Prevalence, impact, management practices and factors associated with dysmenorrhea among students of Akhtar Saeed Medical & Dental College Lahore

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Abstract

Background: Dysmenorrhea is an important health issue of young adult females that badly affects their quality of life and academic performance. This study aimed to determine prevalence, impact, management practices and factors associated with dysmenorrhea among medical students.

Methods: This analytical cross-sectional study was conducted in Akhtar Saeed Medical & Dental College Lahore from August 2020 to December 2020. Using Cochran's sample size calculator and rounding off, sample size of 400 female students was calculated. Convenience sampling technique was used. A self-constructed questionnaire was used which was designed after extensive literature search. Pain intensity was estimated using Visual Analogue Scale (VAS). Data were entered and analyzed in SPSS version 23. Chi square test was applied to find association between variables. A p-value of < 0.05 was considered statistically significant.

Results. Mean age of participants was 21.07 ± 2.58 years. Prevalence of dysmenorrhea was 79.5%. Statistically significant association was found between dysmenorrhea and participant's age (p value=0.002), marital status (p value=0.001), family income (p value=<0.001), age of menarche (p value=<0.001), days of bleeding (p value=0.009) and regularity of cycle (p value=<0.001). Mostly participants used combinations of remedies. Rest was the most commonly used remedy to relieve pain. Impact of dysmenorrhea included social withdrawal, inability to prepare for exam, difficulty in carrying out daily activities and absence from college.

Conclusion. Prevalence of dysmenorrhea was 79.5%. Statistically significant association was found between dysmenorrhea and participant age, marital status, family income, age of menarche, days of bleeding and regularity of cycle. Alone or together, taking rest was the most commonly used remedy to relieve pain. Dysmenorrhea negatively affected quality of life.

Keywords: Dysmenorrhea, impact, management, menstrual symptoms

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Introduction

Menstruation is a physiological phenomenon that symbolizes fertility of a woman (1). Females experience a variety of physical and psychological symptoms during menstrual period like pain, headache and fatigue (2). Over production of prostaglandins and ischemic contractions of the uterus are the major contributory factors of dysmenorrhea (3). Although menstruation is a normal physiological phenomenon, dysmenorrhea is very common problem in young adult females (4). Globally, as many as 90% of adolescent females and more than 50% of menstruating women report suffering from it, with 10–20% of them describing the pain as severe and distressing (5). Dysmenorrhea was reported by 61.6% participants in a research conducted in India (6). A cross sectional study conducted in public sector medical colleges in Lahore revealed prevalence of dysmenorrhea was 78.6% (7). Many factors are associated with dysmenorrhea including menarche at early age, longer duration of menstrual flow, heavy menstrual bleeding, smoking and positive family history (8).

Pain and associated symptoms usually begin before the onset of menstrual flow or later and persist for few hours or days. Different options including pharmacological and non-pharmacological management approaches such as taking non-steroidal anti-inflammatory drugs, herbal products, hot liquids, specific diet, yoga, heating pad and rest have been used to reduce the intensity of pain (9).

Dysmenorrhea affects social life of an individual. It has a negative effect on academic and professional performance, social relationships and daily activities. The effects of painful periods include absenteeism, anxiety, depression, decreased work output and social withdrawal, contributing to decreased quality of life (10). Severe dysmenorrhea may badly affect the quality of life, sometimes leading to disability and inefficiency. It can cause mental and psychological health problems in some of the females resulting in reduced participation in different social activities (11).

Moderate to severe pain that affects routine activities and does not respond to pharmacological treatment can be a sign of underlying pelvic disease like endometriosis which may require medical check-up and appropriate diagnosis of possible underlying pathology (12).

Although dysmenorrhea affects physical and social well-being of females, there is a low tendency to seek health care advice for this problem, may be due to the perception of dysmenorrhea being a normal condition rather than a health issue (13).

