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PRIMARY DYSMENORRHEA AMONG CONSTANTINE 1 UNIVERSITY STUDENTS

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ABSTRACT

Objective: To evaluate the primary dysmenorrhea among Constantine 1 university students. **Study design:** The cross-sectional study was conducted at Constantine 1 University. A multiple-choice questionnaire was administered to 100 students. Data on the presence, severity, symptoms, treatment and absenteeism caused by dysmenorrhea were obtained and analyzed and the degree of pain was assessed by a 100 mm visual analog scale. **Results:** In the sample, the frequency of dysmenorrhea was 98%. In 69% of cases the pains appeared after the 1st year of menstruation. The mean intensity of pain was 6,32 ± 2,43 on the VAS. Of all students experiencing dysmenorrhea, 92,8% reported moderate pain or severe pain. 65,3% reported the duration of their menstrual pain as 24 hours or less. 68% reported duration of menstrual flow between 4 and 6 days. A variety of signs were reported mostly nervousness, abdominal loading and breast pain. 40,8% reporting university absence. Only 12,2% of the students consulted a doctor for their dysmenorrhea; 65% used a medical prescription and self-medication. The most common medications used were Paracetamol (27%) and Ibuprofen (22%). The results show that there was association between intensity of dysmenorrheal pain and vomiting and nervousness also between nervousness in dysmenorrhea and age. **Conclusion:** The frequency of dysmenorrhea among Constantine 1 university students is high and the pain that these students suffer can be severe, disabling. It is necessary to improve the therapeutic options for relief of pain caused by dysmenorrhea and to minimize the impact of dysmenorrhea on social, and study activities

KEYWORDS: Primary dysmenorrhea, Menstrual pain, Symptoms, Constantine 1 university, Students.

INTRODUCTION

Dysmenorrhea refers to cyclic lower abdominal or pelvic pain occurring just before and/or during menstruation. Symptoms such as premenstrual irritability, nervousness, depression, headache, nausea, vomiting, bloating, constipation, diarrhea, fatigue and an urge to urinate frequently may be observed in patients with dysmenorrhea during at least part or for the duration of menstruation. Primary dysmenorrhea is highly prevalent among adolescent girls. Depending on the measurement used, 20-90% of young girls report dysmenorrhea.[1, 2, 3] Dysmenorrhea is thought to be caused by the release of prostaglandins into the uterine tissue; these prostaglandins cause contractions and pain.[1, 4, 5]

The condition is a commonly reported cause of sickness and absenteeism from class and work by the female student community; it is also a public health problem because of its high prevalence among women, the degree of discomfort felt by the sufferer and the considerable economic losses to the community.[6] Secondary dysmenorrhea is defined as menstrual pain resulting from anatomic and/or evident pelvic pathology, such as endometriosis.[7]

The present study aimed to determine the property of dysmenorrhea in a sample of Constantine 1 university students and to evaluate the effects of the students' sociodemographic characteristics on the condition.

PARTICIPANTS AND METHODS

The cross-sectional study was conducted at Constantine 1 University, located in eastern of Algeria. A total of hundred female students at the university were participated. The consent was obtained from all participants and their anonymity was assured after the aims and objectives of the study had been explained. Students were interviewed and completed an anonymous multiple-choice questionnaire detailing sociodemographic and gynaecological/menstruation variables. Included in the gynaecological variables were questions asking about menstrual pain – time of onset, frequency, severity and interference with normal daily activity the questionnaire included questions regarding menstrual history. The students were asked whether they experienced the following symptoms often considered to be associated with dysmenorrhea: nausea, vomiting, bloating, headache, fatigue, diarrhea, general aches and pains and weakness. Dysmenorrhea was defined as ‘‘having painful

menstruation during the previous 3 months'' and the degree of pain was assessed by a 100 mm visual analog scale (VAS).[8] Scores from the VAS were categorized on a scale of 1 to 10.

SPSS version 20 for Windows was used for descriptive and inferential statistical analyses. Results were calculated as frequencies (%), means and standard deviations (SD). Statistical analysis was carried out using the $\chi 2$ test for categorical variables. The level of significance was set at $P < 0.05$.

