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A cross sectional study on the prevalence of premenstrual syndrome among nursing school and college students of Kalyani, Nadia, West Bengal, India

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Abstract

Background: Premenstrual syndrome (PMS) is comparatively under-investigated in the area of psychiatry, in India, hence, this study was considered. The objectives of the study were to find the prevalence of PMS among nursing school and college students of Kalyani Municipal Area, Nadia, Kalyani. The study was to find out the prevalence of PMS and explore the demographic and lifestyle factors related to PMS if any. **Materials & Methods:** It was a cross-sectional study. Systematic Random Sampling method was followed. All the women >16 years who would fulfill the inclusion criteria, were allowed; all from a section/class, then moving to the next college, till the total 184 number are collected. The survey used a self-administered semi-structured questionnaire for collection of data, which had nearly zero item non-response rates. Survey questionnaires, was pre-tested in a different but comparable population. The tools included questions related to socio-demographic attributes, menstrual characteristics, gynecological problems, knowledge about pre-menstrual syndromes (PMS) and treatment seeking behavior including hospitalization and management options undertaken for menstrual and gynecological problems, behavioural factors, menstrual profile, dietary pattern, exercise habit, similar family history etc. to find out the correlation among them. **Results:** Respondent's age was between 16 to 26 years, with the mean age of 20 years. Maximum numbers of respondents (61.58%) were belonging from age group 19-21 years. Nearly 44.74% of the respondents were found having moderate symptoms of PMS and 1.05% had severe symptoms of PMS. About 22.63% of the respondents moderate PMS and 1.58% were assessed having severe form of PMS. Important determinants of PMS and PMDD included some of the major findings from logistic regression. About 58.42% of the respondents' next cycle bega within the interval of 26-30 days, 26.84% within 31-35 days, a little later. Delayed menstruation was stated by 9.47% of the respondents. Additionally, about 5.26% individuals stated that their menstrual cycle had very short interval starting within 15-25 days. Heaviness of menstrual flow was determined by number of pad/ napkin use/day as per absorption capacity. **Conclusion:** Our study revealed a high prevalence and negative impact of PMS on nursing students. Therefore, health education, appropriate medical treatment and counseling services, as part of the overall health service, should be availed and provided to affected women.

Keywords: Pre-menstrual syndrome (PMS), Premenstrual Dysphoric Disorder (PMDD), PSST Scale (pre menstrual symptoms screening tool), Perimenopausal period, Survey questionnaire

Introduction

PMS-Operational definition: Green and Dalton are credited to have coined the term PMS (Connolly, 2001) [1]. The ICD-10 diagnosis of Premenstrual Syndrome (PMS) requires only one premenstrual symptom in a list of symptoms which includes mild psychological discomfort, feelings of bloating and weight gain, breast tenderness, swelling of hands and feet, various muscle aches and joint pains, poor concentration, sleep disturbance and change in appetite (WHO 1996). More rigorous criteria are required for a diagnosis of Premenstrual Dysphoric Disorder (PMDD), the most severe form of PMS. PMDD diagnostic criteria found in the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (American Psychiatric Association, 1994) specify that at least five of eleven moods, behavioral or physical symptoms must be present and at least one must be from the four core symptoms to establish moderate to severe form of PMS [2-4].

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1) Markedly depressed mood, feeling of rejection or hopelessness.
2) Marked anxiety, tension, feelings of being ''keyed up'' or ''on edge''
3) Marked emotional liability (e.g., feeling suddenly sad or tearful or increased sensitivity to rejection)
4) Persistent and noticeable annoyance or bad temper or increased interpersonal conflicts.

The symptoms must markedly interfere with day to day work or with usual social activities and relationships with others (e.g., avoidance of social activities, decreased productivity and efficiency at work or school or working place). The presence of the cyclical outline of symptoms must be deep-rooted by prospective daily symptom ratings for at least of two successive symptomatic cycles.

