Premenstrual Syndrome and Associated Factors among Health Care Professionals: A Cross-sectional Study

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ABSTRACT

Introduction: Premenstrual Syndrome (PMS) is the combination of physical, emotional, physiological and psychological symptoms felt by females after ovulation of each menstrual cycle which may affect the quality of life of the professionals.

Aim: To assess the quality of life among Health Care Professionals (HCP) during PMS.

Materials and Methods: This was a cross sectional descriptive study conducted at MMIMSR, Mullana to assess the quality of life among HCPs during premenstrual period. Total 493 subjects were enrolled out of 520 after excluding those who didn't participate in the study. Subjects were assessed on three scales- Socio demographic Performa, Premenstrual Symptoms Scale (PMSS), Quality of Life (QoL-10). The results were computed with descriptive statistical methods (frequency tables, ANOVA) using SPSS 20 version (IBM Inc Chicago) software.

Results: Out of 493 subjects 253 had PMS. The parameters which showed significant association with QoL were age (<0.001), occupation (<0.001), marital status (<0.001), regularity of cycles (0.02), as well as with the severity (<0.001) of PMS.

Conclusion: The study outcome showed that QoL is directly affected in Healthcare Professional (HCP) with increase in the severity score on PMS symptoms scale. The QoL is also affected with other related socio demographic variables. Proper actions shall be taken to increase the awareness among the women regarding the quality of life during PMS. Proper pharmacological and psychological treatment should be taken which will improve their quality of life.

Keywords: Menstrual cycle, Ovulation, Premenstrual symptoms scale, Quality of life

INTRODUCTION

Each women usually experiences, physical and psychological disturbances during her cyclic change of hormones each month but intensity varies from mild to severe. It usually ends with the end of the menstrual flow. PMS falls in psychosomatic disorder. In reproductive age group, 30-50% suffer from mild to moderate PMS whereas 3-8% have severe [1]. The most common mood symptoms are irritability, depression, crying, oversensitivity and mood swings. Among physical symptoms, fatigue, bloating, breast tenderness, acne and appetite changes with food cravings are common. Devastating effects of PMS leads to sense of inadequacy with regard to QoL. Though, less number of women suffer from severe form of PMS but it have significant deteriorating impact on the overall QoL.

The WHO defines QoL as an individual's awareness of their situation in life according to the conditions of the social and cultural systems in which they reside and in relation to other associated factors [2]. Health professional's helps in maintaining health by diagnosing, preventing and treating the disorder with the application of evidence based medicine. This promote overall health of an individual [3].

As PMS possess lot of emotional turmoil, so this disturbs the personal relationships to huge extent leading to have detrimental effect on QoL therefore, proper measures should be taken in order to decrease the disturbing effects of PMS. There is significant impact of PMS on the affected women's life. Despite of the growing awareness, there remains a considerable deficiency of knowledge about the necessity to consult a doctor or seek treatment for their symptoms. PMS symptoms have a negative impact on females by affecting their physiological, behaviour and psychological aspects of life as well as on the quality of one's life.

Early diagnosis and knowledge regarding PMS symptoms among females will help in choosing appropriate management required. It is necessary to identify and provide medical treatment and counselling for the females to improve their QoL during PMS. The purpose behind the study was to find out whether QoL is being affected or not with PMS.

MATERIALS AND METHODS

This cross sectional study was conducted on HCPs in Maharishi Markandeshwar Institute of Medical Sciences and Research, Mullana in Northern India, after taking clearance from Ethical Board of the Medical College (IEC- 137D). All female HCP including doctors, nurses, interns, junior residents, senior residents, post graduate students, physiotherapist and others (Msc and Bsc medical students) between 20-50 years of age with regular menstruating cycle and willing to participate were included in the study. HCPs who were lactating, with endocrinal, medical or any co-morbid psychiatry illness or using any birth control and hormonal therapy at the time of study were excluded from the study. After explaining the aim and objective of the study and with their consent, data was collected on three scales: socio demographic proforma, PMSS [4] and QoL-10 [5].

Socio Demographic Scale

It consists of seven categories namely name, age, education status, occupation, type of locality (urban, rural), use of analgesic, family history of PMS, which are further subdivided into categories as per the need of the study.

Premenstrual Syndrome Scale [4]

The PMS scale comprised of 40 questions with three sub-scales namely, physiological, psychological and behavioural symptoms. The scoring system is according to the responses. Never as "1", rarely as "2", sometimes as "3", very often as "4"and always as "5" points. Total score reached 80 points or above indicates PMS. Increase in the score indicate an increase in PMS severity. Five

categories were graded as "no symptoms" (range 1-40), "mild" (41-80), "moderate" (81-120), "severe" (121-160), and "very severe" (161-200).

