Original Article

The effect of premenstrual tension on academic performance and social interactions among Iraqi medical students

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ABSTRACT

Premenstrual tension is a common public health problem that significantly affects the personal well-being, academics, and of adolescents' life quality. Consequently, the purpose of the study is to ascertain the prevalence of premenstrual tensions and evaluate its academic and social impact on Iraqi female medical students. From February 2022 to May 2022, a cross-sectional study was carried out at several institutions in Baghdad/Iraq, including (the College of Medicine, Pharmacy, and Dentistry). An online self-questionnaire was used to gather information on the premenstrual tension symptoms, menstrual pain, and academic performance of 2080 Iraqi female medical students. Most respondents (73.6%) experienced various premenstrual symptoms with varying degrees of severity; the most frequent symptoms were depressed mood, anger, irritability, flatulence, acne, and breast tenderness. Approximately (49.0%) of the participants experienced menstrual pain, (78.1%) reported regular menstruation, and (40%) reported learning difficulties. The predominant impact on academic performance was lack of concentration (39.5%) and difficulty in work (34.0%). Among the participants, the majority of the students (59.4%) reported self-medicating with painkillers such as NSAIDs. Furthermore, the study shows that premenstrual symptoms were significantly linked with reduced academic performance and interpersonal relationships among Iraqi medical students (P<0.001). The current study found that premenstrual tension symptoms are associated with poor educational performance and poor interpersonal relationships among Iraqi female medical students. To close the gender gap in our society for a better future, more study is required to analyze and assess the cause of premenstrual tension symptoms and therapeutic interventions.

1. Introduction

Menstruation is a natural physiological event that reflects reproduction [1]. Currently, greater attention is being drawn to the idea that menstruation may hurt several people [2, 3].

Premenstrual tension (PMS) is a common gynecological condition; ninety-five percent of reproductive-age women experience at least one premenstrual symptom [4]. The severity of symptoms can vary between women. Approximately 5% of women may experience severe symptoms enough to interfere with

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their daily activities, interpersonal and social relationships, and poor academic performance [5, 6].

Contrarily, dysmenorrhea is a common menstrual symptom, affecting 45-95% of menstruating women [7]. A person's daily activities, academic and professional performance, social life, and quality of life can all be impacted by painful periods [8]. However, the most prevalent cause of primary dysmenorrhea is uterine prostaglandin overproduction, which leads to uterine contractions and menstrual pain [9].

Stress is often associated with changes in menstrual period length and the frequency and intensity of premenstrual tension [10]. Moreover, according to previous studies, the rate of PMS is believed to be high among female university students, and it adversely affects their academic performance and personal interactions [6, 11, 12]. Furthermore, a previous study found that female medical students were more likely to experience PMS than non-medical students, and it attributed the high prevalence of PMS to the students' stressful lives as a result of the medical university and higher education overcrowded curricula [13, 14]. Furthermore, when compared to other medical students, a scholastic disadvantage may result in an unequal success platform [6]. However, this problem has not been studied, specifically among Iraqi medical students. Consequently, the study aims to assess how premenstrual tension symptoms and other menstrual patterns affect Iraqi medical students' academic performance and interpersonal relationships. Furthermore, it also provides a comprehensive perspective on the pharmacological and other interventions that medical students use to manage premenstrual symptoms and dysmenorrhea.

2. Material and Methods

From February 2022 to May 2022, a cross-sectional study was carried out at various institutions in Baghdad, Iraq, including the College of Medicine, Pharmacy, and Dentistry. An online self-survey was used to collect data related to demographics, period characteristics, premenstrual symptoms,

menstrual pain, and the academic performance of 2080 female medical students. All the participants provided informed consent. This study was ethically approved by the Ethics Committee of Al-Iraqia University's College of Medicine in Baghdad, Iraq (FM.SA/51). Premenstrual symptoms were diagnosed using the ACOG diagnostic criteria [15]. Using the statistical analysis to present the data through SPSS version 22, the chi-square and independent sample t-tests were used to evaluate qualitative data. A p-value ≤ 0.05 is considered statistically significant.

