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Original Article

Prevalence of dysmenorrhic pain among students; Its impact and management

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Abstract

Background: Dysmenorrhoea is a common gynecological problem affecting 60-70% of the adolescent menstruating females. It has been widely neglected but it known to affect the quality of life and is the major cause of absenteeism among adolescent females. This study was conducted to assess the prevalence and impact of dysmenorrhea and the management strategies used by the students.

Methodology: This cross-sectional study was conducted from March to December 2015 at University of Karachi. A total of 350 female university students were randomly selected and dysmenorrhea was assessed using a self-administrated questionnaire. Data regarding demographic characteristics like age, physical measurements, dietary habits, family history, menstrual history, pattern of pain, pain intensity, stress and use of pharmacological agents used for coping was collected and statistically analyzed using SPSS Version 20.

Results: A total of 350 female students were enrolled in the study, of which 300 reported having dysmenorrhea with high prevalence in follicular phase i.e. 36%. The pain characteristics were also recorded and cramping pain was reported by 20.6% of students followed by stabbing (18.6%) and abdominal distention (9.3%). Among the major associated systemic complaints with dysmenorrhea were headache (54.7%), nausea (50%), low back pain (LBP) (50%) and bloating (43.3%). Majority of females preferred medication for pain relief, ibuprofen was the drug of choice (14%) followed by paracetamol (12%). Among non-pharmacological approaches, relaxing therapy was ideal according to 18.6% of students.

Conclusion: Dysmenorrhea is a prevalent cause of distress among the female students, although the condition is prevalent it is considered as a general complaint and mostly neglected. This menstrual complication is coupled with various symptoms that affect daily activities and quality of life.

Keywords

Dysmenorrhea, Abdominal Cramps, Menstrual Cycle, Management.

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Introduction

Menstruation is a normal physiological process controlled by hypothalamopituitary hormones; it is one of the major signs of puberty. Several cultural norms had been linked to this reproductive event. It is taken as a gift and is celebrated in few cultures in order to destigmatize and minimize the associated shame and trauma[1] while the others consider it impure and held their women in isolation and restricted diet and social interaction[2-4]. Menstruation is often associated with irregular and/or excessive, painful bleeding scientifically referred as dysmenorrhea, pain sensation in pelvis directly linked with menstruation accompanied by many other symptoms[5].

Dysmenorrhea is categorized as primary dysmenorrhea and secondary dysmenorrhea. Primary dysmenorrhea is typically reported at the beginning of ovulatory cycles, in the first year of menarche[6]. Increased levels of prostanoids with eicosanoids results in hypercontractility of the uterus which leads to hypoxia and ischemia of the uterine muscles. Which in turn causes impaired and dysrhythmic contractions of the uterus which is believed to be the cause of underlying physiology of primary dysmenorrhea[7]. While secondary dysmenorrhoea is associated with certain pathological condition, women in 30's and 40's are more likely to develop secondary dysmenorrhea[8].

For many years, menstruation has been a psychological trigger for young females due to the associated hormone fluctuations leading to anxiety, fear, anger, confusion, shame and depression[9,10]. Although complaints associated with menstrual cycle are high, but still these complaints are neglected and are given less priority in healthcare assessment[7]. The major symptom of lower abdominal pain or cramping is complicated by other systemic disturbances including various degrees of headaches, migraine, dizziness, vomiting, nausea, diarrhea, bloating, backache, legs pains, shivering and mood swings[9,11]. Which not only affect the routine activities and quality of life of female during the respective time duration but it has also become the major cause leading to gynecological visits, adding to the health related financial burden[12,13]. Age, low body mass index (BMI), tobacco consumption, early menarche, extended or irregular menstrual flow, infections, psychological and genetic factors are the major contributors for dysmenorrhea[14,15].

