

Current Status of the Problems Related to Menstruation among Bengali College Students

Dr. Subhra Basak

Asst. Professor (WBES), S.I.P.E.W., Hastings' House, Alipore, Kolkata-27, W.B., India

Abstract: To determine the status and problems related to menstrual cycle in the Bengali college students and to evaluate its effect on their daily routine.

Methods: A cross-sectional survey of 875 students conducted by questionnaire at 4 different general degree colleges in West Bengal. Questions related to menstruation, elucidated variation in menstrual patterns like length of cycle, duration of bleeding period, history of dysmenorrhea and its severity, PMS and absenteeism from college/classes.

Results and conclusion: The mean \pm SD age of the students was 19.1 \pm 1.99 years, the mean age of menarche was 12.07 \pm 0.89 years. A total of 76% (665 out of 875) students suffering from dysmenorrhea and 85.1% (745 out of 875) students have premenstrual symptoms. Dysmenorrhea was mild (grade 1) in 24.91% (249 out of 875), moderate (grade 2) in 43.31% (431 out of 875) of students and severe (grade 3) in 16.91% of students (195 out of 875). 54.63% students with dysmenorrhea reported that they limit their daily activities and 28.11% reported college absenteeism during menstruation. Prevalence of premenstrual symptoms were: somatic complaints such as abdominal bloating(42%), peripheral edema (7.07%), lumbago (74%), headache (34%), general fatigue(82%), vomiting(13.98%), and psychological disorders such as irritability (65%), depression (45%), nervousness (15%), mood swings (32%). Positive correlation had found between dysmenorrhea and obesity, duration of bleeding, amount of blood flow and positive family history. Presence of dysmenorrhea is high in the subjects who did not participated in regular exercise (87.5%).

Keywords: Dysmenorrhea, PMS, BSA, College students.

I. INTRODUCTION

Onset of menstruation, menarche is a part of many adolescence changes, is a very important emotional land mark for every girl. It may be associated with some menstrual problems like dysmenorrhea. This condition is commonly observed between the ages of 15 and 25 years (10). Painful menses or dysmenorrhea affects 40–90% of women. Despite its high prevalence, understanding of its pathophysiology and its relation to other pain syndromes in women is still limited. Various studies in India revealed that prevalence of dysmenorrhea varies from 33% to 79.67% (34) According to studies dysmenorrhea is interrupting their educational and social life.(7). However, the true incidence and prevalence of dysmenorrhea are not clearly established in India. Dysmenorrhea has been historically categorized into two distinct types: primary and secondary. Primary dysmenorrhea is menstrual pain without pelvic pathology, with onset typically just after menarche. Pain in primary dysmenorrhea occurs during menses and lasts 2–3 days.

Secondary dysmenorrhea describes menstrual pain when underlying pathology is identified (such as uterine or ovarian lesions); its onset may be years after menarche. Pain may start 1–2 weeks before menses and persist beyond, lasting several days. Dysmenorrhea is often classified as mild, moderate, or severe based on relative pain intensity, impact on working ability, and requirements for analgesics.(17,5 32). The exact etiology of dysmenorrhea is unknown but it is thought to be caused by release of prostaglandins, which causes uterine contractions and pain. In some studies it is mentioned that it results from hypoxia and ischemia even though vasopressin may also play a role in increasing uterine contractility, causing ischemic pain and elevated levels of vasopressin evaluated in women with primary dysmenorrhea. (24, 11).

Dysmenorrhea is found to be the leading cause of short term school absenteeism from 38 to 45.6% mentioned in different studies, 58.9% reported decreased daily activity & socialization 46%. (5, 32, 41) It not only disturbs their routine but also causes humiliating suffering. It is a common cause for sickness absenteeism from classes and work by the female student community (1). It is a public health problem with its high prevalence suffering, and considerable economic losses (5). Several studies have shown that adolescents with dysmenorrhea report that, it affects their academic performance, social and sports activities (40).