The American College of Obstetrics and Gynecology (ACOG) published the diagnostic ten criteria for PMS, considering at least one of the six emotional and one of the four somatic symptoms reported within five days of onset of menstrual cycles and goes within 4-6 days of onset of menstruation [5].Allsworth et al,2007 study revealed prevalence of PMS is high among adolescent, those menstruation started early, next is women at reproductive age group, menstrual problems are said to be the major ones especially among adolescent females. Probably there is very little information

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we know about the prevalence of PMS of the prisoners, adolescent street girls, women at prostitution, girls at orphans, drug abusers, and alcohol addicted girls/women. This needs to be highlighted [6].Studies from different parts of the world, including India, show that a large proportion of women (both young and adult) experience these problems which remain mostly unattended to the medical experts (Ray et al., 2010) in West Bengal, India [7]. Menstrual comfort of adolescents has received little responsiveness from health professionals, policymakers and has never been took it as a matter of main concern in public health policies. In a country like India, the adversity of illiteracy, improper health education, gender discrepancy, 'culture of silence' and neglect this vulnerable group may have resulted in deprived reproductive health condition of adolescent females in future [7].Imprisoned women are more likely to have experienced past traumatic incidences such as violence, economic deprivation etc. According to 2000 Census by Human Rights Watch, approximately 39/100,000 White women were imprisoned (e.g. physical or sexual abuse, stressful living conditions, exchanging sex for drugs or money or having parent in jail). Menstrual dysfunction is common in this population. 9% reported amenorrhea, 33% reported menstruation with major depression. They experience huge stress as a result of their imprisonment. Health care providers should consider routine evaluation of reproductive and menstrual function and mental wellbeing during admission and the period of staying at jail for better care for this population. Future studies are required to understand the role of stress and menstrual dysfunctions. Improved knowledge of the impact of anxiety on women's health can direct health interventions and policy making can improve the lives of these women (Allsworth et al., 2007).The influence of stress on menstrual cycle among newly incarcerated women) [6]. Research has examined the future explanations for associations of PMS. Numerous studies specify that family-related and work-related stress may increase menstrual-related problems. There is a paucity of data from population-based studies on the association between and the difference in PMS and major depressive disorder, especially data about the group of women from different country reporting to suffer from both is also inadequate. Women with PMS and depression differ from each other. Because in the absence of successful interference at the right time, depressive symptoms of PMS are increasing day by day. Large number of adolescent and women committed suicide every year due to PMS [8]. Most of them are unnoticed and untreated. From Public health perspectives, more study is required to explore the reason behind PMS, its morbidity and mortality. Perhaps there is very little information we gathered about the prevalence of PMS worldwide and its background in cohorts, like prisoners, adolescent street - girls, women at prostitution, their girls, females at orphans, girl street- beggars, waste- pickers etc. This needs to be highlighted. More research is required (Allsworth et al., 2007) [6]. Because of the increasing prevalence, chronicity and distress caused by PMS, diagnosis and effective treatments are important for clinicians. Many women who seek treatment come too late with diagnostic approaches. PMS to be diagnosed at right time with standard diagnostic criteria. A diagnosis of PMS must be in right time to cut down its severity and the complications. A differential diagnosis to tell apart PMS from other medical and psychiatric conditions is important for appropriate treatment. No hormone or laboratory test indicates a PMS diagnosis. Diagnostic criteria for PMS must recognize the wide range of symptoms [9].

Materials & Methods

It was a cross-sectional population base study. Systemic Random Sampling method was followed. All the women >16 years who will fulfill the inclusion criteria, were allowed all from a section/class, we then move to the next college, till the total 184 number are collected.

Sample size: n=Z2*PQ/d2 Or, Z2*P (1-P)/d2

  Z2= 1.96 =3.84   D = Relative precision = 10   P=15 Q= (1-P)

So, n= 3.84*15*80/5*5 Non respondent = 5%   n=4608/25

So, n= 184.32,n=184. So, total number of girl college student (sample) = 184.

Inclusion Criteria: Women presently studied in Nursing School and College, Kalyani (under Govt) who were more than 18 years, willing to participate in this study (after having details about the study).

Exclusion Criteria: Women,having h/o thyroid disease, dyslipidemia, previous/ present history of hormone intake, women already taking anti depressant and anxiolyic medicines, pregnant women, women with breast cancer, cervical carcinoma, cancer ovary and uterus etc were excluded.

