

## Knowledge and Practices of Menstrual Hygiene among Nursing Students in IIUM Kuantan

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DOI: [10.36347/sjams.2021.v09i09.018](https://doi.org/10.36347/sjams.2021.v09i09.018)

| Received: 07.08.2021 | Accepted: 11.09.2021 | Published: 17.09.2021

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### Abstract

### Original Research Article

**Introduction:** Menstrual hygiene management includes the use and proper disposal of clean menstrual management materials during menstruation while dysmenorrhea is discomfort, pain, and cramps at the uterine origin during menstruation. **Objective:** The objective of this study is to identify the knowledge and practices of menstruation and menstrual hygiene, screening of dysmenorrhea among nursing students in IIUM Kuantan and the relationship between the selected socio- demographic with level of knowledge and practices of menstruation and menstrual hygiene. **Methodology:** A cross-sectional study was conducted among 180 undergraduate nursing students in IIUM Kuantan. The questionnaires distributed consisted mainly four parts which is socio- demographic data, the level of knowledge, practices of menstruation and menstrual hygiene and screening dysmenorrhea among the respondents. **Results:** The result highlighted that majority of nursing students (90.6%) have good knowledge, while (74.6%) students have good practices of menstrual hygiene. High percentage of dysmenorrhea was reported among the students (89.2%). There was a significant difference between year of study and practices of menstrual hygiene ( $p=0.033$ ). **Conclusion:** The knowledge and practices of menstruation was good among nursing students in IIUM Kuantan. However, they need to improve in certain areas regarding knowledge and practices of menstrual hygiene.

**Keywords:** Dysmenorrhea, Menstrual Hygiene, pain, nursing students.

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## INTRODUCTION AND BACKGROUND OF THE STUDY

The menstrual period is one of the natural phenomena that happen to women throughout their reproductive years. Menstrual hygiene management is when women use clean menstrual management materials during menstruation that can be changed in privacy as often as required, use soap and water to wash as needed and have access to facilities for the disposal of used materials [1]. Meanwhile, dysmenorrhea is a symptom occurs during menstruation where women may experience cramps of the uterine origin that appear painful during menstruation [2]. The prevalence of dysmenorrhea in the world is varied based on the different sources ranging between 43 to 90% [3] and in Malaysia estimated 60% to 70% of adolescent females have been experiencing dysmenorrhea according to Ministry of Health. This condition may interrupt their activities in life such as their focus and productivity in learning, social activities, and others. Moreover, if the management during menstruation is poor, women may also experience conditions such as discomfort, having bad odor, and even the reproductive tract infection.

Knowledge about menstruation is essential to women especially women in their reproductive age group to maintain their health and avoid any unwanted diseases related to women health. A study among adolescent schoolgirls in West Bengal found that 370 (85.05%) have the correct knowledge of menstruation, while 15.04% thought that it was either disease or curse of God. 315 (72.41%) girls had knowledge on menstruation before the first occurrence of the menstruation, 199 (63.17%) received the knowledge from their mother and (25.07%) from their teacher. Moreover, 178 (40.94%) students have the correct knowledge that uterus was the source of menstrual blood, while others marked it as urinary bladder (8.27%), vagina (45.74%) or abdomen (5.05%) to be the source [4].

Another study in Northwestern Nigeria conducted on the knowledge regarding menstruation (97.0%) aware that women experienced monthly flow of blood and knew that girls around the age of 11 to 16 attained their menarche (77.8%). Few of them correctly knew that menstruation is normal when it occurs in early adolescence and only 2.5 % of them knew that normal menstrual cycle varies between 21 to 35 days.

Regarding menstrual hygiene, most of them (94%) knew that sanitary products are available for menstrual protection and (86.5%) knew correctly that sanitary pad is the best sanitary absorbent recommended. However, only about half of the respondents (57%) aware that poor hygiene can lead to infection and personal hygiene has a place in the prevention of menstrual pain (57%) [5].

