

Association of Dysmenorrhea with Premenstrual Dysphoric Disorder and the Management Strategies Used by Medical Students

Nowera Zafar¹, Raana Zafar², Sheema Afzal¹

¹4th year MBBS student, Rawalpindi Medical University

²House Officer, Holy Family Hospital

Abstract

Background: The objective of the study was to evaluate the frequency of dysmenorrhea, its association with PMDD and various lifestyle factors, and the management strategies adopted by female medical students of Rawalpindi Medical University.

Methods: A cross sectional study was conducted on 380 female students aged 18-25 years, with regular cycles and no diagnosed uterine/extra uterine disorder. Data were collected about age, BMI, age of menarche, duration of menstrual flow, severity of pain, associated symptoms, interference with daily activities and the management strategies adopted.

Results: 56.3% of the respondents had dysmenorrhea. Mean values were; for age of study population= 20.39±1.55, for BMI=20.87±3.25, for age of menarche=12.93. 79.4% had primary and 20.6% had secondary dysmenorrhea. 69.6% of those with dysmenorrhea had duration of flow between 4-6 days. 47.14% reported their pain from 4-6 on Wong Baker FACES Pain Rating Scale. Pain increased in 39.7%, settled in 37.4% and decreased in 22.9%. 34.6% reported the first day of menstruation to be painful.

27.6% of the total, and 40.2% of respondents with dysmenorrhea presented with PMDD (p=0.00). A statistically significant association of dysmenorrhea was found with fatigue (p=0.00) while none was observed with junk food consumption (p=0.836), water usage (p=0.924) and daily level of activity (p=0.094). Common management strategies were pain killers (59.3%), warm fluids (42.5%), eggs (39.3%), hot-water bottles (26.6%) and heating pads (15%).

Conclusion: Dysmenorrhea is quite a usual finding in majority of the female students. A statistically significant association is found with fatigue and PMDD, in contrast to that with junk food eating and bathing. Dysmenorrhea influences

life significantly and thus requires appropriate management.

Keyword: dysmenorrhea, menstrual cramps, pain, menstruation, premenstrual dysphoric disorder, management

Introduction

Dysmenorrhea is the name for sharp, intermittent painful menstrual cramps of uterine origin, which are located in the supra pubic area and may radiate to lower back¹. There are mainly two types; primary dysmenorrhea and secondary dysmenorrhea². Primary dysmenorrhea usually occurs within 3 years of menarche and is not associated with a pelvic pathology as opposed to secondary dysmenorrhea^{2,3}. Women with dysmenorrhea often require leave of absence from work, and medication⁴. Thus, it can have a significant impact on the quality of life of females. However, there is a social taboo regarding this particular issue⁵. And despite suffering, many females are hesitant to discuss the problem or seek proper consultation and treatment from a physician. Moreover, it is generally believed in our society that factors such as bathing and junk food consumption influence menstrual cramps. Especially, there is a common belief, without being supported by any scientific evidence whatsoever, that taking baths, during the first three days of menstruation, can aggravate and worsen the condition. Menstrual hygiene is very important since negligence in this matter can become a source of infections⁶. Therefore, this research was conducted with the intention of finding out that how much truth lies behind such assumptions. The prevalence of dysmenorrhea varies in different regions of the world, greatly varying between 16% to 85%^{7,8,9}, and in a study done in Pakistan in 2014, the prevalence came out to be 56.1%¹⁰. This percentage is significant enough to not be ignored and should be addressed properly.

Premenstrual dysphoric disorder is characterized mainly by depressed mood, irritability, tension and changes in appetite and sleep, in the week before menstruation. PMDD can significantly interfere with social activities and relationships¹¹. Discomfort associated with PMDD and dysmenorrhea can influence women's reactions to daily events. This research aims towards finding out the association between the two. Moreover, medical students, who are considered to be better equipped with knowledge and understanding about diseases, might have a different approach in the management of dysmenorrhea as compared to those unrelated to the medical field.

The objectives of this research are to determine the frequency of dysmenorrhea, to find out its association with premenstrual dysphoric disorder and with factors such as fatigue, junk food consumption, bathing and daily level of activity, and to find out the management strategies adopted by the female medical students of Rawalpindi Medical University. The findings of this research will prompt young suffering females to seek medical and psychological treatment, and consultation.

