Socio-demographic Factors and Premenstrual Syndrome among Women attending a Teaching Hospital in Islamabad, Pakistan

Amna Amjad[1], Ramesh Kumar[2], Syeda Batool Mazher[3]

[1]*Alumni Health Services Academy, Islamabad, Pakistan*
[2]*Department of Health System and Policy, Health Services Academy, Islamabad, Pakistan*
[3]*Pakistan Institute of Medical Sciences, Islamabad, Pakistan*

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Correspondence to: Dr Ramesh Kumar

Address: Department of Health System and Policy, Health Services Academy, Islamabad, Pakistan

Email: ramesh@hsa.edu.pk

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ABSTRACT

BACKGROUND: The premenstrual syndrome (PMS) is common in younger age women and present a significant public health problem. Previous studies have reported that up to 90% women of child-bearing age experience premenstrual symptoms. This study aims to estimate the prevalence of PMS in women of reproductive age and its association with socio-demographic factors in an urban medical center in Islamabad, Pakistan.

METHODS: This was a cross-sectional study conducted during a three months period. Four hundred and twenty two women between the ages of 15 and 45 years, who were seen in the gynecology outpatient department, maternal child health (MCH) centre Pakistan Institute of Medical Sciences, Islamabad, were recruited. Of these, 350 (83%) respondent women were interviewed on pre-tested and validated questionnaire. Various social, demographic, and clinical variables were compared between women with and without PMS using chi-square test.

RESULTS: Of the 350 participants, 167 had diagnosis of PMS; 51% had mild, 37% had moderate and 12% had severe symptoms. Women with PMS were statistically significantly different in age, residence and income from women without PMS. The prevalence of abdominal bloating, headache, breast tenderness, anxiety and depression and anger outburst was higher in women with PMS than those without PMS.

CONCLUSION: Significant proportion of reproductive age women group suffer from PMS. However, routine screening might help in early diagnosis and management of this problem on time.

Keywords: Premenstrual syndrome; Prevalence; Socio-demographic; Women's health

INTRODUCTION

Premenstrual syndrome (PMS) consists of physical, cognitive, affective or behavioral symptoms that occur cyclically during the luteal phase of the menstrual cycle and resolve quickly at or within a few days of the onset of menstruation [1]. The American College of Obstetrics and Gynecology (ACOG) published the ten criteria for the diagnosis of PMS [4]. Other criteria used to diagnose PMS are based on International Classification of Diseases (ICD10) and Diagnostic and Statistical Manual of Mental Disorders (DSM IV) [5]. In the Pakistani society, menstruation represents the girl's entrance to womanhood and her family may impose strict rules on her social behavior. While menstruation may involve positive changes in the social role of the Pakistani women, it may also lead to a conflict in attitudes towards menstruation expressed by negativity and the development of menstrual disorders [6]. However, the extent and severity of premenstrual syndromes in Pakistani young women is unknown. This lack of data may be because only a minority of women with menstrual problems may sought health care as menstruation is considered a highly personal and secretive topic in the Pakistani culture. Therefore, our aim was to estimate the prevalence of PMS in women of reproductive age and its association with socio-demographic factors in an urban medical center in Islamabad, Pakistan.

METHODS

This cross-sectional study was conducted at the Pakistan Institute of Medical Sciences (PIMS) Hospital, Islamabad over a three months period (April 2012-July 2012). Participants between the ages of 15 and 45 years were recruited from the gynecology outpatient department (OPD) at Maternal and Child Health (MCH) Center using convenience sampling technique. Women presented at the MCH center of PIMS Hospital are mainly from Islamabad, Rawalpindi and the surrounding districts. We excluded women who had incomplete medical records, were pregnant, had psychiatric problems, amenorrhea, or significant pelvic pain secondary to pelvic inflammatory disease or endometriosis. We enrolled 422 women for this study, but only 350 (83%) women met the inclusion criteria and were interviewed on a pre-tested, validated tool by trained data collectors. Questionnaire was translated in the local language before taking the written consent from the respondents. The questionnaire consisted of 12 questions that included demographic and reproductive variables with both close and open responses. The main socio-demographic and reproductive factors studied were: age, residence, education, marital status, age at menarche, occupation, family income, parity, age at first PMS, oral contraceptive use, family history of PMS and symptoms of PMS. Another questionnaire was given to subjects which was based on ACOG PMS criteria [4] including the following six behavioral and four somatic symptoms; depression, angry outbursts, irritability, anxiety, confusion and social withdrawal, breast tenderness, abdominal bloating, headache and swelling of extremities. Symptoms should start during the five days before the menses and relieved within five days of the onset of the menses without recurrence until at least cycle day 13 and are evident for consecutive cycles. Those women who reported such symptoms were further asked to classify symptom severity into mild, moderate or severe. After completing the questionnaire, patients were given daily symptom diary to keep track of their symptoms. Data was analyzed using the Statistical Package for the Social Sciences (SPSS version 20). Chi-square test was used to compare the individuals with and without PMS. Ethical approval was taken from institutional review board of the Health Services Academy, Islamabad.