For any developing country, medical students are regarded a valuable future human resource. To maintain focus on studies, their physical and psychological wellbeing is very important. Any health issue which can affect their academic and professional performance must be explored. It is important to know about prevalence, impact and factors associated with dysmenorrhea. Insufficient knowledge about magnitude and impacts of this health issue may lead to lower level of awareness and insufficient treatment. This information can be used to plan and implement strategies regarding health education of young females about effective and scientifically proven management practices and training of health care providers to deal this issue. In Pakistan, available data regarding its prevalence and impact on health status and social wellbeing among women is limited. This study aimed to find out prevalence, impact and factors associated with dysmenorrhea among medical students.

Methodology

This analytical cross-sectional study was conducted in Akhtar Saeed Medical & Dental College Lahore from August 2020 to December 2020. Sample size was calculated using Cochran's sample size formula. Keeping 5% precision and 95% confidence level a sample size of 385 was calculated. After rounding off, final sample size came out to be 400 participants. Approval from ethical review board of Akhtar Saeed Medical & Dental College was taken (IRB certificate no M-19/050/-CM). Convenience sampling technique was used. All healthy female students of various medical programmes (MBBS, BDS, Pharma-D and Allied Health Sciences) 17-25 years of age, who were willing to participate were included. Female students more than 25 years and those who were not willing to participate were excluded. A self-constructed, pre tested questionnaire was used. Research questionnaire was designed after extensive literature search by modifying the questions used in previous studies. After review by one gynecologist, one biostatistician and two public health specialists, questionnaire was piloted on 20 female students of Akhtar Saeed Medical & Dental College. The questionnaire was found to be reliable (Cronbach's alpha value was 0.73).

Operational definition of dysmenorrhea was set as painful, cramping sensation in the lower abdomen or lower back with onset around the time of initiation of menstruation. The Visual Analogue Scale (VAS) is a scale used to determine the pain intensity experienced by individuals (14). Pain intensity was estimated using Visual Analogue Scale (VAS); 1-3 score as mild pain, 4-6 score as moderate pain and 7-10 score as severe pain. Data were entered and analyzed in SPSS version 23. Categorical variables were tabulated in frequency and percent distribution. Mean and standard deviation were calculated for continuous variable. Chi square test of significance was applied to find association between variables. A p-value of < 0.05 was taken as statistically significant.

Results

Mean age of participants was 21.07 ± 2.58 years. Out of total 400 students, 348(87%) were single while 52(13%) were married. Most of the participants (57.3%) were day scholar while rest 42.8% were residing in hostel. The mean menarche age was 13.16 ± 1.74 years. Out of 400 students, 318(79.5%) had dysmenorrhea. Prevalence of dysmenorrhea among various socio demographic categories are mentioned in Table 1. Among total participants, 131(32.8%) told that the onset of pain is before start of bleeding, while rest 187(46.8%) reported that they experience pain during menstrual flow. Most of the participants, i.e 199 (49.75%) reported that pain lasts for a day while rest feel pain for longer duration.

Higher percentage of dysmenorrhea was observed among participant aged 22-25 years (84%), unmarried females (82.2%), whose family income was more than 100000 per month (85.5%), who had menarche between 11-14 years (85.2%), who had bleeding for 4-7 days (85.6%) and who had regular cycles (84%). Association between these factors and dysmenorrhea was statistically significant (p value <0.05).

The Visual Analogue Scale (VAS) was used to estimate the intensity of menstrual pain from 0 to 10. Mild pain was reported by 26(6.5%), moderate pain by 127(31.8%) and severe pain by 165(41.2%) study participants.

