

Frequency of dysmenorrhea and premenstrual syndrome, its impact on quality of life and management approach among medical university students

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Abstract

Objective: To determine the frequency of dysmenorrhea and premenstrual syndrome, its impact on quality of life and management approach among medical university students.

Study design: Cross sectional study

Place and duration of the study: Hamdard University Hospital, Karachi from Feb 2015 to Jan 2016.

Methodology: A total of 335 students aged between 18-24 years were participated in the study by filling self-administered questionnaire to collect data regarding menstrual cycle and associated specified premenstrual symptoms and dysmenorrhea. Data were analysed on a SPSS version 20.

Results: 335 students had mean age of 21.7 + 1.12 years. Prevalence of PMS was 98.2%. Among them 212 (63%) had mild PMS, 83 (25%) had moderate and 34 (10%) had severe PMS. The order of frequency of symptoms were abdominal cramps, body pain, abdominal bloating, weakness in physical symptoms and mood swings, irritability, aggression and fatigue in psychological symptoms with great impairment in social life / activities and work efficiency/productivity. Dysmenorrhea was prevalent with 190 (58%), out of them 75 (39.5%) reported mild pain, while 74 (38.9), and 41 (21.6) moderate and severe dysmenorrhea respectively. Among the participants 130 (38%) used Panadol and 40 (12%) used NSAIDS as a treatment and according the data 248 (74%) students reported that they used home remedies (like hot drinks, massage or both) along with medical treatment to relieve from the PMS.

Conclusion: Dysmenorrhea and PMS are a common condition in young women and have a significant impact on quality of life, which is directly proportional to the severity of symptoms. PMS are very common in young girls with primary dysmenorrhea. Primary care doctors may play a role regarding reassurance of dysmenorrhea as well as giving information about PMS that can help them in coping with their symptoms. Health education programme for effective treatment from medical practitioners could help those whose symptoms were not improved by self-management.

Key words: Pre menstrual syndrome (PMS), body mass index (BMI), dysmenorrhea, quality of life.

Introduction:

PMS is a complex condition that ranges from mild-to-severe form of physical and psychological symptoms.¹ PMS is used to describe physical, cognitive, affective, and behavioural symptoms that occur periodically during the luteal phase of the menstrual cycle and resolve quickly at or within a few days of the onset of menstruation.² Although it has been estimated that upto 90% of women in reproductive age

experience some degree of premenstrual symptoms, the diagnosis of PMS is assigned to those women whose lives are significantly affected by moderate to severe symptoms.¹ PMS is defined in the Tenth Revision of the International Classification of Disease (ICD-10): as occurrence of one premenstrual symptom in a list of symptoms which include mild psychological discomfort, feelings of bloating and weight gain, breast tenderness, swelling of hands and feet, various

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aches and pains, poor concentration, sleep disturbances and changes in appetite, occurring specifically during the luteal phase of the menstrual cycle and which resolve in the follicular phase at least by the end of menstruation.³ Premenstrual dysphoric disorder (PMDD) is the extreme, predominantly psychological end of the PMS spectrum estimated to occur in 3-5% of women.⁴ Although various etiologies of premenstrual syndrome such as elevated prolactin levels, hypoglycemia or vitamin deficiencies have been proposed, none of these theories has been definitively proven.⁵ In young adolescents symptoms might particularly affect school functions, and social interactions in a negative way.⁶ Women with severe symptoms usually report impairment in their interpersonal or workplace functioning.⁷ Although the true prevalence of premenstrual disorders is unknown, based on the various diagnostic criteria, the reports of the incidence of PMS vary from 0% to 60%.⁷ Dysmenorrhoea is defined as uterine cramps in the lower abdomen, occurring just before and/or during menstruation, with variations among different females.⁸ It is the release of prostaglandins in the menstrual blood that leads to uterine contractions and causes pain of dysmenorrhoea.⁸ Dysmenorrhea is a significant problem, particularly affecting young women and worthy of study. The most prevalent menstrual disorders among adolescents are excessive uterine bleeding, dysmenorrhea and premenstrual syndrome. Dysmenorrhea, usually of the primary type, is a common symptom and a common cause of school absenteeism among adolescents.^{9,10}