RESULTS

Of the 350 patients, 256 (73%) respondents were from urban area, 154 (44%) participants were in age group 15-24 years and 167 (48%) had symptoms consistent with the diagnosis of PMS (Table 1). As compared to women with no education, PMS symptoms were common among educated women. There was significantly higher prevalence (p=0.05) of PMS in women who had menarche <12 years and had family history of PMS than women without PMS. As compared to married women, PMS was more prevalent among unmarried women (39% vs. 60%).

Women with PMS had higher prevalence of family history of PMS in sisters or mothers than women without PMS (61% vs. 31%). To estimate the severity of PMS, each item was rated on a scale of 0 to 3. The total score of PMS was calculated as the sum of the symptom score divided by the number of symptoms (mean) and converted to percent. We further categorized the score between 0-33% as mild, 33-66% as moderate and greater than 66% as severe PMS. Mild PMS was present in 85 (51%), moderate in 62 (37%), and severe in 20 (12%) women. The somatic/physical symptoms were abdominal bloating (N=122, 71%), headache (N=107, 51%), and breast tenderness (N=54, 32%), whereas affective symptoms were confusion (N=45, 27%), irritability (N=60, 36%), anger outbursts (N=60, 36%), anxiety (N=93, 56%), depression (N=52, 31) and social withdrawal (N=7, 4%).

DISCUSSION

In this cross-sectional study, we found that the prevalence of PMS in women presenting to an urban medical center in Pakistan was 48%. We also found that women who were living in urban areas, were younger, unmarried, educated, and had menarche before the age of 12 years had higher prevalence of PMS. Presence of PMS in a sister or mother was also associated with a higher prevalence of PMS.

The prevalence of PMS in this study is similar to previous studies performed in young college-attending women [7][8]. In contrast, a study from Pakistan estimated the prevalence of PMS at 81% [9]. The discrepancy in prevalence estimate may be due to various factors including differences in the study tool, methodology, study area, or study participants. The estimate of the severity of PMS symptoms is also consistent with previous studies enrolling young college-attending women [7]. However, the prevalence of severe PMS was high in our study as previous studies have reported a prevalence of 5.8% in Egyptian

Figure 1: Socio-demographic characteristics of respondents

Variables	Groups	Cases (167) Frequency (%)		Non Cases (183) Frequency (%)		P-value
Age in groups	15-24	108	64.67	46	25.14	<0.001
	25-34	38	22.75	81	44.26	
	35-45	21	12.57	56	30.60	
Residence	Urban	146	85.62	110	60.10	<0.001
	Rural	21	12.57	73	39.90	
Education	No education	27	16.17	52	28.4	0.001
	Primary	58	34.73	73	39.9	
	Secondary	61	36.52	49	26.77	
	Higher	21	12.57	9	4.9	
Marital status	Unmarried	100	59.88	75	40.98	0.001
	Married	66	39.52	105	57.37	
	Widow	1	0.6	3	1.64	
Family income (Pakistani rupees per month)	>30,000	137	82.03	103	56.28	<0.001
	<30,000	30	17.97	80	43.72	
Sister	Absent	62	38.75	128	69.9	<0.001
	Present	105	61.25	55	30.05	
Mother	Absent	65	38.93	125	68.31	<0.001
	Present	102	61.07	58	31.69	
Age at menarche	>12 years	27	16.16	94	51.37	<0.001
	< 12 years	140	83.8	89	48.63	

women and 4.4% in medical students [10][11]. The observed differences between these two studies and our study may be due to differences in the enrolled population or due to secular trends in women's rights over time.

The most frequently reported symptom was abdominal bloating (73%) followed by headache (64%), and anxiety (55.6%), which were also reported in prior studies [12]. Urban residence and higher income household in our sample were significantly associated with the risk of PMS. In contrast, some investigators have suggested that lower socioeconomic status is associated with higher prevalence of PMS. It is possible that the awareness of PMS will be higher in women from higher socioeconomic status while the presence of other factors such as social habits and living conditions may explain the higher prevalence in women from lower socioeconomic status [14].

Our findings of positive associations between PMS and a family history of PMS are similar to previous studies [15]. Shared biological and psychological factors may influence expectations and self-awareness and may underlie this finding. Our study showed an association between PMS and age of menarche less than 12 years. This finding was consistent with a few reports [16], but, in contrast, others reports did not find any association between PMS and age at menarche. The mechanism through which younger age at menarche is associated with PMS remains unclear, although it is possible that an early maturation of ovarian function while physical and psychological functions are still developing maybe responsible for the observed association.

Our study has several potential limitations. Although a high response rate and relatively larger sample size are the major strengths, the

cross-sectional retrospective design may be associated with recall bias. However, the use of questionnaires based on ACOG criteria and daily symptom diary report provide robustness that makes our results more reliable. Our study population was recruited from a teaching hospital, which may limit the generalizability of our findings to overall population. Furthermore, because of the cross-sectional design, we are unable to determine longitudinal relations between any of the studied predictors and outcome and whether they were coexisting or preexisting. Moreover, while women were included in the study based on the absence of chronic medical disorders, they were not screened for other possible medical diagnoses when they reported PMS symptoms.

CONCLUSION

PMS was highly prevalent in women of reproductive age in our study participants. Large number of women who were suffering from PMS had a positive family history in sisters or mothers. Hence, proper health education and screening should be performed in a timely fashion to control the high prevalence in the affected population.

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