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A Study on the Effect of Premenstrual Syndrome on Interpersonal Relationships and Quality of Life

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Abstract **Original Research Article**

Background: Premenstrual Syndrome (PMS) is characterised by various psychological and physical symptoms on a continnum of severity. About 85% women experience mild symptoms, moderate to severe symptoms are seen in 20-25% women, and about 5% women meet the criteria of Premenstrual Dysphoric Disorder (PMDD). PMS often leads to worsening of daily functioning and causes problems in interpersonal relationships. The aim of our study is to find out the relationship between the severity of PMS with interpersonal problems and quality of life. ***Materials and Methods:*** This is a cross-sectional study among consenting medical and paramedical students, aged 18-35 years, of a tertiary care general hospital. Diagnosis of PMS was done by ICD-10 criteria (N94.3). Severity of symptoms was assessed using Premenstual Syndrome Questionnaire. Interpersonal relationships were studied using Inventory of Interpersonal Problems-Short Circumplex Scale. Quality of life was assessed using World Health Organisation-Quality of Life Abbreviated Scale. Brief history was taken to rule out other major psychiatric illnesses. ***Results:*** There is significant (P-value < 0.05) positive correlation between severity of PMS symptoms and interpersonal problems; between severity of PMS symptoms with cold, non-assertive and intrusive traits; anxiety during PMS with overly-nurturant traits; depression during PMS with cold traits; hormonal domain in PMS with intrusive trait. During menses, there is significant positive correlation with increase in dominating trait. Anxiety in PMS with the physical health domain of QoL; depression and hormonal domains of PMS with social relationships domain of QoL had significant negative correlation. ***Conclusion:*** In our study, we found significant relationship between the severity of symptoms with interpersonal problems and quality of life of women suffering from premenstrual syndrome.

Keywords: Premenstrual syndrome, quality of life, interpersonal problems, depression, anxiety, hormonal, menses.

INTRODUCTION

Reproductive age group women frequently experience symptoms during the late-luteal phase of their menstrual cycle, these are collectively called Premenstrual Syndrome (PMS); characterised by various psychological and physical symptoms, which lie on a continnum of severity. About, 85% women experience mild symptoms,20-25% women experience moderate to severe symptoms,5% women meet the diagnostic criteria of Premenstrual Dysphoric Disorder (PMDD), recently added in DSM-5 [coded as 625.4 (N94.3)].

The most common somatic symptoms of PMS are: feeling tired, food craving, insomnia or hypersomnia, headache, pelvic pain and discomfort, breast tenderness, joint pain, bloating. Whereas, the most common affective symptoms are: irritability, anxiety, depression, mood swings, hostility, poor concentration, confusion, social withdrawal, interpersonal conflicts.

The exact cause of PMS is unknown. Different biological factors have been suggested as possible

etiologies, namely, estrogen, progesterone, gamma amino butyric acid (GABA) and serotonin. Estrogen causes neuronal excitability; and progestins are inhibitory in nature, having actions on serotonin, noradrenaline and GABA [1]. A neuroactive progesterone metabolite.

Allopregnanolone, a potent GABA receptor modulator, may cause certain effects like- loss of impulse control, negative mood, aggression, irritability [2]. Serotonergic system dysregulation and decreased serotonergic activity in Luteal phase has also been suggested. SSRI use shows reduction of symptoms in PMS [3]. Sex steroids, especially, Progesterone interact with renin-angiotensin-aldosterone system (RAAS) to alter electrolyte and fluid balance causing bloating and weight gain.

AIMS AND OBJECTIVES

1. To find out the relationship between the severity of symptoms in premenstrual syndrome and the various traits that may lead to problems in interpersonal relationships.
2. To find out the relationship between the severity of symptoms in premenstrual syndrome and the various domains of quality of life.

