

MEDICAL STUDENT'S MENSTRUAL CYCLE: THE UNKNOWN UNKNOWN

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ABSTRACT

Background: *The menstrual cycle is a health indicator in women. The change in health makes female students feel less confident in communicating, studying, and living. Therefore, the study on the characteristics of the menstrual cycle in female medical students brings many practical meanings by figuring conclusions and solutions to improve both physiological and mental discomforts for women during menstruation. Objectives:* *Can Tho University of Medicine and Pharmacy (CTUMP) 3rd year medical students were studied for the characteristics, the abnormalities of the menstrual cycle, and the premenstrual syndrome. Materials and methods:* *The design of a cross-sectional descriptive study with analysis by direct interview method was conducted on 126 female 3rd year medical students at CTUMP. Results:* *Long menstrual cycle time accounted for 38.1% of subjects, while short menstrual cycle time accounted for 0.8%. The study also found that the average menstrual period was 5.00±1.34 days. The premenstrual syndrome was observed in 47.3% of students, with abdominal pain and low back pain accounted for the highest rate (63.5%), and headache accounted for the lowest rate (9.5%). Menorrhagia had a low prevalence (7.1%), whereas menstrual cramp was much more common (60.3%). Conclusions:* *Long menstrual cycles occurred at a high rate among medical students. Abdominal pain and low back pain were the most common symptoms before menstruation. Menstrual cramp was the most common abnormality of the menstrual cycle among CTUMP female medical students.*

Keywords: *girls; menstrual cycle; medical student; Can Tho.*

I. INTRODUCTION

Menstruation is the cyclical, orderly shedding of the uterine lining caused by the interaction of hormones produced by the hypothalamus, pituitary, and ovaries [11]. The menstrual cycle is frequently accompanied by health-related symptoms such as irritability, anxiety, depression, back pain, headaches, acne, body immunity, body temperature, and so on. This phenomenon appears to have an impact on a woman's life and activities, including her ability to absorb nutrients, reduce physical activity, dress, and have sex, as well as her psychological and social well-being [6], [7]. Menstrual cycle issues, particularly for female students in the health sector, require more attention because medical students are among those who are adversely affected by a stressful living and learning environment [10].

According to a study of stress levels conducted on 494 students, there were 75.7% of female students were more stressed than male students (57%) [13]. In 2020, a study conducted by Hue University's University of Medicine and Pharmacy concluded that the rate of dysmenorrhea among female full-time female students at Hue University of Medicine and Pharmacy was high, with most of them experiencing moderate pain and other dysmenorrheal symptoms. Menstrual symptoms were both common and severe [4]. Menstruation is a normal physiological process, but restrictions during the menstrual cycle can have a negative impact on a woman's life. On the other hand, reproductive health is still a sensitive issue that is not widely discussed. Female students are less confident in communicating, studying, and living as their health has changed. This appears to have an impact on the learning and training outcomes of this group of subjects. There is still no

research on the menstrual cycle characteristics of medical students in Vietnam, particularly in the Mekong Delta region. Based on the foregoing, we conducted this study to evaluate the characteristics, abnormalities of the menstrual cycle, and premenstrual syndrome (PMS).

II. MATERIALS AND METHODS

2.1. Study population

The population was selected from the female students studying full-time general medicine for the 2019-2025 course at CTUMP.

2.1.1. Standards for selection

The female students who agreed to take part in the study were born in 2001 and studied 3rd year of full-time general medicine at CTUMP.

2.1.2. Standard for elimination

Subjects suffering from diseases that disrupt the natural menstrual cycle, such as ovarian cysts, uterine fibroids, thyroid disease, endocrine diseases causing menstrual disorders, and polycystic ovary syndrome.

The subject had a history of gynecological surgery intervention. Students with mental illnesses and the ones who did not want to cooperate, were married, had dropped out, passed, or re-studied.

2.1.3. Study address and time

The research was conducted at CTUMP from June 2021 to December 2021 also during the 4th outbreak of the Covid-19 pandemic in Vietnam.

2.2. Methods

2.2.1. Study design

This was an analytical cross-sectional descriptive study.

2.2.2. Study size

The study sample size was determined according to the following formula:

$$n \geq z_{1-\frac{\alpha}{2}}^2 \times \frac{f(1-f)}{\varepsilon^2} \geq 1.96^2 \times \frac{0.91(1-0.91)}{0.05^2} \geq 125.85$$

With:

n: is the estimated sample size for the study.

$z_{1-\frac{\alpha}{2}}$: is the confidence coefficient.

