

## Assessing the Knowledge, Attitude and Practice Regarding Menstruation Among Students: A Cross-Sectional Study

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### Abstract

Menstruation is a normal part of life for a woman every month. It is when the lining of the uterus sheds and comes out of the body through the vagina. Most women around the world go through it, but people have lot of theories and opinions about this life process and it can lead to misconception. However, as time goes by, more and more people learn about the true concept about menstruation, and understanding grows along with it. Hence, this study was dedicated to discover the knowledge, practice and attitude towards menstruation among diploma students who study in UiTM Bertam Pulau Pinang. First, to evaluate the demographic factor, which were gender, place as well as student's course that could influence these students' knowledge of menstruation. Second, to explore the attitude and practice related to menstruation among college students. A comparative cross-sectional survey was conducted on June 2023 among diploma students UiTM Cawangan Pulau Pinang, Bertam Campus. A questionnaire was used to capture students' demographic characteristics, knowledge, attitude and practice towards menstruation. The collected data were analyzed with statistical methods that are both descriptive and inferential using Statistical Package for Social Sciences (SPSS) version 22. The inferential statistic had been used to test the association of knowledge between gender, place and faculty. As a result, the findings revealed that there was a statistically significant difference in the mean score between the male and female participants for all the domains of knowledge in menstruation. In addition, the result demonstrated that there was no relationship between the place of residence and their knowledge about menstruation. Meanwhile, the findings showed that the distribution of knowledge was same across students of pharmacy and health sciences. The study reported that students chose sanitary pads and prefer to use heating pads manage menstrual cramps during periods. The average students also often change sanitary pad during menstruation, which is as much as 3-4 hours. In addition, the majority of students are also found to crave food such as desserts during menstruation, and many of them also experience some unpleasant things during menstruation such as cramps, emotional changes, and fatigue. In conclusion, gender gave an impact to their knowledge of menstruation while the place of residence and student's course did not give impact to the knowledge.

**Keyword:** Menstruation, knowledge, attitude, practice

## Introduction

**Menstruation** refers to the monthly shedding of blood and mucosal tissue from the inner lining of the uterus through the vagina. It is also known as the period. The menstrual cycle begins and ends with menstruation and is divided by ovulation into the follicular and luteal phases (Bull et al., 2019) (Wilcox, A. J. 2000). Since most women menstruate between menarche and menopause, menstrual health is essential to general health. Menarche symbolizes the first menstruation that marks the onset of the fertile segment of a woman's life or reproductive years, in which women can conceive and give birth to one or more children. (International Encyclopedia of Public Health, 2008). The average age at menarche is 13.8 years, however, it ranges from 9 to 18 years and varies by race and ethnicity (Jodi et al., 2000)

Research on knowledge, attitude and menstrual experience is necessary for women's health. Based on a menstrual attitude questionnaire by McPherson (2004), a comprehensive menstruation preparation with positive menarcheal experience is related to a more positive adult menstrual attitudes, experiences and behaviours and vice versa. However, most studies on menstruation and menstrual disorders are mainly confined to female adolescents. (Houston et al., 2006) (Lee et al., 2006). In Malaysia, the knowledge and awareness as well as how to manage symptoms and practice during menstruation still low among women especially men. A study conducted by Y Nor Asyikin et al. (2015), also included men in the research as men play a role their dynamic relationship with their wives, daughters and mothers in terms of menstrual experience is significant, but are often overlooked. Undeniably, menstrual disorder among women can affect male population directly. In a marital relationship, especially in the Malay culture, the men hold the role as the head of the family and should support the family not only financially but also emotionally (Y Nor Asyikin et al., 2015).

Some woman will also experience period pain during their menstruation. This menstrual pain or also known as dysmenorrhea is often described as a dull, sharp discomfort that feels like cramps and usually starts in lower belly right before or during menstruation. Women will sometimes feel pain at their vagina, breast or even waist during early menstruation and it is heavier pain than normal menstrual cramps. To ease the pain, some of them will opt for painkillers (Martha & Adam, 2003). According to Tangchai et al. (2004), very few first- and second-year college students believed that ibuprofen and mefenamic acid are useful treatments for dysmenorrhea.

Undeniably, most women experience food cravings during menstruation. A study on the increase of foods craving for certain foods and variation of intake during menstruation during menstruation was demonstrated. This is due to the changes in levels of hormone estrogen and progesterone in woman during menstrual cycle, especially in the luteal phase. As a result, estradiol is associated with increased carbohydrate rich food intake and progesterone related with sweet food (Sridevi et al., 2016).