MATERIALS AND METHODS

A synopsis was submitted to the institutional ethics committee before commencement of the study, and proper ethics committee permission was taken for the study. This is a cross-sectional single interview study among 60 consenting medical and paramedical students, aged between 18 to 39 years, of a medical college in eastern India. Brief history and MSE was taken to rule out other major psychiatric illnesses like depression, bipolar affective disorder, obsessive compulsive disorder, substance use, etc. Self-reporting Questionnaire (SRQ-20) was given to all the consenting students to rule out depression. Among the study participants, 10 students were excluded due to depression. The rest of the 50 students, were given the Premenstual Syndrome Questionnaire (PMS-Q), to assess severity of various symptoms in the pre-menstrual phase. Then the participants were given the Inventory of Interpersonal Problems- Short Circumplex (IIP-SC) Scale to study their interpersonal relationships. Further, quality of life was assessed using World Health Organisation Quality of Life Abbreviated (WHOQOL BREF) Scale in these study population. The data was compiled and was analysed using SPSS version 16.0 to obtain the results.

RESULTS AND ANALYSIS

Table-1: Correlation between total score of Premenstrual Syndrome Questionnaire (PMS-Q) and total score of Interpersonal Problems Short Circumplex Scale (IIP-SC)

		Total Interpersonal Problems score
Total PMS Score	**Correlation Coefficient (Spearman's rho)**	**0.387**
	P value	**0.006**

Table-1 shows correlation between the total scores of PMS-Q and IIP-SC; showing significant (P-value < 0.05) positive correlation between severity of PMS symptoms and interpersonal problems in general.

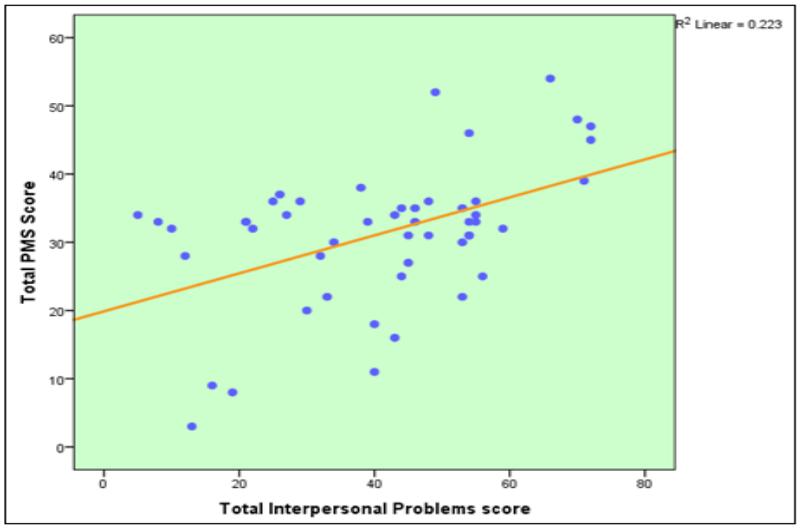

Fig-1: Scatter diagram between the total scores of PMS-Q and IIP-SC.

Figure-1 shows positive correlation between the total scores of PMS-Q and IIP-SC.

Table-2: Correlation between total score of Premenstrual Syndrome Questionnaire (PMS-Q) and domain scores of Interpersonal Problems Short Circumplex Scale (IIP-SC)

		IIP domain dominating	IIP domain vindictive	IIP domain cold	IIP domain socially avoidant	IIP domain nonassertive	IIP domain exploitable	IIP domain overly nurturant	IIP domain intrusive
Total PMS score	**Correlation Coefficient (Spearman's Rho)**	**0.273**	**0.260**	**0.298**	**0.223**	**0.322**	**0.104**	**0.244**	**0.291**
	P value	**0.055**	**0.068**	**0.035**	**0.119**	**0.023**	**0.472**	**0.087**	**0.040**

Table-2 shows correlation between total score of PMS-Q and the domain scores of IIP-SC; showing cold, non-assertive and intrusive traits have significant (P value < 0.05) positive correlation with severity of PMS symptoms.

