Prevalence and Impact of Dysmenorrhea on Hispanic Female Adolescents

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Background: Dysmenorrhea is the leading cause of short-term school absenteeism. It is associated with a negative impact on social, academic, and sports activities of many female adolescents. Dysmenorrhea has not previously been described among Hispanic adolescents, the fastest growing minority group in the United States.

Objective: To determine the prevalence of dysmenorrhea among Hispanic female adolescents; its impact on academic performance, school attendance, and sports and social activities; and its management.

Participants and Methods: A total of 706 Hispanic female adolescents, in grades 9 through 12, completed a 31-item questionnaire about the presence, duration, severity, treatment, and limitations of dysmenorrhea at a local urban high school.

Results: Among participants who had a period in the previous 3 months, 85% reported dysmenorrhea. Of these, 38% reported missing school due to dysmenorrhea during the 3 months prior to the survey and 33% reported missing individual classes. Activities affected by dysmenorrhea included class concentration (59%), sports (51%), class participation (50%), socialization (46%), homework (35%), test-taking skills (36%), and grades (29%). Treatments taken for dysmenorrhea included rest (58%), medications (52%), heating pad (26%), tea (20%), exercise (15%), and herbs (7%). Fourteen percent consulted a physician and 49% saw a school nurse for help with their symptoms. Menstrual pain was significantly associated with school absenteeism and decreased academic performance, sports participation, and socialization with peers ($P<.01$).

Conclusions: Dysmenorrhea is highly prevalent among Hispanic adolescents and is related to school absenteeism and limitations on social, academic, and sports activities. Given that most adolescents do not seek medical advice for dysmenorrhea, health care providers should screen routinely for dysmenorrhea and offer treatment. As dysmenorrhea reportedly affects school performance and attendance, school administrators may have a vested interest in providing health education on this topic to their students.


Dysmenorrhea is the most common gynecologic disorder among female adolescents, with a prevalence of 60% to 93%.1-6 Primary dysmenorrhea, painful menstruation without pelvic abnormalities, may be associated with vomiting, fatigue, back pain, headaches, dizziness, and diarrhea.4 Secondary dysmenorrhea refers to painful menstruation with pelvic abnormalities.

In the United States, dysmenorrhea is the leading cause of short-term school absenteeism.4,6 Several studies have shown that adolescents with dysmenorrhea report that it affects their academic performance and social and sports activities, a distressing finding given the availability of effective medications.2,4 Numerous studies have shown that nonsteroidal anti-inflammatory drugs (NSAIDs), which inhibit the synthesis of prostaglandins, are highly effective in alleviating the symptoms of dysmenorrhea.7-10 However, according to Johnson,3 only 54% of American white adolescents were aware of this therapeutic benefit, while Hillen and Grbavac2 found that 11% of Australian adolescents knew about the prophylactic role of NSAIDs for dysmenorrhea. Despite the negative impact of dysmenorrhea, only 14% to 18% of adolescents seek medical advice, and about half take medications to alleviate their symptoms.1,3 According to a large national study of white and African American adolescents, the prevalence of dysmenorrhea was similar but the rate of school absenteeism was 2 times higher among African American than white adolescents.4 This finding suggests that culture may influence the meaning of symptoms such as pain and the ways in which they are treated. Researchers have shown that an individual’s ethnic background is a major determinant of how one expresses or communicates pain.11-13

Dysmenorrhea has been described among white and African American adolescents but not among Hispanic adolescents, the fastest growing minority group.
PARTICIPANTS AND METHODS

In November 1998, 1000 female students attending a Houston, Tex, high school in grades 9 through 12 were invited to participate in a cross-sectional study that was part of a 3-day reproductive health program. A total of 740 students completed a 31-item, self-administered questionnaire written in both English and Spanish; 260 students were absent from school on all 3 days. The school obtained passive parental consents and assents from all participants. The study protocol was approved by the University of Texas School of Public Health Review Board. The participants were divided evenly into 3 groups; each group participated in 1 of 3 days of this program during school hours in the auditorium. The questionnaire was administered at the beginning of the program, prior to reproductive health lectures. Participants had 20 minutes to voluntarily complete the questionnaire; they were advised not to write their names on the questionnaire and were told that their responses would remain confidential.

