Caspian J Reprod Med, 2015, 1(2): 23-27

Caspian Journal of Reproductive Medicine

Journal homepage: www.caspjrm.ir

Original article

Attribution styles associated with premenstrual syndrome in women at reproductive age, Iran

Salimeh Kord Firoozjaei [1], Mouloud Agajani Delavar [2,*], Ali Asghar Bayani [3]

[1] Department of Psychology, Sari Branch, Islamic Azad University, Sari, Iran
[2] Infertility and Reproductive Health Research Center, Health Research Institute & Department of Midwifery, Babol University of Medical Sciences, Babol, Iran
[3] Department of Psychology, Azadshahr Branch, Islamic Azad University, Azadshahr, Iran

Received: 19 Mar 2015 Accepted: 12 Jun 2015

Abstract

Background: Despite the fact that many research studies, concerning the premenstrual syndrome (PMS), have been conducted in recent years, the relationship between psychological and social factors with PMS remains controversial. The aim of the present study was to examine the association between attribution style in the PMS for positive and negative events.

Methods: A total number of 241 employed women, with the age range of 20 to 40, were randomly selected for the sake of this study. An Attribution Style Questionnaire (ASQ) and a Delany's Premenstrual Checklist were completed by the participants during the follicular and luteal phases, respectively. Pearson correlation coefficient and regression were used for analyzing data.

Results: The PMS group included 145 women, who were experiencing moderate to severe PMS. According to the findings, the negative globality dimension was significantly associated with PMS (r= 0.16, P=0.011). No significant findings for the other attributional style scales were observed.

Conclusion: The results suggest that negative global attributional style appears to be an important construct in PMS; therefore, it can be concluded that women with global attribution style for negative events are more likely to suffer from the PMS.

Keywords: Attribution styles, Premenstrual syndrome, Negative global attributional style

Introduction

Premenstrual syndrome (PMS) is defined as a group of physical and psychological symptoms which occur 7 to 10 days before menstrual bleeding. The symptoms gradually disappear once menstruation starts (1-4). The physiopathology of PMS is still unknown (5). Since PMS is an affective disorder like depression, which can bring about physical problems, there seems to be a relationship between PMS and attribution styles or the same explanatory styles (1, 6-9). An inefficient metacognitive style has been shown to be related to PMS (10). Our hypothesis, as a result, is that attribution style is associated with PMS. Attributional Style is a cognitive-based personality variable, and is also defined as a specific approach by which people explain events happening to them in their lives (11). That means what reason people find for their problems or what they imagine as a reason happens to them. This can incorporate three dimensions, which are as follows: "Rational Source" (internal-external), i.e., people attribute the events happening to themselves, to the environment or to others; "Stability" (stable-unstable), i.e., people define the reason of an event or an accident

***Corresponding author:** Dr. Mouloud Agajani Delavar, Department of Midwifery, Babol University of Medical Sciences, Ganjafroz, Babol, Iran.
Tel: +98-11-32360714, Email: moloodaghajani@yahoo.com

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as stable or transient and unstable; and "Totality" (total, exclusive), i.e., people assume that the cause of an accident is the cause for several other problems or effects, and that its scope can cover a more wider range of dimensions in their lives (11-14).

Given the high prevalence and inappropriate effects of this syndrome on women`s daily life quality, the disruptions in the marital relationship, and the reduction of efficiency at work, we were motivated to compare the attributional styles of women suffering from PMS with those without PMS.