Table-3: Correlation between domain scores of Premenstrual Syndrome Questionnaire (PMS-Q) and domain scores of Interpersonal Problems Short Circumplex Scale (IIP-SC)

		IIP domain dominating	IIP domain vindictive	IIP domain cold	IIP domain socially avoidant	IIP domain nonassertive	IIP domain exploitable	IIP domain overly nurturant	IIP domain intrusive
PMS A domain (Anxiety)	**Correlation Coefficient (Spearman's rho)**	**0.128**	**0.083**	**0.202**	**0.134**	**0.166**	**0.180**	**0.379**	**0.041**
	P value	**0.375**	**0.565**	**0.160**	**0.353**	**0.249**	**0.211**	**0.007**	**0.776**
PMS C domain (Appetite, etc)	**Correlation Coefficient (Spearman's rho)**	**0.302**	**0.261**	**0.409**	**0.256**	**0.323**	**0.160**	**0.091**	**0.196**
	P value	**0.033**	**0.067**	**0.003**	**0.073**	**0.022**	**0.266**	**0.529**	**0.173**
PMS D domain (Depression, etc)	**Correlation Coefficient (Spearman's rho)**	**0.247**	**0.273**	**0.313**	**0.258**	**0.253**	**0.162**	**0.134**	**0.249**
	P value	**0.084**	**0.055**	**0.027**	**0.071**	**0.076**	**0.261**	**0.352**	**0.081**

Table-3 shows correlation between domain scores of PMS-Q and the domain scores of IIP-SC. Anxiety during PMS increases overly-nurturant traits, there is a significant (P-value < 0.05) positive correlation between the two. Dominating, cold, non-assertive, all of these three traits have significant (P-value < 0.05) positive correlation with increased bio-functions during PMS. Depression during PMS may lead to cold behaviour/traits, as suggested by its significant (P-value < 0.05) positive correlation.

Table-4: Correlation between domain scores of Premenstrual Syndrome Questionnaire (PMS-Q) and domain scores of Interpersonal Problems Short Circumplex Scale (IIP-SC)

		IIP domain dominating	IIP domain vindictive	IIP domain cold	IIP domain socially avoidant	IIP domain non-assertive	IIP domain exploitable	IIP domain overly nurturant	IIP domain intrusive
PMS H domain (Hormonal, etc)	**Correlation Coefficient (Spearman's rho)**	**0.182**	**0.203**	**0.102**	**0.143**	**0.229**	**0.090**	**0.253**	**0.293**
	P value	**0.207**	**0.158**	**0.481**	**0.322**	**0.110**	**0.533**	**0.076**	**0.039**
PMS M domain (Menses)	**Correlation Coefficient (Spearman's rho)**	**0.291**	**0.230**	**0.082**	**0.197**	**0.236**	**0.203**	**0.212**	**-0.012**
	P value	**0.041**	**0.108**	**0.571**	**0.170**	**0.099**	**0.158**	**0.139**	**0.932**
PMS Other symptoms	**Correlation Coefficient (Spearman's rho)**	**0.291**	**0.272**	**0.182**	**0.176**	**0.285**	**0.095**	**0.158**	**0.274**
	P value	**0.040**	**0.056**	**0.206**	**0.223**	**0.045**	**0.512**	**0.274**	**0.054**

Table-4 shows correlation between domain scores of PMS-Q and the domain scores of IIP-SC. Hormonal domain in PMS has significant positive correlation with intrusive trait in behaviour. During Menses, there is significant positive correlation with increase in dominating trait of behaviour. Other symptoms in PMS, consisting of dermatological manifestations, somatic complaints, etc are positively correlated to both dominating and non-assertive traits.

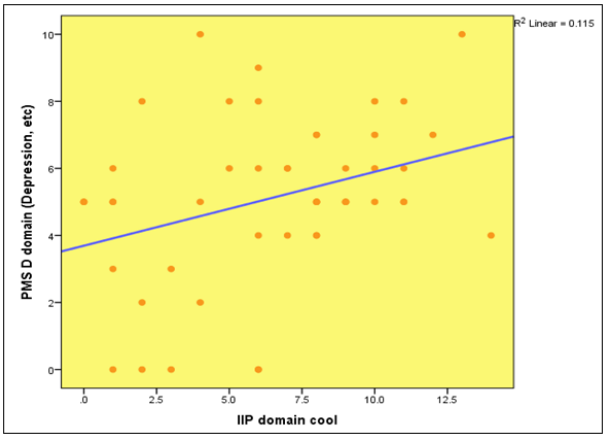

Fig-2: Scatter diagram between the domain scores of PMS-Depression domain and IIP-Cold domain

Figure-2 shows positive correlation between the domain scores of PMS-Depression domain and IIP-Cold domain.