A total of 190 Bengali spoken girl students of Nursing School and College, age between 16 and 28 years, who attained menarche at different ages were surveyed under the study. The study was conducted in one Medical School and one Nursing College located in Kalyani municipality area, Nursing JNM College of Medicine and Hospital and Gandhi Memorial Hospital. First to third year students of Bachelor of Medicine, B.Sc. Nursing along with internees under training at selected medical and nursing schools were surveyed. The survey used a self-administered semi-structured questionnaire for collection of data, which had nearly zero item non-response rates. Survey questionnaires, was pre-tested in a different but comparable population. The tools included questions related to socio-demographic attributes, menstrual characteristics, gynecological problems, knowledge about pre-menstrual syndromes (PMS) and treatment seeking behavior including hospitalization and management options undertaken for menstrual and gynecological problems, behavioural factors, menstrual profile, dietary pattern, exercise habit, similar family history etc. and find out the correlation among them.The key prerequisites of a PMS diagnosis as acknowledge by ACOG comprise the followed:

(1) Symptoms consistent with PMS; (2) Restriction of the symptoms to the luteal phase of the menstrual cycle; (3) Affirmation of the symptom pattern by prospective appraisal (4) the symptoms cause functional impairment; and (5) Prohibiting of other diagnoses that may superior to explain the symptoms [10].Written informed consent was obtained from each participant after explaining the objectives, purpose and procedure of the study. The questions and meaning of related terms was explained to the participants up to their satisfaction. This study was carried out from December 2017 to January 2018 with objectives to rule out the problems related to menstruation in last three cycles.

Background information about the respondents include: age, education, cast, religion, family type, socio-demographic characteristics, father's and mother's education and occupations etc.Questions were related to menstruation, elucidated variation in menstrual patterns like length of cycle, duration of bleeding period, blood loss per cycle, (in this study abnormal menstruation was defined as subject with length of cycle is <20 or >35 days; duration of flow <2 or >7 days and history of dysmenorrhea, number of absorbents used per day, whether feel free to use toilet, treatment history, history of hospital admission etc. 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 their responses would remain confidential. To detect the severity of PMS, PSST Scale was used (Premenstrual Symptoms Screening Tools) and the degree of severity was categorized as no symptoms (0), mild (1), moderate (2) and severe (3) [11].Statistical analysis of the survey-data was performed in STATA SE 12.0 version. Data gathered from the respondents were checked for completeness. After collection of required number of data, the response sheets were arranged according to the code number already given to each of response sheet. Every question has a unique code. Data was encoded, checked thoroughly and analyzed by using the Statistical Package of STATA-12.

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Results

Certain socio-demographic characteristics were found significantly associated with menstrual difficulties as suffered by the students. Nearly 44.74% of the respondents were found having moderate symptoms of PMS and 1.05% had severe symptoms of PMS.

About 22.63% of the respondent's shows moderate PMS and 1.58% were assessed having severe form of PMS. Important determinants of PMS and PMDD included some of the major findings from logistic regression [Table 1].

Table 1: Background Profile of the Respondents (N=190)

Age (in years)	Percentage (%)	Number
16-18	15.26	29
19-21	61.58	117
22-25	22.63	43
26-28	0.53	1
Religion		
Hindu	75.26	143
Muslim	24.21	46
Others	0.53	1
Caste		
SC	28.42	53
ST	4.21	8
OBC	37.37	71
General	30	57
Family Type		
Nuclear	74.07	140
Joint	24.43	46
Extended	1.07	3
Father's education		
Illiterate	4.74	9
Up to primary	24.21	46
Up to secondary	24.21	46
Up to higher secondary	17.89	34
Graduate	24.21	46
Post graduate and more	4.74	9
Father's Occupation		
Unemployed	3.68	7
Agriculture	25.26	48
Labour	9.47	18
Privet sector	7.79	15
Government sector	23.16	44
Business	30.53	58
Mother's Education		
Illiterate	4.74	9
Up to primary	22.63	43
Up to secondary	37.37	71
Up to higher secondary	23.16	44
Graduate	8.95	17
Post graduate & more	3.16	6
Mother's Occupation		
Home maker	84.74	168
Business	1.05	2
Labour	1.05	2
Service at private sector	3.68	7
Service at private sector	9.47	18
Living arrangement		
With parents only	5.79	11
All family members including parents	11.05	21
All family members excluding parents	1.05	2
With relatives	0.53	1
With friend's at hostel	59.47	113
Mess	22.11	42

