QUESTIONNAIRE BASED STUDY ON MENSTRUAL PATTERNS AMONG FEMALE MEDICAL UNIVERSITY STUDENTS OF RURAL NORTH INDIA

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ABSTRACT

BACKGROUND
Menstruation is unique phenomenon in girls. However, even in today's time in India, it is associated with many taboos and myths that affect many socio-cultural and economic aspects of life and is a hindrance in the overall development of a girl to women and becoming empowered. Besides the taboos, there are menstrual problems which a girl has to suffer. A woman's reproductive health is determined by her menstrual health. The prevalence of menstrual disorders is highest in the 20 to 24-year-old age group and decreases progressively thereafter. They affect not only the woman, but also family, social, and national economics as well. Even girls from good socioeconomic background and education are unable to dispel the taboos and are unable to discuss their menstrual issues and problems due to lack of menstrual education. Information on a woman's menstrual pattern will aid in clinical evaluation of gynaecological problems and will make womanhood easier for adolescent women and adults[1]. However, studies on menstrual pattern, menstrual disorders, associated factors and taboos affecting the girls of medical students of university of rural North India are very few. We wanted to determine the menstrual pattern, menstrual disorders, information regarding menstruation and taboos associated with menstruation among female medical students of university of rural North India.

METHODS
A self-descriptive cross-sectional study was carried out among female medical students between the ages 17-22 years. A total of 235 questionnaires was administered to postmenarcheal Indian adolescent girls attending medical college in SGT University, Gurugram, and Haryana India. Participants were asked to respond to a semi-structured questionnaire on menstrual health awareness. The questionnaire included questions on age at menarche, menstrual cycle length and regularity, duration, and amount of flow, type and severity of pain related to menstruation, need for analgesia, and symptoms suggestive of premenstrual syndrome (PMS), and impact of menstrual pain on academic and social activities and taboos associated with menstruation. The main outcome measure was information regarding menarche, description of menstrual patterns, disorders and impact of the disorder on academic and social activities and taboos regarding menstruation.

RESULTS
Out of the 235 questionnaires distributed, 200 were retrieved and the information contained in each questionnaire was analysed. The mean age of menarche was 12.59 ± 1.25 years with a range of 10 to 16 years. The mean age of girls was 19.45 ± 2.5 years. Mean duration of menstrual flow was 4.77 ± 1.06 days. It was observed that 146 (72%) respondents had regular length of menstrual cycle whereas 54 (28%) respondents had irregular menstrual cycle, which showed its peak at the age group of 17-19 yrs. (33.3%) between age groups. Of the 146 students with regular menstrual cycle, 88 (60.27%) had average flow while in 40 (27.39%) had scanty, and 18 (12.32%) had heavy menstrual cycle. Of the 54 students who had irregular cycle, prolonged cycles were reported by 42 (77.77%) students, and frequent cycles were reported by 12 (22.22%) students. Dysmenorrhoea was reported in 140 (70%) respondents. Of these, 70 (50%) had mild, 48 (34.28%) had moderate and 22 (15.72%) had severe pain. Premenstrual syndrome was mentioned by 64 (32%) girls. 65 (53.27%) of the dysmenorrheic girls reported that their working ability was affected. 130 (65%) of the girls were aware of menstruation prior to menarche. Mothers, sisters and friends were the main sources of information 148 (74%). 29% missed social activities, and 12.5% missed college, due to menstrual problems. 110 (55%) needed drugs to treat menstrual disorders. 82.5% girls had misconceptions and taboos related to menstruation.

CONCLUSIONS
Mean age at menarche is in sync with global trend with gradual fall in the age of menarche. There is high prevalence of dysmenorrhoea, PMS, and abnormal menstrual length which requires attention and treatment. These disorders are affecting the working ability, lead to college absenteeism and social withdrawal. Also, even though they are medical students, they still have taboos related to menstruation, which they believe in, and consider many menstrual disorders as normal and are hesitant to come out and discuss with the physician. They are mostly either bearing the problem, or self-medicating. There are many menstrual taboos which are affecting their socio-cultural and economic aspects. Increasing the awareness through educational programs at early age will definitely help the girl in developing confidence and increases self-esteem.