Materials and Methods

A cross sectional study was conducted on 380 female students of Rawalpindi Medical University. The sample size was calculated using WHO calculator, by keeping confidence level 95% and absolute precision of 0.05, with the anticipated population proportion being 0.561. Convenience sampling technique was used as subjects were randomly selected from 1st to final year MBBS female students. The study duration was two months, from January 2017 to February 2017. The inclusion criteria was that the female students of Rawalpindi Medical University must have their ages in the range of 18 to 25 years, they should have regular menstrual cycles and they should not be a diagnosed case of uterine or extrauterine disorder. Approval was taken from the ethical committee of RMC (Institutional Research Forum). After informed consent was obtained from the participants, structured questionnaires were distributed among them. Data was collected about age (in years), weight (in kilograms), height (in centimeters), academic year, age since which the pain started, pattern of pain, severity of pain, and associated symptoms of nausea, vomiting, diarrhoea and headache. They were also questioned if the pain interfered with their work, relationships, daily activities, and if it usually was the

cause of absenteeism. The study population was also inquired about fatigue during menstruation, junk food consumption, using water for bathing purposes especially during the first three days of menstruation, daily level of activity, and the management strategies adopted by them to manage the pain. The severity of the pain was estimated using Wong-Baker FACES Pain Rating Scale. DSM IV criteria for the diagnosis of Premenstrual Dysphoric Disorder (PMDD) was used. Data was entered and analyzed using SPSS version 22. Descriptive frequencies were calculated and Chi Square test was applied to assess statistical significance of various factors with dysmenorrhea.

Results

Out of the total 380 respondents, 214 suffered from dysmenorrhea i.e. 56.3%, and out of these 214, 79.4% were suffering from primary, while 20.6% were suffering from secondary dysmenorrhea. This classification was made on the basis of onset of pain; if the onset had been within 3 years of menarche, it was labelled as primary and if the onset was after 3 years of menarche, it was classified as secondary. The mean age of study population was 20.39±1.55, the mean BMI was 20.87±3.25 while the mean age of menarche was 12.93±1.196. 71% of the participants who were suffering from dysmenorrhea reported absenteeism from University. 44.4% said they experienced symptoms of nausea, vomiting, diarrhoea and headache. According to 34.6%, the first day of menstruation proved to be the most painful. 47.14% rated their pain in the range of 4-6 on the Wong Baker FACES Pain rating scale, 33.17% in the range of 7-10 and 19.69% in the range of 0-3. For 69.6%, the duration of menstrual flow was 4-6 days. For 2.8%, it was for 1-3 days and for 27.6%, it was ≥7 days. The pain had increased with the passage of time in 39.7%, decreased in 22.9% and settled in 37.4%. TABLE I shows the statistical association of dysmenorrhea with fatigue, junk food consumption, bathing during menstruation and PMDD. P value < 0.05 was considered to be statistically significant. TABLE II: shows the results of association between daily level of activity and dysmenorrhea and the results were not statistically significant.

A statistically significant association was found between dysmenorrhea and fatigue during menstruation (p=0.00). No significant association was observed with junk food consumption (>3 days/week) (p=0.836), with bathing in the first 3 days (p=0.924) and with daily level of activity (p=0.094). 27.6% of the total, and 40.2% of those who had dysmenorrhea

presented with PMDD ($p=0.00$), thus showing strong association between dysmenorrhea and PMDD.

The common management strategies adopted were the use of pain killers (59.3%), warm fluids intake (42.5%), eating eggs (39.3%), hot water bottles (26.6%) and electric heating pads (15%). These are shown in Figure-I.

Table-1 : Stastical Association of Dysmenorrhea with fatigue, junk food consumption, bathing and PMDD

VARIABLES	No. of CASES		WITH	WITHOUT	P VALUE
			DYSMENORRHEA	DYSMENORRHEA	
Fatigue	247	(65%)	77.1%	49.4%	0.00*
Junk food consumption (>3 days/week)	304	(80%)	80.4%	79.5%	0.836
Bathing	221	(58.2%)	57.9%	58.4%	0.924
PMDD	105	(27.6%)	40.2%	11.4%	0.00*

P value < 0.05 is statistically significant.