The prevalence of dysmenorrhoea varies widely from country to country. Studies of university students showed its prevalence to be 64% in Nigeria¹¹ and Mexico,¹² 84% in Thailand,¹³ 88% in Turkey,¹⁴ and 93% in Taiwan.¹⁵ In a local study on medical students dysmenorrhoea was reported in 76%, of these 62.43% had primary and 13.19% had secondary dysmenorrhoea.¹⁶ Dysmenorrhea is a common problem among young women, and significantly affect their daily routine work. 65% of women reported limitation in daily activities and 42% reported absenteeism, in a study from Mexico.¹² In another study, 64%

women had reported low concentration in class.¹³ A young woman utilizes different management approaches to cope up their dysmenorrhoea. According to one study, 62% of university students with dysmenorrhoea self-medicated while 26% consulted physicians.¹² A study from US¹⁴ showed that apart from medication, all adolescent girls used nonpharmacological remedies such as sleeping and heat application to soothe pains due to dysmenorrhoea. Approaches to deal with dysmenorrhoea differ in different cultures.

PMS is not life threatening but it can interfere with the productivity of women by affecting their quality of life and mental health, so there is a rising trend noted in number of women seeking treatment for PMS.^{17,19} Hence our study aimed to determine the frequency of dysmenorrhea and premenstrual syndrome, their impact on quality of life in young female medical students as well as management strategies adopted by them. By knowing these information we can help them in coping up with their symptoms by arranging health educational activities for giving awareness about both conditions as well as modifying the pre existing health education programme to improve the quality of their lives.

Materials and Methods: This cross-sectional study was conducted at Hamdard University Hospital, Karachi from Feb 2015 to Jan 2016, using a self-administered questionnaire. The non probability convenient sampling was used for distributing the questionnaire to the individual participants. Approval from the Ethics Review Committee (ERC) of the university was obtained, and a written consent was taken from the participants.

Inclusion criteria were:

- 1) Unmarried girl aged 19-24 years
- 2) Had a regular menstrual period for the last six consecutive months

Exclusion criteria were:

- 1) Irregular menstrual cycle

Table 1: Grading of Physical and Psychological Symptoms of PMS

Description	Mild n (%)	Moderate n (%)	Severe n (%)	Total n (%)
Physical Symptoms				
Abdominal bloating	164 (49.0)	58 (17.3)	0(0.0)	222 (66.2)
Breast tenderness	101 (30.1)	40 (11.9)	0 (0.0)	141 (42.0)
Generalized body pain	164 (49.0)	78 (23.3)	20 (6.0)	262 (78.2)
Headache	78 (23.3)	62 (18.5)	30 (9.0)	170 (50.7)
Abdominal cramps	161 (48.1)	83 (24.8)	38 (11.3)	282 (84.1)
Weakness	144 (43.0)	71 (21.2)	25 (7.5)	240 (71.6)
Vomiting	56 (16.7)	0 (0.0)	0 (0.0)	56 (16.7)
Weight gain	34 (10.1)	16 (4.8)	0 (0.0)	50 (14.9)
Oedema	49 (14.6)	9 (2.7)	0 (0.0)	58 (17.3)
Psychological Symptoms				
Depression	124 (37.0)	22 (6.6)	23 (6.9)	169 (50.4)
Irritability	173 (51.6)	65 (19.4)	28 (8.4)	266 (79.4)
Mood swings	163 (48.7)	103 (30.7)	42 (12.5)	308 (91.9)
Aggression	109 (32.5)	85 (25.4)	67 (20.0)	261 (77.9)
Lethargic/fatigued	133 (39.7)	71 (21.2)	30 (9.0)	234 (69.8)
Inability to cope	108 (32.2)	13 (3.9)	30 (9.0)	151 (45.0)
Feeling out of control	77 (23.0)	35 (10.4)	0 (0.0)	112 (33.4)
Increased appetite/overate	121 (36.1)	23 (6.9)	0 (0.0)	144 (42.9)