According to a study, there were some differences between rural and urban residents in terms of knowledge, behavior, and practices regarding hygiene during the arrival of menstruation in urban and rural. This proves that awareness about menstruation and hygiene needs to be extended to all people regardless of gender, race, religion, and standard of living. (Arumugam et al., 2014). Research finding by Ahmad et al., (2021) also points towards the difference in the

knowledge level regarding place of origin where it reported that rural students were more knowledgeable than urban in Lucknow, India. This fact can be explained due to the rural area of Lucknow has almost a rural-urban fringe, and students daily travel to the city for college.

Considering the above scenario, this proposed study was aimed to assess the knowledge, attitude and practice towards menstruation diploma students at UiTM Cawangan Pulau Pinang, Bertam Campus. This study also evaluated the demographic factor, which were gender, place as well as student's course that could influence these students' knowledge of menstruation. This study also conducted to explore the attitude and practice related to menstruation among college students.

## **Methodology**

### **Study design**

This research utilized a comparative cross-sectional study conducted among students in UiTM Pulau Pinang, Bertam Campus in June 2023 from age 20-23. A self-administered questionnaire was distributed among students regardless of age, gender and student faculty. The questionnaire consisted of 4 sections that required information on the women's and men's socio demographic data, question on the knowledge of menstruation, practice as well as attitude of students during menstruation.

### **Data collection**

The respondents were among Diploma in Pharmacy and Health Science students based on their willingness availability. Students will be invited to participate in the survey via google form, which will be distributed online to subjects who have agreed to participate, along with written instructions for full participation.

### **Data analysis**

The questionnaire items for this survey included four criteria regarding Demographic, Knowledge, Attitude, Practice. The questionnaire component covered general knowledge on menstruation (8 items), practices during menstruation (5 items) and attitudes towards menstruation (5 items). The study utilized five-point Likert scale values for 8 knowledge domain. The following scores was used for knowledge domain, scores of '5', '4', '3', '2' and '1' for 'strongly agree', agree, 'neutral', disagree' and 'strongly disagree' respectively (Y Nor Asyikin et al., 2015). The criteria for attitude and practices during menstruation item comprised of several selections of answers and respondents need to choose all the choice of stated points. The collected data were analyzed with descriptive as well as inferential method by applying the statistical package for social sciences (SPSS) version 26. The data for the criteria of attitude and practice were presented in terms of frequency, percentage and mean while for inferential statistical method, an independent t-test and ANOVA were employed to assess the association of knowledge based on gender, places and faculty. The findings were utilized using a measured significance level of 0.05 to answer the research questions.

## Results

### Respondents' Demographic Profile

A total of 106 students were participated in this study with the majority of respondents were females, 76 females (71.70%) and the rest was 30 males (28.3%) (Table 1). Most of respondents aged 21, 91 students with the highest percentage (85.84%) followed by 5 (4.71%) students aged at 20 and 22 respectively. Another 2 respondents (1.88%) in this study were 23 years old. Only one respondent (0.94%) aged at 18, 19 and 26. Besides, most of respondents come from the faculty of pharmacy (n=76) and faculty of Health Science (n= 28). The biggest proportion of the respondents, 54 students (50.90%) were also living in the sub urban area compared to 33 students (31.10%) and 19 students (17.90%) originated from urban area and rural area respectively (Table 1). Undeniably, female respondents, faculty of pharmacy and those who lived in sub-urban area had the most contribution for the result in this study.

Table 1: Demographic characteristics of the respondents

Item	Frequency	Percentage%
<b>Age</b>		
18	1	0.94
19	1	0.94
20	5	4.71
21	91	85.84
22	5	4.71
23	2	1.88
26	1	0.94
<b>Gender</b>		
male	30	28.30
female	76	71.70
<b>Faculty</b>		
Pharmacy	78	73.60
Health Science	28	26.40
<b>Living area</b>		
Urban	33	31.10
Rural	19	17.90
Sub- urban	54	50.90

### Respondent Knowledge of Menstruation

There was a significant difference of mean score between men and women for all the domains of knowledge on the menstruation (Table 2). The domain “Menstruation cycle can impact mood and emotional health” scored the highest knowledge for men (Mean=4.46, SD= 0.89) and women (Mean=4.46, SD=0.65). However, majority of men (Mean=3.40, SD=0.62) and female (Mean=3.92, SD=0.92) had the lowest score of knowledge on the domain of “Woman bleeds about 20ml-90 ml during menstruation”. Undeniably, male students (Mean=3.40, SD=1.003) had low level of awareness of menstruation in the domain of “Do you have any awareness about menstruation before?”.

