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Research Paper: The Prediction of Family Functions in Women with Premenstrual Syndrome based on Anger and Fatigue

Azar Kiamarsi[1*], Zahra Sohrabi[2]

[1]*Assisstant Professor, Psychology Department, Ardabil branch, Islamic Azad University, Ardabil, Iran*

[2]*Ph.D. in General Psychology, Department of Psychology, University of Mohaghegh Ardabili, Ardabil, Iran*

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Abstract

Premenstrual syndrome is one of the commonest disorders among women with premenstrual period. The aim of the present study was to determine the relationship of anger and fatigue with family functions among women with premenstrual syndrome. The research sample consisted of 120 women who were selected among women with premenstrual syndrome in Ardabil, Iran. To collect the data, State-Trait Anger Expression Inventory-2, Fatigue Scale, Family Assessment Scale, and Daily Symptom Rating Form were used. The results showed that anger and fatigue are significantly related to family functions in women. The results of multiple regression showed that anger and fatigue explained 42 percent of variance family functions of women. Also results support the role of anger and fatigue on family functions. The results have important implications about prevention and counseling in women with premenstrual syndrome. The findings indicate that clinicians should use psychological trainings to cope with the consequences and symptoms of premenstrual syndrome.

*** Corresponding author:**
Azar Kiamarsi
Address: *Department of Psychology, Ardabil branch, Islamic Azad University, Ardabil, Iran*
Tel: 09113464812
E-mail: a.kiamarsi52@gmail.com

1. Introduction

The menstrual cycle is the most important sign of healthy function in the reproductive system of adult women, but this phenomenon is sometimes associated with disorders that cause problems for women in reproductive ages. These physical, mental and emotional symptoms, occurring periodically before menstruation in some women, is diagnosed as premenstrual syndrome (Duenas & Bermejo, 2011). Premenstrual syndrome (PMS) starts several days before menses (2-4 days) and remains for 2-4 days after the first day of menses (Kleinstauber et al., 2016). Population studies have shown variable prevalence of PMS, ranging from 54 to 90%, according to the criteria utilized in the society where the study was conducted (Lowder & Perry, 2004; Braverman, 2007). The prevalence of this syndrome in Iran is also different. Siahbazi, Hariri, Montazeri, MoghaddamBanaem, and Hajizadeh (2011) reported the prevalence of 33/3 % among Iranian women. In fact, it is difficult to determine prevalence because of variable symptoms, quantitative assessment and mental bias (Speroff, Marc & Fritz, 2005). The syndrome can begin at any phase of reproductive life but is more common reported by women who are between their late 20 and early 40 years and have at least one child, a family history of depression, a past history of postpartum depression or a mood disorder (Reiede et al, 2002).

Two prominent models, a bio-medical model and a cultural-feminist model, provide an explanation for Premenstrual Syndrome (PMS). The bio-medical explanations of PMS have concentrated on the possible hormonal changes, neurotransmitters, prostaglandins, drugs, lifestyle, dietary, and cultural-feminist basis for PMS (Henderson, 2000). Bloating and weight gain, breast swelling, mood swings, depression and anxiety, skin problems, changes in appetite, changes in interest in sex, headaches, backaches, cramps, inability to concentrate, loss of interest in usual activities, and confusion are possible signs and symptoms of PMS (Lopez, Kuptein, & Helmerhorst, 2009). In diagnosing PMS, APA (American Psychiatry Association) and NIH (National Institutes of Health) manuals are applied (Speroff et al., 2005).

