

Frequency and Impact of premenstrual syndrome on quality of life

Zahida Perveen Brohi¹, Gulfareen Haider², Nishat Zehra³, Ambreen Amna⁴

ABSTRACT

Objectives: This study was conducted to determine the frequency and impact of premenstrual syndrome (PMS) on quality of life in women of reproductive age (15-49 years), and to determine if frequency estimates varied with menstrual flow.

Methodology: This cross-sectional study was carried out on 500 women of reproductive age currently menstruating, non-pregnant including women attending gynaecology outpatient department and female students of Isra University Hyderabad, from 1-July-09 to 31-December-09. Demographic data, and premenstrual Symptoms were recorded through interview and filling of predesigned questionnaire after taking verbal informed consent, and later analyzed on SPSS 11 for descriptive statistics and comparison of proportions using chi-square test of Independence.

Results: This study shows very high frequency 81.25% of Premenstrual syndrome among women of reproductive age. The most frequent symptoms were reported Backache 446(89.2%) and fatigue in 446(89.2%) out of 500 women. Significant difference of weight gain, lower work or college performance, cramps, skin disorders, fatigue, mood swings, depression and tension were found in premenstrual and menstrual phases among study participants.

Conclusion: Premenstrual syndrome is a common problem, have an adverse impact on a woman's quality of life and productivity.

KEY WORDS: Premenstrual distress, Impact.

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INTRODUCTION

Premenstrual syndrome (PMS) refers to distressing physical, psychological and behavioural symptoms not caused by organic disease, which regularly occurs during the same phase of menstrual cycle and significantly regresses or disappears during the remainder of the cycle.¹ The American psychiatric association DSM-IV defines premenstrual dysphoric disorder (PMDD) as a severe form of Premenstrual syndrome in which symptoms of anger, irritability, and internal tension are prominent.² Premenstrual syndrome is a common yet untreated disorder, which adversely affects their emotional well-being and educational performance representing significant public health problems. Globally premenstrual syndrome affects millions of women during their reproductive years.³ This disorder is characterized by the cyclic

recurrence of symptoms during the luteal phase of the menstrual cycle. Symptoms begin between the ages of 25 and 35 years. More than 200 symptoms have been associated with PMS including physical, psychological and behavioural symptoms.^{1,4} The most common physical manifestations of PMS are abdominal bloating and an extreme sense of fatigue both of which occur in 90% of women with this disorder, breast tenderness and headaches are among the major physical complaints occurring in more than 50% of cases. Up to 85% of menstruating women report having one or more premenstrual symptoms and 2-10% reporting disabling, incapacitating symptoms.^{1,5} The reported prevalence of about 20 – 40% shows that a significant group of women may be affected by PMS. Reports of PMS among adolescents in western countries indicate a prevalence ranging from 14 to 30%.⁶

The etiology of Premenstrual syndrome remains unknown and may be complex and multifactorial. The role of ovarian hormones is unclear, but symptoms often improve when ovulation is suppressed.⁷ Changes in hormones level may influence centrally active neurotransmitters such as serotonin, but in circulation sex hormones levels are typically normal in women with Premenstrual syndrome. Some evidence suggests that the disorder is related to enhanced sensitivity to progesterone in women with underlying serotonin deficiency.⁸ This mechanism may not explain all cases, because some patients do not response to treatment with selective serotonin reuptake inhibitors (SSRIS). Deficiencies in prostaglandin, related to an inability to convert linoleic acid to prostaglandin precursors may be involved in PMS. Despite its official status as a medical disorder, premenstrual syndrome is rarely discussed in Pakistan and is surrounded by secrecy, which leads to lot of misconceptions. Premenstrual syndrome is a common problem education about body physiology and counselling for Pakistan women especially the less privileged once is recommended to increase awareness about Premenstrual syndrome, and to reduce its incidence and improve the quality of life in the affected. Research on Premenstrual syndrome and Premenstrual dysphoric disorder is conducted in many countries but very few been reported on the experience of Pakistani women.⁹ The prevalence varies between 18-53%.⁴ This study was carried out to determine frequency and impact of premenstrual syndrome on quality of life in our local population.

