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ORIGINAL ARTICLE

A Cross Sectional Study on Knowledge, Attitude, Practices of Menstrual Hygiene and College Absenteeism During Menstruation Among Medical Students

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Abstract

Background: Menstruation is a normal body process. However, poor awareness, social restrictions, and symptoms like pain can affect female students' daily activities and college attendance. Medical students, as future doctors, should have good knowledge and safe practices regarding menstrual hygiene. **Methods:** A facility-based cross-sectional study was conducted among 245 female medical students at Government Karur Medical College using a semi-structured questionnaire. Data were summarized using descriptive statistics and tested using Chi-square test and odds ratio. A p-value <0.05 was taken as statistically significant. **Results:** The mean age of participants was 20.4 ± 1.1 years. About 69.4% had some knowledge about menstruation before menarche, mainly from their mothers. College absenteeism during menstruation was reported by 36.7% of students, mostly due to pain (93.3%). Painful menstruation had a significant association with absenteeism ($p < 0.001$), and students with pain had higher odds of taking leave (OR 14.72; 95% CI: 5.13–42.17). PMS was present in 64.9% of participants. Sanitary napkins were used by 97.1%, and most students followed proper disposal and hand hygiene. **Conclusion:** Even though most students had good awareness and hygiene practices, menstrual pain and PMS still led to college absenteeism. Early identification, counselling, and supportive steps at the college level can help reduce absence during menstruation.

Keywords: Menstrual hygiene, college absenteeism, premenstrual syndrome, medical students, dysmenorrhea

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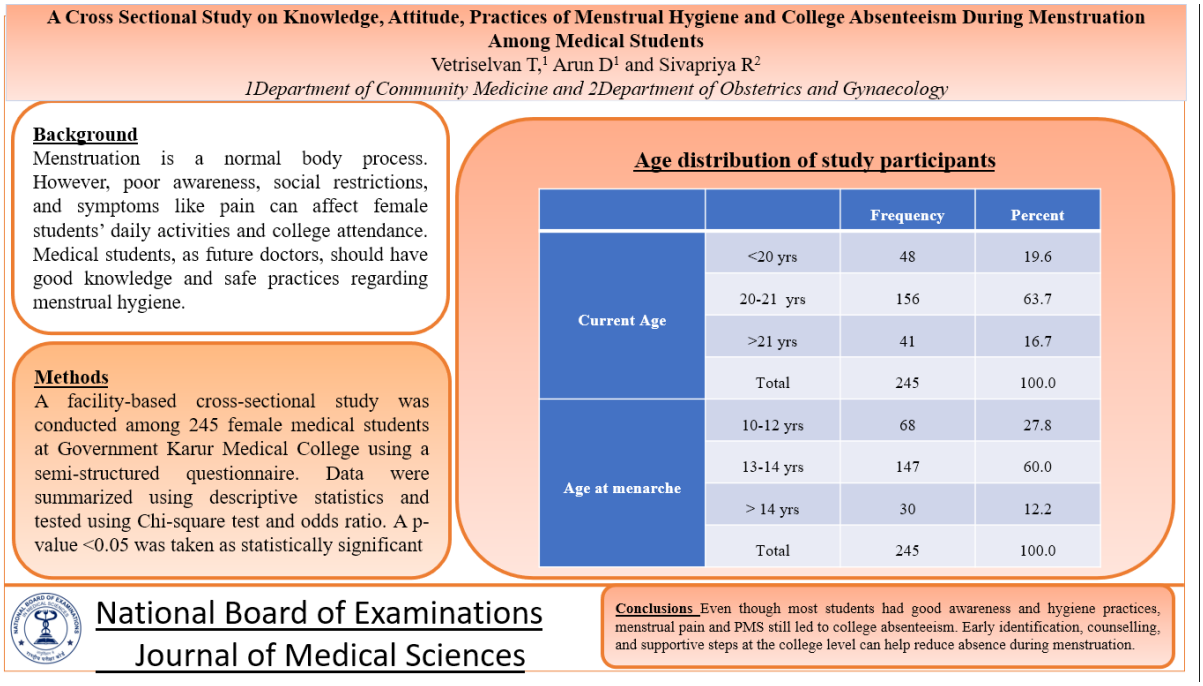
Graphical Abstract



