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Comparison of the Quality of Life in Three Groups: Women with Premenstrual Syndrome, Premenstrual Dysphoric Disorder and General Population in Yazd

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ABSTRACT

Introduction: Premenstrual syndrome can lead to numerous problems for women and increase their susceptibility to depression compared to men. PMS is not a serious threat, but it can influence women's quality of life and mental health and reproductive. This research was conducted to compare the quality of life (QOL) in the three groups: women with premenstrual syndrome, premenstrual dysphoric disorder, and general population in Yazd (a city in the center of Iran).

Methods: This cross-sectional study was performed on 246 women referring to Yazd health centers. They were voluntarily or randomly selected. Data collection tools were quality of life questionnaire SF36 and the premenstrual syndrome screening tool. Obtained data were analyzed by SPSS18.0 with Kruskal-Wallis and Mann-Whitney test for comparison groups on SF-36 subscales.

Results: Among samples, 102(41.5%) had premenstrual syndrome (PMS), in 20(8.1%) the diagnostic characteristics for premenstrual dysphoric disorder (PMDD) were found, and 124 (50.4%) were in general population (GP) group, respectively. Comparison groups with Kruskal-Wallis test on SF-36 subscales showed that except for physical function in other components of quality of life, PMS and PMDD groups and non-clinical populations were significantly different ($p< 0.05$). Considering the Mann-Whitney test, women with PMDD reported a poor health-related quality of life as measured by the SF-36. Women with PMS and PMDD had lower mean score especially in the aspect of role limitation-emotional problems.

Conclusion: Quality of life is significantly affected by premenstrual symptoms, especially in the aspect of role limitation- emotional problems. Further studies and training program regarding PMS is recommended to improve the quality of life in this population, particularly for those experiencing severe premenstrual disorders.

Keywords: Premenstrual Syndrome, Premenstrual Dysphoric Disorder, Quality of Life, Women

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Introduction

Premenstrual syndrome (PMS) is a set of symptoms including emotional, physical and behavioral changes that develop before the menstrual period (1). A mild form of the symptoms is named as PMS by the American College of Obstetricians and Gynecologists (ACOG) while Premenstrual Dysphoric Disorder (PMDD) is the severe presentation of that (2). According to the ACOG report, 85% of the women of reproductive age experience at least one symptom of PMS and PMDD prevalence is 3–8% (2). In a study in Iran, the prevalence of PMS and PMDD is 44% and 16% respectively (3).

The most common symptoms of PMS and PMDD are the following: swelling and tenderness of breast, headache, bloating, sleep disturbances, appetite changes, poor concentration, decreased interest, social withdrawal, irritability, mood swings, anxiety/tension, depression, and feeling out of control (4, 5). Premenstrual symptoms can lead to numerous problems in women such as impairment of physical performance and psychological health and serious dysfunction in social or occupational aspects (6, 7). PMS is not a serious threat, but it can influence women's quality of life and mental health and reproductive (8). PMS makes women more sensitive than men to depression, especially women are more susceptible during premenstrual, postpartum and the climacteric (9).

The quality of life is often described as an individual's perception of their position in life within the culture and value system. For evaluation of the functional impact of a disease, health-related quality of life is used. It assesses QOL in the following eight domains: physical activities, social activities, role activities, emotional role functioning, bodily pain, general mental health, vitality and general health perceptions (1). Through improvements in QOL, the complications associated with this disorder can be reduced or make it more tolerable (4).

Several studies indicated a relationship between PMS and QOL. Maleki's study on Iranian women illustrated that premenstrual symptoms have a significant impact on health-related quality of life, especially on mental and emotional domains (3). Also, Hautamaki et al. reported that premenstrual symptoms in fertile age could impair the quality of life (10). In a study performed on female students with PMS, a relation between stress and the pre-menstrual syndrome with the quality of life was seen (11). A recent study conducted on Korean women revealed the impact of PMS on daily life activities and also stated that there is a significant association between the severity of PMS and the proportion of women with impaired daily life activities (12). This disorder is particularly common in the younger age groups and, therefore represents a significant public health problem in young girls (13). The findings of other studies emphasize that often the problem of women with premenstrual syndrome and marital dissatisfaction is in emotional dimension (14).

To the author best knowledge, previous studies on premenstrual symptoms and their impact only focused on non-Iranian populations, while there are only a few studies in the literature that on limited samples have evaluated the impact of premenstrual symptoms on women's quality of life who live in Iran. It seems that reducing the symptoms of premenstrual syndrome can improve the quality of life (12). It is necessary to investigate the impact of premenstrual symptoms among larger samples with different age groups and to use a disease-specific tool along with a generic measure to assess health-related quality of life. The purpose of this study was to assess the quality of life in a sample of Iranian women in Yazd with premenstrual disorders (PMS and PMDD) and the general population.