METHODOLOGY

This Cross sectional study was conducted at Isra University and Isra University Hospital,

Hyderabad. from 1-July-2009 to 31-December-2009. A sample of 500 non pregnant women of reproductive age (15-49 years) currently menstruating including women visiting Gynaecology out patient department at Isra University Hospital and Female students of Isra University who meet the criteria were included, while Women with medical disorder such as thyroid disease, irregular menstrual cycle and psychiatric disorders were excluded. Data was collected by interview and filling of questionnaire after taking verbal informed consent from women attending the Isra University Hospital out patient department and students of Isra University fulfilling the inclusion criteria about cyclic and recumbent behavioural and somatic premenstrual syndrome and their impact on quality of life. Exclusion criteria strictly followed to avoid confounding variables.

The Questionnaire comprises of: Demographic data and sixteen premenstrual syndrome symptoms based on occurrence and severity. Each symptom is rated whether it occurs in premenstrual phase, menstrual phase; it does not exist, barely inhibit activities or alters life style. Data was analyzed by using soft ware of statistical package for the social sciences version 11.0. Frequency and percentage were computed on 95% confidence interval for variables such as educational status, physical, psychological and behavioural changes. Chi square test was applied to compare the proportion of entire characteristics. Mean + SD were calculated for age. P-value <0.05 was set as the level of significance for interpreting the findings.

Definitions:

- * Depression was defined as psychological disorder that affects a persons mood changes, physical functions and social interactions.
- * Mood swing was defined as an extreme or rapid change in mood.
- * Tension was defined as state of mental or emotional strain.
- * Skin disorders were defined as hyperpigmentation, acne vulgaris and papular eruption during premenstrual phase.

RESULTS

In this study 500 women of reproductive age were surveyed to determine the frequency and impact of premenstrual syndrome on quality of life. Total 500 questionnaires completed in all respectively. This study shows very high frequency (81.25%) among women of reproductive age. The Mean + SD of women age (years) was 26.830 + 6.32. In this study 372 women were married while 128 were unmarried. Weight gain

Table-I: Frequency and severity of premenstrual symptoms in study participants (n = 500).

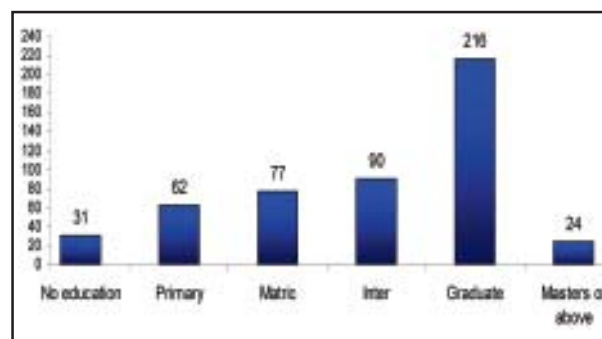
Symptoms	Number	(%)	It does not exist	Barely inhibits activities	Alters life style
Weight gain	440	88.0	60(12%)	256(58.2%)	184(41.8%)
Crying	401	80.2	99(19.8%)	347(86.5%)	54(13.5%)
Lowered work or college Performance	444	88.8	56(11.2%)	243(54.7%)	201(45.3%)
Takes naps	385	77.0	115(23%)	300(60%)	85(17%)
Headache	392	78.4	108(21.6)	214(54.6%)	178(45.5%)
Skin disorders	352	70.4	148(29.6)	160(45.5%)	192(54.5%)
Cramps	431	86.2	69(13.8%)	157(36.4%)	274(63.6%)
Anxiety	428	85.6	72(14.4%)	171(40.0%)	257(60%)
Backache	446	89.2	54(10.8%)	196(43.9%)	250(56.1%)
Fatigue	446	89.2	54(10.8%)	247(55.4%)	199(44.6%)
Painful breasts	380	76.0	120(24%)	266(70.0%)	114(30.0%)
Swelling	446	89.2	54(10.8%)	247(55.4%)	199(44.6%)
Irritability	399	79.8	101(20.2%)	196(49.1%)	203(50.9%)
Mood swings	398	79.6	102(20.4%)	204(51.3%)	194(48.7%)
Depression	388	77.6	112(12.4%)	178(45.9%)	210(54%)
Tension	393	78.6	107(11.4%)	148(37.7%)	245(62.3%)

occurred in 440 women, while Out of 500 women 444 had lowered work or college performance. Backache, Swelling and Fatigue were the most common symptoms occur in 446(89.2%) women (Table-I). Significant difference of weight gain, lower work or college performance, cramps, skin disorders, fatigue, mood swings, depression and tension were found in premenstrual and menstrual phases amongst study participants. In significant difference among crying, takes naps, headache, anxiety, backache, painful breast, swelling and irritability was found in premenstrual and menstrual phases in the study participants (Table II and III respectively).