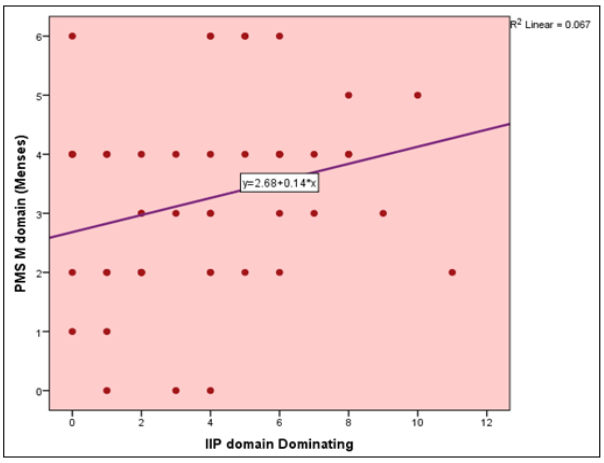

Fig-3: Scatter diagram between the domain scores of PMS-Menses domain and IIP-Dominating domain.

Figure-3 shows positive correlation between the domain scores of PMS-Menses domain and IIP-Dominating domain.

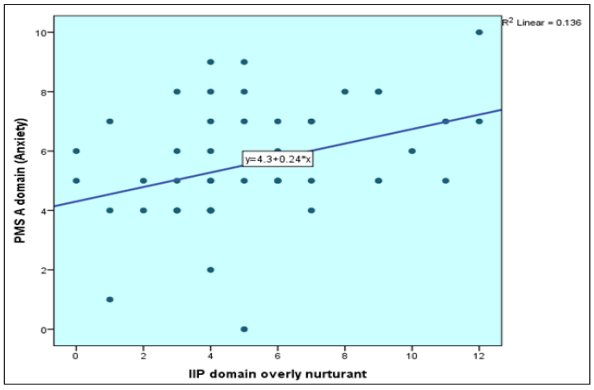

Figure 4: Scatter diagram between the domain scores of PMS-Anxiety domain vs IIP-Overly Nurturant domain

Figure-4 shows positive correlation between the domain scores of PMS-Anxiety domain vs IIP-Overly Nurturant domain.

Table-5: Correlation between the total scores of Premenstrual Syndrome Questionnaire (PMS-Q) and the domain scores of World Health Organisation Quality of Life Abbreviated Scale (WHOQOL BREF)

	Total PMS Score	
QoL domain 1 (Physical Health)	**Correlation coefficient (Spearman's Rho)**	**-0.227**
	P value	**0.113**
QoL Domain 2 (Psychological Health)	**Correlation coefficient (Spearman's Rho)**	**-0.249**
	P value	**0.081**
QoL Domain 3 (Social Relationships)	**Correlation coefficient (Spearman's Rho)**	**-0.186**
	P value	**0.196**
QoL Domain 4 (Environment)	**Correlation coefficient (Spearman's Rho)**	**0.082**
	P value	**0.571**

Table-5 shows correlation between the total score of PMS-Q and the domain scores of WHOQOL BREF. All domains of quality of life except the environment domain have negative correlation with total scores of PMS but none are significant (P-value > 0.05).

Table-6: Correlation between the domain scores of Premenstrual Syndrome Questionnaire (PMS-Q) and the domain scores of World Health Organisation Quality of Life Abbreviated Scale (WHOQOL BREF)

		PMS A domain (Anxiety)	PMS C domain (Appetite, etc)	PMS D domain (Depression, etc)	PMS H domain (Hormonal, etc)	PMS M domain (Menses)	PMS Other symptoms
QoL domain 1 (Physical Health)	**Correlation coefficient (Spearman's Rho)**	**-0.347**	**-0.168**	**-0.253**	**-0.091**	**0.153**	**-0.105**
	P value	**0.013**	**0.245**	**0.076**	**0.528**	**0.287**	**0.468**
QoL Domain 2 (Psychological Health)	**Correlation coefficient (Spearman's Rho)**	**-0.244**	**-0.034**	**-0.133**	**-0.153**	**-0.091**	**-0.168**
	P value	**0.088**	**0.816**	**0.359**	**0.290**	**0.531**	**0.243**
QoL Domain 3 (Social Relationships)	**Correlation coefficient (Spearman's Rho)**	**-0.041**	**-0.143**	**-0.333**	**-0.291**	**-0.123**	**-0.251**
	P value	**0.778**	**0.323**	**0.018**	**0.040**	**0.394**	**0.079**
QoL Domain 4 (Environment)	**Correlation coefficient (Spearman's Rho)**	**0.196**	**0.025**	**-0.026**	**-0.166**	**-0.165**	**-0.017**
	P value	**0.173**	**0.863**	**0.857**	**0.248**	**0.252**	**0.905**