By far, the most reliable management modality preferred by both the sufferers and the healthcare providers is medication including non-steroidal anti-inflammatory drugs (NSAIDS) and oral contraceptives and lifestyle modifications like low fat consumption, is known to relief menstrual cramps[16]. Physical activity has been strongly recommended for females with complaints of dysmenorrhea. With respect to the local perspective, the condition is rarely known and considered by our females. Therefore, the present study was planned to investigate the prevalence of dysmenorrhea, associated symptoms and characteristics and preferred management options among the female students.

Methodology

This cross-sectional study continued for 9 months from March to December 2015 at University of Karachi, Pakistan. Total 350 female university students were randomly selected and enrolled in the study, while married females and those diagnosed with pelvic disease were excluded from the study. Data was collected using a structured questionnaire including details regarding sociodemographic characteristics, menstrual details like menarche age, menstrual cycle regularity, duration, flow, pain sensation description, phase of cycle with maximum pain feelings, severity of pain, other systemic symptoms experienced and the preferred approach to relief dysmenorrhea.

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Menstruation was described as regular if cycle repeats every 28–32 days and continues for 5-7 days. Pain intensity was measured on a scale of 0–10 during menstruation, categorized as mild dysmenorrhea if lies between 1 and 3 point, moderate when between 4 and 7, and severe if falls between 8 and 10 points 2. Written informed consent was taken from all participants prior to the study and the confidentiality was maintained.

The collected data was analyzed using SPSS version 20, where quantitative variables were displayed using mean and standard deviation and frequency and percentages were used for qualitative variables. Pearson Chi-square test was applied to measure the association between different variables and $p<0.05$ was considered statistically significant.

Result

Out of 350 enrolled females, dysmenorrhea was reported by 300(86%) females while only 50(14%) had no complaints of pain during menstruation. 190(63.3%) out of 300 dysmenorrhic females hit puberty in between 11-12 years. Irregular menstrual cycle was observed among 37% of the enrolled females. 203(67.6%) females had 28-35 days cycle and mostly reported 5-7 days bleeding. Maximum dysmenorrhic pain was experienced during the follicular phase of the cycle i.e. 108(36%) while 86(28.6%) reported dysmenorrhea both in Ovulation & Luteal phase of the cycle. Cramping with lower abdominal discomfort, stabbing and burning were the most frequent complaints of dysmenorrhic females.

Table 1: Description of menstruation and the characteristics of dysmenorrhea among female students

Variables		**n=300**
Dysmenorrhea	*Present*	300(85.7)
	Absent	50(14.2)
Menarche Age (Years)	*<11*	76(25.3)
	11-12	190(63.3)
	>12	34(11.3)
Menstrual Cycle	*Regular*	188(62.6)
	Irregular	112(37.3)
Duration of Cycle (Days)	*<28*	22 (7.3)
	28-35	203(67.6)
	>35	75(25)
No of days of menstrual flow	*<5*	41(13.6)
	5-7	222(74)
	>7	37(12.3)
Pain intensity	*Mild*	41(27.3)
	Moderate	84(56)
	Severe	25(16.6)
Prevalence of dysmenorrhea during different menstrual phases	*Follicular*	108(36)
	Ovulation	9(3)
	Luteal	80(26.6)
	Follicular & Ovulation	4(1.3)
	Follicular & Luteal	6(2)
	Ovulation & Luteal	86(28.6)
	Follicular, Ovulation & Luteal	6(2)

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Characteristics of dysmenorrhic pain	*Burning*	26(8.6)
	Cramping	62(20.6)
	Stabbing	56(18.6)
	Pulling	18(6)
	Breaking down	16(5.3)
	Abdominal distention	28(9.3)

**Values are given as n(%)*

Headache (54.7%) was the most frequently reported symptom associated with dysmenorrhea ($p<0.05$) followed by nausea (50%), LBP (50%) and bloating (43.3%). Moderate pain (56%) was reported by most of the dysmenorrhic patients.