Women with PMS experience physical symptoms such as breast tenderness, fluid retention leading to weight gain, fatigue, nausea, and constipation which can occur in the premenstrual period and also psychological symptoms such as anger, irritability, tenseness, anxiety, and restlessness as well as behavioral symptoms like depression, nervousness, and crying (Elnagar & Awed, 2015). Anger is one of the most severe and persistent symptoms of PMS (Walsh, Ismaili, Naheed, & O'Brien, 2015). So, anger is an intensifier factor in symptoms of PMS. Calamari & Pini (2003) indicated the significant relationship of anger introjections, anger intensity and tendency to anger with PMS intensity. 52.4% of PMS sufferers reported anger as common co-morbid symptoms (Silva, Gigante, Carret, & Fassa, 2006). In the premenstrual period, women frequently complain of anger and irritability (Raval, Panchal, Tiwari, Vala, & Bhatt, 2016). The results of Bostanci's study (2010) analyzed anger and anxiety levels in PMS-women, showed that they have consistently higher scores in anger, anger-in, anger-out and lower scores in items of anger control. In a study with teachers, the anger levels of

women with PMS were high but there was no significant relationship between PMS and anger control scores (Ozturk, Baykal & Drumus, 2015). Firoozi, Kafi, Salehi, & Shirmohammadi (2012) found a significant difference in mean score of depression, anxiety, aggression and interpersonal sensitivity between the 3rd and the 13th days of the cycle. Ducasse et al (2016) detected an impulsive-aggressive pattern of personality in women with PMS independently from the time of the menstrual cycle. Women with PMS had higher anger and lower anger control levels (Saglama & Basar, 2019).

In the PMS, complaint of fatigue can appear like clockwork nearly one to two weeks before the cycle commences, informing a woman of an impending menstruation. It is only a part of the body's normal response to the changes that occur during PMS. Fatigue as a main symptom in PMS prevents women attending in community. It often occurs in the last menstrual cycle days (Speroff et al., 2005). The results of some studies showed that 66.6% (Adiguzal, Taskin, & Danaci, 2007), 50.8% (KianiAsiabar et al., 2009) and 52.4% of PMS sufferers reported the fatigue as common co-morbid symptoms.

Halbreich et al (2003) found that the experience of symptoms of PMS can lead to arguments between family members which cause deterioration in relationship. These transient effects intensify conflict, instability, and isolation in the members of family. Psychological symptoms leads to women's work absences, reducing their function (Bornstein et al., 2003; Rapkin, 2005). All of these changes result in changes in the structure and function of the family and poor quality of life in women with PMS.

The personal and behavioral characteristics are affected by this syndrome. These changes in behavior have negative effect on their function (Speroff et al., 2005; Rizk, Mosallam, Alyan, & Nagelkerke, 2006).

Despite the abundance of clinical research on premenstrual symptoms, there is little comprehensive data available to explain the relationship of anger and fatigue to family functions in familial settings. The considerable prevalence of PMS and effects of anger and fatigue in this syndrome were other reasons to conduct research in order to promote women's productive and mental health through projecting the need for women's health services in our community. The purpose was to predict family functions in women with premenstrual syndrome based on anger and fatigue.

2. Method

According to the selection of at least 50 samples in correction studies (Delavar, 2021) and sample size in the previous similar studies, the research sample consisted of 120 women from 30 to 40 years with PMS who were selected among women referred to clinical centers by general practitioners and gynecologists in Ardebil city. During an initial period of 3 months, these women completed daily diaries of premenstrual symptoms. These diaries were used to select women with PMS, as defined by the specific criteria explained in what follows.

The doctors were asked not to refer women with major psychiatric disorder, other gynecological disorders, drug abuse, or any condition requiring psychotropic medication to the centers. The women

should be menstruating regularly, have a 6-month history of premenstrual symptoms occurring in the second half of the menstrual cycle and education levels from high school diploma to bachelor's degree. The following instruments were applied in the present research to collect the necessary data.

State-Trait Anger Expression Inventory-2 (STAEI-2): This scale with 57 items including three scales and nine subscales, was used. Participants responded to these items with four point scales. Spielberger (1999) reported the following reliability coefficients: state anger (0.93), trait anger (0.87), feeling anger (0.85), tendency for verbal anger expression (0.87), tendency for physical anger expression (0.88), anger temperament (0.83), anger reaction (0.70), anger expression-out (0.67), anger expression-in (0.80), anger control-in (0.91), and in anger control-out (0.83).