It is usually possible to differentiate dysmenorrhea from premenstrual syndrome (PMS) based on patients history. The pain associated with PMS is generally related to breast tenderness and abdominal bloating rather than a lower abdominal cramping pain. PMS symptoms begin before the menstrual cycle and resolve shortly after menstrual flow begins (4). There are 23 symptoms grouped under four areas, such as, gastrointestinal symptoms (GI), psychological symptoms (PS), eliminational symptoms (ES), and other physical symptoms. The gastrointestinal symptoms are loss of appetite, increased appetite, nausea, vomiting, anorexia, and gaseous distension of abdomen. The psychological symptoms are depression, excitability, irritability, inability to concentrate on work, and nervousness. Elimination symptoms are: constipation, diarrhea, frequency of micturition, and profuse sweating. Other physical symptoms are lethargy and tiredness, headache, sleeplessness, increased sleep, fullness and tenderness of breasts, feeling of heaviness in the lower abdomen, pain and swelling in the ankle and knee joints, and swelling of face.(2). There are some study about selected PMS. The PMS consists of low backache, fatigue, breast heaviness, abdominal bloating, increased weight, headache, irritability, skin disorders, aggressiveness, depression, gastrointestinal symptoms and loss of appetite (36).

The present study was carried out to estimate the prevalence of dysmenorrhea, factors associated with dysmenorrhea and its common symptoms as well as to determine the sickness absenteeism due to dysmenorrhea and to assess the quality of life among the dysmenorrhic girls. This would provide evidence of the severity of the problem in this area. Through this study we are trying to explore the problem faced by female college students during menses and its correlation with biologic variables.

II. BODY OF ARTICLE

MATERIAL AND METHODS:

This observational study was carried out at three different General degree colleges of West Bengal from January to March, 2010. A total 875 students participated. A pre designed questionnaire was administered to the female college students, whose age was between 18 – 25 years. Questions related to menstruation, elucidated variation in menstrual patterns like length of cycle, duration of bleeding period, blood loss per cycle, history of dysmenorrhea and its severity, pre-menstrual symptoms and absenteeism from college/classes. Each participant was given 20 minutes to complete the questionnaire; they were advised not to write their name on the questionnaire and were told that, there responses would remain confidential. To detect the severity of dysmenorrhea we used the Verbal-Multidimensional Scoring System (3). “A normal menstrual cycle lasts from 21 to 35 days; with 2 to 6 days of flow and average blood loose 20 to 60 ml (31)”. In this study dysmenorrhea was defined as having painful menstruation during the previous three months and the degree of pain was categorized as mild, moderate and severe. College absence was defined as missing a half day to complete day of college because of pain during menstruation (5). Regarding the family history, presence of dysmenorrhea in mothers and in sisters was inquired(30) of Pre-menstrual syndrome (PMS) is recurrent variable cluster of trouble some physical and emotional symptoms that develop 7–14 days before the onset of menstruation and subsides when menstruation occurs. In this study only ten selected PMS were chosen. This study included only unmarried nulliparous, healthy female college students, in age group of 18 to 25 years. The participation was purely on voluntarily basis and written consent was taken before initiating the data collection. Data were analyzed by Chi-square test. Statistical significance of differences between groups was tested, P-value was <0.05 i.e., statistically significant.

RESULTS:

In this study 875 participants completed the questionnaire. The mean age of the participants was 19.1±1.99 years. The mean age at menarche was 12.07±0.89 years. Prevalence of dysmenorrhea was 76% of these 16.91% severe (grade 3), 43.31% moderate (grade 2)and 24.91% were mild (grade 1). In 745 participants, 85.1% have PMS. Among the subjects having dysmenorrhea (n=665), following symptoms i.e., General fatigue(81.95%), Lumbago/Backache(73.98%),