DISCUSSION

Premenstrual syndrome influences a significant proportion of women, with a small proportion suffering severe effects which lead to economic as well as personal hardship. This study was designed to determine the frequency and impact of premenstrual syndrome (PMS) on quality of life in women of reproductive age (15 – 49) years. Data from our country focusing on this issue is scarce, however worldwide many studies are published on this topic. The present study showed frequency of premenstrual syndrome was 81.25%. This figure is quite higher than previously published researches. A study at Khyber Teaching Hospital in Peshawar found 53% of the young college girls experience premenstrual syndrome.⁹ Two studies from France and China also reported lower incidence of 35%. In contrast Johnson reported 75% prevalence of premenstrual syndrome.¹⁰

The present study showed frequency of weight gain in 440(88%) from which weight gain alters life style in 184(41.8%). Woods et al from USA have demonstrated the same findings.¹¹ The result of this study showed frequency of lowered work or college performance in 444(88.8%) women in contrast to study by Rizk, DE from UAE regarding impact of premenstrual syndrome on quality of life, the prevalence of PMS was 45.2%, with Majority (60%) used pharmacological therapy ,Premenstrual syndrome had a moderate but significant negative impact ($P < 0.001$) on the quality of life of affected girls, particularly school performance, social interactions, life style and emotional well being.¹² Bornstein and colleagues analyzed women aged 18 to 45 years in southern California in a cross sectional cohort study, and found that women with PMS had significant mental and physical symptoms. In addition women with PMS reported decreased productivity at work, greater interference with



Graph-1: Showing the educational status of the study participants (n = 500)

Table-II: Cross tabulation of variables with significant difference of severity between premenstrual and menstrual phase among study participants (n = 500).

Variables:	Severity:	Premenstrual	Menstrual	Total no (%)	P value	Chi square
Weight gain (n= 440)	A) Barely inhibits activities	204(61.6%)	52(47.7%)	256 (58.2%)	0.01*	6.535, df=1
	B) Alters Lifestyle	127(38.4%)	57(52.3%)	184(41.8%)		
Lowered work or college performance	A) Barely inhibits activities	185(59.3%)	58(43.9%)	243(54.7%)	0.003*	8.827, df=1
	B) Alters Lifestyle	127(40.7%)	74(56.1%)	201(45.3%)		
Skin disorders	Barely inhibits activities	63(56.8%)	97(40.2%)	160(45.5%)	*0.004	8.353, df=1
	Alters Lifestyle	48(43.2%)	144(59.8%)	192(54.5%)		
Cramps	Barely inhibits activities	77(44.5%)	80(31.0%)	157(36.4%)	0.006*	8.15, df=1
	Alters Lifestyle	96(55.5%)	178(69.0%)	274(63.6%)		
Fatigue	Barely inhibits activities	210(62.3%)	37(33.9%)	247(55.4%)	< 0.001*	26.825df=1
	Alters Lifestyle	127(37.7%)	72(66.1%)	199(44.6%)		
Mood swings	Barely inhibits activities	110(56.1%)	94(46.5%)	204(51.3%)	0.05*	3.660df=1
	Alters Lifestyle	86(43.9%)	108(53.5%)	194(48.7%)		
Depression	Barely inhibits activities	96(51.1%)	82(41.0%)	178(45.9%)	0.05*	3.953Df=1
	Alters Lifestyle	92(48.9%)	118(59.0%)	210(54.1%)		
Tension	Barely inhibits activities	84(44.0%)	64(31.7%)	148(37.7%)	0.01*	6.322Df=1
	Alters Lifestyle	107(56.0%)	138(68.3%)	245(62.3%)		

Calculated by Fisher's Exact test.

