

Relationship between Symptoms of Premenstrual Syndrome (PMS) and Quality of Life (QOL) in the Adolescents

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Abstract: Premenstrual syndrome is a common condition in women and includes a range of emotional, psychological, and physical symptoms triggered by the menstrual cycle and it can have different effects on quality of life. The aim of this study was to examine the relationship between Premenstrual Symptoms and quality of life among adolescents of Iranian high school students. This study conducted on 157 adolescents of high school students at Zahedan(Iran) in 2012. The participants were recruited through Cluster sampling method. In order to examine Premenstrual Symptoms we used PMS questionnaire and for assessing quality of life BREF- WHOQOL questionnaire was used. The findings of current study showed a significant negative correlation between premenstrual symptoms and quality of life. We, also, found significant negative correlation between psychological Premenstrual Symptoms ($r=-$, $p=0/032$) and physical symptoms($r=-$, $p=0/0001$) with quality of life among adolescents. Because there was negative correlation between a premenstrual symptoms and quality of life among adolescents, we suggest systematic and well-designed programs for prevention and treatment of PMS. [Nour Mohammad Bakhshani, Zahra Aghashahi, KobraLashkari Pour, MinooYaghmaei. **Relationship between Symptoms of Premenstrual Syndrome (PMS) and Quality of Life (QOL) in the Adolescents.** *Life Sci J* 2013;10(2s):265-268] (ISSN:1097-8135). <http://www.lifesciencesite.com>. 46

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Introduction

Menstrual disorders are common among young women and adolescents (Bakr & Ez-Elarab, 2010). Among these disorders, PMS is a complex disorder that is a periodical repetition of some psychological or physical complaints which begins during the luteal phase of the menstrual cycle and subsides with the onset of menstrual bleeding (Daley, 2009) or shortly after that (Frackiewicz & Shiovitz, 2001). In the results obtained from various studies, prevalence of PMS was estimated different (Tschudin, Berteau, & Zemp, 2010). Usually, it is estimated that 5-76% of women suffer from PMS during the childbearing age (Öztürk, Tanrıverdi, & Erci, 2011). Definitive cause of PMS is unknown (Limosin & Ades, 2001). However, PMS risk factors can be classified into three hormonal, physiological, and social-psychological categories (Potter, Bouyer, Trussell, & Moreau, 2009). Women show symptoms of PMS at any time in childbearing age (Bakr & Ez-Elarab, 2010), but the symptoms usually begin with the first menstruation in the adolescence (Johnson, 1987), gradually intensify with the increase of age (Warner & Bancroft, 1990) and clearly remain until menopause (Bakr & Ez-Elarab, 2010). Common symptoms include backache, abdominal bloating and pain, irritability, muscle cramps (Frackiewicz & Shiovitz, 2001), headache, breast swelling and pain, anxiety, weight gain, fatigue

(Houston, Abraham, Huang, & D'Angelo, 2006), changes in sleep, mood swings, appetite changes, depression, decreased concentration, unrest (Bakr & Ez-Elarab, 2010), aggression, stress, and excessive food desires (Frackiewicz & Shiovitz, 2001).

These symptoms can interfere with daily functioning (Vigod, Ross, & Steiner, 2009), interpersonal relationships, occupational performance (Kirkpatrick, Brewer, & Stocks, 1990), and educational performance (impaired attention in the classroom and frequent absences from school) (Choi et al., 2010) and are economically costly for the involved people (Deuster, Adera, & South-Paul, 1999) and have negative effects on quality of life of millions of women, including adolescents (Öztürk et al., 2011). According to the World Health Organization (WHO), quality of life is the individuals' understanding of their own condition in the cultural context and the value system in which they live and this understanding is associated with their goals, expectations, standards and priorities (King, King, & Hinds, 1998). Although the premenstrual syndrome has been well studied in the adults, it has been recently diagnosed in the adolescents. If the importance of PMS is ignored during the adolescence, it can have devastating effects on their health and dimensions of quality of life (Lustyk, Gerrish, Shaver, & Keys, 2009).