Respondent's age is between 16 to 26 years, with the mean age of 20 years. Maximum numbers of respondents (61.58%) are belonging from age group 19-21 years. Slightly over one-fifth (22.63%) of the students were between 22 to 25 years. Only 15.26% are from age groups of 16-18 years. Majority of them are Hindu (75.26%), followed by a-fifth (21.21%) Muslim and only

0.53% belonged to Buddhist religion. Largely the respondents (37.37%) were belonging from OBC caste group, followed by 30% from General caste, 28.42% were SC and only 4.21% were ST caste. About three-fourth (74%) of the respondents belonged from nuclear families, followed by 24.34% from joint family and only 1.59% was from extended family [Table 1]. As shown (Fig 1)

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about 40 percent of the students were surveyed from JNM hospital, while all the rest were from Gandhi Hospital. About5 percent of the respondents reported their father having no education and a fifth (24.4 percent)reported their fathers' education up to primary level, while as stated by the rest- fathers were educated up to secondary level and beyond. A large proportion (30.50%) of the

respondents mentioned that fathers' major income source as business, followed by agriculture workers (25.26%) and government servant (23.16%). About 9.5% mentioned their fathers as unskilled laborers, 7.79% were reportedly worked at private sector and 3.68% of the respondent's fathers as stated were unemployed.
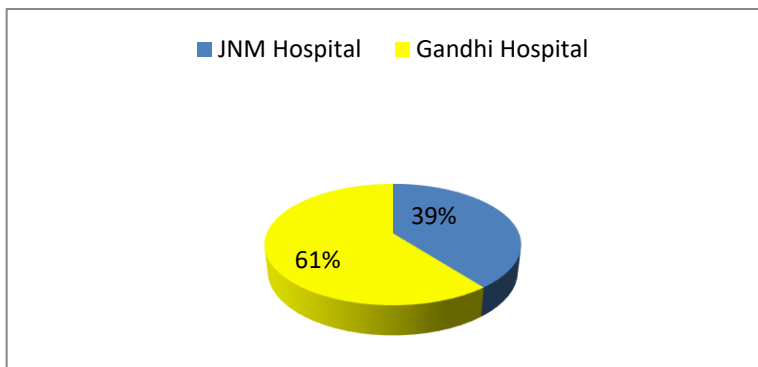

Fig 1:Distribution of respondents from two medical institutions

Nearly two-fifth (37.37%) of respondents mentioned their mothers educated up to secondary level, followed by those reported having education till higher secondary level (23.16%), slightly over a-fifth (22.63%) reported their mothers educated up to primary level and about 5% stated to have attained no education. Almost negligible proportion reported (3.16%) that their mothers had attained education up to post graduation and beyond. As stated, mothers were mostly (84.74%) found home maker, followed by 9.47% whose mothers worked at Government sector and 3.68% at private

sector. Only a small proportion stated their mothers (1.05%) either having a business or worked as laborer. Regarding living arrangement (Table 1), majorities (59.47%) of the students were found residing in respective institute's hostels; about 22.11% were found living at mess outside hospital premises. Nearly 11.05% lived with parents and other family members at home, 5.79% stated to live with parents only, and a small number (1.05%) were reported living with all family members excluding parents.
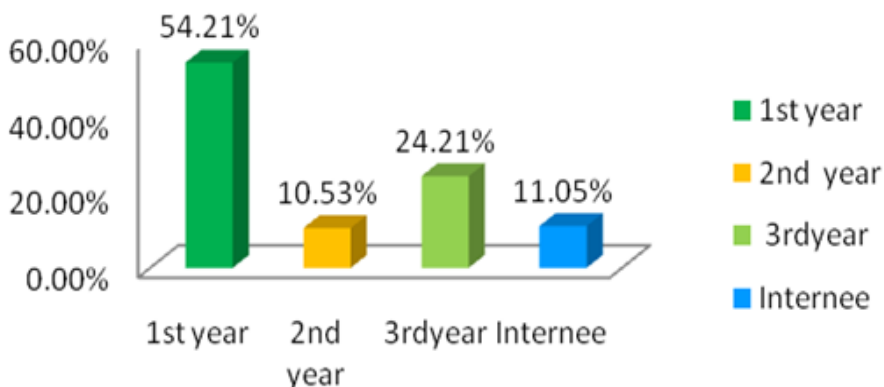