Materials and Methods

This cross-sectional study included 264 employed women, who were between 20 to 40 years of age. Having screened the participants with regard to the inclusion and exclusion criteria, the researcher(s) thoroughly elicited data from the participants. The ethics approval for the implementation of the research was granted by the Ethics Committee of Babol University of Medical Sciences and the Islamic Azad University, Sari Branch. Informed consent forms were given to the participants prior to the implementation of the research. The exclusion criteria for the research included the following factors: individuals with psychotic problems, those with a history of mood disorders and anxiety, those who used birth control pills, women with endometriosis, polycystic ovary syndrome, anemia, endocrine problems, and hyperprolactinemia, which can produce symptoms similar to those of PMS. The statistical calculation of sample size, with a prevalence of 46% in Asia, a standard score of (Z) 95%, and the margin error of 3% (d), was estimated to be 264. The Iranian version of Seligman`s Attribution Style Questionnaire (ASQ), which was originally developed by Seligman, was utilized in this study. The ASQ is a self-report measure which asks individuals to imagine five positive and five negative hypothetical events happening to themselves, which can ultimately measure the individuals 'attributions for uncontrollable events. Islami Shahr has reviewed and evaluated the validity and reliability indices of Seligman`s Attribution Style Questionnaire for the scales of negative internality, positive internality, negative stability, positive stability, negative globality, and positive globality in Iran, and verified all the questions in terms of content validity (15). The participants were asked to complete the Seligman`s Attribution Style Questionnaire during the follicular phase. The follicular phase of the menstrual cycle is a good time to complete such questionnaires since the premenstrual complaints are at the minimum, and do not affect the process of filling out the forms. The average scores were calculated for each individual dimension (internal, stable, and global). The reliability, internal consistency and validity of Seligman`s Attribution Style Questionnaire in our study were measured to be 0.75, 0.89, and 0.79, respectively. The diagnosis of PMS in this study relied heavily on the volunteers' response to the 28 items in Delany's checklist, their medical history, and a physical examination. It must be stated that the Delany's checklist for premenstrual symptoms was completed during the luteal phase (16). The reliability, internal consistency and validity of the checklist in our study were calculated to be 0.72, 0.93 and 0.75, respectively. The scoring of this form was based on a 4-point Likert scale from 0 to 3. The minimum and maximum scores were between 0 and 84. The participants were divided into two groups according to their premenstrual syndrome using a cutoff score, i.e., scores of equal to or less than 15 are regarded as no premenstrual syndrome, and greater than 15 are regarded as premenstrual syndrome. If the participants were judged to have premenstrual syndrome, the researchers would rate the severity as moderately (16-30), severely (>30) premenstrual syndrome. The characteristics of the participants including their age, educational status, marital status, age at menarche, and the number of pregnancies were all meticulously recorded.

Statistical analysis

All data analyses were performed using SPSS software (Statistical Package for the Social Sciences, version 16.0, SPSS Inc., Chicago, IL, USA). All data were tested for normality through skewness and kurtosis values as well as the Kolmogorv-Smiroff. Chi-Square test ($\chi 2$) and Two sample t-test were used to compare the two different groups. The correlation of Attribution styles with PMS was assessed through Pearson correlation test and linear regression. All the results were considered significant at $p \leq 0.05$.

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Table 1. Characteristics of women with PMS and Non PMS women in Initial Study of Attributional Style (n= 241)

Variables	Total (N=241)		With PMS (N=145)		Without PMS (N=96)		P-value
	N	%	N	%	N	%	
Body mass index (kg /m2)							0.313
< 25	131	54.4	75	51.7	58	58.3	
≥ 25	110	45.6	70	48.3	40	41.7	
Education (years)							0.102
≤ 12	41	17.0	20	13.8	21	21.9	
> 12	200	83.0	125	86.2	75	78.1	
Age at menarche (years)							0.122
< 13	26	10.8	12	8.3	14	14.6	
≥ 13	215	89.2	133	91.7	82	85.4	
Number of pregnancies							0.881
≤ 1	127	71.4	104	71.7	68	70.8	
>1	69	28.6	41	28.3	28	29.2	
Marital status							0.212
Single (single, divorced, widowed)	181	75.1	113	77.9	68	70.8	
Married	60	24.9	32	22.1	28	29.2	
	Mean	SD	Mean	SD	Mean	SD	
Age	32.3	5.4	32.3	5.4	32.3	5.3	0.770
Negative internality	15.7	2.3	15.6	2.1	15.9	2.6	0.385
Negative stableility	10.2	2.8	10.5	2.9	9.9	2.6	0.627
Negative globality	14.6	2.8	14.8	2.9	13.3	2.8	0.016
Positive internality	11.8	2.5	11.9	2.3	11.8	2.3	0.846
Positive stability	10.5	2.8	10.7	2.8	10.2	2.8	0.242
Positive globality	12.1	2.5	11.9	2.3	12.2	2.9	0.374

Results

The age of the participants ranged between 20 and 40, with a mean age of 32.3±5.4 years, BMI ranged between 16.8 and 40 kg/m2 (mean ± SD: 25.3±3.9). The PMS scores ranged from 0 to 71, and 145 cases were found to have a moderate to severe PMS. The majority of respondents had an academic degree. It was found that there was a significant relation between negative globality and PMS, which is shown in Table1.