3. Results

Demographic and menstrual cycle data of 2080 female medical students are presented in Table 1. The majority of participants (73.6%) experienced various premenstrual symptoms. Depressive mood and abdominal bloating were considered the most frequent affective and somatic symptoms (65.5%) and (52.0%), respectively (Table 2). However, regarding the severity of symptoms, 35.3% of the participants had moderate symptoms (Table 1).

Among the participants, (49.0%) reported having varying degrees of dysmenorrhea. The majority of them (32.0%) rated dysmenorrhea as mild. Moreover, (21.9%) of participants reported irregular menstruation. Furthermore, medication (Non-steroidal anti-inflammatory drugs) (NSAIDs) was the most frequently used self-medicating treatment by participants for relieving premenstrual symptoms and menstrual pain (59.4%). (Table 1&3).

The most commonly reported were lack of concentration and working difficulty (50.1%) and (42.7%), respectively (Table 4).

Furthermore, the study found significant relationships between the premenstrual symptoms and the age of the participants, the age of menarche, and dysmenorrhea (p 0.005). Additionally, the study found that premenstrual symptoms were significantly associated with reduced academic performance and personal relationships among Iraqi female medical students (p 0.001). (Table 3 and 4).

Table 1. Demographic and Menstrual Characteristics of Iraqi Medical Students

Demographic and Menstrual characteristics	n=2080	%
Age	(21.7±2.9) years	
Age of menarche	(12.1±0.7) years	
Body mass index	(23.9±4.2) (kg/m^2)	
Marital status		
- Married	547	26.3%
- Unmarried	1533	73.7%
Menstrual regularity		
- Regular	1624	78.1%
- Irregular	456	21.9%
Premenstrual symptoms (PMS)	1531	73.6%
Severity of PMS		
- Mild	530	26.0%
- Moderate	735	35.3%
- Severe	266	12.8%
Dysmenorrhea	1019	49.0%
Severity of Dysmenorrhea		
- Mild	666	32.0%
- Moderate	236	11.3%
- Severe	117	5.6%

Table 2. Distribution in the Severity of premenstrual symptoms among Iraqi Medical Students

Premenstrual Symptoms	Severity of symptoms			
Affective symptoms	mild	moderate	severe	Total (%)
Depression	(25.6%)	(26.3%)	(13.6%)	(65.5%)
Outburst of anger	(21.4%)	(22.2%)	(13.6%)	(57.3%)
Irritability	(14.2%)	(25.6%)	(14.3%)	(54.0%)
Stress	(13.9%)	(6.9%)	(8.1%)	(29.0%)
Routine activities Disturbance	(21.3%)	(4.1%)	(2.6%)	(28.1%)
Aloneness	(8.8%)	(12.8%)	(5.0%)	(26.5%)
Absenteeism	(9.1%)	(3.4%)	(2.5%)	(15.0%)
Embarrassment	(1.7%)	(1.7%)	(1.9%)	(5.3%)
Somatic symptoms				
Abdominal bloating	(33.3%)	(13.6%)	Breast	(52.0%)
Breast tenderness	(27.2%)	(17.8%)	(4.8%)	(49.9%)
Acne	(29.9%)	(15.7%)	(4.2%)	(49.8%)
Dysmenorrhea	(32.0%)	(11.3%)	(5.6%)	(49.0%)
Headache	(22.2%)	(10.6%)	(2.8%)	(35.7%)
Sleep disturbances	(8.0%)	(6.4%)	(12.4%)	(26.8%)
Swelling extremities	(5.2%)	(1.7%)	(1.8%)	(8.7%)

Table 3. Relationships between Premenstrual Symptoms and Demographics among Iraqi Medical Students