Fig 2:Percentage distribution of respondents across year of courses

As shown in Fig 2,a majority (54.21%) of the respondents were from 1st year of the medicine/nursing courses, 10.53% from second year and 24.21% from 3rd year.Nearly 17.37% of the students were enrolled at 1st year B.Sc nursing course of JNM Hospital and 11.5% were internees with the same hospital. A majority (58.20%) of the students reported to come from Nadia district, followed by 12.17% from Malda and 11.64% from Murshidabad district. Nearly 5.82% were from South and North 24 PGS, 4.23% are from Burdwan, 2.65% are from Hooghly, 2.12% are from Uttar and

Dakshin Dinajpur, 0.53% is from Howrah and only 0.16% is from Bankura.
Menstrual Profile of the Respondents
        As shown (Table 2), a majority (65.79%) of the respondent reported their menstrual cycle is regular as per their perception. About 28.84% stated this to be varying between regular and sometimes irregular and 7.73% reported that they have irregular menstrual cycle.
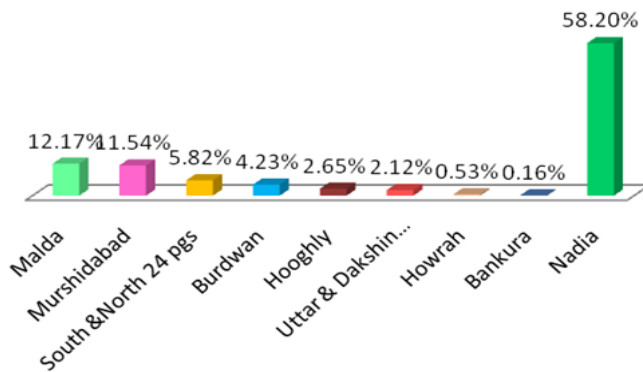
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Fig 3:Reported origin of respondents across different districts
Table 2: Menstrual profile of the Respondents [n=190]

Attributes	Characteristics	Percentage	Number
Menstrual cycle			
	Regular	65.79	125
	Irregular	7.73	54
	Sometimes regular, sometimes irregular	28.84	51
Interval of next menstrual period (days)			
	15-25	5.26	10
	26-30	58.42	111
	31-35	26.84	51
	36-45	9.47	18
Experience of physical discomforts			
	Breast tenderness	37.37	71
	Bloating sensation	19.47	37
	Headache	32.11	61
	Swelling of hands & feet	11.05	21
	Acne	32.11	61
	Gastrointestinal problems	42.11	80
	Joint pain	48.95	93
Number of pad/ napkin used/day			
	1-2 (Scanty Bleeding)	5.79	11
	3-4 (Regular Bleeding)	78.95	150
	5-7 (Heavy Bleeding)	15.26	29
Experience of emotional discomforts			
	Depression	25.26	48
	Angry outburst	20	38
	Crying spell	14.74	28
	Irritability	75.26	143
	Anxiety	37.37	71
	Confusion	12.11	23
	Social withdrawal	7.89	15
	Changes in sexual behaviour	13.90	26
	Insomnia	20	38
	Euphoric behaviour	1.58	3
	Fatigue	75.13	142
	Suicidal thought	3.70	7
Family history of similar menstrual difficulties			
	Yes	27.37	52
	No	46.84	89
	No idea	25.79	49
Functional difficulties during menstruation			
	Always at toilet use	47.37	90
	Sometimes at toilet use	16.84	32
	Do not feel difficulty	35.79	68
Frequency of toilet use increased during menstruation		62.96	119