RESULTS

Mean age of the students in the study group was 22.54 ± 2,30 years (range, 17–29 years) and mean age at menarche was 13.02± 1.30 years (range, 10–17 years). Among hundred female students, the frequency of dysmenorrhea was 98%. In 69% of cases the pains appeared after the 1st year of menstruation. 77% had a family history of dysmenorrhea. 42,9% sometimes have pain, 20,4% frequently have pain and 36,7% always have pain during menstrual period. 65,3% of participants reported the duration of their menstrual pain as 24 hours or less. The mean intensity of pain among the students was 6,32 ± 2,43 on the VAS. Of all students experiencing dysmenorrhea, 7,2% reported mild pain, 58,8% reported moderate pain and 34% reported severe pain. While 8,2% experienced the pain most few days before the onset of menstrual flow, 51% experienced pain most at onset of menses, 7,1% at the end of menses and 20,4% experienced pain throughout the menstrual period. In our study, 25% of the students reported that the pains concern the lower part of the abdomen, in 12% it concern the lower part of the back and in 25% the both. All this localizations were reported by 18 of cases. Participants were reporting a variety of signs mostly nervousness, abdominal loading and breast pain. Intensity of dysmenorrheal pain, localization of pain and distribution of symptoms associated with dysmenorrhea are shown in Table 1.

Table. 1: Distribution of pain intensity and symptoms associated with dysmenorrhea.

Characteristics	%
Distribution of menstrual pain intensity	
Severe	42,9
Moderate	58,8
Mild	7,2
Localization of pain	
Lower part of the abdomen	25
Lower parts of abdomen and back	25
Lower part of the abdomen and back and irradiation to the lower limbs	18

Lower part of the back	12
Lower part of the abdomen and irradiation to the lower limbs	12
Irradiation to the lower limbs	2
Symptoms associated with dysmenorrhea	
Nervousness	83
Abdominal loading	60
Breast pain	59
Headache	46
Diarrhea	45
Nausea	40
Depressed mood	29
Insomnia	29
Vomiting	27
Syncope	8

11% of the participants reported that the length of menstrual flow is less than 4 days; 68% reported duration between 4 and 6 days. 34% of the students had regular menstrual cycle. 68% of them reported that their menstrual cycle is of 28 days. Among 21% it is more than 28 days and less than 28 days in 11% of students. 7% of students with dysmenorrhea said that their menstrual flow is mild. 75% described it as moderate and 18% said that it is important. Among participants, 79,6 % indicated that dysmenorrhea limited their concentration. 40,8% reporting university absence. The mean length of absenteeism was 1,01 ± 1,24 day. 14% reported missing 1 day, 10,5% reported missing 2 days and 22,1% reported missing 3 days.

Only 12,2% of the students consulted a doctor for their dysmenorrhea; 65 % used a medical prescription and self-medication. 71,9% of these students reported that it was effective. The most common medications used were Paracetamol (27%) and Ibuprofen (22%) (Table. 2). Among participants with dysmenorrhea, 74,5% reported using herbs. 69 % of these students reported that it was effective. 68% of students prefer use of medication and 32% prefer traditional Medicine.

Table. 2: Drugs used to treat dysmenorrhea.

Drugs	%
Paracetamol	27
Ibuprofen	22
Diclofenac	11
Piroxicam	4
Naproxen	1

Analysis of the associations between the intensity of dysmenorrheal pain and characteristics of dysmenorrhea and gynaecological and personality variables showed that the only variables

significantly associated with intensity of dysmenorrheal pain were vomiting ($\chi 2$= 22,777, ddl=10, *P* = 0,012) and nervousness ($\chi 2$ = 23,892, ddl = 10, *P* = 0.008). Also there was association between nervousness in dysmenorrhea and age ($\chi 2$ = 19,944, ddl = 11, *P* = 0,046).

DISCUSSION

To our knowledge, our study is the first to have specifically studied characteristics of primary dysmenorrhea among Constantine 1 university students. The present study found a high frequency of dysmenorrhea (98%). Earlier studies in different cultures reporting rates of prevalence between 20% and 90%.[9,10] A reason for the variation in these estimates may be the use of selected groups of women and the absence of a universally accepted method of defining dysmenorrhea.[11] Another reason for the variation could be ethnic and sociocultural factors among the study groups.

Dysmenorrhea is characterized by fluctuating, spasmodic menstrual cramps, sometimes referred to as “labor-like” pains that begin only a few hours before or with the onset of menstrual flow, the symptoms of primary dysmenorrhea lasts only 2–3 days. The pains are most intense on the first or second day of the menstrual flow, or more precisely the first 24–36 hours, consistent with the time of maximal prostaglandin release into the menstrual fluid (vide infra). The pains are suprapubic in location with radiation into the inner aspects of the thighs. The cramps are frequently accompanied by backache, nausea, vomiting and diarrhea in a high percentage of case.[12]

Pain is defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage.[13] Menstrual distress leads to unpleasant and disturbing pain.[2, 14] Many women are embarrassed to discuss anything related to menstruation and may not trust that their doctor will consider menstrual pain a genuine problem. Hundreds of studies however, have demonstrated the prevalence of dysmenorrhea and its significant impact. In this sense, dysmenorrheic pain can be as problematic as surgical pain or any other kind of chronic or acute pain.[13, 15, 16] According to the VAS, the mean score for intensity of pain was greater than 5 (6,32 ± 2,43). A previous study conducted in Turkey indicated the same results.[17, 18], whereas other researchers outside Turkey have determined a lower score (4.8±2.7).[19] One plausible explanation for this is that the perception of pain could vary because of society, lifestyle, or cultural factors.