Demographic Characteristics	The Premenstrual Symptoms		
	Statistical test	df	*p-value*
Age	7.084*	2078	.000
Age of menarche	4.396*	2078	.002
Body mass index	2.371*	2078	.520
Marital status			
- Married	5.301**	1	.012
- Unmarried			
Menstruation			
- Regular	1.637**	1	.112
- Irregular			
Dysmenorrhea	91.182**	1	.000
Medication use (analgesics)	5.150**	2	.076

*t: Independent t-test;** χ2: Chi-square; df: degree of freedom

Table 4. Premenstrual Symptoms, Academic Performance, and Personal Relationships among Iraqi Medical Students

Academic performance	The Premenstrual Symptoms		
	Statistical test	df	p-value
Mood changes	56.258	2	0.00
Lack of concentrations	41.137	1	0.00
Difficulty in working	52.936	1	0.00
Poor individual work performance	54.269	1	0.00
Lack of motivations	57.501	1	0.00
Poor collaborative work performance	18.232	1	0.00
Absenteeism personal interactions	28.014	1	0.00
Poor relationships with family	98.459	1	0.00
Poor interpersonal relationships with friends	78.009	1	0.00

*t: Independent samples t-test;** χ2: Chi-square test; df: degree of freedom; BMI: body mass index

4. Discussion

Premenstrual symptoms disrupt a female's regular lifestyle during the luteal phase of the menstrual cycle and resolve once the menstrual cycle starts [16]. Literature studies have shown a high prevalence rate of premenstrual symptoms among women with a high level of psychosocial stress. Premenstrual symptoms significantly affect women's health, including impairment of their daily activities and mental health disorders such as anxiety [17, 18]. However, studies reported that stress is often associated with changes in the duration and frequency of the menstrual cycle and the intensity of premenstrual symptoms [19].

In the current study, 73.6% of participants experienced premenstrual tension symptoms. The most frequently reported affective symptoms were depressed mood (65.5%), anger (57.3%), and irritability (54.0%). The most common physical symptoms were flatulence (52.0%), breast tenderness (49.9%), and acne (49.8%). However, among the participants, approximately (35.3%) suffered from moderate premenstrual symptoms. This rate was nearly identical to that found in previous studies [20, 21].

One of the most common gynecological disorders affecting young women in their teens and early adulthood is dysmenorrhea, which affects about 75 percent of them. Menstrual pain can harm a student's personal, family, and academic life[22]. The present study found that 49.0% of participants experienced dysmenorrhea to varying degrees. About 32.0% of them experienced mild menstrual pain. However, such findings were consistent with the previously reported studies [23]. Furthermore, the majority of participants chose to self-medicate to manage their premenstrual symptoms and menstrual pain, and non-steroidal anti-inflammatory drugs (NSAIDs) were the most commonly used self-medication method (59.4%). These findings were consistent with those from previous studies of reproductive-age women [24, 25].

Menstrual disturbances can adversely affect academic performance, because of missed work, increased medical costs, and lower overall life quality [6, 26]. The current study, however, reveals that 40% of female medical students experienced increased learning challenges, the main effects of which were a lack of concentration in 50.1% of them and trouble working in 42.7%. These findings were consistent with those from previous studies of reproductive-age women [27, 28].

According to the study findings, the study indicated there were significant relationships between premenstrual symptoms (P<0.005). Furthermore, the study shows that premenstrual symptoms were significantly linked with reduced academic performance and interpersonal relationships among Iraqi medical students (P<0.001).

5. Conclusion

The present study found that premenstrual tension symptoms are associated with poor educational performance and poor interpersonal relationships among Iraqi female medical students. To close the gender gap in our society for a better future, more study is required to analyze and assess the cause of premenstrual tension symptoms and therapeutic interventions.

Conflict of Interest

The authors hereby declare that they have no conflict of interest.

Author's contributions

All authors equally participated in designing experiment analysis and

interpretation of data. All authors read and approved the final manuscript.

Consent for publications

Availability of data and material

The authors have embedded all data in the manuscript.

Informed Consent

The authors declare not used any patients in this research.

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