Interval of menstrual period gets determined by beginning of next cycle. About 58.42% of the respondents' next cycle begins within the interval of 26-30 days, 26.84% within 31-35 days, a little late. Delayed menstruation was stated by 9.47% of the respondents. Additionally, about 5.26% individuals stated that their menstrual cycle has very short interval starting within 15-25 days. Heaviness

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of menstrual flow gets determined by number of pad/ napkin use/day as per absorption capacity. As shown (Table 2) 5.79% of the respondents stated using 1-2 absorbents/ day in average, was signifying scanty bleeding. A majority (78.95%) reported to use 3-4 napkins/ day and 15.26% used 5-7 absorbents/day throughout cycles signifying heavy menstrual flow. Fig 4 shows that a majority of the respondents (84.66%) stated to have menarche between 12-14 years; a little late for warm and humid country like India. About 11.64% of them had the start in between 9-11 years. Only 3.70% of respondents' menstruation started between 15-19

years (late menarche). Mean age of menarche for the group was found to be 12.73 years. It is observed that 27.37% of the respondents said about the similar menstrual difficulties in their family. 46.84% said no and 25.79% have no such idea. When we consider the functional difficulties during menstruation,47.37% of the respondents said that they are not feeling free to use toilet, 16.84% said that they feel sometimes difficulties and 35.79% do not feel difficulties. About 62.96% of the respondents said that they have increased frequency of toilet use during menstruation.
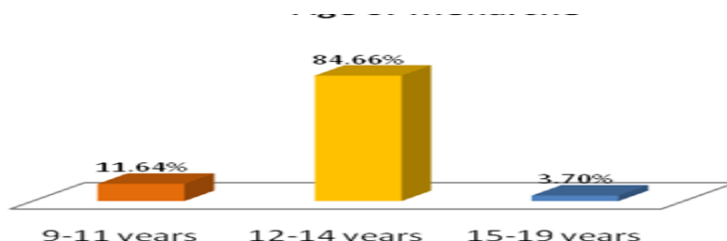

Fig 4:Percentage of respondents reported age to menarche

Treatment history of the respondents during menstruation
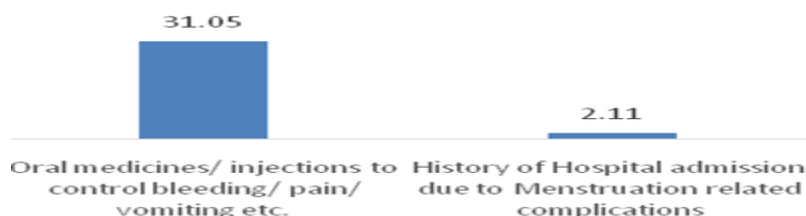

Fig 5:Reported menstrual treatment history of respondents(%)

As shown (Fig:5) about 31.05% of the respondents stated to have sought medical treatment (oral medicines/ injections) during menstruation to combat related complications like bleeding/ pain/ vomiting etc. While, about 2.11% of respondents were found having history of Hospital admission during menstruation due to menstruation related complications.

Emotional symptoms before and during menstruation
Emotional symptoms are often get characterized by depression. Among the study (Table 2) about 25.26% had stated having depression, followed by 20% having angry outburst and 14.74% having crying spell prior to menstruation. A good chunk of the