Tables II: Statistical Association Of Dysmenorrhea With Daily Level Of Activity

DAILY LEVEL OF ACTIVITY	WITH DYSMENORRHEA	WITHOUT DYSMENORRHEA	P VALUE
Sedentary	51.9%	41.6%	
Moderately active	43%	54.2%	0.094
Vigorousl y Active	5.1%	4.2%	

P value < 0.05 is statistically significant.



Figure- 1: Management Strategies For Dysmenorrhea Adopted By Female Students Of RMC

Discussion

The results of this study show that the incidence of dysmenorrhea in our young female population is quite significant. Among our study population of 380,

214 i.e. 56.3% were suffering from dysmenorrhea. A study that was carried out in Mirpur, Azad Kashmir showed this prevalence to be 56.1%¹⁰, and in a study in Saudi Arabia, it was found out to be 74.4⁹. It was as low as 16% in a Japanese study and as high as 92.5% in a study done in Taiwan¹². The variation in results in different areas may be due to the variety of definitions of dysmenorrhea, different study populations and data collection methods. 71% of those who were suffering from dysmenorrhea reported absenteeism from college in this study. In a study in Saudi Arabia on adolescent school girls, absenteeism due to dysmenorrhea was observed in 59.4%⁹. However, in a research conducted on medical students in Hong Kong, the result was only 11%¹³. In Pakistan, this percentage seems to be quite high in comparison. 44.4% experienced associated symptoms of nausea, vomiting, diarrhoea and headache and in 47.14%, the severity of the pain was in the range of 4-6. Thus, the study shows that a majority of young girls are affected by dysmenorrhea; it significantly influences attendance which may limit their academic performance. This stresses that dysmenorrhea should not be ignored and discussion on this topic should not be considered as a social taboo.

In this study, 42.1% were not taking a bath during their menstruation days. A study done in Karachi showed that 50% of the females refrained from taking a bath during the days of menstruation¹⁴. However, our study also shows that no statistically significant association exists between bathing and dysmenorrhea ($P=0.924$). A large number of our female population believes that using water for bathing purposes during menstruation can be harmful. This study denies those claims and there has been no previous documented study to refute this myth on a scientific basis. It is important to educate young girls about menstrual hygiene since unhygienic practices give rise to infectious conditions. This study also shows that the association with junk food consumption is also not significant ($P=0.836$). A study in India shows similar results ($P=0.89$)¹⁵.

In our study, prevalence of PMDD was found out to be 27.6%. In a study done in Peshawar, also on medical students, this prevalence was 18.2%¹⁶. However, a study done on general population showed this percentage to be 2-5%¹⁷. In a study done in Japan on university students from a nonmedical background, a strong association was also found ($p 0.000$)¹⁸. Higher incidence of PMDD in university students may point towards the possibility of greater stress and anxiety levels. There was a strong statistical

association between PMDD and dysmenorrhea with the P value=0.00). Another study in Pakistan that assessed association between PMS and dysmenorrhea also showed significant results (P=0.003)¹⁹. These results signify that greater stress and mental tension in university students has a relation to the pain experienced during menstruation.

Our study that was conducted exclusively on medical students showed that the most popular method of management adopted by them was pharmacological self-treatment (in 59.3%). In a study done in India which was conducted on females belonging to a non-medical background, the usage of non-pharmacological methods was greater i.e. 83.2%, while analgesics were used by only 25.5%²⁰. Greater medical knowledge in a population comprising of medical students may have influenced their preferences in the management strategy. Proper guidelines must be provided for the management of dysmenorrhea and PMDD. The limitations of our study were that we could not exclude the undiagnosed cases of uterine or extra uterine disorder.