Fatigue Scale (FS): Chalder, Berelowitz and Hirsch (1993) designed this scale with fourteen items reporting cronbach's alpha and retest reliability coefficient of this scale in range from 0.82 to 0.85 and 0.74 to 0.81, respectively.

Family Assessment Scale (FAS): This scale was designed by Epstein, Baldwin and Bishop (1983) based on McMaster's model with forty-five items that measure familial structural and institutional characteristics. The Alpha internal parallelism in subscales has been reported to range from 0.72 to 0.92 by designers (Fischer & Corcoran, 2007). In the present research Cronbach's alpha was calculated as 0.78.

Daily Symptom Rating Form: This scale was designed by Rivlin and Martin (1999) with 18 items. Each item is rated on a scale of 0 "not at all" to 3 "extreme". In this research Cronbach's alpha was calculated as 0.82.

According to the DSM-IV, participants should, at least, have five out of eleven symptoms of PMS criteria with at least one being from the 4 first symptoms (core symptoms) and the symptoms should occur a week before menses and stop a few days after the onset of menses. The women traced for the above symptoms completed the study questionnaires administrated in the following order: The Multidimensional Anger Scale, Fatigue Scale, Family Assessment Scale and Daily Symptom Rating Form. Then the collected data were analyzed by the use of SPSS-16 software.

3. Results

The mean age of the sample and standard deviation were 28.60 and 5.68, respectively. Table 1 shows the means and standard deviations for all the variables traced in the women.

Table 1. Means and standard deviations of fatigue, anger and family functions in women

Variable	M	SD
Physical fatigue	16.44	5.31
Psychic fatigue	11.31	3.51
Fatigue	27.75	7.91
External anger	12.69	2.49
Internal anger	18.13	4.53
Anger	88.05	22.11
Family function	76.46	24.92
PMS symptoms	75.89	18.59

The Pearson correlation coefficients of fatigue and anger with family functions are presented in women with PMS (Table 2). As appears from the Table, anger and its dimensions were negatively correlated with family functions and a significant negative correlation was observed among the

fatigue, its dimensions and family function in women with PMS (P<0.001). Likewise, there are positive correlation among anger (and dimension of internal anger), fatigue (and its dimensions) and PMS symptoms.

Table 2. Pearson correlations of fatigue and anger with family function in women with PMS

Variable	1	2	3	4	5	6	7
1. Physical fatigue	1						
2. Psychic fatigue	0.593**	1					
3. Fatigue	0.934**	0.842**	1				
4. External anger	0.186	0.198	0.212	1			
5. Internal anger	0.432**	0.380**	0.459**	0.238	1		
6. Anger	0.578**	0.300*	0.521**	0.499**	0.673**	1	
7. PMS symptoms	0.477**	0.707**	0.634**	0.209	0.525**	0.434**	1
8. Family function	-0.48**	-0.283**	-0.448**	-0.378**	-0.488**	-0.849**	-0.413**

*p < .05 **p < .001

Table 3 shows two stepwise multiple regression analyses, including anger and fatigue, were used to determine which variables best predict family functions and PMS symptoms in women with PMS. Significant models were produced for them, adjusted $R^2 = 0.721$, F (2, 58) F= 74.872, $p < 0.000$ in family functions index and $R^2 = 0.417$, F (2, 58) = 20.705, $p < 0.000$ in PMS symptoms index.

Table 3. Stepwise multiple regression of anger, fatigue for predictor of family function and PMS symptoms in women with PMS

	RS	F(sig)	B	SE	*B*	t(sig)
Predictors of family function index						
Fatigue	0.200	14.789	-0.23	0.256	-0.007	-0.90(<0.928)
Anger	0.721	74.872	-0.953	0.092	-0.845	-10.397(<0.000)
Predictors of PMS symptom index						
Fatigue	0.402	39.637	1.315	0.276	0.560	4.765(<0.000)
Anger	0.417	20.705	0.120	0.099	0.142	1.209(<0.231)

As seen in Table 4, about 39% of family function variance is explained through the variables of internal anger, physical fatigue and external anger. Also, about 0.58 of PMS symptoms variance is accounted for the variables of psychic fatigue and internal anger. As a result of the t–test, the impact quotients of internal anger (B=–1.627), physical fatigue (B=–1.436), and external anger (B=–2.509) in family function and the impact quotients of psychic fatigue (B= 3.141) and internal anger (B= 1.226) in PMS symptoms indicate that they can meaningfully predict the family functions and PMS symptoms variance of women with PMS.

