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Original Research Article

Problems associated with menstruation among medical students: a cross sectional study

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ABSTRACT

Background: Medical students are at high risk for developing menstrual irregularities due to their lifestyle, food pattern and exercise habits. Also, majority of the menstrual disorders are preventable by changing better lifestyle, early diagnosis and treatment. Hence this study was conducted with the objective of addressing the menstrual disorders and associated problems among the medical students.

Methods: The cross-sectional study was conducted by the department of obstetrics and gynaecology, at Sri Muthukumaran Medical College Hospital and Research Institute, among the first, second- and third-year female students who are doing their MBBS course in the same institute, during the month of December 2019. A total of hundred students were included in the study. Data was collected using a proforma and analysis was done using Statistical Package for Social Sciences (SPSS) version 17.

Results: Menstrual cycle periodicity was irregular among 17% of participants. Dysmenorrhoea, mid cycle pain, heavy menstrual bleeding was noted among 27%, 19% and 11% respectively. Also 10% of students reported sickness absenteeism due to menstrual disorders.

Conclusions: Adolescent students should be educated on the importance of physical and mental health in terms of healthy food habits and regular physical exercise to overcome the menstrual disorders and to enjoy healthy reproductive period.

Keywords: Dysmenorrhoea, Medical students, Menstruation, Menstrual disorders

INTRODUCTION

Menstrual cycle is a physiological change that occurs in females. The process of menstruation is the flow of blood from the endometrial lining of uterus through the vagina.¹ Girl's first menstruation refers to menarche and it is used as an indicator of maturity to assess the developmental status of a pubertal female.^{2,3}

It generally occurs between the ages of 11 and 14 years in 95% of girls depending on race, ethnicity, socioeconomic and nutritional status.⁴ Menstrual cycle is irregular during the first year of menarche due to anovulatory cycles.

Weight, height, body fat and BMI are the factors which influence the regularity and duration of menstrual cycle.

Typically, a menstrual flow lasts 2-7 days with changing three to six pads per day suggests normal flow. The normal duration between two menstrual cycles ranges from 21 to 35 days.⁵ Menstrual dysfunction occurs in majority of the adolescent girls and it may affect the life of adolescent and young adult women.^{6,7}

Dysmenorrhea is one of the most common gynaecologic disorders among adolescent girls which may be associated with symptoms like headache, back pain,

vomiting, nausea and diarrhoea. It is believed that the cause of the pain is excess production of prostaglandins (PG) in the endometrium during the ovulatory cycle⁸. It is the major cause of activity restriction and school absence in adolescent girls.

Medical students are at high risk for developing menstrual irregularities due to their lifestyle, food pattern and exercise habits. Dysmenorrhea and Premenstrual Syndrome are most commonly related to absence from class/college, limitation in social, academic, sports and daily activities.^{9,10} Medical students need to study harder and are vulnerable to stress, which may lead to dysfunction of hypothalamo-pituitary ovarian axis causing menstrual abnormalities.¹⁰

A number of medical conditions can also cause irregular cycles which can be diagnosed and treated at an early stage. However, this part of women's health is very crucial which needs to be concentrated. More than 90% of menstrual problems are preventable just by early detection and appropriate treatment.¹¹ Hence this study was conducted with the objective of addressing the menstrual disorders and associated problems among the medical students.

METHODS

The cross-sectional study was conducted by the department of obstetrics and gynaecology, at Sri Muthukumar Medical College Hospital and Research Institute, among the first, second- and third-year female students who are doing their MBBS course in the same institute, during the month of December 2019. Based on the literature¹², considering the prevalence of irregular menstrual cycles among students as 40% with confidence of 95% and relative precision of 10%, the sample size was calculated as ninety-three and it was rounded to hundred. Hence, a total of hundred students were included in the study. Students who were on treatment with hormonal pills were excluded from the study.

The principal investigator explained the purpose of the study to each participant and a written consent was obtained from the participants prior to the commencement of the study.

The participants were also informed that their participation was voluntary and that they could withdraw from the interview at any time without consequences.

Every effort was made, to be sure that all information collected from the participants, remain confidential. The study was conducted using a questionnaire, covering particulars related to clinical and treatment history related to their menstrual disorders. Data was entered in Microsoft excel and data analysis was done using Statistical Package for Social Sciences (SPSS) version 17.

RESULTS

In this study among medical students 57% of them were in the age group of 19-20 years, 38% of the participants were below 18 years of age and 5% of the participants were above 20 years of age. Among the study participants, maximum of 78% of the participants attained menarche between the ages of 12-14 years whereas 16% of the participants attained menarche in the age of 11 and below while 6% of the participants attained menarche after 14 years of age. Regarding Body Mass Index (BMI) 5% of the students were underweight and 21% of the students were found to be overweight and 2% of the students were obese. Menstrual cycle periodicity was regular for 83% of the participants in this study. Among 100 students menstrual cycle duration was regular for 83% of the participants, it was short for 1% of the participant and prolonged for 2% of the participant (Table 1).