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BACKGROUND

Women's first menstruation is called menarche. It is an important maturity indicator used to assess the development status of a pubertal female. Menstruation is the natural part of the reproductive cycle.[2] One of the most common gynaecologic complaints in young women who present to the clinicians is Dysmenorrhoea.[3] Disorders in cycles or its irregularities are a major gynaecological problem among female adults especially adolescent and a major source of anxiety to them and their family. Premenstrual syndrome (PMS) is another problem that some women experience during the late luteal phase of each menstrual cycle (7-14 days prior to menstruation). Although various aetiologies of premenstrual syndrome such as elevated prolactin levels, hypoglycaemia or vitamin deficiencies have been proposed, none of these theories has been definitely proven.[4,5] Despite being a regular phenomenon the menstruation has been surrounded by secrecy and myths in many societies which affect many aspects of social and cultural life.[6]

Information on a women's menstrual pattern aids in clinical evaluation of gynaecological problems and will make womanhood easier for adolescent women and adults.

Procedure

This Self-descriptive cross-sectional study was conducted to determine age at menarche, menstrual cycle length and regularity, duration and amount of flow, type and severity of pain related to menstruation, need for analgesia, and symptoms suggestive of premenstrual syndrome (PMS), impact of menstrual pain on academic and social activities, taboos related to menstruation and need of analgesia and treatment taken. Also, to infer the extent of awareness and source of information regarding menstruation possessed by Indian girls before attaining puberty.

The questionnaire included questions on concerning their age at menarche, menstrual cycle length and regularity, duration and amount of flow, type and severity of pain related to menstruation, need for analgesics, symptoms suggestive of premenstrual syndrome (PMS) and taboos related to menstruation. Respondents were also asked about the impact of menstruation and its disorders on the social life and academic activity. Other variables of interest included; any additional menstrual related symptoms or gynaecologic symptoms not mentioned in the questionnaire, source of information regarding menstrual health knowledge and academic performance were the main sources of information.

Aims & Objectives

To determine the menstrual pattern, menstrual disorders, information regarding menstruation and taboos associated with menstruation among female medical students of university of rural North India.

METHODS

Self-descriptive cross-sectional study was carried out among female Medical students (MBBS I-V) between the ages 17-24 years. A Total of 235 questionnaires were administered to postmenarcheal Indian female students attending medical college in SGT University, Gurugram, Haryana between August 2017 – July 2018. India. The sample size of 235 patients were taken for convenience.

Inclusion Criteria

MBBS girl students aged between 17 to 24 years, menstruating, and unmarried; those students who cooperated to provide correct and complete information and fitted into the study criteria were included for the study.

Respondents were selected from each class using stratified random sampling method. Students were briefed on the objective of the study and duly completed questionnaires were collected and analysed.

Statistical Analysis

The data were analysed using SPSS for Windows version 16.0. Descriptive statistics was used to determine mean age of the subjects, age at menarche, frequency of menstrual disorders, prevalence of dysmenorrhea, PMS and activities affected by this condition.

RESULTS

Out of the 235 students, 200 responded to the questionnaire. The mean age of the female medical students was 19.45 ± 2.5 years. The mean age of menarche was 12.59 ± 1.25 years exhibiting wide variations, i.e., 10 to 16 years among the participants. Most respondents 184 (92 %) menstruated by the age of 15.

Menstrual characteristics as indicated by the selected subjects are presented in Table 1.

Characteristics		Frequency (N)	(%)
Menstrual Cycle Length (days)	<20	21	10.5%
	20-35	131	65.5%
	>35	48	24%
Duration of Menstrual Flow/No. of Days	<2	9	4.5 %
	2-6	181	90.5 %
	>7	10	5 %
Regularity of Menstrual Cycles	Regular Cycle	131	65.5%
	Irregular Cycle	69	34.5%
Table 1. Showing Various Menstrual Characteristics			

Regular menses occurred in 65.5 % (n =131/200) of girls; a cycle length ranging from 21 to 35 days (Mean, 27.58 ± 1.79 days) and the mean duration of menstruation was 4.77 ± 1.06 days with a range of 2–8 days. The pattern of menstrual related morbidities, additional symptoms reported by participants and treatment patterns are shown in Table 1.