In our study 34 % of the students described their dysmenorrhea pain as severe. Furthermore, other studies reporting that the prevalence of severe dysmenorrhea is between 10% and 27%.[20, 21] Release of prostaglandins and other inflammatory mediators in the uterus is thought to be a major factor in dysmenorrhea. Prostaglandin levels have been found to be much higher in women with severe menstrual pain than in women who experience mild or no menstrual pain.[22]

We also found that 79,6% of our participants indicated that dysmenorrhea limited their concentration and 40,8% reporting university absence secondary to menstrual pain and this is in agreement with findings from other studies.[23] In addition, in the present study the variety of signs associated with dysmenorrhea are noted. These symptoms are similar to those previously reported in the literature.[24, 25]

Of the dysmenorrheic students, only 12.2% consulted a doctor for the problem. Previous studies found rates ranging from 14% to 37%.[16, 26, 27, 28] It can be explained by that women may consider pain to be a normal accompaniment to the menstrual cycle and fail to seek medical advice even when their symptoms are severe and incapacitating.

Several classes of analgesics have been utilized in the treatment of pain. The basic remedies for analgesia are confined to a small number of medications that include Paracetamol, NSAIDs and opioids. In general, opioids are indicated for the treatment of moderate pain that is non-responsive to NSAIDs and of severe pain.[29] Our results indicate that the most frequent treatment used by dysmenorrheic students were Paracetamol and Ibuprofen. Other results have found Syncol as frequent treatment.[16, 30]

In our survey, 40,8% of students with dysmenorrhea reported that it causes their absenteeism. This percentage was greater than the 24.1% in a study of Mexican high school students[16] and was similar to the absenteeism rate reported in other published works.[25, 26, 31, 32]

There are several limitations to this study. Secondary dysmenorrhea is rare among unmarried students but this cause of menstrual pain could not be excluded because health care professionals did not examine the participants.

CONCLUSIONS

In conclusion, the high frequency of dysmenorrhea found among Constantine university students demonstrates that this condition is a significant public health problem that requires

attention. Primary dysmenorrhea is an exceedingly common gynaecological complaint. A substantial proportion of students suffer moderate or severe pain associated with menses. The symptoms frequently limit activity and account for significant time lost from study and work.

A prospective large-scale and multicenter study should be carried out in the future to further validate our findings.

CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest related to this article.

REFERENCES

1. Harel Z. Dysmenorrhea in adolescents and young adults: etiology and management. J Pediatr Adolesc Gynecol, 2006; 19: 363–71.
2. Patel V, Tanksale V, Sahasrabhojanee M, Gupte S, Nevrekar P. The burden and determinants of dysmenorrhoea: a population-based survey of 2262 women in Goa, India. BJOG, 2006; 113: 453–63.
3. Tangchai K, Titapant V, Boriboonhirunsarn D. Dysmenorrhea in Thai adolescents: prevalence, impact and knowledge of treatment. J Med Assoc Thai, 2004; 87(Suppl 3): 69–73.
4. Fraser IS. Prostaglandins, prostaglandin inhibitors and their roles in gynaecological disorders. Baillieres Clin Obstet Gynaecol, 1992; 6: 829–57.
5. French L. Dysmenorrhea in adolescents: diagnosis and treatment. Paediatr Drugs, 2008; 10: 1–7.
6. Adeyemi S, Adekanle DA. Management of dysmenorrrhoea among medical students. Int J Gynecol Obstet, 2007; 7(1): Accessed May 11, 2009.
7. Dawood MY. Dysmenorrhea. J Reprod Med, 1985; 30(3): 154–67.
8. Bruera E, Kuehn N, Miller MJ, Selmser P, Macmillan K. "The Edmonton Symptom assessment system". *Journal of Palliative Care*., 1991; 7(2): 6-9.
9. Davis AR, Westhoff CL. Primary dysmenorrhea in adolescent girls and treatment with oral contraceptives. J Pediatr Adolesc Gynecol, 2001; 14(1): 3–8.
10. Jamieson DJ, Steege JF. The prevalence of dysmenorrhea, dyspareunia, pelvic pain and irritable bowel syndrome in primary care practices. Obstet Gynecol, 1996; 87(1): 55–8.
11. Tangchai K, Titapant V, Boriboonhirunsarn D. Dysmenorrhea in Thai adolescents: prevalence, impact and knowledge of treatment. J Med Assoc Thai, 2004; 87(Suppl 3): 69–73.