Table 2. Comparison of knowledge between gender.

Domains of knowledge	Knowledge score (SD)		p-value <sup>a</sup>
	Mean Men	Mean Women	
Do you know about menstruation and how it occurs?	3.70(1.17)	4.50(0.774)	0.000
Menstruation comes a month	4.03(0.85)	4.35(1.00)	0.000
Average menstruation cycle is 28 days.	4.10(0.95)	4.57(0.78)	0.005
Average period length is 2-7 days.	3.96(0.98)	4.56(0.66)	0.000
Menstruation happens when the lining of the uterus breaks down and bleed after no fertilization	4.20(0.84)	4.71 (0.64)	0.000
Menstruation cycle can impact mood and emotional health	4.46(0.89)	4.80(0.65)	0.004
Woman bleeds about 20ml -90 ml during menstruation	3.40(0.62)	3.92(0.92)	0.003
Do you have any awareness about menstruation before?	3.40(1.00)	4.39(0.86)	0.000

As a result, there was no relationship between the place of residence and their knowledge about menstruation except for the domain of “Average menstruation cycle is 28 days” with the  $p$ -value of 0.030 (Table 3). Out of 106 respondents, respondents originated from urban, rural and suburban scored high in the domain of “Menstruation cycle can impact mood and emotional health” with the mean score of 4.56, 4.63 and 4.814 respectively. The lowest mean score domain was “Woman bleeds about 20ml -90 ml during menstruation”, urban 3.70, rural 3.72 and suburban 3.83 respectively.

Table 3. Comparison of knowledge between place

Domains of knowledge	Knowledge Score Mean (SD)			<i>p</i> -value <sup>a</sup>
	Urban	Rural	Suburban	
Do you know about menstruation and how it occurs?	4.13(1.16)	4.27(0.827)	4.35 (0.91)	0.727
Menstruation comes a month	3.96(1.09)	4.31(0.89)	4.407(0.901)	0.144
Average menstruation cycle is 28 days.	4.03(1.12)	4.59(0.79)	4.61 (0.626)	0.030
Average period length is 2-7 days.	4.30(0.91)	4.50(0.74)	4.407 (0.714)	0.716
Menstruation happens when the lining of the uterus breaks down and bleed after no fertilization	4.33(1.06)	4.59(0.66)	4.685 (0.507)	0.515
Menstruation cycle can impact mood and emotional health	4.56(1.07)	4.63(0.78)	4.814 (0.437)	0.737
Woman bleeds about 20ml -90 ml during menstruation	3.70(0.92)	3.72(0.76)	3.83 (0.905)	0.881
Do you have any awareness about menstruation before?	4.06(1.08)	4.31(0.78)	4.055 (1.053)	0.706

As a result, the score knowledge of menstruation was same across faculty of pharmacy and health science except for the domains of knowledge “Menstruation happens when the lining of the uterus breaks down and bleed after no fertilization” with the p-value, 0.041. (Table 4)

Table 4. Comparison of knowledge between faculty

Domains of knowledge	Knowledge score Mean (SD)		<i>p</i> -value <sup>a</sup>
	FF	FSK	
Do you know about menstruation and how it occurs?	4.31(0.98)	4.17 (0.94)	0.326
Menstruation comes a month	4.28(0.96)	4.21(0.99)	0.686
Average menstruation cycle is 28 days.	4.48(0.86)	4.32(0.86)	0.242
Average period length is 2-7 days.	4.37(0.82)	4.46(0.63)	0.857
Menstruation happens when the lining of the uterus breaks down and bleed after no fertilization	4.64(0.72)	4.35(0.78)	0.041
Menstruation cycle can impact mood and emotional health	4.73(0.73)	4.64(0.78)	0.617
Woman bleeds about 20ml -90 ml during menstruation	3.74(0.88)	3.85(0.84)	0.624
Do you have any awareness about menstruation before?	4.14(1.07)	4.03(0.79)	0.262



### Respondent Attitude on Menstruation

Table 5 reported for the respondent's attitude towards menstruation consist of things experienced during menstruation and food craving. The survey demonstrated that majority of respondent experienced emotional changes (24.1%) followed by cramps (23.6%), fatigue (18.9%), headache (17.2%) as well as bloating (16.3%). Meanwhile, respondents opted to crave desserts (36.3%) followed by snacks (29.1%) and sweet drinks (28.3%). Only several respondents craved healthy food (6.3%) during menstruation.