Dysmenorrhea	No Dysmenorrhoea	60	30%
	Mild	70	50%
	Moderate	48	34.28%
	Severe	22	15.72%
PMS	Absent	136	68%
	Present	64	32%
Abnormal Cycle Lengths	Absent	146	73%
	Prolonged Cycle	42	21%
	Frequent Cycle	12	6%
Table 2. Showing Various Menstrual Complaints			

166 respondents reported various menstrual disorders, giving a prevalence rate of 83 %. Dysmenorrhea was the most prevalent 140 (70 %) menstrual disorder in our sample, followed by PMS 64 (32 %), and abnormal cycle lengths 54 (27.5%)

Of the 140 (70%) girls who reported dysmenorrhoea 70 (50%) had mild, 48 (34.28%) moderate and 22 (15.72%) had severe dysmenorrhea.

No Need	90	45%
Self-Medication	44	22%
Treatment Given by Parents	30	15%
Treatment Given by A Doctor	36	18%
Table 3. Showing Need of Treatment		

Despite the fact that girls are studying in a medical college still only 36(18%) are consulting a doctor for help.

Overall, menstrual disorders prevented 29% (n=58) of students from participating in social activities and 12.5% (n = 25) from attending college.

Dysmenorrhea was responsible for the highest rate of college absenteeism (61 %) followed by PMS (38 %). The majority of absences (58 %) were for 1 day, with 32 % for up to 2 days and 3 girls reported missing up to 4 days of college each cycle.

No Information	31	16.5%
Mom/Sister	77	38.5%
Friends	71	35.5 %
Doctor/Nurse	5	2.5 %
Mass Media	16	8 %
Table 4. Depicting Awareness Before Menarche		

169 (83.5%) of participants were aware of menstruation before attaining menarche. Source for information varied from mothers and friends to TV, magazines, and newspaper; nevertheless, the major sources were mothers and friends 148 (74%).

No Misconception	**35**	**17.5%**
Do not enter temple	141	70.5%
Do not sleep on bed	34	17%
Do not enter kitchen	56	28%
Do not wash head during mensus	46	23%
Do not touch holy books	108	54%
Women are unhygienic during mensus	51	25.5%
Avoid sour food like curd, pickles etc	67	33.5%
do not exercise during menses	110	55%
Severe Pain during mensus is normal	69	38.5%
Don't drink cold beverages	76	38%
Table 5. Showing Prevalent Myths and Taboos Related to Menstruation		

As shown in the table 5 there are many misconceptions about menstruation despite the fact that the students are studying medical education due to lack of awareness and communication. Maximum misconception is regarding that one should not enter temple, touch holy books, do not exercise and should not enter kitchen during menstruation.

DISCUSSION

235 questionnaires were distributed out of which 200 were retrieved of 85.4% which is a good response rate. A number of factors such as general health, genetic factors, socioeconomic and nutritional factors determine the age of menarche.[7] It has been reported that regional and racial differences have a lot of bearing on menarchial age.[8,9] Also studies have suggested that menarche tends to appear earlier in life as the sanitary, nutritional and economic conditions of a society improves.[10,11] The mean age for menarche observed in the present study from SGT Hospital was 12.59 ± 1.25 years which was lower compared to the result of other studies. Similar study from south India Mysore reported 13.36 ± 1.25 years.[12] Although small differences are obvious between the reported ages, varying from 13.06 ± 1.43 years in West Bengal[13] to 13.4, 13.5, and 13.6 years in Goa, Chennai, and East Delhi, respectively.[14,15,16,17] Recent reports from many countries of the world indicate a decline in the mean age; the current age as per reports from European and North American countries is 12.5 years, while 12.8 ± 1.3 years is from Turkey.[18] Our study is showing a decline in the menarcheal age lower than the various above studies.

This is similar to study from south India and as medical students coming to the university are a mix of girls from both urban and rural background.