Table 2: Impact of Dysmenorrhea and Premenstrual syndrome on quality of life

Description	Dysmenorrhea			P Value	Pre-menstrual syndrome
Abstinence from college	22 (40.0)	33 (44.6)	20 (48.8)	0.688	101 (30%)
Abstinence from class	22 (40.0)	15 (20.3)	20 (48.8)	0.004	118 (35.2%)
Unable to study	22 (40.0)	33 (44.6)	41 (100)	<0.0001	170 (51%)
Lack of concentrate	36 (65.5)	33 (44.6)	41 (100)	<0.0001	197 (59%)
Lack of sleep	34 (45.3)	43 (58.1)	20 (48.8)	0.281	187 (55.8%)
Decrease appetite	17 (30.9)	15 (20.3)	20 (48.8)	0.006	83 (24.8%)
Social isolation	22 (40.0)	53 (71.6)	20 (48.8)	0.001	149 (44.5%)

2) History of medical and psychiatric disorders

Information regarding participants' age, age at menarche, menstrual cycle regularity, amount of blood loss and pain severity was collected. Blood loss is described as mild (below average), moderate and heavy if associated with clots. Pain severity was graded as mild, moderate and

severe. Participants were also requested to fill the proforma based on Daily Record of Severity of Problems (DRSP)18 for their recurrent experience of symptoms during the premenstrual phase that subside with onset of menstruation. Psychological symptoms of depression, irritability, mood swings, aggression, lethargic/fatigued, inability to cope, feeling out of control and increase in appetite/ overate are recorded, along with physical symptoms such as abdominal bloating, breast tenderness, generalized body pain, headaches, abdominal cramps, weakness, vomiting, weight gain and oedema. Diagnosis of PMS was made according to ICD-10 symptoms check list and Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) was used to diagnose PMDD. Data were analyzed using the Statistical Package for the Social Sciences (SPSS version 20). Summary tables and figures were used for descriptive purpose. Chi-square (X²) test was performed to investigate the association between premenstrual symptoms with characteristics of participants. Findings with p value <0.05 were considered to be statistically significant.

Operational definitions:

Mild symptoms: Symptoms as minor as not interfering routine daily activities

Moderate symptoms: Symptoms interfering routine daily activities

Severe symptoms: Symptoms hindering participation in any activity

Results:

Study sample comprised of 360 students, out of them 335 returned the questionnaires completed in all respects. Participants mean age was 21.7+ 1.12 years, 78.5% participants were with normal BMI, 11.60% were overweight and 9.90% were underweight. Prevalence of PMS was found 98.2%, among them mild PMS was found in 212 (63%) students, moderate and severe PMS was 83 (25%) and 34 (10%) respectively. 219(65.4%) students experienced bleeding for 3-5 days and 116(34%) for 6-7 days.

