

Associated Clinical Manifestations and Self-management Approaches of Primary Dysmenorrhea among Adolescent Students in Erbil City, Iraq

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Abstract

Background: Primary dysmenorrhea is one of the most common gynecological problems among adolescent females which interferes with daily activities and affects their physical and emotional aspects and has a negative impact on quality of life. Self-medication for primary dysmenorrhea is a very common practice. **Objective:** This study aimed to find the associated clinical manifestations and self-management approaches of primary dysmenorrhea and its relations with some demographical and menstrual characteristics. **Materials and Methods:** A descriptive cross-sectional study was conducted on 300 dysmenorrheic adolescent students in secondary schools in Erbil city, during the period from March to June 2016. A purposive (nonprobability) sampling was used. A questionnaire format was prepared by researcher which included following parts: sociodemographic data, menstrual data, clinical manifestation, and self-management approaches to minimize this problem. **Results:** Majority of the study samples aged between 14 and 17 years, their school class was 11, the education of their mothers was illiterate, and mothers' occupation was housewife. Regarding the menstrual characteristics, age of menarche among majority of the study samples was between 12 and 14 years, frequency of menstrual cycle was between 29 and 31 days, and level of pain during menstruation was severe. There was a high significant association between headache, breast tenderness, and age of adolescents. Significant association was also found between reduced ability of concentration and age of menarche. There was a significant relationship between self-management approach used by adolescents with school class and regularity of blood flow. **Conclusion:** Primary dysmenorrhea considerably affected physical activity and concentration of students. Self-management approaches practiced by adolescent participated in this study were poor.

Keywords: Adolescent, primary dysmenorrhea, self-management approach, students

INTRODUCTION

One of the most common complaints for women that can affect quality of life is dysmenorrhea. Dysmenorrhea is a subgroup of pelvic pain that manifests as painful menstrual flow.^[1,2] It occurs in two forms: Primary and secondary dysmenorrhea. Primary dysmenorrhea is painful menstruation occurring without any gynecological disease, often starting at 6 to 12 months after menarche and possibly continuing to menopause. Although the secondary form can occur at any time in a woman's life between menarche and menopause, it most often happens after 25 years of age subsequent to a gynecological pathology such as endometriosis and ovarian cysts.^[3] Primary dysmenorrhea usually starts around the onset of menstruation and may continue for 8 h to 3 days.^[3] Although there is not enough information to attribute the etiology

of primary dysmenorrhea to one factor yet, a combination of factors, including increase of synthesis and secretion of prostaglandin F_{2α} increased vasopressin and oxytocin that subsequently enhance the secretion of prostaglandin, and stimulation of the type C pain fibers, are postulated to be the contributing agents.^[4,5]

Dysmenorrhea has different detrimental effects on individuals and the community. For instance, school and work absenteeism, interference with daily living activities, limitation in socialization, and higher intake of sedative medications are

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positively associated with the higher prevalence and intensity of dysmenorrhea.^[6-8] In 2007, the International Association for the Study of Pain estimated that at each menstrual period, approximately 10% to 15% of dysmenorrheic women were not able to work for 1–3 days.^[9] In the United States, dysmenorrhea causes annual loss of nearly 140 million working hours.^[10] In Japan, it was estimated that economic losses due to dysmenorrhea totaled \$4.2 billion dollars annually.^[11]

Treatment for primary dysmenorrhea varies across different population worldwide and includes lifestyle modification, complementary and alternative modalities, over-the-counter drugs, prescription analgesics, and hormonal contraceptives. Prompt alleviation of the symptoms is necessary, failing which it may be responsible for the silent suffering among young women. Nonsteroidal anti-inflammatory drugs and antispasmodics are commonly used drugs.^[12,13]

There is an limited literature on the association among sociodemographic characteristics and menstrual factors with the intensity of primary dysmenorrhea and the experiences of female students with dysmenorrhea to gainful understanding of the phenomenon of dysmenorrhea and the impact on the lives of this category of sufferers.^[14]

This study aimed to find the associated clinical manifestations and self-management approaches of primary dysmenorrhea and its relations with some demographical and menstrual characteristics.