In a study conducted in Nepal among the school adolescent regarding the knowledge on Menstruation Hygiene Management (MHN), 17(6.2%) had poor knowledge, 186 (67.4%) had fair knowledge and 73 (26.4%) had good knowledge. 90% of the students aware of the reason to use a sanitary pad and 35% of them think that the time interval to change pad is daily. Most of the respondents knew the reason for washing hands after handling used pad (97%) and the proper way of disposing of used pad (98.9%) [6].

Another study revealed that five hundred four (60.9%) participants had good knowledge about menstruation and its hygiene. And those who had mothers that have education status of secondary school and above were 1.51 times more likely to have good knowledge about menstruation and menstrual hygiene compared to the others [7]. The practice of good menstrual hygiene among women is required to avoid discomfort, odor, rashes, infection, and other consequences.

In addition, a study among under-graduate nursing students in India revealed that 90.7% of them restricted themselves from any religious activities during menstruation, (65.1%) did not practice any food restriction during menstruation and majority of them (97.7%) did not remain absent from nursing school during menstruation. From the study it revealed that restriction of activities and food consumption were observed among the nursing students [8]. It is noted that although nursing students might have certain level of knowledge about human medical health, they may have limited knowledge regarding the issues of dysmenorrhea and the menstrual hygiene practices during their menstrual period.

Moreover, little research has been done among the science-based or nursing students in Malaysia regarding menstrual hygiene and most existing studies focused on the sample populations among adolescent age group and which was conducted mostly in rural areas only. Furthermore, inadequate knowledge among the students may lead to poor practices which in turn can result the consequences of poor hygiene. Therefore, this study aims to identify the students' knowledge regards to menstruation, their practices on menstrual hygiene and screening of dysmenorrhea and its effect on their daily life. In addition, this study also aimed to determine the association between selected socio-

demographic data with knowledge and practices of menstrual hygiene.

## METHODOLOGY

A cross-sectional study with a convenience sampling method was used among the undergraduate nursing students in Kulliyyah of Nursing, International Islamic University Malaysia. The sample size of this study after calculation and excluding participants from pilot study was 180 participants where the inclusion criteria was female nursing students in IIUM Kuantan while the male nursing students, students involved in the pilot study and who have gynecological problem were excluded from the study.

The data collection started after obtaining ethical consideration from IIUM Research Committee (IREC) and Kulliyyah of Nursing Post Graduate Research Committee (KNPGR). The data collection was carried out using set of the adapted questionnaires from the previous studies [9, 10] that comprised of four parts. Part A consisted of the socio-demographic characteristics. Part B and C consisted of multiple answer questions which were related with the knowledge and practices of menstrual hygiene.

Each correct answer was given one mark and no mark was given for incorrect answer. The last part of the questionnaire, Part D is the screening of dysmenorrhea among the students which consists of twelve questions with multiple answers. Pilot study was conducted among the students and obtained Cronbach-Alpha of 0.770 which was in the good range. The data collection used online questionnaire that was carried out for allocated time of two months. The collected data were then entered and analyzed using IBM SPSS 20.0.

Descriptive and statistical analysis was used for data analysis of the study. The results were presented as a set of numbers and percentages, and a Chi-Square test was used to determine any significant differences between some sociodemographic group and their knowledge and practices.

## RESULTS

### Socio-Demographic Characteristics

Total 180 female nursing students from IIUM Kuantan were involved in this study and their age between 19 to 26 years from four different years of study. They are categorized into Group one (year 1 and 2) and Group two (year 3 and 4), 31.7% and 68.3% respectively. Majority of them (85.6%) described their age of menarche start at 11 to 13 years old. The sources of menstrual hygiene information before menarche obtained from family members (90.6%) outnumbered the other variables such as from peers (7.2%) and through education (22.1%). Half of the students (50.6%) have mother's education at lower level (primary or secondary) during the time of first menses

while 49.4% have mother's education at higher level (university and others) at the time of first menses. Most of the students (59.4%) have family history of

dysmenorrhea while (40.6%) have no family history of dysmenorrhea.