Irritability(64.96%), Depression(44.96%), Abdominal bloating(41.95%), headache(33.98%), mood swings(32.03%), Nervousness (15.04%), vomiting (13.98%) and Peripheral edema (7.07%) were reported. In 6.17% subjects, length of cycle was abnormal (2.86% had <20 days and 3.31% had >35 days); 13.94% subjects had abnormal duration of bleeding period; (of these 4% subjects had duration <2 days and 9.94% had >7 days); 49.03% subjects were reported abnormal blood loss per cycle; (of these, 41.94% had little and 7.09% had heavy blood flow). Dysmenorrhea is related significantly with duration of bleeding and amount of blood flow. Among the participants, 28.11% were absent from college, and 54.63% reported social withdrawal & limit daily activities during menstruation. 64% participants did no physical exercise; while 36% have 30 minutes or more outdoor exercise activity. Presence of dysmenorrhea is high in the subjects who did not participated in regular exercise(87.5%). 16.91% subjects were underweight while 11.2% subjects were overweight; in underweight category 77.7 %, while in overweight 91.84% subjects were suffering from dysmenorrhea (P=16.55). Prevalence of dysmenorrhea was significantly more among the girls with family history of dysmenorrhea (64.57%).

TABLE I : MENSTRUAL CYCLE CHARACTERISTICS IN BENGALI COLLEGE STUDENTS

Menstrual cycle characteristics	No. of subjects	% (Percentage)
Length of cycle (days)		
<20 Days	25	2.86
21-35 Days	821	93.83
>35 Days	29	3.31
Amount of blood flow/cycle		
Little (1-4 pads per day)	367	41.94
Moderate (5-10 pads per day)	446	50.97
Heavy (2 pads at a times on first day)	62	7.09
Duration of bleeding (days)		
<2 Days	35	4.00
2-7 Days	752	85.94
>7 Days	87	9.94
Dysmenorrhea		
Yes	665	76
No	210	24
Grade of dysmenorrhea		
Grade0	130	14.86
Grade1	218	24.91
Grade2	379	43.31
Grade3	148	16.91
Premenstrual symptoms (PMS)		
Yes	745	85.14
No	130	14.86
Incidence of circumstances (out of 665)		
Social withdrawal & Limit daily activities	478	54.63
College absenteeism	246	28.11

International Journal of Novel Research in Healthcare and Nursing

Vol. 3, Issue 1, pp: (118-124), Month: January-April 2016, Available at: www.noveltyjournals.com

TABLE II: BODY MASS INDEX WISE DISTRIBUTION OF PARTICIPANTS

Body Mass Index(BMI)	No of subjects	% (Percentage)
Under weight(<18.50)	148	16.91
Average weight(18.50-24.99)	629	71.89
Over weight(>25.00)	98	11.2

TABLE III: FACTORS ASSOCIATED WITH DYSMENORRHOEA

Menstrual Characteristics	Total Frequency	Presence of dysmenorrhoea	
		Yes	No
Body Mass Index(BMI)			
Under weight(<18.50)	148	115(77.7%)	33(22.3%)
Average weight(18.50-24.99)	629	460(73.1%)	169(26.9%)
Over weight(>25.00)	98	90(91.84%)	8(8.16%)
P = 16.55, Significant			
Regularity			
Yes	821	624(66.0%)	197(23.99%)
No	54	41(75.93%)	13(24.07%)
P = 0.0002, Not Significant			
Duration of bleeding(days)			
<2 Days	35	32(91.43%)	3(8.57%)
2-7 Days	752	616(81.91%)	136(18.09%)
>7 Days	88	17(19.32%)	71(80.68%)
P = 173.99, Significant			
Length of cycle (days)			
<20 Days	25	24(96%)	1(4%)
21-35	821	616(75.03%)	205(24.97%)
>35 Days	29	25(86.21%)	4(13.79%)
P = 7.56, Not Significant			
Amount of blood flow/cycle			
Little (1-4 pads per day)	367	280(76.29%)	87(23.71%)
Moderate (5-10 pads per day)	446	380(85.20%)	66(14.79%)
Heavy (2 pads at a times on first day)	62	5(8.06%)	57(91.94%)
P = 177.59, Significant			
Family history of dysmenorrhoea			
Yes	565	453(80.18%)	112(19.82%)
No	310	212(68.39%)	98(31.61%)
P = 15.25, Significant			

TABLE IV: EXERCISE ACTIVITY WISE DISTRIBUTION OF PARTICIPANTS AND ITS ASSOCIATION WITH DYSMENORRHEA

Exercise activity (30 min or more)	Number(%)	Presence of dismenorrhoea	
		Yes	No
Yes	315(36)	175(55.56%)	140(44.44%)
No	560(64)	490(87.5%)	70(12.5%)
Total	875	665	210