MATERIALS AND METHODS

A descriptive cross-sectional study was conducted on 300 dysmenorrheic adolescent students in secondary schools in Erbil city, during the period from March to June 2016. A purposive (nonprobability) sampling was used. A questionnaire format was prepared by researcher which included following parts: sociodemographic data, menstrual data, clinical manifestation, and self-management approaches to minimize this problem. Direct interview technique was applied for collecting the data. Verbal consent was taken from study participants before interview. Data were analyzed using the Statistical Package for the Social Science (SPSS version 20).

Chi-square test was used for association between clinical manifestation and age group, clinical manifestation and age of menarche, self-management and age group, and self-management and age of menarche with some menstrual characteristics. $P \leq 0.05$ was considered as significant association between variables.

Ethical approval and consent to participate

Before data collection, the research proposal was applied to an Ethical Committee of Nursing College of Hawler Medical University, Erbil, Iraq, and written consent was taken from all participants.

RESULTS

Table 1 represented the demographic data of students participated in this study. Majority of the study samples aged between 14 and 17 years were in Grade 11 and Muslim. About 48.7% and 88.1% of their mothers were illiterate and housewife, respectively.

As Table 2 exhibited, 85% of study samples at age between 12 and 14 years experienced their menarche. Amount of blood flow was moderate and menstrual cycle was 29–31 days in majority of the students. Approximately half of participants had menstruation lasted 6–8 days. Nearly 55% of students represented they have clot during menstruation. Severe pain was experienced by 44.4% of mothers during menstruation.

Almost 83.1% of students felt fatigue when they have menstruation. Over half of participants' ability to concentrate was diminished; also nearly, the same part of them had sleep disturbance during menstruation. Nearly 73% of them experienced change in normal physical activity. Backache was common in 52% of students [Table 3].

Eating sweet food was the approach that practiced by most part of the students. Avoiding of drinking caffeine was the second most approach used by adolescents in this study.

Table 1: The biographical characteristics of the study samples

Biographic characteristics	Frequency (%)
Age group/years	
10-13	2 (0.7)
14-17	266 (88.1)
18-21	34 (11.3)
School class	
7	1 (0.3)
9	64 (21.2)
10	80 (26.5)
11	151 (50)
12	6 (2)
Religion	
Muslim	302 (100)
Others	0
Marital status	
Single	301 (99.7)
Others	1 (0.3)
Education level of mother	
Illiterate	147 (48.7)
Primary school graduate	106 (35.1)
Intermediate school graduate	9 (3)
Secondary school graduate	8 (2.6)
Institute and above graduate	32 (10.6)
Occupation of mother	
Doctor	2 (0.7)
Teacher	28 (9.3)
Employee	6 (2)
Housewife	266 (88.1)

Table 2: The menstrual characteristics of study samples

Menstrual characteristics	Frequency (%)
Age of menarche	
9-11	27 (8.9)
12-14	258 (85.4)
≥15	17 (5.6)
Amount of blood flow	
Mild	29 (9.6)
Moderate	211 (69.9)
Severe	62 (20.5)
Regularity of blood flow	
Regular	206 (68.2)
Irregular	96 (31.8)
Frequency of cycle (day)	
<26	11 (3.6)
26-28	65 (21.5)
29-31	160 (53)
≥32	66 (21.9)
Menstrual cycle duration	
<3	4 (1.3)
3-5	135 (44.7)
6-8	156 (51.7)
>8	7 (2.3)
Contain clots	
No	139 (46)
Yes	163 (54)
Level of pain	
Mild	47 (15.6)
Moderate	121 (40.1)
Severe	134 (44.4)

Table 3: The clinical manifestations of study samples

Clinical manifestations	No, frequency (%)	Yes, frequency (%)
Breast tenderness	230 (76.2)	72 (23.8)
Headache	204 (67.5)	98 (32.5)
Fatigue	51 (16.9)	251 (83.1)
Anxiety	170 (56.3)	132 (43.7)
Nervosa	188 (62.3)	114 (37.7)
Sleep disturbance	133 (44)	169 (56)
Bloating	295 (97.7)	7 (2.3)
Restlessness	166 (55)	136 (45)
Mood fluctuation	188 (62.3)	114 (37.7)
Reduced ability concentrate	127 (42.1)	175 (57.9)
Changes in normal (physical activity)	80 (26.5)	222 (73.5)
Backache	145 (48)	157 (52)

Herbal treatment, supplements, and medications were used by minority of the students to manage their dysmenorrhea. About 17% of students always practice sleeping to relieve their dysmenorrhea [Table 4].

