

Prevalence of Premenstrual Symptoms Among College Students

Üniversite Öğrencilerinde Premenstrüel Semptomların Prevalansı

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ABSTRACT Objective: To assess the prevalence of premenstrual symptoms in college students. **Material and Methods:** Five hundred and thirty-seven consecutive students who admitted to the outpatient clinic between May 2010 and September 2010 were assessed regarding their premenstrual symptoms using “The premenstrual symptoms screening tool” (PSST); developed by Steiner et al. which includes a set of questions on premenstrual symptoms. Weighted prevalence rates for premenstrual symptoms, oral contraceptive use and mean duration of symptoms were evaluated. **Results:** The mean age of the participants were 21.4±2.7 years. The prevalence of moderate and severe premenstrual symptoms were 34.1% and 19.5%, respectively. Ninety percent of the participants reported at least one symptom. The mean duration of symptoms in a menstrual cycle were 5.7±0.9 days in participants with moderate premenstrual symptoms and 6.1±0.8 days in participants with severe premenstrual symptoms. Mean duration of premenstrual symptoms ranged between 3-6 years. Only 5.5% of the participants with severe premenstrual symptoms were seeking for treatment. **Conclusion:** This study indicates that premenstrual symptoms are common in university students, but only few of them seek for medical care for severe premenstrual symptoms. It is definitely essential to inform the university population about the symptoms and the treatment modalities of premenstrual symptoms as this condition may have strong negative impact on the school performance, daily function and quality of life.

Key Words: Premenstrual syndrome; students

ÖZET Amaç: Üniversite öğrencilerinde premenstrüel semptomların prevalansının araştırılması. **Gereç ve Yöntemler:** Mayıs 2010-Eylül 2010 tarihleri arasında üniversite polikliniğinde görülen ardışık 537 öğrenci premenstrüel semptomlara yönelik olarak Steiner ve ark. tarafından geliştirilmiş olan Premenstrüel Semptomların Tarama Ölçeği (PSST) ile değerlendirildi. Orta ve ağır derecede premenstrual semptomların prevalansları, oral kontraseptif kullanımı ve semptomların süresi değerlendirildi. **Bulgular:** Katılımcıların yaş ortalaması 21,4±2,7 yıldır. Orta derecede premenstrual semptomların ve ağır premenstrüel semptomların prevalansı sırasıyla %34,1 ve %19,5 olarak tespit edildi. Katılımcılardan %90'ı en az bir semptom bildirdi. Menstrüel siklus içerisinde semptomların ortalama süresi orta derecede semptomların tespit edildiği olgularda grubunda 5,7±0,9 gün, ağır semptomların olduğu grupta 6,1±0,8 gün olarak belirlendi. Premenstrüel semptomlarının 3-6 yıldır devam ettiği gözlemlendi. Bu olgulardan sadece %5,5'inin şikayetleri ile ilgili olarak tedavi istemi olduğu tespit edildi. **Sonuç:** Çalışma sonucuna göre, premenstrual şikayetler üniversite öğrencilerinde sıkça izlenmesine rağmen tedavi için talep çok az görülmektedir. Üniversite öğrencilerinin premenstrüel semptomların tedavisi ile ilgili olarak bilgilendirilmeleri okul performansları ve yaşam kaliteleri açısından önem kazanmaktadır.

Anahtar Kelimeler: Premenstruel sendrom; öğrenciler

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As many as 80-90% of women at reproductive ages experience some symptoms attributed to the premenstrual phase of the menstrual cycle. The prevalence of premenstrual dysphoric disorder (PMDD)

is estimated to be 3-8%, and PMDD or severe premenstrual syndrome (PMS) is estimated to occur in 15% to 20% of menstruating women.¹⁻³ The ICD-10 diagnosis of Premenstrual Syndrome requires only one premenstrual symptom in a list of symptoms which includes mild psychological discomfort, feelings of bloating and weight gain, breast tenderness, swelling of hands and feet, various aches and pains, poor concentration, sleep disturbance and change in appetite.⁴ More strict criteria are required for a diagnosis of PMDD. PMDD is defined by a set of four research criteria, all of which must be met to confirm the diagnosis.⁵

The Premenstrual Symptoms Screening Tool (PSST) includes a list of premenstrual symptoms as well as a measure of impairment in accordance with DSM-IV criteria for PMDD. It also translates categorical DSM-IV criteria into a rating scale with degrees of severity (Table 1).⁶ It has been suggested that the subjective reporting of severity of symptoms may be the most useful clinical diagnostic indicator of women seeking treatment and captures the greatest number of symptomatic women.^{7,8}

Despite the considerable prevalence and impact of PMS, which make it a popular topic in the media, healthcare professionals are still unaware of the impact of premenstrual symptoms on individ-

TABLE 1: The premenstrual symptoms screening tool (PSST).