respondents (75.26%) are suffering from irritability. About 3.70% of the respondents in the study have reported to harbor suicidal thoughts during their menstrual period. About 37.37% of them reported having anxiety in this period, 12.11% reportedly experience confusion and 7.87% showed social withdrawal. Also 14% of respondents stated that they have change in sexual desire, 20% had insomnia(deprivation of sleep).A very small percentage (2%) stated having euphoric behavior. A large proportion (75.13%) of respondents made complaint about frequent tiredness and fatigue before the onset of menstruation [Fig. 6].
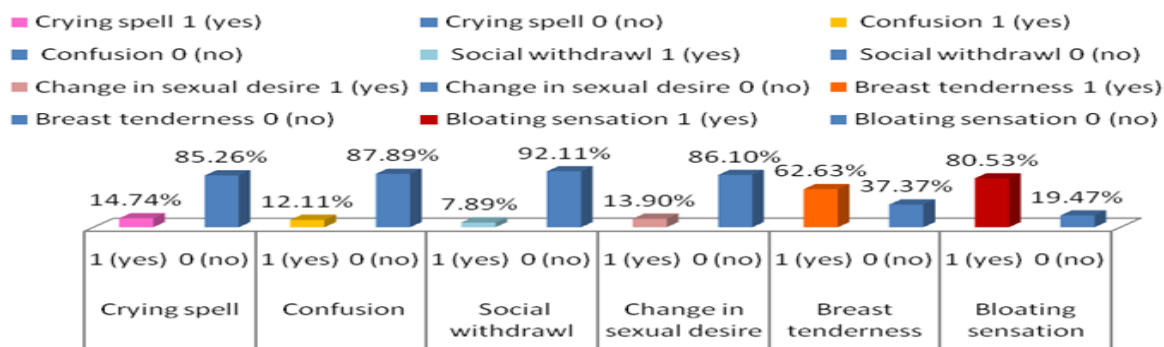

Fig 6: Percentage of respondents had emotional and physical symptoms

Physical symptoms before and during menstruation
Physical discomforts begin with cascade of symptoms such as breast tenderness, bloating sensation, headache, swelling of hands

and feet, gastrointestinal upsets, acne and joint pain. 37.37% of the respondents suffer from breast tenderness and fullness 3-4 days prior to menstruation and persists up to 4-6 days after menstrual

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flow begins and then goes off. Nearly 32.11% of the respondents stated suffering from acne which flare-up few days before menstruation. 42.11% of the respondents mentioned that they experience gastrointestinal problems like alternate and irregular bowel habit few days prior to menstruation and gradually goes off with-in 4-6 days when bleeding stated. While 32.11% respondents made complaint of headache before and during menstruation. About 49% of the respondents complain about joint pain,

Discussion

Onset of menarche is a universal experience among adolescent girls that marks the transition from childhood to early womanhood [12] and it signifies reproductive maturity of a women. It may have an impact on risk factors of their reproductive health (Harlow, 2000) [13]. Most of the girls encounter some problems and discomforts like variable degree of abdominal pain and discomforts, amenorrhea (absence of menstruation), dysmen-orrhea (painful menstruation) and menorrhagia (heavy bleeding during menstruation) before and during the menstrual period, which sometimes affects their daily life activities [14, 15]. PMS is a common occurrence in women of adolescent and reproductive age. Varieties of physical, cognitive, emotional and behavioral symptoms occur during the luteal phase (this phase begins after ovulation and persists about 14 days of the menstrual cycle and resolve promptly at or within a few days of the onset of menstruation) (Steiner., 2000) [16]. In our study, nearly 44.74% of the respondents were found having moderate symptoms of PMS and 1.05% had severe symptoms of PMS (PSST Scale used by the Clinician, we've used).Factors such as socio-demographic variables of women influence their menstrual characters like menstrual cycle span, timekeeping in periods, prevalence of premenstrual problems and pain at the time of menstruation (Rowland *et al*., 2002) [17], (Rahman *et al*., 2004) [18] (Sanyal and Ray, 2008) [19]. Reproductive development in adolescent girl population introduces a wide range of reproductive health risks. Adolescent girls suffered from menstrual problems due to their lack of knowledge on reproductive health, low literacy rate, improper health-education, gender disparity, 'culture of silence' and lack of governmental initiative to address this group (Jejeebhoy and Sebastian, 2003) [20].In our study, it was found that moderate to severe PMS was more common with increasing age (P-value=0.004). Distribution of PMS was almost equal among all casts and religions. Nuclear family was found to be associated with moderate to severe form of PMS (P value 0.480). There was no significant difference in father's and mother's occupation and respondents chance of suffering to PMS. Respondents--- whose mothers were home makers---had slightly lower the chance of severe PMS (66.46%) compared to working mother (82.76%). Respondent residing with their families had a lesser chance of severe PMS (58.82%) compared to those who residing outside home (82.76%). In our study, 25.26% of the respondents was found having depression, followed by 20% having angry outburst and 14.74% having crying spell prior to menstruation. A good chunk of the respondents (75.26%) were suffering from irritability. Bloating is a common early symptom of menstruation that any women experiences and is a common pre menstrual symptom. It may feel like gaining weight or abdominal heaviness and there is feeling of tightness or swollen of other body parts. Bloating generally occurs 3-4 days before menstruation and goes-off within a few days after menstrual flow begins. It happens due to water retention and high sodium level that is increased by hormonal changes in the follicular stages of menstruation mainly those women who have history of more carbohydrate and salt intake. There may be swollen face or legs along with breasts at the same time [10, 21]. Gastrointestinal problems are other symptoms of PMS characterized by abdominal pain, nausea vomiting, altered bowel habit etc. Female hormone progesterone and estrogen cause fullness of stomach with gas from fermented food and altered bowel habit like constipation or diarrhea. The fluctuation or rise