**Tabl-1: Socio- demographic characteristic**

N= 180	Variables	N (%)
Year of study	Year 1 and 2 (Group A)	57 (31.7)
	Year 3 and 4 (Group B)	123 (68.3)
Age	≤ 20	50 (27.8)
	21-23	12 (67.2)
	≥ 24	9 (5.0)
Age at menarche	≤ 10 11-13	154 (85.6)
	≥ 14	17 (9.4)
Sources of information before menarche	Family (Mother and sister)	163 (90.6)
	Peers	13 (7.2)
	Educations	4 (2.2)
Mother's academic qualification	Lower education (Primary and secondary)	91 (50.6)
	Higher education (University and others)	89 (49.4)
Family history of dysmenorrhea	Yes	107 (59.4)
	No	73 (40.6)

**Knowledge on Menstruation and Menstrual Hygiene**

Table 2 shows that majority of the students (89.4%) mentioned hormonal was the cause of menstruation while (10.6%) chose natural as the cause of menstruation. Regarding the origin of menstrual blood, about 85.6% mentioned uterus while the rest answered bladder (1.1%), vagina (6.7%) and ovary (5.0%). About 91.1% students stated 11- 13 years old was the normal age of menarche while (5.0% %) mentioned 14-16 years old. Most of them mentioned the

normal flow of menstruation days was 5-7 days (93.3%), 4.5% stated 3-5 days and 2.2% stated more than seven days. More than half of the respondents (63.3%) answered the normal duration of menstrual interval was 26 to 30 days, 34.4% stated 21-25 days, and only 2.2% mentioned 31-35 days. About 61.1% have knowledge about menstrual hygiene before menarche while 95% think that sanitary pad is the ideal absorbent during menstruation and only 5% think cloth piece or other material is ideal for menstruation.

**Table-2: Knowledge on menstruation and menstrual hygiene**

Variable		N (%)
What is the cause of menstruation?	Hormonal	161 (89.4)
	Natural	19 (10.6)
What is the origin of the menstrual blood?	Uterus	154 (85.6)
	Bladder	2 (1.1)
	Vagina	12 (6.7)
	Ovary	9 (5.0)
	Don't know	3 (1.7)
Normal age of menarche (in years)	11-13	164 (91.1)
	14-16	9 (5.0)
	Don't know	7 (3.9)
Normal flow of menstruation (days)	3-5 days	8 (4.5)
	5-7 days	168 (93.3)
	> 7 days	4 (2.2)
Normal duration menstrual interval	21-25	62 (34.4)
	26-30	114 (63.4)
	31-35	4 (2.2)
Have knowledge about menstrual hygiene before menarche	Yes	110 (61.1)
	No	70 (38.9)
What do you think ideal absorbent?	Sanitary pads	170 (94.4)
	Cloth piece	8 (4.4)
	Others	2 (1.1)

**The Practices of Menstrual Hygiene**

Majority of the respondents (98.9%) used sanitary pads as their absorbents while only 1.1% used cloth piece or other materials. More than half of the students (58.9%) used maximum more than three number of pads per day during their last menstruation. Most of the respondents (78.3%) changed their pads at places other than their residence such as at Kulliyah or clinical posting while 21.7% do not change their pads at other places. About 68.9% stated the sanitary bins was the disposal place of the used absorbents, while 30.6% mentioned dustbin, only 1% of student stated others, while none of them flushing it in the toilet. The majority (97.2%) of them bathe during menstruation, (91.7%) wash the external genitalia more than three times a day while (8.3%) wash the external genitalia three times or less than three times a day. More than

half (58.3%) used water only for cleaning external genitalia followed by water and soap (41.1%) and only 1.1% used water and antiseptic. About 76.7% of them have restriction of food during menstruation while the others (23.3%) have no restriction of food during menstruation.

