higher in early premenopausal women (14.9% to 18.4%) than late premenopausal women (8 to 12%). Early premenopausal women had higher odds of irritability, nervousness and frequent mood changes.

As far as severity of the problems are concerned, psychological problems related to menstruation were prevalent in the younger premenopausal women to a greater degree as compared to somatic and urogenital problems. While the psychological problems continue, the somatic and urogenital problems increase with increasing age. Thus, older premenopausal women heading towards menopause have a much greater degree of all types of problems.

### Conclusion

Women all through their reproductive years experience a variety of symptoms/problems during menstruation. They suffer equally in early and late reproductive years as far as psychological problems are concerned. Somatic problems like hot flushes, joint pains, heart and skin problems and urogenital problems increase significantly with increasing age. Degrees of severity of menstrual problems also increase significantly with increasing age leading to occurrence of menopause.

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