Materials and Methods

This descriptive (correlational) study was conducted in 2012 on Iranian high school students. After coordination with the provincial Education Office and districts of 1 and 2 of the Education Office, first considering the list of all schools, one school was selected from each district through cluster sampling and then in each school, one class from the first grade and one class from the second grade were randomly selected. The sample size in this study was 180 people. 2 participants were excluded not reaching the puberty and 7 cases due to incomplete filling of the questionnaire, and 14 cases were excluded due to lack of any PMS symptoms. Finally, the sample size reached 157 cases. PMS Screening Questionnaire was used to study the symptoms of premenstrual syndrome. The questionnaire contains 21 self-report questions that evaluate the frequency and severity of PMS symptoms. 10 questions are related to psychological symptoms, 10 questions related to physical symptoms, and one question is related to the effects of symptoms on adjustment of person. Each question contains five options (none (option 1) to severe (option 5)). In order to determine the severity and number of premenstrual symptoms of adolescents, according to the criteria of the American College of Obstetricians and Gynecologists (ACOG), those who had at least 2 symptoms of the symptoms listed in the PMS Screening Questionnaire during 3 months of the cycle (including at least an

emotional and a physical symptom) with moderate and to high severity diagnosed with PMS (people who reported mild symptoms were not considered patients). This test was standardized by Bakhshani et al. and its validity was examined through content validity and its reliability was reviewed through test-retest method and it is recognized as a validated questionnaire (Bakhshani, Mousavi, & Khodabandeh, 2009). BREF-WHOQOL Questionnaire was used to measure quality of life (QOL). This questionnaire includes four domains of physical health, psychological health, social relationships and environmental health and contains 26 questions each including 5 options (none (option 1) to severe (option 5)). The final score is obtained from the total score of questions. The questionnaire was standardized in 2006 by Nejat et al. on the people of Tehran. The questionnaire reliability was measured using Cronbach's alpha and intraclass correlation, obtained from test-retest, which is 0.7 in all above-mentioned ranges. The questionnaire validity was measured through distinction power of this tool in normal and patient groups using linear regression and the correlation matrix of questions with ranges was used to evaluate structural factors of the questionnaire. According to the above descriptions, the questionnaire has acceptable reliability and validity (Nejat S, Montazeri A, Holakooenaeni K, Kazem M, & Majdzade SR, 2004). The questionnaires were delivered to the students in anonymous worksheets

Table 1: Pearson correlation matrix between the severity of symptoms of premenstrual syndrome and quality of life in adolescents

Variables	Quality of Life (general)		Mental Health		Physical Health		Social Relationships		Environmental Health	
	r	p	r	p	r	p	r	p	r	p
All symptoms of PMS	-0.30	0.000	-0.122	0.126	-0.034	0.671	-0.176	0.028	-0.365	0.000
Psychological symptoms	-0.171	0.032	-0.047	0.555	0.055	0.496	-0.075	0.348	-0.231	0.004
Physical symptoms	-0.335	0.000	-0.142	0.75	-0.104	0.19	-0.234	0.003	-0.39	0.000

Table 2: The results of one-way analysis of variance (ANOVA) of PMS symptoms (premenstrual syndrome) in different age groups

variables	Sum of squares	df	Mean squares	F	p
Intergroup	97.1567	4	392.417	522.2	0.043
Between group	85.23560	152	155006		
Total	83.25130	156			

Table 3: mean scores of premenstrual syndrome symptoms by age group

groups	Age	N	F	mean ± SD
	14-15	29	17.8	48.13 ± 9.8
	15-16	67	41.1	50.62 ± 12.93
	16-17	46	28.2	48.32 ± 12.64
	17-18	12	7.4	60.50 ± 25.22
	18-19	3	1.3	50.33 ± 4.50

only based on the code assigned to them. After data collection, data were analyzed using SPSS-18 software through Pearson correlation test and analysis of variance (ANOVA).