(please mark an "X" in the appropriate box)

Do you experience some or any of the following premenstrual symptoms which <u>start before</u> your period and <u>stop</u> within a few days of bleeding?				
Symptom	Not at all	Mild	Moderate	Severe
1. Anger/irritability				
2. Anxiety/tension				
3. Tearful/increased sensitivity to rejection				
4. Depressed mood/hopelessness				
5. Decreased interest in work activities				
6. Decreased interest in home activities				
7. Decreased interest in social activities				
8. Difficulty concentrating				
9. Fatigue/lack of energy				
10. Overeating/food cravings				
11. Insomnia				
12. Hypersomnia (needing more sleep)				
13. Feeling overwhelmed or out of control				
14. Physical symptoms: breast tenderness, headaches, joint/muscle pain, bloating weight gain				
Have your symptoms, as listed above, interfered with:				
	Not at all	Mild	Moderate	Severe
A. Your work efficiency or productivity				
B. Your relationships with coworkers				
C. Your relationships with your family				
D. Your social life activities				
E. Your home responsibilities				
Scoring				
The following criteria must be present for a diagnosis of PMDD				
1) at least one of #1, #2, #3, #4 is severe				
2) in addition at least four of #1 - #14 are moderate to severe				
3) at least one of A, B, C, D, E is severe				
The following criteria must be present for a diagnosis of moderate to severe PMS				
1) at least one of #1, #2, #3, #4 is moderate to severe				
2) in addition at least four of #1 - #14 are moderate to severe				
3) at least one of A, B, C, D, E is moderate to severe				

uals, their families and environment. College students are a unique population that PMS may alter the school performance. There are limited studies in Europe and Asia focusing on the young population.⁹⁻¹¹ The aim of this study was to screen the prevalence of premenstrual symptoms with PSST in the young university population studying hard to graduate.

MATERIAL AND METHODS

A total of 537 students who admitted to the outpatient clinic of Beykent University during May 2010 and September 2010 were assessed regarding their premenstrual symptoms using PSST.⁶ The study was approved by local Ethics Committee of the university, and written informed consents were signed by all of the participants. The questions on premenstrual syndrome used in this paper were part of the written questionnaire (Translated by Schering Pharma 2009). The instrument includes ten items with different premenstrual symptoms, each of which has to be rated with respect to the presence and intensity previous to and at the onset of the menstrual period. The symptom list is introduced with the question “Do you experience some or any of the following premenstrual symptoms which start before your period and stop within a few days of bleeding?” The list includes the symptoms [1] anger/irritability, [2] anxiety/tension, [3] tearfulness/increased sensitivity to rejection, [4] depressed mood/hopelessness, [5] difficulty in concentrating, [6] fatigue/lack of energy, [7] overeating/food cravings, [8] insomnia or hypersomnia, [9] feeling overwhelmed or out of control and [10] physical symptoms such as breast tenderness, headaches, joint/muscle pain, bloating and weight gain. The tool furthermore asks whether such premenstrual symptoms interfered not at all, mildly, moderately or severely with (a) work efficiency, (b) relationships with co-workers or family, (c) social life activities and (d) home responsibilities. The instructions of the premenstrual symptoms screening tool of Steiner et al.⁶ are followed for the screening of moderate to severe premenstrual symptoms. Additional information were also collected including the age, hormonal contraception, regularity and

duration of the menstrual cycle, pain with periods, number of days that premenstrual symptoms last; and number of years with premenstrual symptoms. All data were presented as in percentages and means±standard deviation.