Table 1: Characteristics of the study participants.

Variables	Percentage
Age group	
≤ 18 years	38
19-20 years	57
> 20 years	05
Age at menarche	
≤ 11 years	16
12-14 years	78
> 14 years	06
BMI	
Underweight	05
Normal	72
Over weight	21
Obese	02
Periodicity of menstrual cycle	
Regular	83
Irregular	17
Duration of menstrual cycle	
Normal	97
Shortened	01
Prolonged	02

Associated with menstrual cycles 27% of the participants had dysmenorrhoea, 19% of the participants had mid cycle pain, 11% of the participants had heavy menstrual bleeding, 2% of the participants had mastalgia and 1% of the participants. Associated medical conditions like hypothyroidism, hyperthyroidism, PCOD, stress and premenstrual syndrome was noted among 4%, 1%, 8%, 5% and 4% of the participants respectively (Table 2).

Ultrasonography was done for 14% of the participants in this study for menstrual cycle irregularities. Treatment was taken by 15% of the participants in this study. Also, ten percentages of participants were missed their academics due to menstrual disorders (Table 3).

Table 2: Proportion of participants with associated clinical conditions.

Variables	Percentage
Associated Symptoms	
Heavy menstrual bleeding	11
Dysmenorrhoea	27
Vomiting	01
Mastalgia	02
Mid cycle pain	19
Associated conditions	
Hypothyroidism	04
Hyperthyroidism	01
PCOD	08
Stress	05
Pre-menstrual syndrome	04

Table 3: Treatment aspects of the study participants.

Variables	Percentage
USG done	
Yes	14
No	86
Treatment taken	
Yes	15
No	85
Sickness absenteeism	
Yes	10
No	90

DISCUSSION

The present study was conducted to assess the menstrual disorders and associated problems among the medical students. Among the study participants, maximum of 78% of the participants attained menarche between the ages of 12-14 years whereas 16% of the participants attained menarche in the age of 11 and below while 6% of the participants attained menarche after 14 years of age. Mean (SD) age of menarche was 13.1±0.8 years. This finding is consistent with the reports of Begum et al, where they reported mean age as 13 years and Ikaraoha et al also reported a mean age at menarche of 13.89 years.^{13,14} The age of menarche is determined by number of factors such as, general health, genetic factors, socioeconomic and nutritional status.¹⁵

In this study, menstrual cycle periodicity was regular for 83% of the participants in this study. Among 100 students menstrual cycle duration was regular for 83% of the participants, it was short for 1% of the participant and prolonged for 2% of the participant. In the study conducted by Karout et al reported the most common menstrual disorders were irregular frequency of menstruation (80.7%) and irregular duration of menstruation (43.8%).¹²

Problems with menstrual pattern may affect 75% of girls, and are the major cause of recurrent short-term school absenteeism in female adolescents.^{6,7} Menstrual irregularity and prolonged menstrual bleeding are the most common menstrual disorders in early adolescents. Prolonged menstrual bleeding usually occurs early after menarche due to anovulatory cycles. In anovulatory cycles, estrogen unopposed by progesterone produces an unstable endometrial lining that eventually breaks down, and vasoconstriction and myocardial contractility do not occur.¹⁶

In this study, 27% of the participants had dysmenorrhoea, 19% of the participants had mid cycle pain, 11% of the participants had heavy menstrual bleeding, 2% of the participants had mastalgia and 1% of the participants. Associated medical conditions like hypothyroidism, hyperthyroidism, PCOD, stress and pre-menstrual syndrome was noted among 4%, 1%, 8%, 5% and 4% of the participants respectively. Other studies conducted by Lee et al and Amita et al reported the prevalence of dysmenorrhoea as 67.7% and 73.8%, respectively.^{17,18}

In this study, mid cycle pain was reported by 19% of participants whereas Amita et al, that reported mid cycle pains in 63.29% of participants.¹⁸ Similarly, in the study conducted by Jerry et al showed 49% subjects were suffering from mid cycle pain.¹⁹

In the present study, ten percentages of participants were missed their academics due to menstrual disorders. Similarly conducted by Klein et al it was reported that 14% of adolescents aged 12-17 years missed school because of menstrual cramps and it was more common in subjects with severe dysmenorrhea.⁶ Similarly Sickness absenteeism is significantly more among dysmenorrhic girls as reported by Avasarala et al and Weissmen et al.^{20,21}

CONCLUSION

In the present study, dysmenorrhoea and irregular cycles are more common. Also, the burden of sickness absenteeism is rising. Hence all the students should be educated on the importance of physical and mental health in terms of healthy food habits and regular physical exercise. Studies in large scale are needed to assess the in depth of this issue so as to prepare and implement health programmes at schools and college levels, to address the adolescent population.

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