Majority of participants used combinations of remedies to relieve pain. Heating pad along with analgesics were used by 24(6%), home remedies by 46(11.5%), homeopathic medicine by 27(6.7%), exercise by 4(1%), tea & coffee by 36(9%), medicine from pharmacy by

Table 1: Socio demographic characteristics of participants

CHARACTERISTICS	n (%)	DYSMEN- ORRHEA PRESENT	p value
Age of participant			0.002*
Up to 17 years	42 (10.5)	25(59.5)	
18- 21 years	164 (41)	130(79.2)	
22-25 years	194 (48.5)	163(84)	
Marital Status			0.001*
Married	52(13)	32(61.5)	
Single	348(87)	286(82.2)	
Area of residence			0.13
Day Scholar	229(57.25)	176(76.9)	
Hostel resident	171(42.75)	142(83)	
Family income			<0.001*
Less than 50000 per month	65(16.25)	41(63.1)	
50000-100000 per month	135(33.75)	106(78.5)	
More than 100000 per month	200(50)	171(85.5)	
Age at Menarche			<0.001*
7-10 years	22(5.5)	18(81.8)	
11-14 years	236(59)	201(85.2)	
15-18 years	116(29)	87(75)	
More than 18 years	26(6.5)	12(46.2)	
Family history of dysmenorrhea			0.28
Present	67(16.75)	50(74.6)	
Absent	333(83.25)	268(80.5)	
Duration of bleeding			0.009*
1-3 days	65(16.25)	47(72.3)	
4-7 days	202(50.5)	173(85.6)	
More than 8 days	133(33.25)	98(73.7)	
Length of menstrual cycle			0.27
Less than 21 days	26(6.5)	19(73.7)	
21-24 days	148(37)	123(83.1)	
25-29 days	165(41.25)	125(75.8)	
More than 30 days	61(15.25)	51(83.6)	
Pattern of menstrual cycle			0.001*
Regular	269(67.25)	226(84)	
Irregular	131(32.75)	92(70.2)	

*Statistically significant

14(3.5%), rest along with heating pad by 81(20.3%), rest and home remedies by 45(11.3%) and rest with tea or coffee by 41(10.3%) study participants.

Figure 1: Intensity of pain (n=318)

Figure 2: Ways to relieve pain (n=318)

Impact of dysmenorrhea on daily activities of participants is mentioned in table 2. More than one third participants (38.3%) used to take leave from college due to dysmenorrhea. Only 8.5% were able to carry out daily activities while rest were either unable to carryout daily activities or were able to do occasionally. About 26% female students revealed that they withdraw themselves from friends and family. Among total participants, 37% were not able to prepare for test/exam due to pain. Only 35.5% were able to manage physical activities during menstruation while 44% were not able to do so due to pain. About 50.3%

and 9.3% of total participants thought that their quality of life is poor or very poor respectively due to dysmenorrhea.

Table 2: Impact of dysmenorrhea (n= 318)

IMPACT OF DYSMENORRHEA	NO OF RESPONDENTS (n)	% AMONG TOTAL PARTICIPANTS
Used to take leave from college		
Yes	153	38.3
No	165	41.3
Able to carry out daily activities		
Always	34	8.5
Occasionally	244	61
No	40	10
With drawn from friends / family		
Yes	105	26.3
No	213	53.3
Quality of life		
Good	80	20
Poor	201	50.3
Very poor	37	9.3
Able to prepare for test/exam		
Yes	170	42.5
No	148	37
Able to do physical activities		
Yes	142	35.5
No	176	44

Discussion

The findings of this study revealed that the prevalence of dysmenorrhea was high (79.5%). However, it is comparable to the reported values in researches conducted in other countries. Similar results were observed in Japanese college students, participants with around 79% have experienced pain in menstruation phase (15). A systematic review which included 38 studies conducted in countries having low, middle and high income, showed the prevalence of dysmenorrhea as high as 71.1% (16). A study conducted in India among Pharma students of similar age group revealed prevalence of dysmenorrhea as 82% (17). Although pain is subjective feeling, most of the participants of this study reported the intensity of pain as moderate or severe. Mild pain was reported by 26(6.5%), moderate pain by 127(31.8%) and severe pain by 165(41.2%) participants. Another study conducted

among Spanish female university students described prevalence of dysmenorrhea as 74.8% with 38.3% participants having severe menstrual pain and 58% having moderate pain. In both studies, majority of participants described intensity of their pain as moderate or severe (18).