Methods

This cross-sectional study was conducted with the participation of 246 women referring to Yazd health centers. Sampling was conducted from August 2016 to March 2017. These individuals were selected from women referring to health care centers in suburbs of Yazd (Azadsahr and

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Emamshahr health care centers); in categorizing health care centers, five centers were placed in suburban areas. Sampling was done randomly based on the family number registered in the electronic health case. Based on the lottery number of the household file, individuals were invited to participate in the study. Inclusion criteria for participation included people in the 15-49 age range, being married and willing to participate. Qualified individuals completed the questionnaires after declaring their consent. According to the same study (8), taking into account the level of confidence 0.95, p=%80 and d=0.5 sample was estimated for246 people. In this study, data collection tools were Quality of Life questionnaire SF36, screening questionnaires PMS (Premenstrual Syndrome Screening Tool) and the Demographic data.

Measures

Short Form Health Survey (SF-36)

The Short Form Health Survey (SF-36) is an instrument used in assessing the health-related quality of life of patients and the general public(15). This multi-item scale assesses eight domains: a) physical functioning (questions 3, 4, 5, 6, 7, 8, 9, 10, 11, 12), b) role limitation due to physical problems (questions 13, 14, 15, 16), c) bodily pain(questions 21, 22), d) general health (questions 1, 33, 34, 35, 36), e) vitality (energy and fatigue) (questions23, 27, 29, 31), f) social functioning (questions 20, 32), g) role limitation due to emotional problems (questions 17, 18, 19), and h) mental health (questions 24, 25, 26, 28, 30). The scores range from 0 to 100 and a higher score indicates the better health-related quality of life, zero representing the worst HRQOL and 100 representing the best possible score. Based on this, 36 questions of the questionnaire were organized in the form of 8 structures, and each question had a score between 0 (lowest score) and 100 (highest score). Therefore, according to the response of individuals to the questions' options, a score is assigned to the individual and the individual's score in any structure is obtained from summing up individual scores for the questions of each structure. Zero to 100 for each aspect is intended and is not cut-off point. Translation and validation of Iranian version of the SF-36 were done by Montazeri and colleagues(16). In assessing the internal consistency (to test reliability), the Cronbach's α coefficient for all eight Quality of Life and Marital Satisfaction in Medical Staff in Iran SF-36 scales ranged from 0.77 to 0.90 except the vitality scale (a0.65) (17).

Premenstrual Syndrome Screening Tool

The PSST was used for screening women with PMS. This 19-items questionnaire consists of two parts. One consists of 14 questions designed to acquire the information toward the mood, physical and behavioral symptoms and the second contains five questions designed to assess the effects of PMS symptoms on people's lives. The PSST is constructed by Canada's McMaster University and standardized for Iranian population by Siahbazi et al (18). Women who meet three following conditions, are diagnosed as moderate or severe PMS: (i) for items 1 to 4, at least one should be moderate or severe, (ii) for items 1 to 14, at least four should be moderate or severe and (iii) for the last five items, at least 1 should be moderate. To meet the criteria for PMDD, women must experience these three conditions: (i) for items 1 to 4, at least one should be severe, (ii) for items 1 to 14, at least four should be moderate or severe and (iii) for the last five items, at least 1 should be severe.

Statistical analysis

Obtained data were coded and analyzed descriptively and inferentially using SPSS 18. Descriptive statistics were used to summarize and organize the data for frequency and percentage of samples in three groups. Kruskal-Walis Test was used for comparison groups on SF-36 subscales, and Mann-Whitney Test was used for pairwise comparison. The level of significance was set, a priori, at 0.05.

Ethical approval

The Institutional Review Board at Shahid Sadoughi University of Medical Sciences approved the study (code: IR.SSU.SPH.REC.1395.79). In

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order to allow research subjects to make an informed participation decision, they were fully informed of the importance, purposes, and methods of the research. The participants were reassured about their identity, and that other personal information would remain confidential, then the informed consent form was signed by them voluntarily.

Results

A profile of the subjects

This study was conducted with 246 women who referred to Yazd health centers. The mean age of women was 30.92 ± 6.18 years.

Table 1 shows the distribution of demographic variables in women with PMS, PMDD, and the general population.