RESULTS

The ages of the participants were between 18 and 27 years and the mean age was 21.4±2.7 years. The prevalence of moderate and severe premenstrual symptoms were present in 34.1% and 19.5 %, respectively (Figure 1). Mean cycle length was 29.6±2.8 days. The mean duration of symptoms in a menstrual cycle were 5.7±0.9 days in participants with moderate premenstrual symptoms, and 6.1±0.8 days in participants with severe premenstrual symptoms. Mean duration of premenstrual symptoms ranged between 3-6 years. Dysmenorrhea was described by the 25.7% of the participants who had moderate to severe premenstrual symptoms. Out of 537 participants, 33 (6.2%) were taking oral contraceptive pills (Table 2). Out of 33

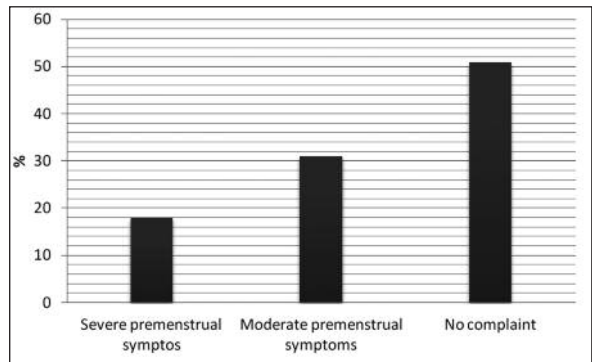


FIGURE 1: Prevalences of premenstrual syndrome and premenstrual dysphoric disorder in the university students.

Age	21.4 ± 2.7
Mean cycle length (days)	29.6 ± 2.8
Duration of symptoms in a menstrual cycle (days)	5.7 ± 0.9
Duration of premenstrual symptoms (years)	4.8 ± 0.8
Dysmenorrhea	25.7%
Oral contraceptive pills	6.2%

Values are given mean±SD and percentages.

participants taking oral contraceptive pills, only 6 (18.2%) had moderate to severe premenstrual symptoms. Only 5.5% of participants who had moderate-severe premenstrual symptoms were seeking for treatment.

DISCUSSION

The prevalence of moderate premenstrual symptoms and severe premenstrual symptoms were 34.1% and 19.5%, respectively in our study. Previous studies that have assessed the prevalence of premenstrual symptoms in adolescents, point out that 51-86% of teens experience premenstrual symptoms.¹²⁻¹⁴ Wittchen et al. studied 1488 women between the ages of 18 and 24 years. They found that 5.8% met DSM-IV criteria and additional 18.6% nearly met the criteria.⁹ In another study conducted among Nigerian college students, the prevalence of PMDD is found to be 6.1%.¹¹

Although we found high prevalence of premenstrual symptoms in comparison with the aforementioned studies, hard study work in a university may promote the premenstrual symptoms. The prevalence may also differ in accordance with the sociodemographic factors. There are two studies that have been previously conducted in Turkish college students. One of them was carried out in 345 college students in Çanakkale. Data were collected by a questionnaire and scale for premenstrual syndrome. In the study, the prevalence of premenstrual syndrome in college students was found as 67.5%.¹⁵ Other study was carried out among Anadolu University students and included 469 subjects. The authors have found that 62.5% of the participants had premenstrual syndrome and the depression risk was 48%.¹⁶ Their finding has indicated that premenstrual syndrome may cause susceptibility to depression. Both of these studies conducted in Turkish university population are comparable with our results.

In a retrospective study, adult patients have reported the onset of their premenstrual symptoms in their teens.¹⁷ Although the peak age of presen-

tation with severe premenstrual symptoms is after 20 years, most women state they have been symptomatic for almost 10 years before requesting and receiving treatment.¹⁸ Our study strengthens the importance of findings concerning the high prevalence of premenstrual disorders in the college population.

In a study including 4085 women in European countries, premenstrual symptoms found to be severely affecting women's activities in their daily lives.¹⁹ Regarding these findings, early treatment of the premenstrual symptoms will have a good impact on the daily lives and school performance of the college students. Despite the high prevalence of premenstrual symptoms, we have observed that only few of the students were demanding help for this problem. This may be because of the high prevalence of these symptoms. This condition may lead them to consider the severe premenstrual symptoms as normal and age-related.

In this study, out of 33 participants taking oral contraceptive pills, only 6 had severe premenstrual symptoms. Although it was proven that oral contraceptive pills had no effect on mood, new regimens with 24 active pills and 4 placebo days, combined with a progestin drospirenone have been approved by US Food and Drug Administration for the treatment of PMDD.²⁰ This may be an option for whom desires hormonal contraception with severe premenstrual symptoms.