Introduction

Menstruation is a normal body process, but it is still affected by myths, shame, and restrictions, which can influence menstrual hygiene practices and college attendance [1]. Public health guidance highlights that good menstrual hygiene management (MHM) is important for the health, dignity, and education of adolescent girls and young women [2]. Evidence from low- and middle-income countries shows that problems during menstruation are often linked to factors such as social norms, lack of proper toilets and facilities, and limited support that can reduce participation in studies and also affect their well-being [3,4].

Studies among Indian medical and health-professional students show that missing college during menstruation is common and the most common reason is dysmenorrhea and discomfort [5,6]. Medical students usually have better awareness and practices compared to the general population but still gaps exist in understanding the biological process and in proper management of the symptoms [7,8]. Dysmenorrhea is common symptom among university students worldwide which can reduce quality of life and daily functioning among them [9,10]. Proper assessment and appropriate management of primary dysmenorrhea is recommended to reduce symptoms and to improve their routine activity [11].

Premenstrual syndrome (PMS) is also common in young women which can affect their mood, physical comfort, and also their academic performance [12]. Evidence from meta-analysis noted that prevalence of this PMS differs among various studies because of different criteria and populations. PMS also remains as a significant problem [13]. In India, myths and restrictions in menstrual practices continue to be common problem that is even seen among educated groups [14]. Safe disposal of menstrual waste is another important problem and studies have shown

that there are various challenges in disposal methods and can vary widely [15].

Therefore, this study was conducted among female medical students in Karur, Tamil Nadu, to assess knowledge, attitude and practices (KAP) related to menstrual hygiene, measure the prevalence of college absenteeism during menstruation, and identify associated factors.

Objectives

1. To assess the knowledge, attitude, and practices related to menstrual hygiene among female medical students.
2. To determine the prevalence of college absenteeism during menstruation and associated factors.
3. To assess the prevalence of premenstrual syndrome (PMS).

Materials and Methods

A cross-sectional study was conducted among 245 female medical students at Government Karur Medical College, Tamil Nadu. Simple random sampling was used for selecting the students. A pre-validated semi-structured questionnaire was used to collect the data regarding sociodemographic details like their age, age at menarche, prior knowledge about menstruation, menstrual pattern, menstrual pain (dysmenorrhea), symptoms regarding PMS, hygiene practices, restrictions during menstruation, and college absenteeism.

Data were entered in Microsoft Excel and summarized using descriptive statistics. The Chi-square test was utilised to find the association between these menstrual factors and college absenteeism. Odds ratios (OR) with 95% confidence intervals (CI) were calculated. A p-value <0.05 was considered statistically significant.

Results

A total of 245 female medical students participated in the study. The mean age of the participants was 20.4 ± 1.1 years. All participants had attained menarche, and the mean age at menarche was 13.1 ± 1.2 years. About 69.4% of students had some knowledge about menstruation before menarche. The most common source of information was mother (56.47%), followed by friends (21.76%), teachers (8.82%), books (5.29%), and other sources (7.67%). However, despite this prior knowledge, more than half of the students (55.1%) were unaware of the source of menstrual blood, and only 40.4% correctly identified the uterus as its origin. Nearly 47.3% of students reported feeling anxious during their first menstrual experience.

Menstrual absenteeism was reported by 90 students (36.7%). Among them, 28.2% missed college for one day, 7.8% for two days, and 0.8% for three days. The main reasons for absenteeism were menstrual pain (93.33%), need for rest (26.67%), fear of staining clothes (8.89%), and lack of toilet privacy (4.44%).