References

1. Proctor M, Farquhar C. Diagnosis and management of dysmenorrhea. *BMJ* 2006;332(7550): 1134-1138.
2. Banikarim C, Chacko MR, Kelder SH. Prevalence and impact of dysmenorrhea on Hispanic female adolescents. *J Arch Pediatr Adolesc Med* 2000;154: 1226-1229.
3. Smith RF. *Gynecology in primary care*. Baltimore: Williams & Wilkins, 1997:389-404.
4. Jarrett M. et al. "Symptoms and self Care Strategies in Women with and without Dysmenorrhea". *Health Care Women Int* 1995;16(2); 167-178.
5. Lihemo G, Hafeez-Ur-Rehman H. Amplifying youth voices to tackle myths and taboos surrounding menstrual hygiene in Pakistan [Internet]. Stories of UNICEF Innovation. Global Innovation Centre. Available from: <http://unicefstories.org/2017/04/17/amplifying-youth-voices-to-tackle-myths-and-taboos-surrounding-menstrual-hygiene-in-pakistan/> [accessed 10th July 2017].
6. Poureslami, Mohammad and Osati-Ashtiani, Farzaneh (2002). Assessing Knowledge, Attitudes, and Behavior of Adolescent Girls in Suburban Districts of Tehran About Dysmenorrhea and Menstrual Hygiene. *Journal of International Women's Studies* 2002;3(2): 51-61.
7. Ohde S, Tokuda Y, Takahashi O, Yanai H, Hinohara S, Fukui T. Dysmenorrhea among Japanese women. *Obstet Gynecology Int J* 2007; 100(1):13-7.
8. Tangechai K, Titapant V, Boriboonhirunsarn D. Dysmenorrhoea in Thai adolescents: Prevalence, impact and knowledge of treatment. *J Med Assoc Thai* 2004; 87:S69-S73.
9. Abd El-Mawgod MM, Alshaibany AS, Al-Anazi AM. Epidemiology of dysmenorrhea among secondary-school students in Northern Saudi Arabia. *J Egypt Public Health Assoc* 2016; 91(3):115-9.
10. Yasir S, Kant B, Dar MF. Frequency of dysmenorrhoea, its impact and management strategies adopted by medical students. *J Ayub Med Coll* 2014; 26(3):349-52.
11. Hantsoo L, Epperson CL. Premenstrual dysphoric disorder: epidemiology and treatment. *Curr Psychiatry Rep* 2015; 17(11):87.
12. Cheng HF, Lin YH. Selection and efficacy of self-management strategies for dysmenorrhea in young Taiwanese women. *J Clin Nurs* 2011; 20:1018-25.
13. Chia CF, Lai JH, Cheung PK, Kwong LT, Lau FP, Leung KH, et al. Dysmenorrhoea among Hong Kong university students: prevalence, impact, and management. *Hong Kong Med J* 2013; 19:222-8.
14. Ali T, Rizvi S. Menstrual knowledge and practices of female adolescents in urban Karachi, Pakistan. *Journal of Adolescence* 2010; 33(4):531-541.
15. Singh A, Kiran D, Singh H, Nel B, Singh P, Tiwari P. Prevalence and severity of dysmenorrhea : a problem related to menstruation, among first and second year female medical students. *Indian J Physiol Pharmacol* 2008; 5(4):389-97.
16. Tabassum S, Afridi B, Aman Z, Tabassum W, Durrani R. Premenstrual syndrome: frequency and severity in young college girls. *J Pak Med Assoc* 2005; 55(12):546-9.
17. Epperson CL, Steiner M, Hartlage SA, Eriksson E, Schmidt PJ, Jones I, et al. Premenstrual Dysphoric Disorder: Evidence for a New Category for DSM-5. *Am J Psychiatry*. 2012; 169(5): 465-75.
18. Sahin S, Ozdemir K, Unsal A. Evaluation of premenstrual syndrome and quality of life in university students. *J Pak Med Assoc* 2014; 64: 915-922.
19. Nisar N, Zehra N, Haider G, Munir AA, Sohoo NA. Frequency, intensity and impact of premenstrual syndrome in medical students. *J Coll Physicians Surg Pak* 2008; 18(8):481-4.
20. Omidvar S, Bakouei F, Amiri FA, Begu K. Primary dysmenorrhea and menstrual symptoms in Indian female students: prevalence, impact and management. *Glob J Health Sci* 2016;8(8): 135-44.