SURVEY INSTRUMENT

The 31-item questionnaire, designed specifically for this study, included information concerning the severity of dysmenorrhea and its impact on school attendance, academic performance (self-perceived impact on class concentration, class participation, test-taking skills, homework tasks, and grades), sports participation, socializing with peers, and performing daily chores. Dysmenorrhea was defined as having painful menstruation during the previous 3 months and the degree of pain was categorized as mild, moderate, or severe. School absence was defined as missing a half day to complete days of school and class absence was defined as missing individual classes because of dysmenorrhea during the previous 3 months. In addition, the questionnaire included items about treatments used by participants and their mothers for dysmenorrhea and consultations (school nurse, physician, and curandera, also known as folk healer) sought for relief of symptoms. A visual analogue scale, dividing pain into mild, moderate, and severe, was used to measure menstrual pain; this scale has well-established validity and reliability (Cronbach α = .94).14

RESULTS

Non-Hispanic female students (n=34) and Hispanic female students who had not had a period in the previous 3 months (n=30) were excluded from the data analysis. Descriptive statistics (frequencies, means, and SEs) were used to determine mean age of participants, age at menarche, prevalence, and treatment of dysmenorrhea and activities affected by this condition. Associations between the level of menstrual pain and activities affected by menstrual pain (school, homework, class participation, class concentration, taking tests, sports participation, and going out with friends) were analyzed using odds ratios (ORs) with 99% confidence intervals (CIs). A more conservative P level of .01 was chosen to help control for type I error. Associations between the level of menstrual pain and the therapeutic options were examined using ORs with 99% CIs. Association between treatments taken by participants and their mothers were determined using χ² analysis as the test of significance at the .01 level. These analyses were completed using the Statistical Software Package for the Social Sciences (SPSS), version 8.0 (SPSS Inc, Chicago, Ill).

IMPACT OF DYSMENORRHEA ON ACADEMIC, SOCIAL, AND SPORTS ACTIVITIES

Among participants, 59% indicated that dysmenorrhea limited their class concentration; 56%, daily chores; 51%, sports participation; 50%, class participation; 46%, going out with friends; 36%, taking tests; 35%, homework; and 29%, grades. Thirty-eight percent reported missing school days and 33% reported missing individual classes due to menstrual cramps during the previous 3 months. Among participants reporting school absence, 46% reported missing one half to 1 day of school, 36% reported missing 2 to 3 days, and 18% reported missing more than 4 days. The rate of school absenteeism was 52% among participants reporting severe menstrual pain compared with 20% among those with mild menstrual pain. The school absenteeism rate was 67% among participants reporting emesis and 60% among those reporting diarrhea during menstruation.

ACADEMIC, SOCIAL, AND SPORTS LIMITATIONS ASSOCIATED WITH MENSTRUAL PAIN

A significantly greater proportion of participants with severe menstrual pain reported school absence, decreased test-taking skills, and limited socialization with friends and sports participation than those with mild menstrual pain (P<.01) (Table).
Many participants (88%) indicated that their mothers were aware of their symptoms. The treatments taken for dysmenorrhea by the participants and their mothers who had dysmenorrhea reportedly were similar (P<.001). Seventy-three percent of participants indicated that they knew of medications to alleviate their symptoms of dysmenorrhea. Sixty-seven percent of the participants reported that they either did not think or did not know whether a physician could help them and 33% thought that a physician could help them with their menstrual symptoms.

**TREATMENTS USED TO ALLEVIATE SYMPTOMS OF DYSMENORRHEA**

The participants with dysmenorrhea reported using multiple treatments to relieve their symptoms: rest (58%), medications (52%), heating pad (26%), tea (20%), exercise (15%), and herbs (7%). Fifty percent of those who drank tea chose Manzanilla tea or chamomile tea. A greater proportion of participants reporting severe menstrual pain used herbs (OR, 5.9; 99% CI, 1.2-28.8), rest (OR, 3.3; 99% CI, 1.9-5.9), medications (OR, 3.2; 99% CI, 1.8-5.7), heating pad (OR, 3.2; 99% CI, 1.6-6.4), tea (OR, 3.2; CI, 1.4-7.0), or physician consultation (OR, 2.6; 99% CI, 1.1-6.0) than those reporting mild menstrual pain. Among participants with dysmenorrhea who reported taking medications, 44% indicated missing school, 68% indicated limited class concentration, 42% reported diminished test-taking skills, and 53% reported less socialization with friends.

Overall, 49% of the participants with dysmenorrhea consulted the school nurse during the previous 3 months but 77% of those who visited the school nurse reported no relief from this visit. In contrast to the 49% school nurse consultation rate, 14% consulted a physician for help; this rate increased to 23% among participants reporting severe menstrual pain. Two percent reported consulting a curandera for help with their dysmenorrhea.

A major finding of this study was the high prevalence of dysmenorrhea (85%) among Hispanic female adolescents, which falls within the range reported by Klein and Litt (59.7%) and Campbell and McGrath (93%). The prevalence of severe dysmenorrhea (42%) was markedly higher than previously reported among white (23%) and African American (14%) adolescents. This finding supports the previously reported correlation between ethnicity and pain perception. Of note, participants rated their menstrual pain during the previous 3 months; the frequency and intensity of pain during each cycle may have varied and was not determined. In addition, many Hispanic adolescents reported headaches, fatigue, back pain, vomiting, diarrhea, and dizziness during menstruation at frequencies similar to those previously reported in the literature. Given the frequency of these symptoms, health care providers should consider inquiring about them in conjunction with menstrual pain because these symptoms may be more debilitating.