The mean duration of menstruation was 4.98 ± 1.52 days, ranging from 2 to 20 days. Most students (85.7%) reported having a regular menstrual cycle, while 14.3% had irregular cycles. Among those with irregular cycles, only 57.14% had sought medical consultation. The remaining students did not seek care mainly because they believed the irregularity was normal (73.3%). Most students with irregular cycles (65.71%) felt that poor lifestyle habits were the cause.

Menstrual pain was experienced by 72.7% of participants, commonly on the

first (34.27%) and second day (42.70%) of menstruation. For pain relief, the majority preferred rest (83.15%), while 10.11% used home remedies and only 6.74% took medications. Vaginal discharge was reported by 67.8% of students, most commonly white discharge (65.66%), followed by curdy white discharge (31.93%). Only 10.24% reported foul-smelling discharge. Other symptoms experienced during menstruation included fatigue (49.4%), nausea (18%), diarrhoea (17.1%), dizziness (13.1%), headache (11.8%), and vomiting (9.8%).

Regarding menstrual products, 90.2% of students were aware of menstrual cups, but only 47.51% knew how to use them properly. Sanitary napkins were used by 97.1% of participants, while very few used tampons (0.4%) or menstrual cups (0.4%). About 2% used a combination of products. The average number of pads used per cycle was 4 ± 6.16, with a range of 1 to 7 pads. Most students (95.5%) disposed used pads by wrapping them and throwing them in dustbins, while 3.7% used incineration. Almost all participants (99.6%) practiced proper handwashing after changing absorbents.

Most students (94.3%) discussed menstruation with their family members. However, 76.7% reported facing at least one restriction during menstruation. These included avoidance of religious places (75.1%), restriction from entering the kitchen (6.1%), avoidance of family functions (8.2%), being made to sleep or sit separately (4.9%), and restriction from sports activities (0.4%).

More than half of the students (64.9%) experienced premenstrual syndrome (PMS). Common PMS symptoms included irritability (60%), fatigue (47.8%), anxiety (31.8%), depression (30.6%), crying spells (28.2%), increased appetite (22.9%), confusion (20%), headache (20%), bloating (20%), dizziness (15.9%), breast tenderness (11%), insomnia (9%), palpitations (5.3%), and forgetfulness (5.3%).

On statistical analysis, a significant association was found between menstrual pain and college absenteeism, with 95.6% of students who experienced pain taking leave during menstruation ($p < 0.001$). The association between absenteeism and irregular menstrual cycles (45.7%) or PMS (38.4%) was not statistically significant. Students with menstrual pain had 14.72 times higher odds of availing leave (95% CI: 5.13–42.17), whereas the odds of absenteeism among those with PMS were 1.223 (95% CI: 0.70–2.12) (Tables 1-3 and Figure 1 to 2).

Table 1. Age distribution of study participants and age at menarche among female medical students (n = 245)

		Frequency	Percent
Current Age	<20 yrs	48	19.6
	20-21 yrs	156	63.7
	>21 yrs	41	16.7
	Total	245	100.0
Age at menarche	10-12 yrs	68	27.8
	13-14 yrs	147	60.0
	> 14 yrs	30	12.2
	Total	245	100.0

Table 2. Association between menstrual-related factors and college absenteeism during menstruation among female medical students

	LEAVE ON MENSTRUATION		Total	p value
	Yes	No		
Painful Menstruation	86	92	178	<0.001*
	48.3%	51.7%	100.0%	
Irregular Menstrual Cycle	16	19	35	0.234
	45.7%	54.3%	100.0%	
PMS	61	98	159	0.472
	38.4%	61.6%	100.0%	

* Statistically Significant

Table 3. Distribution of menstrual knowledge, symptoms, health-seeking behaviour, and menstruation-related absenteeism among female medical students (n = 245)