Table 1. Demographics frequency of samples in the three groups (n=246)

Variable		General Population N (%)	PMS N (%)	PMDD N (%)
Age	17-25	22(17.7)	24(23.5)	4(20.0)
	26-34	59(47.6)	57(55.9)	7(35.0)
	35-42	43(34.7)	21(20.6)	9(45.0)
Marital Duration	1-5	39(31.5)	38(37.3)	4(20.0)
	5.5-15	54(43.5)	51(50.0)	9(45.0)
	≥15	31(25.0)	13(12.7)	7(35.0)
Number Of Offspring	≥2	102(82.3)	90(88.2)	16(80.0)
	<2	22(17.7)	12(11.8)	4(20.0)
Women's level of education	Sub Diploma	17(13.7)	10(9.8)	4(20.0)
	Diploma	46(37.1)	28(27.5)	10(50.0)
	Bachelor's Degree	61(49.2)	64(62.7)	6(30.0)
Women's employ	Homemaker	90(72.6)	64(62.7)	14(70.0)
	Employment	34(27.4)	38(37.3)	6(30.0)
Husband's level of education	Sub Diploma	27(21.8)	17(16.7)	8(40.0)
	Diploma	47(37.9)	35(34.3)	6(30.0)
	Bachelor's Degree	50(40.3)	50(49.0)	6(30.0)
Husband's employ	Employee	49(39.5)	46(45.1)	6(30.0)
	Self-Employment	72(58.1)	55(53.9)	11(55.0)
	Unemployed	3(2.4)	1(1.0)	3(15.0)
Economic Status	Weak	3(2.4)	0(0)	2(10.0)
	Moderate	83(66.9)	78(76.5)	14(70.0)
	Good	37(29.8)	22(21.6)	4(20.0)
	Excellent	1(0.8)	2(2.0)	0(0)

Frequency and in the three groups

Samples were organized in three groups (PMS, PMDD, and General Population), half of the samples had no symptoms of premenstrual syndrome. Frequency and percentage of samples was 124 (50.4%) in the general population, 102(41.5%) in PMS and 20(8.1%) in PMDD.

Comparison SF-36 subscales in three groups

The result of Kruskal-Walis Test for Comparison groups on SF-36 subscales showed that except for physical function (p= 0.125) in other aspects of quality of life (p= 0.000), PMS and PMDD groups and general populations were significantly different. Aspects "social functioning," "Role Limitation-Physical Health," "Role Limitation-Emotional Problems," "mental health," "vitality," "bodily pain" and "general health" in general population are higher than the women with

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PMS and PMDD, respectively($p< 0.05$). Also, aspect "general health" in women with PMS is higher than the women with PMDD ($p= 0.025$). Considering these findings, a poor health-related quality of life measuring by the SF-36 was seen in women with PMDD. Women with PMS and PMDD had lower mean score especially in aspect role emotional. The result of this test and the Mann-Witney Test is reported in Table 2.

Table 2. Comparison groups for the three groups on SF-36 subscales in samples

SF-36 subscales	General population(GP)			PMS			PMDD			P-value	Comparison with Mann-Witney
	Median±IRQ	Mean	SD	Median±IRQ	Mean	SD	Median±IRQ	Mean	SD		
Physical functioning	80.00±28.75	75.96	21.87	75.00±20.00	74.16	18.57	72.50±12.50	70.00	17.91	0.125	-
Social functioning	75.00±25.00	74.09	18.87	62.50±25.00	63.11	18.81	62.50±46.88	55.00	25.77	0.001**	GP>PMS 0.000* GP>PMDD 0.003*
Role Limitation-Physical Health	100.00±25.00	79.63	31.61	75.00±50.00	64.95	35.57	75.00±68.75	66.25	38.28	0.000**	GP>PMS 0.000*
Role Limitation-Emotional Problems	100.00±66.67	70.96	38.71	66.66±100	52.94	41.78	33.33±66.67	40.00	39.88	0.000**	GP>PMS 0.001* GP>PMDD 0.001*
Mental health	72.00±27.00	69.77	17.03	56.00±17.00	57.80	16.09	54.00±19.00	50.40	17.95	0.000**	GP>PMS 0.000* GP>PMDD 0.000*
Vitality	67.50±23.75	67.13	14.95	57.50±21.25	57.25	16.49	50.00±23.75	51.50	17.95	0.000**	GP>PMS 0.000* GP>PMDD 0.000*
Bodily pain	77.50±20.00	74.83	16.75	67.50±32.50	63.16	19.55	57.50±37.50	57.25	26.78	0.000**	GP>PMS 0.000* GP>PMDD 0.002*
General health	65.00±25.00	64.59	15.85	55.00±25.00	57.59	17.67	50.00±15.00	47.75	17.05	0.000**	GP>PMS 0.004* GP>PMDD 0.000* PMS>PMDD 0.025*

****** Kruskal-Walis Test * Mann-Witney Test

Discussion

This study aimed at investigating the quality of life in the three groups: women with premenstrual syndrome, premenstrual dysphoric disorder and the general population in Yazd.