Table-6 shows the correlation between the domain scores PMS-Q and the domain scores of WHOQOL BREF. Anxiety in PMS had significant alterations in the physical health domain of quality of life, as seen by significant negative (P value < 0.05) correlation between them. Depression and Hormonal domains of PMS both had significant negative correlation (P value < 0.05) with social relationships domain of quality of life.

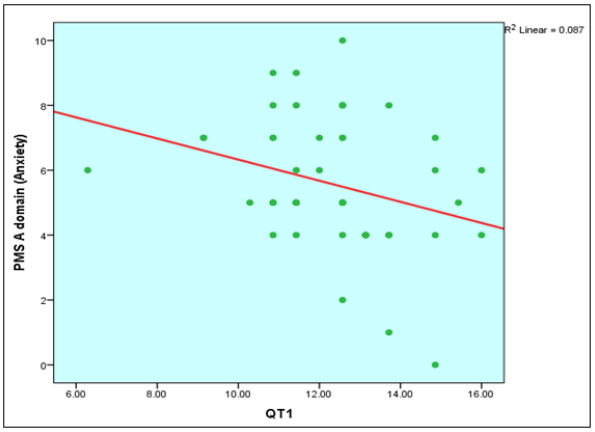

Fig-5: Scatter diagram between the domain scores of PMS-Anxiety domain and QoL Physical Health

Figure-5 shows negative correlation between the domain scores of PMS-Anxiety domain and QoL Physical Health.

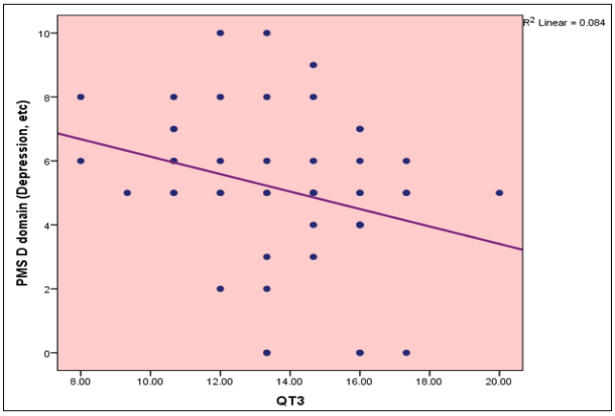

Fig-6: Scatter diagram between the domain scores of PMS-Depression domain and QoL Social Relationship domain

Figure-6 shows negative correlation between the domain scores of PMS-Depression domain and QoL Social Relationship domain.

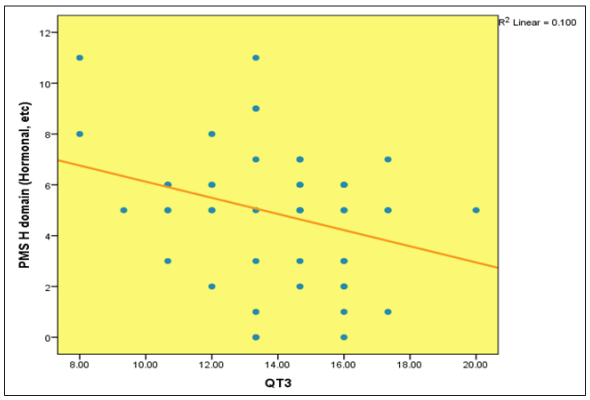

Fig-7: Scatter diagram between the domain scores of PMS-Hormonal domain and QoL Social Relationship

Figure-7 shows negative correlation between the domain scores of PMS-Hormonal domain and QoL Social Relationship.

DISCUSSION

In our study, there was significant (P-value < 0.05) positive correlation between severity of PMS symptoms and interpersonal problems in general (Table-1).