P = 112.79, Significant

TABLE V: PERCENTAGE OF PARTICIPANTS WITH DYSMENORRHOEA WHO SUFFER FROM PMS

PMS	Number	Percentage
General fatigue	545	81.95
Lumbago/Backache	492	73.98
Irritability	432	64.96
Depression	299	44.96
Abdominal bloating	279	41.95
headache	226	33.98
mood swings	213	32.03
Nervousness	100	15.04
vomiting	93	13.98
Peripheral edema	47	7.07

DISCUSSIONS:

In the present study the mean age of menarche was 12.07±0.89 years, which is very similar to many other studies (6,8). Most of the girls related to one or more menstrual problems. Dysmenorrhea is the most common (76%) gynecological problem in female college students in this study. Several other studies reported its prevalence as 67.7% (20), 67.2 % (36), 67% (35), 67% (23), 67%(39), 74% (18) and 59.7% (19). The ranges of prevalence of dysmenorrhea from 51% to 80% have been reported by many other studies (33,26). In this study, 16.91% 43.31% and 24.91% participants were suffering from severe, moderate and mild grades of dysmenorrhea, while study by Jerry et al (19) showed that 14% severe, 38% moderate and 49% subjects were mild sufferers. Other common disorders in present study were abnormal menstrual flow, abnormal duration of flow followed by irregular length of cycle and polycystic ovarian disease, while in the Malaysian study (20) a “long cycle” was a common menstrual disorder among adolescent girls; this may be due to difference in their gynecological age. In biologic variables, BMI statistically correlated with dysmenorrhea (P=16.54, significant) and overweight has prevalence of dysmenorrhea (91.84%) in this study . However, the evidence of an association between overweight and dysmenorrhea is inconsistent (Andersch,Harlow, French). Another study by Parazzini et al(29) and Singh et al (36) have not found an association with obesity. Regularity and length of menstrual cycle were statistically not correlates with dysmenorrhea in present study. Duration of bleeding and amount of blood flow statistically correlated with dysmenorrhea. Some studies have shown a link between dysmenorrhoea and several risk factors including early menarche, irregular or long cycles and heavy menses. (3,39). In the present study the girls who had positive family history suffered more, which suggest that there must be some genetic factor. This is also supported by the other studies (9,21) A study from rural China evaluated the metabolic gene polymorphism and risk of dysmenorrhea and they provided the evidence of genetic susceptibility to recurrent dysmenorrhea.(41) Students participating in regular exercise have less dismenorrhea (55.56%) than the students who did not exercising regularly (87.5%).

In present study 85.1% female college students had PMS, while in other studies PMS was reported as 63.1% (SharmaP). Etiology of PMS is unknown and it is a relatively uncommon disorder during adolescence. Adolescent girls commonly complain of PMS when they are actually experiencing dysmenorrhea or psychosocial problems (22). Backache, abdominal bloating fatigue and breast heaviness are the most common symptoms reported by participants. We found that certain symptoms, namely general fatigue, low back pain and irritability, contributed more to the perceived severity than other complaints. Prevalence of premenstrual symptoms in the present study was higher than a Japanese survey(15) that reported back pain in 6.9% of women and headache in 11% of women (compared with our results of 72% and 22% respectively)

In the present study, 28.11% were absent from college, and 54.63% reported social withdrawal & limit daily activities during menstruation. Several studies reported that rate of absenteeism from school/ work as ranging from 34 to 50% (3,39,5). Many studies (26,39) reported that ability to perform work was affected in up to 52% of female adolescents. Another study (5) showed that in majority of female adolescents, PMS and dysmenorrhea had significant effect on academic performance and was responsible for school absenteeism.Menstrual symptoms caused a heavy impact on social, school, and work responsibilities in women. A cross-sectional survey from India found that 17% of adolescent girls reported missing school classes due to dysmenorrhoea while 60% reported disruption of their daily activities (36). In an Australian study, 53% of high school girls reported that dysmenorrhoea limited daily routines and 37% stated that it affected schoolwork (14). A study from New York found 46% of students missing one or more days of school due to dysmenorrhoea.(27).