The frequency of women with PMS and PMDD

In this study, 41.5% of women had PMS and 8.1% had PMDD. However, this rate is lower, higher or similar to the rate of other countries. In other words, Maleki et al. reported that 44%

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participant had PMS and 16% had PMDD (3). Sahin et al. reported that the frequency of PMS was 36.3% (1). Delara et al. showed that the ICD-10 diagnostic criteria for PMS was found in all research subjects and based on the DSM-IV diagnostic criteria, 37.2% of participants were experiencing PMDD (4). Kapur et al. found that 16 (40%) of the women undergoing the survey were found to be suffering from mild form of premenstrual syndrome, and interestingly 10 (25%) and 7 (18%) out of the total number of women (40) surveyed were having moderate and severe premenstrual syndrome respectively (6). Edward et al. reported mild PMS 21.7%, moderate PMS 64.8% and severe PMS 13.4%, respectively (8). Dirikvand Moghadam et al. in Meta-analysis study covering 17 studies that reported the total frequency of PMS 48% and frequency of this syndrome in Europa, Africa, Asia, and South America was 40%, 85%, 46% and 60%, respectively (19).

Differences in studies can be due to factors such as menstruation, lactation, and menopause and probably because of race, ethnicity, and cultural differences in expressing symptoms in different societies (20). Also, the difference in the instrument of measuring signs can lead to a difference between the statistics. However, recognizing these symptoms and focusing on people with more severe symptoms can be effective in improving these symptoms and helping women. Reported frequently in this study had many similarities with Iranian Studies, results with other non-Iranian Studies was different. Of course, the diversity of the regions in terms of social, economic, and even cultural climate and stress can be a justification for this difference. The difference in study populations and research methods may be the reasons for achieving different results.

Comparison SF-36 subscales in three groups

Comparison groups on SF-36 subscales showed that except for physical function in other aspects of quality of life, PMS, PMDD groups, and general populations were significantly different. Women with PMDD reported a poor health-related quality of life. What is surprising is that women with PMS and PMDD had lower mean score especially in aspect “role limitation- emotional problems.” It can be seen from this survey that the impact of premenstrual symptoms on mental and emotional health-related quality of life domains is greater than its physical domains. This indicates the necessity of further attention of psychologists and other mental health professionals to this disorder.

This result is consistent with Maleki et al. that showed except for physical function in other aspects of quality of life, PMS and PMDD groups and non-clinical populations were significantly different. Based on these findings, poor health-related quality of life was obtained using the SF-36 in women with PMDD especially on mental health, vitality and social activities (3). Similarly, Sahin et al. found that mean scores of students with PMS from all domains of SF-36 was significantly low compared to students without PMS and average score participant with PMS in aspect “role emotional” was 33.3 that was lower than all the other aspects (1). In addition, Dean et al. indicated that PMS is a factor associated with reducing the quality of life, especially in mental subscale (21). The findings of a study by Delara et al. confirm that adolescents with premenstrual disorders suffer from poor health-related quality of life especially in an emotional and physical role, social functioning and bodily pain domains (4). Furthermore, the SF-36 was used by Nisar et al. to assess health-related quality of life in Pakistan female adolescents with PMS; they found a significantly lower mean score of QOL in the affected group (22).

The results of this study were consistent with these studies. What seems certain, the result of this study indicated that in women with PMS and PMDD, symptoms of this syndrome impairs a person's life; subsequently, this disorder affects the quality of life. On the other hand, considering that, emotional problems, relationship and mental symptoms of this syndrome are of great intensity, and the first aspect of the quality of life that was most affected, is the aspect of emotional role.

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Conclusion

Findings of this study affirmed the fact that the quality of life was considerably lower in women with PMS and PMDD versus the general population. Awareness of this issue can help; health care providers get a better knowledge of these people and provide them with recommendations for reducing or improving symptoms. Women's quality of life can improve by the implementation of training programs especially for those suffering from more severe premenstrual disorders.

In addition, better diagnostics, symptoms of premenstrual syndrome and its relation to various aspects of quality of life, can be carried out necessary measures. Considering that emotional role, is the lowest aspect of the quality of life of participants, especially in patients with PMDD, we need to focus more on the aspects of a spiritual, mental and emotional role in improving the quality of life.

This study has several limitations that need to be taken into consideration when generalizing about the finding. One of them is that it was a cross-sectional study. The next item was confined to the area borders of the city. This study suggests that more research is required on these limitations. Also, training programs are developed to better understand the symptoms and treatments and the results after the intervention are analyzed in order to measure the quality of life associated with it.

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Conflict of Interest

Authors declare no conflict of interests.

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