12. Ylikorkala O, Dawood MY. New concepts in dysmenorrhea. Am J Obstet Gynecol, 1978; 130: 833–47.
13. Loeser JD, Treede RD. The Kyoto protocol of IASP basic pain terminology. Pain, 2008; 137: 473–7.
14. Jamieson DJ, Steeg JF. The prevalence of dysmenorrhea, dyspareunia, pelvic pain, and irritable bowel syndrome in primary care practices. Obstet Gynecol. 1996; 87: 55–8.
15. Ortiz MI, Rangel-Flores E, Carrillo-Alarco´n LC, Veras-Godoy HA. Prevalence and impact of primary dysmenorrhea among Mexican high school students. Int J Gynaecol Obstet, 2009; 107: 240–3.
16. Strohbuecker B, Mayer H, Evers GC, Sabatowski R. Pain prevalence in hospitalized patients in a German university teaching hospital. J Pain Symptom Manage, 2005; 29: 498–506.
17. Nebahat Ozerdogan, Deniz Sayiner, Unal Ayranci, Alaettin Unsal, Sevgi Giray. Prevalence and predictors of dysmenorrhea among students at a university in Turkey. International Journal of Gynecology and Obstetrics, 2009; 107: 39–43.
18. Appel LJ, Moore TJ, Obarzanek E, Vollmer WM, Svetkey LP, Sacks FM, et al. A clinical trial of the effects of dietary patterns on blood pressure. DASH Collaborative Research Group. N Engl J Med, 1997; 336(16): 1117–24.
19. Goldstein-Ferber S, Granot M. The association between somatization and perceived ability: roles in dysmenorrhea among Israeli Arab adolescents. Psychosom Med, 2006; 68(1): 136–42.
20. Cakir M, Mungan I, Karakas T, Girisken I, Okten A. Menstrual pattern and common menstrual disorders among university students in Turkey. Pediatr Int, 2007; 49(6): 938–42.
21. Nur N, Sumer H. Prevalence of dysmenorrhea and related risk factors in Adolescents. STED, 2008; 17(1): 27–30.
22. Proctor M, Farquhar C. Diagnosis and management of dysmenorrhoea. BMJ, 2006; 13: 1134–1138.
23. Burnett MA, Antao V, Black A et al. Prevalence of primary dysmenorrhea in Canada. J Obstet Gynaecol Can, 2005; 27: 765–770.
24. Hillen J, Grbavac S. Primary dysmenorrhea in young western Australian women: prevalence, Impact and knowledge of treatment. J Adolesc Health. 1999; 25: 40-45.
25. Johnson J. Level of knowledge among adolescent girls regards regarding effective treatment for dysmenorrhea. J Adolesc Health Care. 1988; 9: 398-402.

26. Pedro´n-Nuevo N, Gonza´lez-Unzaga LN, De Celis-Carrillo R, Reynoso-Isla M, de la Torre-Romeral L. Incidence of dysmenorrhea and associated symptoms in women aged 12–24 years. Ginecol Obstet Mex, 1998; 66: 492–4.
27. Johnson J. Level of knowledge among adolescent girls regarding effective treatment for dysmenorrhea. J Adolesc Health Care. 1988; 9: 398–402.
28. O'Connell K, Davis AR, Westhoff C. Self-treatment patterns among adolescent girls with dysmenorrhea. J Pediatr Adolesc Gynecol, 2006; 19: 285–9.
29. WHO (World Health Organization). Cancer pain relief, 2nd ed., Geneva, Switzerland: World Health Organization; 1996.
30. Velasco-Rodrı´guez R, Mora-Brambila AB, Gonza´lez-Ortega LE, Bonilla-Gutie´rrez OJ. Clinical characteristics and treatment of dysmenorrhoea in nursing students. Rev Enferm IMSS, 2006; 14: 29–34.
31. Polat A, Celik H, Gurates B, et al. Prevalence of primary dysmenorrhea in young adult female university students. Arch Gynecol Obstet 2009; 279: 527–32.
32. Loto OM, Adewumi TA, Adewuya AO. Prevalence and correlates of dysmenorrhea among Nigerian college women. Aust N Z J Obstet Gynaecol, 2008; 48: 442–4.