	Yes	No	Total
Knowledge about menarche	170 (69.4%)	75 (30.6%)	245 (100.0%)
Discuss Menstruation with Family members	231 (94.3%)	14 (5.7%)	245 (100.0%)
Painful menstruation	178 (72.7%)	67 (27.3%)	245 (100.0%)
Visited Gynaecologist during painful/Irregular menstruation	20 (57.1%)	15 (42.9%)	245 (100.0%)
Vaginal discharge	160 (65.3%)	85 (34.7%)	245 (100.0%)
PMS	159 (64.9%)	86 (35.1%)	245 (100.0%)
Leave on Menstruation	90 (36.7%)	155 (63.33%)	245 (100.0%)

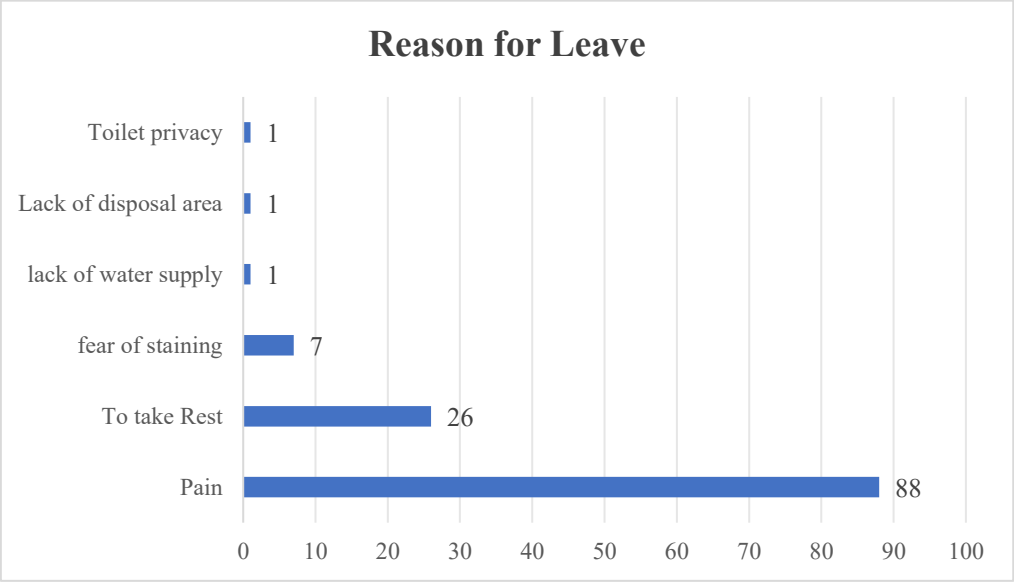


Figure 1. Reasons for college absenteeism

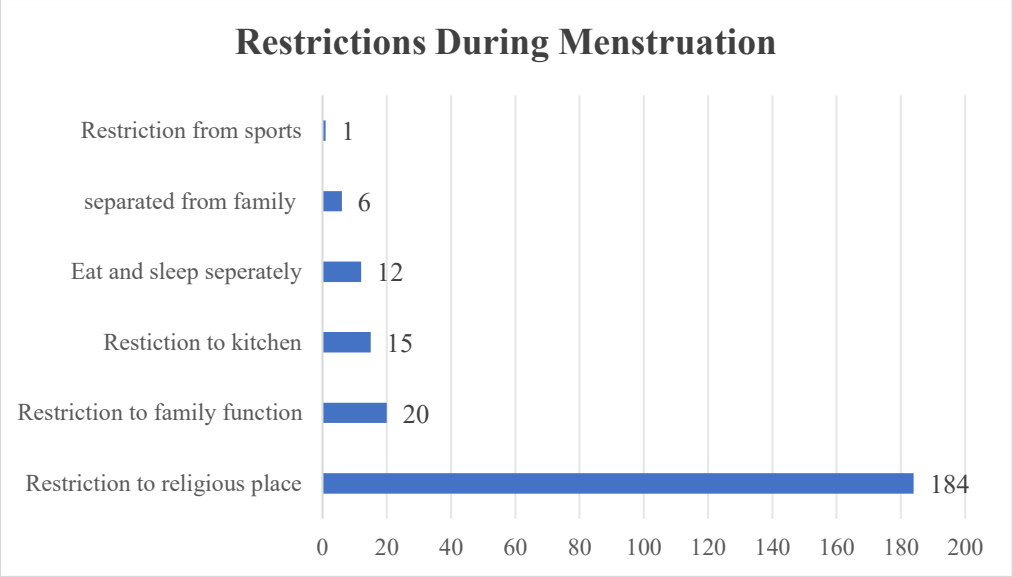


Figure 2. Restrictions during Menstruation

Discussion

The menstrual absenteeism rate in the present study was 36.7% which is similar to reports from medical and dental students in India, where absence during menstruation is mainly due to menstrual pain (dysmenorrhea) and discomfort [5,6]. The strong link between dysmenorrhea and absenteeism found in our study also matches international evidence showing that dysmenorrhea commonly causes difficulty in daily activities and lowers quality of life among university students [9,10]. This highlights the need to follow standard, guideline-based methods for assessment and management of primary dysmenorrhea while providing student health services (11).

The prevalence of PMS in this study was 64.9% which is also like findings from other study in young women and college student populations. Even though PMS was not significantly linked with absenteeism in our study, it still indicates a high burden [12,13]. Menstrual restrictions were frequently reported, showing that cultural taboos and social restrictions still persist, which is similar to findings from some Indian studies and also from qualitative studies done in low- and middle-income countries [3,14].

Although most of the students used sanitary napkins and also practiced good hand hygiene, the type of menstrual product used and the method of its disposal are still important in menstrual hygiene management. The product preference and disposal practices observed in our study are comparable to earlier studies showing wide variation in menstrual hygiene behaviors and disposal methods [7,15]. The high awareness but low use of menstrual cups suggests that knowledge alone may not be enough; practical guidance and supportive environments are also needed to improve their acceptance and regular use of these menstural cups [8].

Conclusion

Menstrual absenteeism was common among the students mainly due to dysmenorrhea. Although most students followed good hygiene practices, many still had gaps in understanding the process in