Table 5 represented that the overall self-management in 77.2% of the study samples were poor.

Table 4: Self-management approaches

Self-management	Never, frequency (%)	Sometimes, frequency (%)	Always, frequency (%)
Heating pad to the lower abdomen	194 (64.2)	61 (20.2)	47 (15.6)
Exercise	221 (73.2)	67 (22.2)	14 (4.6)
Massage	185 (61.3)	65 (21.5)	52 (17.2)
Chocolate	184 (60.9)	66 (21.9)	52 (17.2)
Sleeping	151 (50.0)	98 (32.5)	53 (17.5)
Avoid drinking caffeine	137 (45.4)	91 (30.1)	74 (24.5)
Herbal treatment	260 (86.1)	14 (4.6)	28 (9.3)
Dieting/nutrition supplement	278 (92.1)	15 (5)	9 (3)
Medication	224 (74.2)	46 (15.2)	32 (10.6)
Sweet food	101 (33.4)	111 (36.8)	90 (29.8)
Spicy food	170 (56.3)	77 (25.5)	55 (18.2)

Table 5: The overall self-management

Overall self-management	Frequency (%)
Poor	233 (77.2)
Fair	69 (22.8)
Good	0
Total	302 (100)

Applying Chi-square test in this study to find an association between self-management approaches and biographic characteristics of dysmenorrhea, it was revealed that there was a significant relationship between students' school class and overall self-management [Table 6].

The findings of this study showed that there was a significant relationship between level of pain in students during menstruation with overall self-management so that students with moderate and severe pain poorly managed their pain by themselves. Having clot during menstruation was significantly related to overall self-management at $P = 0.003$. Students with regular blood flow in comparison with students with irregular blood flow had poor management of their dysmenorrhea [Table 7].

DISCUSSION

Three hundred dysmenorrheic adolescent students in secondary schools in Erbil city were recruited in this study. Regarding the demographic data of participants of this study, majority of the study samples aged between 14 and 17 years were in Grade 11 and Muslim. Age of menarche in 85% of study samples was between 12 and 14 years. About 53% of students' frequency of menstrual cycle was between 6 and 8 days and over half of them have clot in their menstrual blood.

In our sample, 44.4% of students claimed to have severe pain. In other countries, severe pain was reported by 6.3% to 42% of adolescent girls suffering from dysmenorrhea.^[15-19]

Table 6: Identify associations between self-management approaches and biographic characteristics of dysmenorrhea

Biographic characteristics	Overall self-management		P (Chi-square test)
	Poor, frequency (%)	Fair, frequency (%)	
Age group/years			
10-13	2 (0.7)	0	0.475 (NS)
14-17	207 (68.5)	59 (19.5)	
18-21	24 (7.9)	10 (3.3)	
School class			
4	1 (0.3)	0	0.009 (HS)
9	59 (19.5)	5 (1.7)	
10	56 (18.5)	24 (7.9)	
11	114 (37.7)	37 (12.3)	
12	3 (1)	3 (1)	
Marital status			
Single	233 (77.2)	68 (22.5)	0.066 (NS)
Others	0	1 (0.3)	
Education level of mother			
Illiterate	115 (38.1)	32 (10.6)	0.545 (NS)
Primary school graduate	83 (27.5)	23 (7.6)	
Intermediate school graduate	7 (2.3)	2 (0.7)	
Secondary school graduate	7 (2.3)	1 (0.3)	
Institute and above graduate	21 (7)	11 (3.6)	
Occupation of mother			
Doctor	1 (0.3)	1 (0.3)	0.475 (NS)
Teacher	19 (6.3)	9 (3)	
Employee	5 (1.7)	1 (0.3)	
Housewife	208 (68.9)	58 (19.2)	