Dysmenorrhoea 140 (70%) is the most common problem associated with female medical students in this study lower compared to other studies. Studies in Ethiopia and Turkey showed a overall prevalence of dysmenorrhoea among students 85.1% and 89.5% respectively which was higher than our study.[19] Recently, it has become an important public health problem among the female population; The proportion of mild, moderate and severe dysmenorrhoea in the present study were 67 (54, 9%), 49(37.78%)and 15(12.29%) respectively while study from Ethiopia showed 47.5%, 38.2% and 14.2% respectively which was almost comparable. Prevalence of dysmenorrhoea among the selected group was 78.2% and 66.8% in studies on adolescents from south India[20] and it was associated to early menarche age; similar observation is reported among Moroccan girls[21]. Probably early onset of menarche leads to earlier ovulatory cycles and an earlier experience of dysmenorrhea. Occurrence of severe pain during menstrual period accounts for 3-20% in most population. Early menarche could be reason for significantly higher incidence of dysmenorrhoea. Various studies have shown that severity of pain decreases with increase in age, and in older women the frequency of severe pain decreases.

53.27% of dysmenorrhoeic women had limitation of their working ability while the south Indian study showed 68.8% of the participants said their working ability was affected to moderate extent, the association between severity of pain and limited work ability was statistically significant (P = 0.000). It is important to know the health problems of the general population so that corrective measures can be incorporated in the health intervention programs; our study has contributed to the current health-related problems of women which curtails their productivity. Although the problem faced by the women is for a short duration, the repetitiveness makes it a serious concern and requires a corrective measure.

The prevalence of PMS in our study was 52% which was almost similar to the Mysore study was 116 (58%). But this was less than the prevalence found among Jima University

students of Ethiopia,[22] teacher training university students of Iran,[23] university students of Thailand[24] and university students of Nigeria[25] which was 99.6%, 98.2%, 85.5% respectively. This difference could be due to the different population studied different study groups, different time of study and different criteria used in different studies.

Other common disorders in present study were abnormal menstrual flow, abnormal duration of flow followed by irregular length of cycle. Our study showed that 34.5% girls had irregular cycles out of which 24% had prolonged cycles and 10.5% had frequent cycles which was significantly higher than the study from Mysore South India where 2.2% and 4.1% of the participants had to encompass short and long menstrual periods, respectively. It could be possible that the increase in the incidence of irregularity is due to changes in lifestyle that is being introduced in different spheres of life and various other factors like pollution, pesticides in food and drinking water in large quantities and radiation.

However, higher percentages (7-24%) of occurrence are reported from Turkey and Nigeria.[26] In our study 21 (10.5%) girls had shorter cycles <= 20 days and 48 (24%) had cycles >35 days which is significantly more than in other studies.

Similarly, reports have indicated variations in duration of flow, the mean duration being 5.3 ± 1.32 days and stretched to more than 7 days for Indians. One to four percent of women population is reported to have long duration of flow[27]. We found a mean duration of 4.77 ± 1.06 days as the normal period of menstrual flow, with 4.1% of participants having more than 7 days Irregularity in the monthly shedding is also indicated in different studies, percent occurrence from Bangladesh,[1] Lebanon,[27] and Gambia[28] varied from 3 to 16%, whereas studies from India presents a figure of 5 to 9%.[29]

121 (60.5%) were aware of menstruation before menarche as compared to the south study of 101 (50.5%). Awareness regarding menarche is common among young girls and gradually it is increasing in rural area as shown by the figure in our study. The major source of information was mothers, sisters and friends, or the information media, such results were also reported by other works.

Despite the fact that menstrual disorders are so common majority of girls 55(50%) do self-medication, 20 (18.18%) took treatment as advised by parents and 35(31.81%) only consulted the doctor for dysmenorrhoea. The consultation of the doctor only occurred in severe cases.

There are many taboos and superstitions associated with menstruation. only 17.5% girls had no misconception. 70.5% do not attend temple, 54% do not touch holy books, 55% do not exercise, 38% do not drink cold beverages, 33.5% do not touch or take sour food and 38% consider severe pain as normal which is similar to study by Garg S and Anand T.[30]

CONCLUSION
Dysmenorrhea, PMS, and menstrual irregularity are more prevalent among young females and gradually increasing with time. These problems affect the social and academic life of the college girls. Despite increasing awareness, self-medication is still the rule which may be damaging in the long run. Timely intervention and consultation with the doctor would help in significantly improving the life of the college girls thereby improving the productivity. Timely programs regarding awareness of the disorders of menstruation would help girls cope better and seek proper medical assistance.

The limitation of the present study is that it consists only of College and University students, and may not represent the frequency of dysmenorrhea and other menstrual disorders among young women in the general population.

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