α : is the design significance level (with $\alpha = 0.05$).

f = 0.91

Based on a study conducted at the Medical College of Immam Abdulrahman Bin Faisal University, f was the rate of students suffering from some menstrual problem [9].

d: is the allowable error, with d = 0.05.

The study was conducted on a total of 126 samples.

2.2.3. Sampling method

All subjects satisfying the research conditions were invited to participate in the study by means of convenient sampling until the number of values of the sample to be searched was sufficient.

2.2.4. Study content

Certain aspects of the subject's menstrual cycle were investigated, which included menstrual cycle time and menstrual period. Menstrual cycle time is the time (in days)

between the first two days of menstrual bleeding of two latest menstrual periods (short: menstrual cycle length is less than 25 days, normal: menstrual cycle length is between 25 and 30 days, long: menstrual cycle length is greater than 30 days). The menstrual period is the time (in days) between the start of menstrual bleeding and the end of menstrual bleeding in a menstrual cycle (short: the average number of menstrual days is less than 3 days, normal: the number of menstrual days ranges between 3 and 7 days, long: the number of menstrual days is greater than 7 days can be a sign of menorrhagia).

PMS is a condition in which the body exhibits one or more of the following symptoms a few days before the menstrual period. These symptoms include chest stinging, needle-like discomfort in the breasts, even feeling tighter than usual, and more painful with movement or movement. In the first few days of menstruation, abdominal bloating causes the abdomen to enlarge, tighten, and give the illusion of weight gain. Despite the headache, lower abdominal pain and lower back pain have been revealed.

Some research subjects' menstrual cycle disorders, abnormal symptoms, and syndromes were also investigated. The irregular cycle is the phenomenon of menstruation without a regular cycle. It can be a few days earlier, a few days to a few months later, or even amenorrhea when there has been no period for 6 months or more. Menorrhagia is defined as bleeding that is not related to the menstrual cycle and lasts for more than 7 days. Dysmenorrhea is a physical phenomenon that manifests as lower abdominal pain, pain through the spine, may spread to the thighs or chest, causing tightness in the breasts, difficulty breathing, and sometimes spreading to the entire abdomen. Dysmenorrhea can be accompanied by headaches, back pain, nausea, fainting, and fever.

2.2.5. Statistical analysis

All data collected were processed and analyzed using SPSS 26.0 software in accordance with medical statistics methods. The frequency and percentage of qualitative variables were used to describe them. If the variable had a normal distribution, the means and standard deviation were used to describe it; otherwise, the medians and maximum value, minimum value were used to describe it. The Kolmogorov-Smirnov test was used to determine whether a variable had a normal distribution.

2.2.6. Ethics approval

Our study was approved by the Medical Ethics Committee of CTUMP on medical research with No. 21.401-ĐHYDCT. The informed consent form (No. 401/PCT/HĐĐĐ) was accepted on 24th June, 2021.

All study participants were clearly explained the purpose and method of conducting the study. This study ensures the voluntary participation of research subjects. Study participants were allowed to refuse or not answer questions when they felt uncomfortable. The subject's personal information and research data will be encrypted after data collection to ensure privacy for study participants.

III. RESULTS

3.1. The menstrual cycle characteristics

The median menstrual cycle time was 30 days, the mean period was 5 ± 1.34 days. 38.1% of subjects had long cycle times, while 0.8% had short cycle times. 96% of the students participating in the study had an average menstrual period.

Table 1. The cycle time and menstrual period

Feature	Menstrual cycle time (days)			Period (days)			Total
	Short	Medium	Long	Short	Medium	Long	
Frequency	1	77	48	1	121	4	126
Percent (%)	0.8	61.1	38.1	0.8	96.0	3.2	100%
Medium or Median	30 (Min = 23, Max = 60)			5±1.34			

3.2. Features of premenstrual syndrome and signs of this syndrome

Table 2. PMS and its signs

No.	Signs		Frequency	Percentage (%)
01	Chest tightness	Yes	56	44.4
		No	70	55.6
02	Headache	Yes	12	9.5
		No	114	90.5
03	Abdominal pain, low back pain	Yes	80	63.5
		No	46	36.5
04	Distention	Yes	30	23.8
		No	96	76.2
05	PMS	Yes	55	43.7
		No	71	56.3

44% of students participating in the study showed signs of chest tightness. Symptoms of headache accounted for a low rate (9.5%). PMS was reported to occur in 43.7% of students.