menstruation. Restrictions because of social and cultural beliefs were common in this study. Menstrual health education in the college, easy access to counselling, and proper treatment for menstrual pain may help in reducing absenteeism and improve students' well-being.

Strengths

This study included an adequate number of female medical students and used simple random sampling, which reduced selection bias within the study setting. It assessed many important aspects of menstrual health, including knowledge before menarche, understanding of menstruation process, hygiene practices, dysmenorrhea, premenstrual syndrome, sociocultural restrictions, and college absenteeism thus providing us a comprehensive picture. The use of statistical analysis to assess associations and report odds ratios with confidence intervals strengthened the identification of dysmenorrhea as an important factor contributing to absenteeism. The findings are particularly relevant because medical students are future healthcare providers, and the results from this study can help in planning effective college-based menstrual health interventions.

Limitations

As the study had a cross-sectional design, it can identify associations but cannot establish cause-and-effect relationships. This is a single-centre study conducted in one medical college so the findings may not be generalizable to all medical students or other educational settings. The data was collected using a self-reported questionnaire that may cause recall bias and also may have underreporting of some sensitive issues. Premenstrual syndrome was identified based on reported symptoms alone since there is no standardized diagnostic tool, which may also influence the accuracy in determination of prevalence. Some factors that could affect menstrual symptoms and absenteeism like anemia, stress, nutritional status, or underlying gynecological conditions, were not assessed in this study.

Author Contributions

Author 1 contributed to the conceptualization and definition of the intellectual content of the manuscript and design of the study. Author 2 was responsible for the design of the study, data acquisition, data analysis, and statistical analysis, and contributed to the definition of intellectual content. Author 3 played a key role in literature search, manuscript editing, and manuscript review. Author 1 will serve as the corresponding author / guarantor of the manuscript

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Conflicts of interest

The authors declare that they do not have conflict of interest.

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