Table 2: Relationship between dysmenorrhea and associated systemic symptoms

Symptoms	**Dysmenorrhea**		**p-value**
	Present	Absent	
Nausea	75(50)	16(10)	0.001
Vomiting	43(28.6)	15(10)	0.01
Bloating	65(43.3)	21(14)	0.15
Diarrhea	39(26)	12(8)	0.08
Mood Changes	35(23.3)	7(4.7)	0.11
Low Back Pain	75(50)	35(23.4)	0.09
Headaches	82(54.7)	6(4)	0.04

**Values are given as n(%)*

**p-value <0.05 is considered significant*

Table 3 shows the medicine and therapies preferred to address dysmenorrhic pain. Non pharmacological relaxing therapies (18.6%) were the most preferred management strategy for controlling dysmenorrhea. The frequently used pharmacological approaches include ibuprofen (14%) followed by paracetamol (12%) and herbal medicines (8.9%). Ponston, aspirin and buscopan were among the other rarely used pharmacological agents.

Table 3: Preferred treatment options for dysmenorrhea

Treatment Option	**n(%)**
Ibuprofen	42(14)
Paracetamol	36(12)
Buscopan	10(3.3)
Aspirin	8(2.6)
Ponston	19(6.4)
Herbal Medicine	27(8.9)
Relaxing Therapy	56(18.6)

Discussion

This study aimed to identify the incidence of dysmenorrhea and associated systemic symptoms, pain severity, characteristics and its treatment among students. Our results highlighted that dysmenorrheal pain was relatively a common complaint in young females that is about 85.7% (Table 1), which is comparable to previous literature i.e. the reported prevalence among university students was 34% in Egypt, 70.2% in India, 85% among Hispanic female adolescents, and 93% in Australia[17,18-20]. There is a wide variation in the reported statistics worldwide as the protocols describing the dysmenorrheal pain and the

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sociodemographic characteristics are different for each individual locale. Moreover, there are wide variety of perceptions and myths that undermine the significance of this female health issue which is the major reason behind negligence[21].

The scale of symptoms accompanying menstrual pain ranges from digestive disturbances like nausea, abdominal cramps, vomiting, aches and pains, tiredness and dizziness[22]. We found, the most complained symptoms included headache, LBP, nausea, and bloating which consistent to an Indian study, according to which tiredness (56.8%) was the major symptom associated with dysmenorrhea followed by back pain (40.1%)[19]. In contrast, a Palestinian study reported physical fatigue and emotional instability manifested as nervousness/irritability as the major symptoms observed among the dysmenorrhic females[23].

Majority of the respondents (47.2%) reported use of pain medication for relief (Table 3), similar results were produced in a study, where approximately 58% of dysmenorrheal students opted pain killer pills[22]. While 18.6% prefer relaxing therapy and a very few prefer herbal medication (8.9%). Whereas, in India, pharmacological management is less preferred by students (25.5%) while use of herbal medicine and other nonpharmacological approaches to relief pain are commonly practiced[19]. Women do not usually seek medical help for dysmenorrhea and mostly follow nonpharmacological approach including heat application[24].

This study was conducted with the aim to estimate the prevalence of dysmenorrhea among students, the impact and management associated with it. Although high prevalence of dysmenorrhea was observed among the females enrolled in our study but there were several limitations. The sample size of the study was too small and the study site was restricted to single center so the findings cannot be generalized for all local females of Karachi. Nevertheless, the findings offered valuable information about menstrual health, its care, associated issues among students.

Conclusion

It can be concluded from the results that dysmenorrhea is prevalent among young females, complicated by a number of symptoms involving other systems that may affect sports activity, social activities, daily chores and quality of life as well and is becoming the leading cause of absenteeism in educational sector. Although dysmenorrhea significantly affects the quality of life, adolescent girls rely on self-care to ease the symptoms of dysmenorrhea without tracking the adverse drug reaction. Therefore, it is essential to organize and promote awareness programs among students regarding this restricting health condition, its associated impacts and the negative effects of consuming drugs without prescription and over the counter drugs (OTC).

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