III. CONCLUSION

Dysmenorrhea is common among the Bengali college students and it is major problem representing the leading cause of college/class absenteeism, information about its effective medication may help alleviate the discomfort during menses. Relationship between dysmenorrhea and obesity (BMI), duration of bleeding, amount of blood flow, positive family history and exercise activity have been found. Although further research is needed, as their relationship is controversial in many other studies. The authors would like to reiterate the need for screening for and treating menstrual symptoms because of the impact on daily activities and the potential to reduce avoidable suffering.

REFERENCES

- [1] Adeyemi AS, Adekanle DA. Management of dysmenorrhoea among medical students. *Int J Gynecol Obstet* 2007;7: 1528-39.
- [2] Agarwal AK, Agarwal A. A study of dysmenorrhea during menstruation in adolescent girls. *Indian J Community Med [serial online]* 2010 [cited 2015 Oct 9];35:159-64
- [3] Andersch B, Milsom I. An epidemiologic study of young women with dysmenorrhea. *Am J Obstet Gynecol* 1982; 144: 655–660.
- [4] Andrew S, Coco MD. Primary dysmenorrhea. *Am Fam Physician* 1999; 60: 489–496.
- [5] Banikarim C, Chacko MR, Kelder SH. Prevalence and impact of dysmenorrhea on Hispanic female adolescents. *J Arch Pediatr Adolesc Med* 2000;154:1226-1229.
- [6] Cakir M, Mungan I, Karakas T, Giriskan I, Okten A. Menstrual pattern and common menstrual disorders among university students in Turkey. *Pediatr Int* 2007 Dec; 49(6): 938–942.
- [7] Dawn CS. *Textbook of Gynaecology and Contraception*. 10th ed. Calcutta: Dawn Books; 1990.
- [8] Demir SC, Kadayıfçý TO, Vardar MA, Atay Y. Dysfunctional uterine bleeding and other menstrual problems of secondary school students in Adana, Turkey. *J Pediatr Adolesc Gynecol* 2000 Nov; 13(4):171–175.
- [9] Elahi N, Parveen N. Menstrual disorders in adolescent age group. *J Coll Physc Surg Pak* 1997;7(3):105-107.
- [10] Ferber SG, Granot M. The association between somatization and perceived ability: roles in dysmenorrhea among Israeli Arab adolescents. *J Psychosomatic Medicine*. 2006;68:136-142.
- [11] French L. Dysmenorrhea. *J American Family Physician* 2005;71(2):292.
- [12] *Gynecology*, Lippincott William & Wilkins: Wolters Kluwer business, Philadelphia. 2007; 14th (ed.): 446.
- [13] Harlow SD, Park M.: A longitudinal study of risk factors for the occurrence, duration and severity of menstrual cramps in a cohort of college women. *Br. J Obstet Gynaecol* 1996; 103:1134–1142.
- [14] Hillen TI, Grbavac SL, Johnston PJ, Straton JA and Keogh JM. Primary dysmenorrhea in young Western Australian women: prevalence, impact, and knowledge of treatment. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine*. 1999Jul;25(1):40-5.
- [15] Hinohara S, Fukui T. Dysmenorrhea among Japanese women. *Int J Gynaecol Obstet*. 2008 Jan;100(1):13-7. .
- [16] Hispanic female adolescents. *Arch Pediatr Adolesc Med* 2000; 154: 1226–1229.
- [17] Howstuffworks [homepage on the internet]. Dysmenorrhea by the editors of consumer guide, c1998- 2006 Inc; c2006 publications international Ltd.
- [18] Jayashree R, Jayalakshmi VY. Socio-cultural dimensions of menstrual problems. *Health Educ South East Asia*. 1997;12:21–6.
- [19] Jerry R, Klein MD, Iris F, Litt MD . Epidemiology of Adolescent Dysmenorrhea. *Pediatrics* 1981; 68: 661–664.