Results

According to the results of the Pearson correlation test, there is a significant negative relationship between PMS symptoms and quality of life in adolescents in Zahedan ($r = -0.3$) ($P = 0.00$). Results also showed that there is a significant negative relationship between psychological symptoms of PMS and quality of life of adolescents in Zahedan ($r = -0.171$) ($P = 0.032$). Besides, there is a significant negative relationship between physical symptoms of PMS and quality of life of adolescents ($r = -0.335$) ($P = 0.000$). The other relationships are shown in table 1. Results of analysis of variance (ANOVA) shows that there is a significant difference between the average severity of PMS symptoms in the compared age groups ($P = 0.043$) (table 2).

Tukey's post-hoc test was used to determine the difference between which pair of means is significant. The results of this post hoc test showed that the greatest differences are between the age group of 14-15 and 17-18 (Mean \pm SD = 12.362 \pm 4.273) and the age group of 16-17 and 17-18 (Mean \pm SD = 12.179 \pm 4.035). Indicators of frequency of different age groups are shown in table 3.

Discussion

The study results indicate a significant negative correlation between mental and physical symptoms of premenstrual syndrome and quality of life in adolescents. These findings are consistent with the results of the previous studies (Bakr & Ez-Elarab, 2010; Öztürk et al., 2011; Yang et al., 2010). Explanation of this finding can be justified considering that multiple symptoms of this disorder (abdominal pain, backache, breast pain and headache, irritability, depression, anxiety, etc.) may be too severe that they would disrupt interpersonal relationships and occupational and academic performance of people (Bakr & Ez-Elarab, 2010; Eke, Akabuike, & Maduekwe, 2011; Öztürk et al., 2011). The results of the study of Wilson and Keye on high school students in 1989 showed that the majority of adolescent girls know PMS as a problem that affects their education and performance significantly (Wilson & Keye, 1989). Also, the existence of specific issues about adolescence life, insecurity of social and academic environment and family life, as well as mental stress and expectation (forecast) of most negative symptoms can all interfere with mood symptoms and their intensification in adolescents (Rasheed & Sowailam,

2003). Some PMS symptoms may have serious negative consequences for adolescents, their families and their social relationships including low self-esteem, low tolerance levels to stress and feelings of inadequacy (Bakhshani et al., 2009) Houston in 2006 showed that even negative expectations and predictions about PMS lead to a high rate of absenteeism from school and loss of academic activities (Houston et al., 2006). Yang et al. in 2010, in a research conducted on 949 subjects concluded that the symptoms of premenstrual syndrome have a negative impact on quality of life, especially after sexual function in women and approximately 67.5% of women are under the pressure of sexual history. However, 45.7% of women with no PMS has problem in the sexual history (Yang et al., 2010). Chio et al. in their study in 2010 on Korean women revealed that the majority of women (91.5%) have little knowledge about PMS and only a few of them consult with physicians in this regard (Choi et al., 2010). According to a study conducted in 2006 on 379 women ranging from 15 to 69, Ozturk et al. stated that most women did not know the methods of coping with the symptoms of premenstrual syndrome (Öztürk et al., 2011). Thus, inadequate knowledge and skills might cause problems that negatively affect their quality of life. Another result of this study shows that the older the adolescents, the higher the extent and severity of PMS symptoms in them. These findings are consistent with the results of Warner et al. (1990). It seems to be due to the psychological-social stress (Warner & Bancroft, 1990). Generally, the results of the present study, consistent with the statements of Vichnin et al. in 2006 (Vichnin, Freeman, Lin, Hillman, & Bui, 2006) and Derman et al. in 2004 (Derman, Kanbur, Tokur, & Kutluk, 2004), show that PMS is a major problem among adolescents and there is a negative relationship between this disorder and quality of life of adolescents. Given the higher prevalence of symptoms of this syndrome among adolescent girls and since this can interfere with family, educational and social activities, an educational program in schools to increase the general information of teens on the menstruation physiology, PMS and the relationship between hormonal changes and symptoms as well as the use of preventive strategies and proper and timely treatments are recommended to help the adaption and improvement of the quality of life and to promote health of adolescent girls.

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