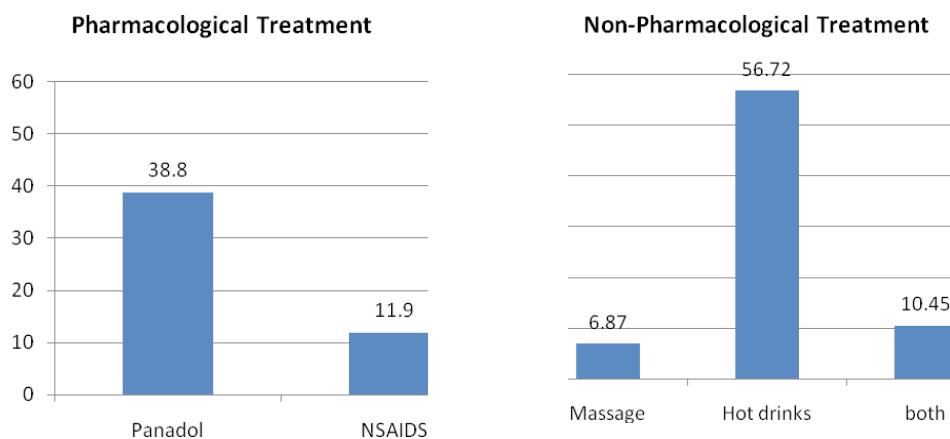


Fig.1: Reported treatment of Premenstrual Syndrome

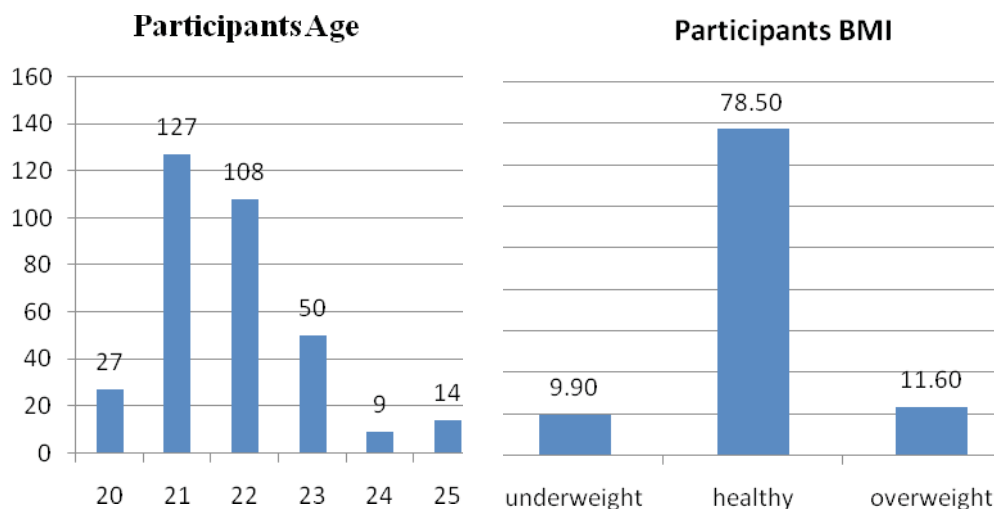


Fig.2: Age and BMI distribution of participants

Majority of the students 277 (82.7%) had normal flow while scanty, moderate and heavy flow reported by 21 (6.3%), 24 (7.2%) and 13 (3.9%) students respectively. Dysmenorrhea was prevalent with 190 (58%), mild pain reported in 75 (39.5%), while 74 (38.9%) and 41 (21.6%) reported moderate to severe dysmenorrhea respectively. Among the participants 130 (38%) used Panadol and 40 (12%) used NSAIDS as a treatment. And according to the data 248 (74%) students reported that they used home remedies (like hot drinks, massage or both) along with medical treatment to relieve from the PMS (figure I and II).

Table I shows the prevalence of each premen-

strual symptoms according to severity. Abdominal cramps, body pain, abdominal bloating, weakness, headache were the common physical symptoms and mood swings, irritability, aggression and fatigue were the common psychological symptoms. Prevalence of abdominal cramps was rated from moderate to severe by 83 (24.8%) and 38 (11.3%) respectively. And mood swings was rated from moderate to severe by 103 (30.7%) and 42 (12.5%) students.

Table II shows the impact of dysmenorrhea and premenstrual syndrome on quality of life. Unable to study and lack of concentration was rated moderate to severe by 33 (44.6%) and 41 (100%) respectively ($P < 0.0001$), and social iso-

lation was rated from moderate 53 (71.6%) to severe in 20 (48.8%) students ($P = 0.001$).

Discussion:

Pre-menstrual syndrome and dysmenorrhoea are the commonest gynaecologic disorders among female adolescents. Data on the frequency of menstrual dysfunction and its impact on health status, quality of life and social integration among women in developing countries are scant. The lack of data and the private nature of menstruation perpetuate the belief that menstrual complaints do not warrant the attention of the public health community.²⁸

In our study of 335 students the mean age was 21.7+ 1.12 years. Prevalence of PMS was 98.2%. Mild PMS was found in 212 (63%) students, while moderate and severe PMS was 83 (25%) and 34 (10%) respectively. These findings were comparable to the study conducted in Egypt¹⁹ and Saudi Arabia²⁰, who reported 80% and 96.6% prevalence of PMS respectively. Whereas another study by Fikru and Mebratu²¹ from Ethiopia reported low prevalence of PMS upto 37.2%, similarly Serfaty et al²² and Dean et al²³ reported 35% and 30% respectively. These wide differences in prevalence might be due to geographical variation, sampling techniques and type of study population.