3.3. Abnormal menstrual cycle characteristics

Table 3. Abnormalities of the menstrual cycle

No.	Abnormalities of the menstrual cycle		Frequency	Percentage (%)	Total
01	Irregular cycle	Yes	59	46.8	126 (100%)
		No	67	53.2	
02	Menorrhagia	Yes	9	7.1	126 (100%)
		No	117	92.9	
03	Menstrual cramp	Yes	50	60.3	126 (100%)
		No	76	39.7	

The rate of irregular cycles accounted for 53.2% of the study subjects. The number of subjects with menorrhagia accounted for a small fraction of those without (7.1%). In contrast to menorrhagia, the presence of dysmenorrhea was more dominant (60.3%).

IV. DISCUSSION

4.1. Traits of the menstrual cycle

More than half of the students participating in the study had an average cycle time characteristic (61.1%), the number of students with a low cycle time was negligible (0.8%), and most of the rest had a longer than average menstrual cycle time (38.1%). This was an

alarming signal because the percentage of students with polymenorrhea accounted for a fairly high percentage. This suggests that the menstrual cycle in medical students needs more attention. Further studies on this issue are needed. The results of our study are different from some studies on the menstrual cycle in other groups of subjects. Another study was conducted with a sample size of 5561 science majors, oligomenorrhoea was the most common problem reported (15.3%), and polymenorrhoea was much less common (2.0%) [3]. Meanwhile, the study in 2020 found that among 503 subjects, 59 (11.7%) female students had a long menstrual cycle time, 53 (10.6%) female students had a short cycle time and 391 (77.7%) female students had normal menstrual cycle duration [13]. The difference between our study and these studies may be due to the sample size as well as the nutrition. Our study was limited because the variable menstrual cycle time was based on the subjective testimonies of the research subjects.

While almost students in the study had normal menstrual periods (96 students), the number of students with irregular periods was much lower (3.2% of students had long periods and 0.8% had short periods). 5.00 ± 1.34 days was the median of menstrual days. Our findings were similar to another study conducted on 584 women (18-40 years old). The average number of menstrual days for the subjects in this study was 6 days [12]. This showed that the number of days of a woman's period was stable in different studies.

4.2. Features of premenstrual syndrome and signs

PMS was found to occur in nearly half of the 3rd year full-time female medical students at CTUMP (43.7%). PMS of the study was based on 4 symptoms occurring 7 days before menstruation including, abdominal pain, low back, headache, distention, and chest tightness. The results of our study are similar to another study on the menstrual cycle of students which was conducted on 258 female health science students. The results of this study showed that 46.7% of students had PMS [10]. However, when compared with a number of studies in the world conducted on students from other disciplines, we found that there was a big difference in the data. A study at a medical institution found that 58.1% of freshmen had PMS [1]. Another study conducted on students at 15 universities found that only 33.82% of subjects had PMS [2]. Similar to our study, the research topics mentioned above were conducted on university students, excluding female students with a history of amenorrhea, history of dysmenorrhea, blood and other gynecological diseases. Most of the symptoms we used to conclude PMS were the same symptoms mentioned in other studies. However, the headache was the most common premenstrual symptom. According to the findings of previous research, it accounted for less than 10% of the cases in our study [5]. Instead, the two most common PMS symptoms were abdominal pain, low back pain, and chest tightness. The differences between studies may be due to the research subjects, geographical locations, and sample sizes. The distinction between how to select the defining symptoms for PMS was particularly noteworthy.

4.3. Irregularity of the menstrual cycle

Our data showed that a small number of medical students had menorrhagia, accounting for 7.1%, which was much lower than the prevalence of some other disorders such as irregular menstrual cycles or dysmenorrhea. Compared with a similar study, it was found that 3.4% of subjects had menorrhagia, 27% had irregular menstrual periods, and 89.7% had dysmenorrhea. Although both studies were conducted on a group of students in

the health sciences, we found differences in the parameters. However, there was still a certain similarity between our study and the study among young female students menorrhagia was an abnormal phenomenon with a low rate. Dysmenorrhea accounted for a high proportion. Higher, this result was also similar to another study which was conducted on a sample size of 42879 women between the ages of 15-45. Besides that, menstrual cramp was the most common symptom (85%) [8]. From the above data, we found that menstrual cramp was the most common symptom of menstrual cycle abnormalities in the population of health science students.

V. CONCLUSIONS

Medical students had a high percentage of long menstrual cycles. However, most of the students had normal menstrual periods. Furthermore, our study found that the menstrual cramp was the most common symptom that appears before menstruation. Menstruation is the manifestation of the menstrual cycle that appears at the highest rate.

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