Pearson correlation and linear regression were also used for inferring and generalizing the results of the relationship between attribution styles and PMS. There was also a significant correlation between negative globality and PMS (P=0.011). That means that respondents with negative globality attribution style are significantly more likely to suffer from PMS than those with other attributional style scales. It is worth mentioning that no significant findings for the other attributional style scales were observed in this study (table 2).

The above mentioned significance level of Fisher statistics (P<0.05) (Table 3) indicates that the changes in the dependent variable can be significantly predicted by the regression model. According to the determination coefficient, about 2.7 percent of the intensity changes of premenstrual syndrome is affected by total or universal attribution style in failure situations. Since the confirmed model and the significance level of the regression coefficients are significant at (P<0.05), the related mathematical

Table 2. Pearson correlation test indicators between attribution styles and premenstrual syndrome for desirable and undesirable events.

Attribution styles	PMS	
	r	P-value
Negative internality	-0.09	0.145
Negative stableility	0.121	0.061
Negative globality	0.16	0.011
Positive internality	-0.01	0.843
Positive stability	0.09	0.149
Positive globality	-0.11	0.086

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Table 3. Summary of the analysis of correlation test data and regression modeling to examine the relationship between negative global attribution style and PMS

Regression Model	Fisher Statistic	Significance Level	R Square (Determination Coefficient)	Regression Model Coefficients		
				Fixed Number	Slope	Standardized Coefficient
	6.55	0.01	0.027	10.86	0.85	0.16
				Significance Level		
				0.03		0.01

formula will be y=10.86 + 0.85x, in which y refers to premenstrual syndrome and x is the score of total or universal attribution style in failure situation.

Discussion

The related correlation test data analysis, which was performed to investigate the relationship between internal, stable and global attribution styles for the hypothesis of this study, showed (with the confidence interval of 95 percent) that there was a relationship between negative globality dimension and PMS. This way, when a person generalizes the cause of a failure to all other aspects of his or her life, the severity of PMS in the person will increase. Few studies have been conducted on the relationship between attribution style and premenstrual syndrome, but the results of some research studies in this area indicated that insufficient attribution style (pessimistic explanatory style) was most often accompanied by depression (11, 17). Although Ball et al. did not report insufficient attribution styles as a risk factor for the emergence of depression, they stated that these styles can emerge and be applied by the effect of depression (13).

Meanwhile, no significant relationship was found between other attribution styles (internal and stable) or other pessimistic and optimistic explanations and the premenstrual syndrome, which is in line with the findings of Youdale`s study (1990) (18), which reported a relationship between insufficient attribution style and PMS. This finding is not consistent with the result of a study conducted by Seligman et al., claiming that attribution style could not be regarded as a predictive factor for PMS.

The limitations of this study were as follows: a narrow statistical society including the female employees of an organization, lack of prospective recording of premenstrual syndrome symptoms due to the large sample size and their cooperation quality, the removal of some selected examples due to the two-stage nature of the questionnaire completion procedure and the changing nature of the dependent variable with regard to the exclusion criteria possessed by the respondents and the inappropriate inclusion criteria, the lack of accuracy and carefulness in answering the questions by some respondents due to the length of the questionnaires.

Conclusion

Given the fact that research studies on the psychological factors associated with PMS are very limited in scope, we recommend that future investigations use longitudinal designs to explore more-specialized PMS-related and non-PMS-related attributional style measures. It is assumed that raising the awareness of health care services about the attribution styles of patients can result in a change in their vision and behavior. This change can ultimately help mental health specialists and the people in charge to improve their understanding and perception of these patients and make their treatments more efficient.

Acknowledgements

We hereby thank the respectable staff at Babol University of Medical Sciences for their invaluable cooperation and support, which is greatly appreciated.

Conflict of interest

None declared.

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