Our study also found that, the cold, non-assertive and intrusive traits have significant (P value < 0.05) positive correlation with severity of PMS symptoms (Table-2).

In our study, we found that, the anxiety during PMS increases overly-nurturant traits, there is a significant (P-value < 0.05) positive correlation between the two. Dominating, cold, non-assertive, all of these three traits have significant (P-value < 0.05) positive correlation with increased bio-functions during PMS. Depression during PMS may lead to cold behaviour/traits, as suggested by its significant (P-value < 0.05) positive correlation (Table-3).

Our study, also found that, hormonal domain in PMS has significant positive correlation with intrusive trait in behaviour. During Menses, there is significant positive correlation with increase in dominating trait of behaviour. Other symptoms in PMS, consisting of dermatological manifestations, somatic complaints, etc are positively correlated to both dominating and non-assertive traits (Table-4).

In our study, we found that, all domains of quality of life except the environment domain have negative correlation with total scores of PMS but none are significant (P-value > 0.05) (Table-5).

Our study, has also found that, the anxiety in PMS had significant alterations in the physical health domain of quality of life, as seen by significant negative (P value < 0.05) correlation between them. Depression and Hormonal domains of PMS both had significant negative correlation (P value < 0.05) with social relationships domain of quality of life (Table-6).

In our study, the physical health and social relationships domains of quality of life were most adversely affected by anxiety and depression (also hormonal effects), respectively. The findings of our study corroborate with the studies quoted below. In a previous study by Ziba Taghizadeh *et al*., they found that PMS was associated with a significant burden on quality of life in adolescents and that with increase in severity in PMS symptoms the quality of mental health declined [4]. Another study, by Hatice Kahyaoglu Sut *et al.*, was carried out on Turkish nurses to study work related quality of life. The study found, nurses with premenstrual syndrome had decreased quality of life on the professional front [5]. In another study, by Tulika Joshi *et al*., found that dysmenorrhoea was one of the leading causes of absenteeism from college and thus, adversely impacted the quality of life in young girls [6].

CONCLUSION

In our study, we found significant relationship between the severity of symptoms with interpersonal problems and quality of life of women suffering from premenstrual syndrome (PMS).

LIMITATIONS

Our study had a small sample size. This may have been the reason, that we found no significant correlation between the total scores of premenstrual syndrome and the various quality of life domains.

Future Directions

Firstly, if we take a larger sample size, and perhaps conduct a multicentric study to find out the causative factors leading to the wide array of physical and psychological symptoms of PMS, it might yield some interesting results about the disorder and its effect on the social and occupational functioning, and the quality of life.

Secondly, the persons excluded from the study, due to diagnosis of depression have been contacted and given a choice to whether or not seek pharmacological or non-pharmacological means of treatment. We intend to do a follow-up study among medical and paramedical students to see the prevalence of depression among them.

Ethics Consideration

This is a self-sponsored study

There is no conflict of interest.

REFERENCES

1. Halbreich U. The etiology, biology and evolving pathology of premenstrual syndromes. Psychoneuroendocrinology. 2003;28(3):55.
2. Bäckström T, Bixo M, Johansson M, Nyberg S, Ossewaarde L, Ragagnin G, Savic I, Strömberg J, Timby E, van Broekhoven F, van Wingen G. Allopregnanolone and mood disorders. Progress in neurobiology. 2014 Feb 1;113:88-94.
3. Marjoribanks J, Brown J, Shaughn O'Brien PM, Wyatt K. Selective serotonin reuptake inhibitors for premenstrual syndrome. Cochrane Database Syst Rev. 2009 Apr.
4. Arbabi M, Shirmohammadi M, Taghizadeh Z, Mehran A. The effect of premenstrual syndrome on quality of life in adolescent girls. Iranian Journal of Psychiatry. 2008:105-9.
5. Sut HK, Mestogullari E. Effect of premenstrual syndrome on work-related quality of life in Turkish nurses. Safety and health at work. 2016 Mar 1;7(1):78-82.
6. Joshi T, Kural M, Agrawal DP, Noor NN, Patil A. Primary dysmenorrhea and its effect on quality of life in young girls. Int J Med Sci Public Health. 2015 Mar 1;4(3):381-5.