Table 5. Attitudes against menstruation

Item	Response frequency=n percentage= (%)
Things experience by woman during menstruation	
Bloating	69 (16.3%)
Cramps	100 (23.6%)
Emotional changes	102 (24.10%)
Headache	73 (17.2%)
Fatigue	80(18.9%)
What kind of food do you crave during menstruation?	
Healthy food	15(6.3%)
Snacks	69 (29.1%)
Desserts	86(36.3%)
Sweet drinks	67(28.3%)

### Respondent Practice on Menstruation

Table 6 represented practices by respondents during menstruation. Majority of the students (88.7%) prefer sanitary pad as the most used products and menstrual cup (2.8%). The least used product is tampons (1.9%). While there were quite number of people (6.6 %) who were unsure what woman wear during their period. Regarding period pain management, heating pads (53.8%) was the most popular way to manage period pain followed by pain killers (27.4 %) as well as sleep (15.1%). In addition, most of the students opted to change their sanitary pad 3-4 hours (66%) a day, some students occasionally change sanitary pad (15.1%) followed by twice a day, morning and night (3.8%). However, a quite small number of students unsure how to manage sanitary pad during menstruation (15.1%).

Table 6. Practices towards menstruation

Item	Response frequency=n percentage= (%)
How frequents sanitary pads need to be change a day?	
Every morning and night	4 (3.8%)
Occasionally	16 (15.1%)
3-4 hours	70 (66.0%)
Not sure	16 (15.1%)
What menstrual hygiene products is frequently used during menstruation	
Sanitary Pads	94 (88.7%)
Tampon	2 (1.9%)
Menstrual Cups	3 (2.8%)
Not Sure	7 (6.6%)
How to manage period pain?	
Pain killers	
Heating pads	29 (27.4%)
Sleep	57(53.8%)
Not sure	16 (15.1%)
	4 (3.8%)

## Discussion

### Knowledge on menstruation

Our findings revealed that knowledge on the menstruation different regarding gender, residence place and faculty. The study reported that there was a statistically significant difference in the mean score between the male and female participants towards knowledge in menstruation. This result is in line with a research conducted in Korea that revealed men's knowledge about menstruation was lower than women (Moon et al., 2020). Other than that, there was another study conducted in South India, also found that the value of knowledge about menstruation among young women is significantly higher than that of young men, especially for women who have early education about menstruation at school. (Deepa et al., 2019).

The study indicates that the distribution was the same across between the place of residence and their knowledge about menstruation except for the domain of "Average menstruation cycle is 28 days" with the  $p$ -value of 0.03. However, the study contradicted with another study that discovered that there was a disparity in knowledge about menstruation, especially for those in low- and middle-income countries. This contradictory finding could be explained by the fact that the menstrual knowledge of the adults around them was also low and they also have less access to get more and detailed information about menstruation, when compared to those who live in developed countries and urban areas (Chandra & Vipul, 2020). Apart from that, the finding was consistent with the study in Bangladesh that presented the level of knowledge was different between those who live in urban and rural areas where urban areas is higher than rural areas. (Alam & Sultan, 2019). Furthermore, it was found that the men's level of knowledge about menstruation is different for each individual, and it is quite challenging for them to have any awareness or knowledge about menstruation due to limited access to information. They themselves have not experienced it, so it is quite difficult for them to understand about menstruation and it makes them less eager to know more about it. (Mason et al., 2017). Similarly, a study in India reported that girls living in households with poor economic status had lower knowledge of menstruation than better-off families (Malhotra et al., 2016).

The knowledge score proved that there were no relevant association between the students from the diploma of pharmacy and health sciences as all the students were knowledgeable in health information. The above findings was consistent with a research reported that undergraduate students pursuing health-related programmes possessed good knowledge on menstruation. In addition, the study found a significant association between the study's course with menstrual knowledge. It might be because, in science, students have more exposure to this topic than commerce and management students (Ameada & Garti, 2016). This present finding also supported a previous study which concluded that majority of students from Science and Technology course were five times more knowledgeable about menstruation than Commerce and Management students (Ahmad et al., 2021).