In current study, the most common physical symptoms were abdominal cramps (84%), body pain (78%), abdominal bloating (66%) while mood swings (91.9%), irritability (79.4%) and aggression (77.9%) were the most common psychological symptoms. These findings are consistent with the study by Parveen et al¹⁶, who observed abdominal cramps (63%) and irritability (61%) as the most common physical and psychological symptom respectively, similarly Magdy²⁴ reported abdominal bloating as the most frequent symptom. Moreover, Haifa and Khalid reported the most common symptoms were fatigue and mood swings at 72.9% and 72.3% respectively²⁵. These differences in frequencies of symptoms might be due to the difference in level of stress, BMI and dietary habits of students.

PMS significantly affects the quality of life of participants. In our study, 197 (59%) participants indicated that pre menstrual syndrome limited their class concentration, lack of sleep in 187 (55.8%), unable to study 170 (50.7%), social isolation 149 (44.5%) and class participation 118 (35%). Magdy²⁴ from Saudi Arabia and CF Chia²⁶ from Hong Kong reported the similar impact of PMS on quality of life.

Dysmenorrhea is also the most common gynaecologic disorder among female adolescents, with a prevalence of 60% to 93%.²⁷⁻²⁸ In current study, Dysmenorrhea was prevalent with 190 (58%) out of them, 75 (39.5%) reported mild pain, while 74 (38.9%) and 41 (21.6%) reported moderate to severe dysmenorrhea respectively. Among participants, 55.8% indicated that dysmenorrhea limited their work concentration, 51.6% reported lack of sleep and 63.8% reported social isolation. The rate of unable to study was 100% among participants reporting severe menstrual pain compared with 40% among those with mild menstrual pain. The severity of dysmenorrhoea varied greatly. These differences in the degree of pain severity may be related to cultural differences in pain perception and variability in pain threshold.

Treatment of dysmenorrhoea and PMS should be directed at providing relief from the cramping pelvic pain and associated symptoms. Non-steroidal anti-inflammatory drugs and oral contraceptives are reported as providing the most effective treatment.²⁹ The use of oral contraceptives by unmarried girls is, however, culturally unacceptable in our traditional and conservative community. In our study, 170 (51%) of the students were self medicated, among them 130 (76%) used Panadol and 40 (24%) used NSAIDs, while 74% of students availed both home remedies and self medication. There were only 11 (3.3%) of our student consulted to physician for their pain relief. This might be due to fear of seeking medical advice or cultural beliefs or they might consider it as a normal part of their menstrual cycle.²¹

The common type of treatment used by partici-

pants of Thailand study²⁹ was 82.9% mefenamic acid and 66.7% paracetamol for their pain relief. Another study by fikru showed that 48% students were self medicated, 36.4% used simple analgesics and 7.5% used home remedies.²¹ Although not life threatening, dysmenorrhoea can be particularly disruptive to a woman's daily life and productivity. In the absence of appropriate pain relief, women with severe dysmenorrhoea may not be able to carry out their normal activities.³⁰

Conclusion:

Dysmenorrhea and PMS are a common condition in young women and have a significant impact on quality of life, which is directly proportional to the severity of symptoms. Premenstrual symptoms are very common in young girls with primary dysmenorrhea. Primary care doctors may play a role regarding reassurance of dysmenorrhea as well as giving information about PMS that can help them in coping with their symptoms. Health education programme for effective treatment from medical practitioners could help those whose symptoms were not improved by self management.

Role and contribution of Authors:

Dr Seema Ghani, Senior Registrar, Gynae/Obs, Hamdard College of Medicine & Dentistry, Hamdard University Hospital, wrote the initial write up and collected the data.

Dr Tehmina Parveen, Assistant Professor, Gyane/Obs, Hamdard College of Medicine & Dentistry, Hamdard University Hospital, went through whole article and give the final touches.

Conflict of Interest: None

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