NS: Not significant, HS: Highly significant

Those differences in pain severity may be associated with cultural differences as regards pain perception and variability of pain threshold. Studies pointed out a correlation between ethnicity and pain perception,^[20] and assessment of pain severity is subjective.^[21-25] In addition to pain which is the main symptom, dysmenorrhea is the cause of discomfort due to subsequent clinical signs. In this study, the most common symptoms experienced by the students suffering from dysmenorrhea were sleep disturbance (56%), anxiety (3.7%), restlessness (45%), reduced ability to concentrate (57.9%), fatigue (83.1%), and backache (52%). The result of this study regarding ratio of reduction in concentration ability is close to the ones of 75% and 51.7% reported, respectively, by several authors.^[6,23]

Different methods were adopted by the participating females to relieve the pain. In this study, eating sweet food and avoiding caffeine were the most practiced methods by students. Medical and herbal treatment was used by small part of study

Table 7: Identify associations between self-management approaches and menstrual characteristics of dysmenorrhea

Menstrual characteristics	Overall self-management		P (Chi-square test)
	Poor, frequency (%)	Fair, frequency (%)	
Age of menarche			
9-11	18 (6)	9 (3)	0.319 (NS)
12-14	202 (66.9)	56 (18.5)	
≥15	13 (4.3)	4 (1.3)	
Amount of blood flow			
Mild	21 (7)	8 (2.6)	0.621 (NS)
Moderate	166 (55)	45 (14.9)	
Severe	46 (15.2)	16 (5.3)	
Regularity of blood flow			
Regular	166 (55)	40 (13.2)	0.038 (S)
Irregular	67 (22.2)	29 (9.6)	
Frequency of cycle (day)			
<26	7 (2.3)	4 (1.3)	0.251 (NS)
26-28	49 (16.2)	16 (5.3)	
29-31	130 (43)	30 (9.9)	
≥32	47 (15.6)	19 (6.3)	
Menstrual cycle duration			
<3	4 (1.3)	0	0.111 (NS)
3-5	106 (35.1)	29 (9.6)	
6-8	120 (39.7)	36 (11.9)	
>8	3 (1)	4 (1.3)	
Contain clot			
No	118 (39.1)	21 (7)	0.003 (HS)
Yes	115 (38.1)	48 (15.9)	
Level of pain			
Mild	45 (14.9)	2 (0.7)	0.003 (HS)
Moderate	92 (30.5)	29 (9.6)	
Severe	96 (31.8)	38 (12.6)	

NS: Not significant, HS: Highly significant, S: Significant

samples. A US study showed that apart from medication, nonpharmacological remedies were also used.^[26]

In this study, 4.6% of the students carried out physical exercise as a measure to control their dysmenorrheal illness. Regarding this, a similar study conducted in Iran supports that the use of physical activity had positive impact on the most of primary dysmenorrhea symptoms.^[27,28] Unfortunately, none of the respondents from Nigeria reported engaging in physical exercise to manage their menstrual pain, rather about 73.2% restricted physical activity because of the severity of the pain.^[29]

Results revealed that there was a significant relationship between students' school class and overall self-management. Furthermore, there was a significant relationship between level of pain in students during menstruation with overall

self-management so that students with moderate and severe pain poorly managed their pain by themselves. Having clot during menstruation was significantly related to overall self-management. Students with regular blood flow in this study had poor management of their dysmenorrhea.

Despite treatments being available for primary dysmenorrhea and the positive effects of self-care behaviors on treatment, the low self-care knowledge causes the high prevalence of primary dysmenorrhea. The results of this study show that evidence-based education can encourage the girls with dysmenorrhea to do self-care behaviors. The self-care behaviors increased 1.3 times; as a result, the severity of dysmenorrhea decreased 2 times in the evidence-based education group. Chiou *et al.* evaluated the effects of systematic health education on dysmenorrheic girls' knowledge, attitudes and self-care behaviors and found a significant increase in the experimental group members' dysmenorrhea-related knowledge and self-care behaviors knowledge and self-care behaviors.^[30]

CONCLUSION

Primary dysmenorrhea considerably affected physical activity and concentration of students. Self-management approaches practiced by adolescent participated in this study were poor.

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Conflicts of interest

There are no conflicts of interest.

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