Dysmenorrhea was more common in respondents aged 22-25 years. Similar findings were revealed in another study conducted among Egyptian females aged 12-25 years. Researchers mentioned that increased age was of the most potential risk factors for dysmenorrhea (19).

This study reflected that being unmarried or single is an associated factor of dysmenorrhea. Results of study at Benin also found that single women were 1.3 times more likely to have dysmenorrhea (20).

Results of the study reflected that participants who bleed for 4-7 days showed highest prevalence of dysmenorrhea. In a study conducted in India, girls having menstrual flow for more than 5 days had 1.9 times more chance of having dysmenorrhea (21).

High prevalence of dysmenorrhea was observed in respondents who had menarche before 14 years of age. Heba et al also concluded that in Palestinian university students, dysmenorrhea was significantly associated with menarche below 14 years of age (22).

Most of the participants who had regular cycles reported dysmenorrhea. This finding was similar to a study conducted among medical students of South India which showed higher percentage of participants (82.7%) having regular cycles reported dysmenorrhea. Moreover, available scientific knowledge suggests that dysmenorrhea is more common in ovulatory cycles which are usually regular (23).

This study reflected there is no significant association between positive family history and dysmenorrhea. Findings of another study conducted among female students at Kuwait are different. Respondents having positive family history of dysmenorrhea, had higher odds of having dysmenorrhea (24). Some researchers have suggested that women with a family history of dysmenorrhea can experience menstrual pain due to behavior learned from their mothers and sisters (18).

Majority of participants used combinations of remedies to relieve pain. Alone or in combination with other remedies, taking rest (41.9%) was the most commonly used remedy. The other remedies used to relieve pain were heating pad along with analgesics, home remedies, homeopathic medicine, exercise, hot liquids like tea & coffee and pharmaceutical medicine. Results of a research conducted in India also described different

approaches to relieve pain such as rest by 38%, over the counter medication 6.1%, use of heating pad 17.6%, exercise 1.8% and special food and drink 8.5% (25).

Dysmenorrhea has great impact on educational activities and daily routine of females. In this study 38.3% participants used to take leave from college due to dysmenorrhea. About two third participants were facing difficulty to carryout daily activities. The results are comparable to a study conducted in Saudi Arabia which showed that 38.9% of the respondents reported that they restrict daily activities while 44.9% restrict social activities during their menstrual period and about class attendance of 34 % was affected (26).

In current study, a significant percentage of participants (26.3%) reported social withdrawal due to dysmenorrhea. Results of another study conducted in Turkey showed percentage of social withdrawal was 36.7%. Life style and degree of social and personal stress can be regarded as potential reasons for this variation (27).

Dysmenorrhea negatively affects quality of life. Most of the respondents reported poor or very poor quality of life due to pain during menstruation. Researchers in a study conducted in Riyadh, Saudi Arabia also described that dysmenorrhea had a negative effect on quality of life (28).

Conclusion

Prevalence of dysmenorrhea was 79.5%. Statistically significant association was found between dysmenorrhea and participant age, marital status, family income, age of menarche, days of bleeding and regularity of cycle. Majority of participants used combinations of remedies to relieve pain. Alone or in combination with other remedies, taking rest was the most commonly used remedy to relieve pain. Dysmenorrhea negatively affected quality of life. Impact of dysmenorrhea included social withdrawal, inability to prepare for exam, difficulty to carryout daily activities and leave from college. In young female medical students, moderate to severe dysmenorrhea that affects their routine, academic and professional activities, requires professional attention and proper diagnosis of possible underlying pelvic disease. Knowledge about magnitude of this health issue, its impact and associated factors will help health care providers to accurately diagnose and manage dysmenorrhea. Information and awareness are required to optimize the use of existing management practices.

Acknowledgments:

The authors are thankful to Momal Khan and Asma Akif for their support and facilitation.

Source of funding:

None

Conflict of Interest:

No conflict of interest to be declared.

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