P value is statistically significant at level <0.05

Df = degree of freedom.

hobbies, and a greater number of work days missed for health related reasons (each $P < 0.001$) compared with the control group women with PMS also made more frequent visits to ambulatory care providers and were more likely to accrue on excess of \$500 in visit costs over 2 years.¹³

In Hylan et al's study 8 – 16% of symptomatic women missed work in the preceding year because of premenstrual syndrome and 5 – 8% of those who had ever missed work had been absent for more than 14 days in the past year.¹⁴

Table-III: Cross tabulation of variables with non- significant difference of severity between premenstrual and menstrual phase among study participants (n = 500).

Variables:	Severity:	Premenstrual	Menstrual	Total no: (%)	P value	Chi square
Crying	Barely inhibits activities	336(86.2%)	11(100.0%)	347(86.5%)	0.37*	1.760Df=1
	Alters Lifestyle	54(13.8%)	0	54(13.5%)		
Takes naps	Barely inhibits activities	219(77.1%)	81(80.2%)	300(77.9%)	0.57*	0.412Df=1
	Alters Lifestyle	65(22.9%)	20(19.8%)	85(22.1%)		
Headache	Barely inhibits activities	101(54.9%)	113(54.3%)	214(54.6%)	0.91*	0.013Df=1
	Alters Lifestyle	83(45.1%)	95(45.7%)	178(45.4%)		
Anxiety	Barely inhibits activities	98(42.6%)	73(36.9%)	171(40.0%)	0.23*	1.46Df=1
	Alters Lifestyle	132(57.4%)	125(63.1%)	257(60.0%)		
Backache	Barely inhibits activities	142(44.5%)	54(42.5%)	196(43.9%)	0.75*	0.147df=1
	Alters Lifestyle	177(55.5%)	73(57.5%)	250(56.1%)		
Painful breast	Barely inhibits activities	217(71.1%)	49(65.3%)	266(70.0%)	0.32*	0.969Df=1
	Alters Lifestyle	88(28.9%)	26(34.7%)	114(30.0%)		
Swelling	Barely inhibits activities	156(61.9%)	82(65.6%)	238(63.1%)	0.49*	0.490Df=1
	Alters Lifestyle	96(38.1%)	43(34.4%)	139(36.9%)		
Irritability	Barely inhibits activities	103(51.8%)	93(46.5%)	196(49.1%)	0.31*	1.104Df=1
	Alters Lifestyle	96(48.2%)	107(53.5%)	203(50.9%)		

Calculated by Fisher's Exact test.

P value is statistically non- significant at level <0.05

Df = degree of freedom.

In our study the frequencies of headache 392 (78.4%), fatigue 446(89.2%) and painful breast were 380(76.0%). These findings are in agreement with a study conducted by Casper RF, which showed the frequency of Fatigue in 90% of women and breast tenderness and headache are occurring in more than 50% of cases.¹⁵

In this study results shows that frequency of Irritability 399(79.8%) Mood swings 398(79.6%), depression 388 (77.6%), Tension 393(78.6%). Casper RF has demonstrated mood swings in more than 80% of cases; other frequent behavioural complaints include irritability, tension, and depressed mood in 70% of women. Vichnin et al from USA has observed the most severe symptoms were mood swings, anxiety, and irritability with the greatest impairment in the home.¹⁶ A study done by Farooqi in the University of Punjab shows frequency of physical 54.78% Psychological 43.97% and social symptoms 4.29%.¹⁷

CONCLUSION

It is concluded from this study that premenstrual syndrome is a very common problem, have an adverse impact on a woman's quality of life and productivity that leads to increased direct and indirect medical costs. Majority of women of child bearing age experience some cyclic menstrual related symptoms, accurate diagnosis, Proper diet, exercise and lifestyle changes can help to relieve symptoms, restore function and optimize overall health of women with premenstrual syndrome.

Authors Contribution:

Zahida Perveen and Gulfareen Haider conceived the idea for this project and assisted with the study design, data analysis, drafting and primarily responsible for writing the article.

Nishat Zehra assisted with the data analysis and critically reviewed the manuscript.

Ambreen Amna provided statistical advice and performed the analysis.

Details of Ethics Approval: Ethics approval was obtained from the institutional ethics committee of Isra University Hyderabad, approval date 27th July 2010.

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