The school absenteeism rate in this study was higher than previously reported by Klein and and Litt (23.6% among African Americans and 14% among whites) and lower than that reported by Johnson (45.6% among whites). The variation in school absenteeism rates among these studies may be related to the existence of different cultural perceptions and responses to various gradients of pain. However, this relationship is difficult to evaluate without studying various ethnic groups simultaneously. Also, comparing school absenteeism rates in these studies is difficult because different time frames were used in determining the former. Not surprisingly, the rate of school absenteeism was higher among Hispanic adolescents with severe menstrual pain (52%) than mild menstrual pain (20%), consistent with previous findings. Hispanic adolescents with severe menstrual pain were nearly 4 times as likely to miss school and to have limited academic performance than those with mild menstrual pain. Given these findings, school officials and school health program coordinators may benefit from considering dysmenorrhea in the context of improving their school attendance rates and academic performance of their students.

Overall, the management of dysmenorrhea among this group of Hispanic female adolescents was similar to previous studies of white and African American adolescents. A physician consultation rate of 14% and medication use rate of 52% are similar to previous study findings. Alternate sources of medical advice included school nurses and curanderas. A greater number of participants with dysmenorrhea sought help from school nurses instead of physicians, which suggests that these participants felt more comfortable seeking help from nurses. Unfortunately, school nurses can only recommend rest and

**Associations Between Menstrual Pain and Limited Activities**

<table>
<thead>
<tr>
<th></th>
<th>Mild Pain, n = 138</th>
<th>Moderate Pain, n = 183</th>
<th>Severe Pain, n = 234</th>
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<tr>
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<td>33</td>
<td>52</td>
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<tr>
<td>Homework</td>
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<td>Class participation</td>
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<td>54</td>
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<tr>
<td>Going out with friends</td>
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<td>44</td>
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heating pads, which may explain the self-perceived ineffectiveness of the care received at the nurse’s office. Of note, all students had access to the school-based clinic, which is staffed by physicians and nurse practitioners. However, this study did not determine how many students were aware of this clinic, which may have contributed to the low physician consultation rate. Very few Hispanic adolescents consulted a curandera, consistent with the literature.16

Interestingly, the level of knowledge concerning medication use for dysmenorrhea (73%) was higher than previously reported by Johnson.1 Unfortunately, the lack of knowledge regarding the role of physicians in the treatment of this condition was an alarming 67%, which may have contributed to the low physician consultation rate. According to the literature, within the Hispanic culture, medical information is passed from mother to daughter and home remedies are often tried before seeking medical advice.17 Given the similarity in treatments used by mothers and daughters and that 88% had communicated their symptoms to their mothers, the latter appear to have been their source of medical information. How Hispanic female adolescents and their mothers view painful menstruation is unknown.

Adolescents who restrict daily activities because of dysmenorrhea should be offered prophylactic treatment with NSAIDs. Prophylactic treatment with NSAIDs should begin 2 to 3 days before the onset of menstruation and be continued through the duration of the menstrual cramps. Clinical studies support the role of NSAIDs in the treatment of dysmenorrhea.18-21 In this study, about 50% of those who took medications for dysmenorrhea still indicated social and academic limitations, which suggests that these medications were an inappropriate choice or dose. We did not determine the dosage and type of medications taken for dysmenorrhea or the self-perceived effectiveness of their use. To maximize benefit from NSAIDs, health care providers may consider inquiring about the type and dose of medications that their adolescent patients are taking for their menstrual pain. Given the similar treatment measures between mothers and daughters, health care providers may take the opportunity to educate both mothers and daughters about the effective use of NSAIDs to alleviate the symptoms of dysmenorrhea.

LIMITATIONS

There are several limitations to this study. Secondary dysmenorrhea is rare among adolescents but this cause of menstrual pain could not be excluded because health care professionals did not examine the participants. Also, participants were asked to recall menstrual and school absenteeism information from 3 months ago, which may have led to recall bias. How participants distinguished teas from herbs was not determined and may have led to misclassification. Because this is an anonymous study, the information on dysmenorrhea was obtained by self-report and could not be validated. Given that this was the first study on dysmenorrhea among Hispanic adolescents, these findings may not be generalizable to the Hispanic population with inherent cultural differences.

CONCLUSIONS

Dysmenorrhea is common among the Hispanic adolescent population and its activity limitations are not unique to this ethnic group. In light of the public health importance of these social and academic limitations associated with dysmenorrhea, school administrators could play a vital role in reducing the prevalence of information about dysmenorrhea and its associated limitations by incorporating dysmenorrhea and its treatment into health education curriculums. More effective school nurse may also help alleviate the discomfort that many students experience from dysmenorrhea while in school. Also, school nurses could intervene through secondary prevention by educating students about appropriate medication use and referring to health care providers in the community or school-based clinics as needed.

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