The Quality of Life 10 (Qol-10) [5]

The 10-item QoL10 questionnaire is used for measuring self-rated physical and mental health of the subjects. It takes 10 minutes to administer, collect and analyse per patient. This QoL-10 battery with 10 key questions helps the patient to report their overall quality of their life. It is five point likert scale and total score ranges between 1-5 after calculating the score with the formula mentioned below.

Equation for final score	Score
({Health} ((Q1+Q2).2)+{QoL} ((Q 10)+(Q3+Q4+Q5):3):2)+[ability] ((Q6+Q7+Q8+Q9):4)):3	Higher the score means bad QoL

Interpretation: 1 is great, 2 is normal, 3 is bad for QoL1 and very bad for QoL5 and QoL10,4 is very bad for QoL1 and deadly for QoL5 and QoL10, 5 is dying for QoL1, QoL5 and QoL10 - you cannot survive for very long with this low rating.

STATISTICAL ANALYSIS

Data was analysed by using Statistical Packages of Social Sciences version-20 (SPSS v20) and Descriptive statistics (frequency tables and ANOVA testing) was used.

RESULTS

Maximum population belonged to the age group of 20-24 years. Mean value on QoL of the same age group was 2.33 which was highest among all other groups, this means that this age group showed bad QoL as compared to other age group and significant association was seen with QoL [Table/Fig-1].

Character	Category	n	Mean	SD	p-value
Age groups	20-24	221	2.33	0.66	0.03
	25-29	200	2.24	0.6	
	30-34	47	2.13	0.83	
	35-39	10	2.14	0.64	
	40-44	11	1.72	0.41	
	45-49	3	1.85	0.35	
	50 and above	1	2.02	0.65	

[Table/Fig-1]: Age distribution of the subjects with QoL.
ANOVA test was applied

The unmarried females had high mean score value on QoL than married females and reported to have bad QoL. There was significant association seen among occupation and marital status with QoL [Table/Fig-2].

The women with regular menstrual cycles had lower mean score value (2.23) on QoL showing good QoL than those with irregular cycles (2.46) and significant association was seen with regularity and QoL [Table/Fig-3].

Out of total 493 subjects enrolled in the study, 10 (2%) subjects had no premenstrual symptoms, maximum subjects 230 (46.7%) showed mild symptoms, whereas 182 (36.9%) had moderate and subjects showing severe symptoms were 61 (12.4%), 10 (2%) subjects showed very severe premenstrual symptoms [Table/Fig-4].

The mean score value on the QoL is increasing with the increase in severity of PMS, showing that there is deterioration of QoL among HCPs with the increase in severity of PMS and it shows significant association between severities of PMS with QoL (p-value <0.001) [Table/Fig-5].

Character	Category	n	Mean	SD	p-value
Education	Graduate	368	2.27	0.63	0.47
	Postgraduate	125	2.22	0.72	
Occupation	Faculty	128	2.15	0.7	<0.001
	Interns	93	2.14	0.69	
	Nursing background	205	2.28	0.58	
	Physiotherapy background	44	2.67	0.64	
	Other	23	2.29	0.67	
Locality	Rural	117	2.23	0.51	0.115
	Urban	376	2.26	0.69	
Marital status	Married	136	2.05	0.61	<0.001
	Unmarried	357	2.34	0.65	
Family H/O	Yes	66	2.31	0.69	0.46
	No	427	2.25	0.65	

[Table/Fig-2]: Socio demographic profile of the subjects.
ANOVA test was applied

Character	Category	n	Mean	SD	p-value
Regularity	Irregular	50	2.46	0.7	0.021
	Regular	443	2.23	0.65	
Use of analgesics	Yes	134	2.26	0.73	0.99
	No	359	2.26	0.62	

[Table/Fig-3]: Other related variables associated with PMS.
ANOVA test was applied

Category	Frequency	Percent
No PMS	10	2
Mild	230	46.7
Moderate	182	36.9
Severe	61	12.4
Very severe	10	2
Total	493	100

[Table/Fig-4]: Distribution of HCPs according to the scores of PMS.
ANOVA test was applied

Character	Category	n	Mean	SD	p-value
Severity of Pms	No	10	1.89	0.3	<0.001
	Mild	230	2.05	0.49	
	Moderate	182	2.32	0.68	
	Severe	61	2.73	0.66	
	Very severe	10	3.39	0.85	

[Table/Fig-5]: Severity of PMS with QoL.
ANOVA test was applied

DISCUSSION

The PMS issue is most neglected and untreated among females. Even as this study was performed among HCP of medical stream. Still there were seven subjects who refused to give information regarding PMS. Many females avoid talking about PMS. If we talk about general public, lot of hesitancy and stigma is attached regarding these issues. And hence, PMS might go unaddressed.