and fall of estrogen and progesterone altered the gut motility by varying level of contraction and relation. Progesterone plays an important role during the contraction of uterine muscle which can cause pelvic cramps. Women experiencing PMS are found to be more prone to headache. These range from dull ache or sharp stabbing pain leading to feeling them very miserable, and often making it difficult for them to think in the right way. Serotonin is a hormone which triggers headache. Fluctuating levels of female hormones like, progesterone and estrogen, also come into play in headache during menstruation [22]. Yoshimi K et al [23] study revealed that the rates of moderate to severe PMS and premenstrual dysphoric disorder were 9.7% (99/1022) and 2.2% (22/1022), respectively. Significant differences were observed between the PMS (+) group and those without PMS-the PMS(-) group-in age at menarche (P = 0.022), menstrual pain (P <0.001), hypnagogic disorder (P <0.001), long Internet use time (P <0.001), eating breakfast (P = 0.018), chewing well (P = 0.037), and belonging to a sports club (P = 0.046). Multivariate analysis revealed that the risk factors for PMS were menstrual pain (odds ratio [OR], 4.74; 95% confidence interval [CI]: 2.83-7.95), hypnagogic disorder (OR, 2.22; 95% CI, 1.47-3.35), stress fracture (OR, 2.19; 95% CI, 1.21-3.98), and Internet use time (OR, 1.003; 95% CI, 1.001-1.005) [23]. Tolossa FW et al study revealed that the most commonly reported physical symptoms with PMS were abdominal bloating by 141(81.5%), abdominal cramps by 128(74.0%), breast tenderness by 118(68.2%), back pain by 115 (66.5%), weakness by 107(61.9%), generalized body pain by 104(60.1%), and headache by 100(57.8%) of the participants, while the most commonly reported psychotic symptoms experienced by the participants were loss of interest in doing things which was by 134(77.5%), followed by depressed mood by 129 (74.6%), anger feeling 99(57.2%), and difficulty concentrating 81(46.8%) [24]. Bhuvaneswari K et al found a high prevalence of PMS(62.7%) among college students. The most common premen-strual symptoms were back, joint and muscle aches. Participants with PMS had poorer quality of life than those without PMS [25].

Conclusion

PMS is comparatively under-investigated in the area of psychiatry, in India, hence, this study is considered. The objectives of the study are to find the prevalence of PMS among college students of Kalyani Municipal area, Nadia, Kalyani. The study is to explore the demographic and lifestyle factors related to PMS if any. Our study revealed a high prevalence and negative impact of PMS on nursing students. Therefore, health education, appropriate medical treatment and counseling services, as part of the overall health service, should be availed and provided to affected women. Severe symptoms have negative impact on academic and social performances of the students by causing frequent class missing, exam missing, low grade scoring and academic withdrawal, which affect the life of the subjects and as the whole the country. College authorities shall address and recognize PMS issue among the female students and provide real support to them. Educational health programme must be conducted not only to illuminate PMS but also reduce further menstruation related morbidities.

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