Our results must be supported by the studies in other university students in different regions of our country as there are not yet enough studies reporting the prevalence of PMS and PMDD concerning the whole Turkish population. Concerning the fact that premenstrual disorders are quite high in college students, it is definitely essential to inform the teenage population about the symptoms and the treatment modalities of premenstrual symptoms as this condition may have a strong negative impact on the school performance, daily function and quality of life with a subsequent economic burden, specifically in terms of decreased productivity.

REFERENCES

1. Braverman PK. Premenstrual syndrome and premenstrual dysphoric disorder. *J Pediatr Adolesc Gynecol* 2007;20(1):3-12.
2. Mikacich JA. Premenstrual disorders: premenstrual syndrome and premenstrual dysphoric disorder. *Postgraduate Obstetrics&Gynecology* 2008;28(24):1-6.
3. Johnson SR. Premenstrual syndrome, premenstrual dysphoric disorder, and beyond: a clinical primer for practitioners. *Obstet Gynecol* 2004;104(4):845-59.
4. Janca A, Hiller W. ICD-10 checklist- A tool for clinicians' use of the ICD-10 classification of mental and behavioral disorders. *Compr Psychiatry* 1996;37(3):180-7.
5. American Psychiatric Association. *DSM-IV Classification. Diagnostic and Statistical Manual of Mental Disorders*. 4th ed. Washington DC: American Psychiatric Association; 2000. p.886.
6. Steiner M, Macdougall M, Brown E. The premenstrual symptoms screening tool (PSST) for clinicians. *Arch Womens Ment Health* 2003;6(3):203-9.
7. Angst J, Sellaro R, Merikangas KR, Endicott J. The epidemiology of perimenstrual psychological symptoms. *Acta Psychiatr Scand* 2001; 104(2):110-6.
8. Smith MJ, Schmidt PJ, Rubinow DR. Operationalizing DSM-IV criteria for PMDD: selecting symptomatic and asymptomatic cycles for research. *J Psychiatr Res* 2003;37(1):75-83.
9. Wittchen HU, Becker E, Lieb R, Krause P. Prevalence, incidence and stability of premenstrual dysphoric disorder in the community. *Psychol Med* 2002;32(1):119-32.
10. Shye D, Jaffe B. Prevalence and correlates of perimenstrual symptoms: a study of Israeli teenage girls. *J Adolesc Health* 1991;12(3):217-24.
11. Adewuya AO, Loto OM, Adewumi TA. Pattern and correlates of premenstrual symptomatology amongst Nigerian University students. *J Psychosom Obstet Gynecol* 2009;30(2):127-32.
12. Montero P, Bernis C, Loukid M, Hilali K, Baali A. Characteristics of menstrual cycles in Moroccan girls: prevalence of dysfunctions and associated behaviours. *Ann Hum Biol* 1999; 26(3):243-9.
13. Wilson CA, Keyes WR Jr. A survey of adolescent dysmenorrhea and premenstrual symptom frequency. A model program for prevention, detection, and treatment. *J Adolesc Health Care* 1989;10(4):317-22.
14. Adigüzel H, Taşkın OE, Danacı AE. [Investigation of premenstrual syndrome and its symptoms in Manisa]. *Türk Psikiyatri Derg* 2007;18(3):215-22.
15. Tanrıverdi G, Selçuk E, Okanlı A. [Prevalence of premenstrual syndrome in University students]. *Journal of Anatolia Nursing University School of Nursing* 2010;13(1):52-7.
16. Yücel U, Bilge A, Oran N, Ersoy ME, Gencdoğan B, Özveren O. [The prevalence of premenstrual syndrome and its relationship with depression risk in adolescents]. *Anadolu Psikiyatri Dergisi* 2009;10(1):55-61.
17. Keyes W. Premenstrual syndrome. *Proceedings of a Conference on PMS and Related Biobehavioral Disorders*. Provo, UT: BYU Division of Conferences;1983. p.1-10.
18. Robinson RL, Swindle RW. Premenstrual symptom severity: impact on social functioning and treatment-seeking behaviors. *J Womens Health Gen Based Med* 2000;9(7):757-68.
19. Dennerstein L, Lehert P, Bäckström TC, Heinemann K. The effect of premenstrual symptoms on activities of daily life. *Fertil Steril* 2010;94(3):1059-64.
20. Pearlstein TB, Bachmann GA, Zacur HA, Yonkers KA. Treatment of premenstrual dysphoric disorder with a new drospirenone-containing oral contraceptive formulation. *Contraception* 2005;72(6):414-21.