**Level of Knowledge and Practice on Menstrual Hygiene**

The finding shows that majority of the respondent have good knowledge 163 (90.6%) while only 17 (9.4%) have poor knowledge of menstrual hygiene. More than half of the respondents display good menstrual hygiene practices (74.6%) and (25.4%) of them categorized as poor menstrual hygiene practices.

**Table-3: Level of knowledge and practice on menstrual hygiene**

Score	Level of knowledge on menstruation And menstrual hygiene, n (%)	Practices of menstrual hygiene, n (%)
Poor	17 (9.4)	46 (25.4)
Good	163 (90.6)	135 (74.6)

**Screening of Dysmenorrhea**

Most of the respondents have experienced dysmenorrhea in which (70%) of them experienced it sometimes, (27.2%) always experiences it and only (2.8%) has never experienced it during menstruation. Majority of them (53.9%) stated pain usually last for 1 to 2 days while (38.3%) stated pain last less than 24 hours and only a few answered 3 to 4 days and more than 4 days which were 6.1% and 1.7% respectively. About (77.8%) mentioned lower back or lower abdomen as the site of the pain is followed by extremities (0.6%) and (18.3%) at the entire site mentioned. About half of the respondents have moderate pain (51.1%), while (36.7%) have mild pain, and only (10%) have severe pain. Most of the students (93.9%) have duration of menstruation for five or more days; however, there are 5.6% and 0.6% of students

who have 3 to 4 days and 1 to 2 days of menstruation respectively.

More than half of them (60.6%) have different pain degree in every menstruation where (32.8%) have little differentiation, (50.0%) of them experienced the pain on the beginning of menstrual and last for 24 hours, (29.4%) experienced it during the menstruation and continues for 48 hours, (15%) experienced the pain before menstrual cycle and only (2.8%) experienced it before one week of menstruation. About (71.1%) of them has intermittent pain while 26.1% have continuous pain during the menstruation. Most of the students (78.3%) need medication to ease the pain and more than half (60.6%) stated that dysmenorrhea affects their activity while the rest (39.4%) stated dysmenorrhea did not affect their daily activities.

**Table-4: Screening of dysmenorrhea**

Variable	Responses	n (%)
Experience of dysmenorrhea	Yes, always	49 (27.2)
	Yes, sometimes	126 (70)
	Never	5 (2.8)
How long the pain does usually lasts?	< 1 day	69 (38.3)
	1 – 2 days	97 (53.9)
	3 – 4 days	11 (6.1)
	> 4 days	3 (1.7)
Site of pain	Extremities	1 (0.6)
	Lower back and abdomen	140 (77.8)
	All of the above	33 (18.3)
	None of the above	6 (3.3)
Classification of pain	No pain	4 (2.2)
	Mild	66 (36.7)
	Moderate	92 (51.1)
	Severe	18 (10)

Duration of bleeding days	1-2	1 (0.6)
	3-4	10 (5.6)
	5 and more	169 (93.9)
The same pain degree every menstrual cycle	Yes	71 (39.4)
	No	109 (60.6)
If no, what is the pattern of pain difference	Little differentiation	59 (32.8)
	Moderate differentiation	57 (31.7)
	Severe differentiation	2 (1.1)
	None	62 (34.4)
Time of pain	Before menstruation	27 (15.0)
	Beginning menstrual and lasts for 24 hours	90 (50.0)
	During menstrual and continues for 48 hours	53 (29.4)
	Before one week of menstruation	5 (2.8)
Type of pain	None of the above	5 (2.8)
	Continuous	47 (26.1)
	Intermittent	128 (71.1)
	None	5 (2.8)
Need medications to ease pain	Yes	39 (21.7)
	No	141 (78.3)
Does period pain affect your activities	Yes	109 (60.6)
	No	71 (39.4)

**Association between Selected Sociodemographic Data with Knowledge and Practices of Menstrual Hygiene**

There is no significant difference between the year of study group with p value of 0.376 as well as mother’s education during the first menses (p=0.220) with the knowledge of menstrual hygiene among

nursing students. The chi square test revealed that there is a significant difference in the practices of menstrual hygiene with the year of study with p value of 0.033. In addition, there is no significant difference in mother’s education during the first menses with the practices of menstrual hygiene (p= 0.931).