International Journal of Novel Research in Healthcare and Nursing

 Vol. 3, Issue 1, pp: (118-124), Month: January-April 2016, Available at: www.noveltyjournals.com

- [20] Lee LK, Chen PCY, Lee KK, Kaur J. Menstruation among adolescent girls in Malaysia: a cross-sectional school survey. *Singapore Med J* 2006; 47(10): 874.
- [21] Limb AY, Pee DH, Eun BL, Park SH, Kim SK. A study of menstruation of school girls in ansan. *J Korean Pediatr Soc* 1994;37(11):1586-1594.
- [22] McEvoy M, Chang J, Coupey SM. Common menstrual disorders in adolescence: nursing interventions. *MCN Am J Matern Child Nurs* 2004; 29: 41–49.
- [23] McKay L, Diem E. Concerns of adolescent girls. *J Pediatr Nurs*. 1995;10:19–27.
- [24] Medscape: [homepage on the internet]. Dysmenorrhea: primary dysmenorrhea. Decherny AH. Womens health, ACP Medicine online. 2002; c2002 WebMD Inc; New york. Available from: www.acpmedicine.com/
- [25] Nag RM. Adolescent in India. Calcutta: Medical Allied Agency; 1982:18–26.
- [26] Ng TP, Tan NC, Wansaicheong GK. A prevalence study of dysmenorrhoea in female residents aged 15–54 years in Clementi Town, Singapore. *Ann Acad Med Singapore* 1992; 21: 323–327.
- [27] O'Connell K, Davis AR, Westhoff C. Self-treatment patterns among adolescent girls with dysmenorrhea. *Journal of Pediatric and Adolescent Gynecology*. 2006 Aug; 19(4): 285-9.
- [28] Pain clinical updates, International Association for the Study of Pain, Volume XV, Issue 8 November 2007
- [29] Parazzini F, Tozzi L, Mezzopane R, et al. Cigarette smoking, alcohol consumption and risk of primary amenorrhoea. *Epidemiology* 1994; 5: 469–472
- [30] Parveen N, Majeed R, Rajar UDM. Familial predisposition of dysmenorrhea among the medical students. *Pak J Med Sci* 2009;25(5):857-860
- [31] Paula JAH. Benign diseases of the Female Reproductive Tract. *Berek & Novak's Gynecology*, Lippincott William & Wilkins: Wolters Kluwer business, Philadelphia. 2007; 14th (ed.): 446
- [32] .Poureslami M, Ashtiani FO. Assessing knowledge, attitudes, and behavior of adolescent girls in suburban districts of Tehran about Dysmenorrhea and Menstrual hygiene. *J Inter Women's Studies* 2002;20(2):1-10.
- [33] Pullon S, Reinken J, Sparrow M. Prevalence of dysmenorrhoea in Wellington women. *N Z Med J* 1988; 101: 52–54.
- [34] Sharma A, Taneja DK, Sharma P, Saha R. Problems related to menstruation and their effect on daily routine of students of a medical college in Delhi, India. *Asia Pac J Public Health*. 2008;20(3):234-41. Epub 2008 May 28.
- [35] Sharma M, Gupta S. Menstrual pattern and abnormalities in the high school girls of Dharan: a cross sectional study in two boarding schools. *Nepal Med Coll J*. 2003 Jun;5(1):34-6.
- [36] Sharma P, Malhotra C, Taneja DK, Saha R. Problems related to menstruation amongst adolescent girls. *Indian J Pediatr*. 2008 Feb;75(2):125-9.
- [37] Singh A, Kiran d, Singh H, Nel B, Singh P and 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; 52 (4) : 389–397
- [38] Singh MM, Devi R, Gupta SS. Awareness and health seeking behaviour of rural adolescent school girls on menstrual and reproductive health problems. *Indian J Med Sci*. 1999 Oct;53(10):439-43.
- [39] Sundell G, Milsom I, Andersch B. Factors influencing the prevalence and severity of dysmenorrhea in young women. *Br J Obstet Gynaecol*. 1990;97:588–94.
- [40] Wilson C, Keye W. A survey of adolescent dysmenorrhea and premenstrual symptom frequency. *J Adolesc Health Care* 1989; 10: 317–322.
- [41] Wu D, Wang X, Chen D, Niu T, Ni J, Liu X, et al Metabolic gene polymorphisms and risk of dysmenorrhea. *J Epidemiology* 2000;11(6):648-653.