Table 4. Stepwise multiple regression for predictor of family functions and syndrome in women with PMS

	RS	F(sig)	B	SE	*B*	t(sig)
Predictors of Family function index						
Internal anger	0.238	18.447	-1.627	0.643	-0.296	-2.531(<0.014)
Physical fatigue	0.327	14.119	-1.436	0.543	-0.306	-2.646(<0.011)
External anger	0.386	11.963	-2.509	1.072	-0.251	-2.339(<0.023)
Predictors of PMS symptom index						
Psychic fatigue	0.500	59.049	3.141	0.489	0.594	6.426(<0.000)
Internal anger	0.577	39.489	1.226	0.379	0.299	3.234(<0.002)

4. Discussion

This study examined the relationship of anger and fatigue to family functions in women with premenstrual syndrome. The results revealed a relationship among anger, its dimensions and family functions in women with premenstrual syndrome. These results laid in findings of Saglam and Basar (2019), SoydaAkyol, KarakayaArısoy and Caykoylu (2013), Calcamari and Pini (2003), Reyes, Meinnger, Liehr, chan, and Muller (2003), Christian, (2000), Yarcheski, Mahon, and Yarcheski (2002). The results demonstrated that anger and its dimensions reported low family function. So anger was a negative predictor of family functions for women with PMS, suggesting that women who experience high anger face the problems in interpersonal relations and that these flaws negatively affect family functions such as problem-solving, communication, affective responsiveness, emotional support, behavior control and general performance. Premenstrual impairment may be more severe at home (e.g., influencing marital relationships and homemaking, as compared to social and out of home occupational defects (Saglam & Basar, 2019).

Also, there was a relationship between general anger and internal anger with PMS symptoms. The results are consistent with the previous research findings (Yarcheski et al., 2002; Christine, 2000; Calamari & Pini, 2003). There is an impulsive-aggressive pattern of personality in women with PMS independently from the time of e menstrual cycle. Trait anger remained associated with PMS independently of every other personality trait (Ducasse et al, 2016). Bostanci (2010), analyzing the anger and anxiety levels of health in PMS-women found that the women consistently had higher scores in anger, anger-in, anger-out and lower scores in terms of anger control.

The further results showed a relationship between general fatigue and physical fatigue with family function in women with PMS. This result is consistent with the prior research findings (e.g., Speroff et al., 2005; Daugherty, 1998; Mortola, Grton, Beck, & Yen, 1990). The findings indicated that fatigue in PMS sufferers leads to poor family function because fatigue is associated with asthenia mental sensation, lack of energy and exhaustion. These flaws disable PMS sufferers in physical and psychic health.

In addition, a relationship of general fatigue and psychic fatigue to PMS symptoms was observed. This finding is in harmony with the findings of Mortola et al., 1990; Afra, Mahmoud, Abu Salem, and Mohamed (2020). They reported the fatigue

one of the most common symptoms in PMS. Gupta, Lahan and Bansal (2012) concluded that PMS-women had poorer sleep quality than women without PMS. Therefore, they experience more fatigue and tiredness during this period time.

5. Conclusion

This study detected a significant relationship of anger and fatigue to family functions in women with premenstrual syndrome. The findings showed that clinicians should use psychological trainings to cope with the consequences and symptoms of premenstrual syndrome. Future cohort studies investigating large populations, assumption of group without PMS, controlling PMS precedent and utilizing other measures beside self- report are recommended.

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Conflict of interest

The authors declare that there is no conflict of interest.

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