As per results of this study, prevalence of PMS is 51.3%. It is observed that maximum population belonged to the age group of 20-24 years with mean score value on QoL (2.33). This age group showed bad QoL as compared to other age groups. The reason for this might be that as this age is close to the onset of menarche so they are not well adaptive to these physiological changes which may lead to bad QoL. As the age increases, adaptation to PMS improves further improving the QoL of the subjects.

The graduate population had the higher mean value than post graduates showing that they had bad QoL. Among different occupations, it was physiotherapists who had highest mean value

(2.67) reflecting to have bad QoL among all other categories. The probable reason behind this may be as they have more of physical activities and are more involved with long standing procedures.

As seen in the results, mean value was higher among unmarried (2.34) than married (2.05) reflecting that the QoL of married females is much better than unmarried. The probable reason may be as married females have better emotional support from their partners and able to consult their respective doctors for their symptoms more openly as compared to unmarried women. The mean value of the patients having family history of PMS was (2.31) and had bad QoL than those not having any family history as genetics as it play a major role among the etiological factors in PMS.

The women who had regular cycles with mean value (2.23) had better QoL than one with irregular cycles with mean value (2.46). There is lot of distress associated with irregular cycles which directly affects ones QoL.

According to a study by Kahyaoglu Sut H and Mestogullari E, [6] the prevalence of PMS was 38.1%. When the PMSS total score increased there was decrease in Work Related Quality of Life (WRQoL) score in the nurses with PMS. While in our study the prevalence of PMS was 51.3 %. Similar results were seen in this study that as the severity of the PMS increases there was decline in the QoL of life of HCPs.

It was reported in a study by Farrokh-Eslamlou H et al., that 60.6% of girls had mild, 25.1% had moderate symptoms and 14.2% showed severe PMS [7]. As per present study results maximum subjects 230 (46.7%) had mild symptoms, whereas 182 (36.9%) had moderate and 61 (12.4%) had severe symptoms. The students with family history of PMS in their first degree relatives and those who take medicine to relieve PMS symptoms had significant high PMS symptoms (p<0.05). In this study concordance results were seen in regard with the family history, but it was not found to be statistically significant. In the present study, there was use of analgesics by 134 subjects but mean score value did not show any significant variation.

A study reported that PMS is directly related with substantial burden on QoL in adolescents. Increase in the severity of PMS symptoms leads to decrease in the quality of mental health and the score of QoL in all the domains are lower in adolescents with PMS compared to the healthy group. This concludes that PMS have major impact on various dimensions of QoL. The results of the present study are in concordance with the results of the study done by Arbabi M et al., [8].

It was observed in a study by Sevil S et al., that average scores of students with PMS were lower in all domains of QoL (p<0.05 for each domain). Present study also supported the similar result, with the p-value of 0.001, showing significant association of PMS with the QoL [9].

A study by Prungsin T and Taneepanichskul S, showed that prevalence of moderate to severe PMS was 11.4% and mild PMS/no PMS was 88.6% [10]. The results are in concordance with the present study in which, maximum subjects 230 (46.7%) showed mild symptoms. In the above study the QoL was not significantly associated between PMS and non PMS (p>0.05), while in this study there was a significant association seen with p-value (0.001), showing that as the severity of PMS increased, there was a decline in QoL.

The PMS was detected in 72.1% of the students in a study by Pinar G et al., [11]. In our study it resulted to be 51.3%. In above study the relationship between QoL and PMS was evaluated and inverse relationship was seen between both the parameters (p<0.05). Similar concordance results were seen in index study, that severity of PMS affects the QoL by worsening it.

In a study by Goker A et al., it was reported that the frequency of PMS was 91.8% while in present study it was 51.3% [12]. Goker A et al., reported that family history significantly affected QoL scores. In present study also, QoL was bad more in population having positive family history.

As in present study other identified factors which showed significant association with the QoL in PMS includes age, occupation, marital status and regularity of cycles. These all variables had significant impact on QoL. But there was scarce data available related to these variables, so comparison was not possible with any previous literature. So further more studies should be planned at different places to find the impact of QoL on HCP females using these related factors.

LIMITATION

As this study was conducted on highly selective female HCPs only, more over many of the senior faculty could not be included because of their busy schedules, hence the data may not be the true presentation of the population of HCPs. Moreover in India, unmarried subjects find this topic sensitive to talk and difficulty revealing their menstrual symptoms due to which we may had biased findings . Studies must be taken up to find whether the population affected by severe symptoms of PMS could able to manage their professional work or not during this period.

CONCLUSION

The results of this study suggest that PMS poses its effect on QoL of affected women having physical, psychological, behavioural and family-social consequences therefore, it is necessary to take a more general approach to women care beyond treating physical symptoms only. Women s must be encouraged to express their QoL status during PMS.

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