### **Practice towards menstruation**

Based on the reported study, majority of respondents used sanitary pad during menstruation as it is disposable and easy to handle during travel. But however, sanitary pads is environment unfriendly as it is unsustainable. It may be harmful towards our environment compared to the reusable menstrual cups. (Eryilmaz & Ozdemir, 2009). The least number of people who practice using tampon on their period might be because of the risk of the tampons which considered risky for women's health. In another study, they achieved the same results for the most used products during menstruation.

Considering period pain management, we discovered that most respondents opted heating pads as the best way to manage period pain compared to pain killers and sleeping. Heating pads can give comfort especially when experiencing period cramps as it gives warm sensation to the are affected usually abdomen (Iacovides et al., 2015). In order to alleviate menstruation pain, it has been observed that the nonsteroidal anti-inflammatory drug (NSAID) can be used as primary treatment but they commonly cause adverse effects (AEs), including indigestion, headaches, and drowsiness (Marjoribanks et al., 2015). Similarly, some of them will opt for painkillers to ease the pain. (Martha & Adam, 2003). According to Tangchai et al. (2004), very few first- and second-year college students believed that ibuprofen and mefenamic acid are useful treatments for dysmenorrhea.

Repondents mostly choose 3 – 4 hours sanitary during menstruation followed by changing every morning and night. This findings contradicted a report done by Sapkota et al., (2013) that revealed majority people who change their pads twice a day (every morning and night).sa

### **Attitude towards menstruation**

It was reported that emotional changes was the common attitude experienced by students during menstruation. We find that two studies have quite large percentage of headache (26.1%) (Eryilmaz & Ozdemir, 2009) and (24.7%) (Grandi et al., 2012) as menstrual pain symptoms. Cramps are common menstrual pain caused by the imbalance hormone during menstruation. This pain is the effect of prostaglandin which responsible for uterine muscles contraction that leads to discomfort. (Begum et al., 2016). The emotional changes are often related to the changes of progesterone and estrogen levels. However, progesterone is more related to the brain activity that involves in emotional changes during menstruation and thus explain why women often experience mood changes (Sundström Poromaa & Gingnell, 2014). Bloating also considered common to women. In previous study it is stated that abdominal pain and bloating were more severe, and bowel movements occurred more frequently when period happens. (Houghton, 2002).

In another hand, fatigue is frequently happened during heavy blood flow. Heavy menstrual bleeding is common and it causes a fall in hemoglobin and serum ferritin levels, which are used to evaluate anemia. It also causes an increase in fatigue and has effect on both physical and role limits. In another study, it was reported that most woman severely crave for sweet foods and salty foods are common during menstruation. These explain why our results shows similar results where woman love sweet and salty food during the time of the month. (Bancroft et al., 1988). The reason for this might be because of the responders love to enhance their mood during menstruation as they might experience mood changes. In another research, it is reported that sweet food or carbohydrate can enhance individual's mood. Thus, this can explain why the high number of responders who opt for desserts and sweet drinks compared to the number of respondents who opt for healthy food. (Christensen, 2001)

## Conclusion

In conclusion, the knowledge and awareness about menstruation is still low among students, especially male students and for those who live in rural areas. Our findings revealed that there was a statistically significant difference in the mean score between the male and female participants for all the domains of knowledge in menstruation. In addition, the result demonstrated that there was no relationship between their knowledge about menstruation and the place of residence and as well as for pharmacy and health sciences courses. A deeper approach needs to be taken to give them awareness to deepen the knowledge of menstruation. This is because, menstruation is a natural thing that happens to women, even if they are men and do not experience it, they also need to know about menstruation and things related to it. In addition, the majority of respondents practice good and healthy habits such as frequently changing sanitary pads during menstruation, and choose to manage menstruation with suitable options such as using heating pads and painkillers. Considering the attitudes of the respondents during the menstrual cycle, we found that the majority of them have a good and rational view of menstruation. If something unusual happens during menstruation, it may be a sign of something abnormal in the body and may be a symptom of more serious diseases such as endometriosis and fibroids. A high level of knowledge about menstruation can help us prevent the occurrence of any diseases related to menstruation and thus can increase the level of women's health. However, there are a lot of lacking in some parts of our study that can be improve for a better result. We hope that our study provided an insight into menstrual knowledge and good practices in diploma students and need further research for an in-depth understanding of the issue.

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