**Table-5: Association between selected socio- demographic data with knowledge and practices of menstrual hygiene**

Variable	Knowledge (%)		P-value	Practices (%)		P-value
	Poor	Good		Poor	Good	
Year of study						
Group A (year 1 & 2)	7 (12.3)	50 (87.7)	0.376	20 (35)	37 (65)	4.527
Group B (year 3 & 4)	10 (8.2)	113 (91.8)		25 (20.3)	98 (79.7)	
Mother’s education during first menses						
Lower education (Primary and secondary)	11 (12.1)	80 (87.9)	0.220	23(25.3)	68 (74.7)	0.007
Higher education (university and others)	6 (6.7)	83 (93.3)		22 (24.7)	67 (75.3)	

**DISCUSSION**

From the results, it is noted that the nursing students have good level of knowledge and practices (90.6%). However, a considerable number of students are still lacking the anatomy and physiological knowledge in which 19 (10.6%) of them do not know the causes of menstruation and 26 (14.4%) of them do not know that the uterus is the origin of the menstrual blood. Regardless, this finding is different from the previous studies conducted in India among non-science-based students in which only 4.7% of the girls knew that menstrual bleeding coming from the uterus in

one study and another study showed more than half of the participants 164 (55.9%) knew that uterus is the source of menstrual bleeding [11, 10]. These findings might be due to the differences in the education received during their study, and nursing students may have obtained more information and knowledge regards to the reproductive organs, and their physiology.

Regarding to menstrual hygiene practice, majority of the nursing students in IIUM have good level of practice (74.6%). But some are still lacking in certain correct practices of menstrual hygiene in which

74 (41.1%) used less than three number of pads per day during their last menstruation. This is consistent with a study conducted before among university students in which 27.2 % of them only used more than three pads per day [2]. Meanwhile, in a study among nursing students in Dhaka, more than half (55.7%) of them stated that they changed the material once a day while the rest (27.4%) changed twice a day [8]. However, it is indicated the correct practice of using sanitary pads as changing the pads every 3 to 4 hours for maintaining good hygiene and preventing bad odors [12]. These indicated that, the differences in findings were seen among the respondents from the same educational nursing background which might be due to the different individual and environmental factors.

Moreover, there are still 56 (31.1%) of students disposed the used sanitary pads at different places other than sanitary bins even though their overall practice is good. The findings are consistent with other studies examined among nursing, medical and midwifery students in which they disposed their used sanitary pads into dustbin or refuse bins which is 173 (59%) and 76.5% respectively [10, 13]. Meanwhile, a study in India showed different outcomes and interesting results in which one third of the girls disposed their pads in the toilets, the others in household waste and some of them burn the used pads [11]. The differences in practice might be influenced by the adequacy of facilities, such as toilets with water supply, and the sanitary bins provided in the toilets.

In addition, the percentage of students who experience dysmenorrhea is very high (97.2%) among the nursing students in Kuantan. It is found to be higher than other studies where it reported dysmenorrhea among respondents were 78% and 76% respectively [14, 15]. Majority of the students (53.9%) in the present study experienced the pain in one to two days where most of them described it as moderate pain in line with the study among medical students in MAHSA University in Malaysia [6]. However, in another studies, the participants described the pain as moderate to severe [16, 17]. These findings might be influenced by the differences in their interpretation and individual pain threshold level.

Most of the students (78.3%) in this study need medication to ease their pain and more than half (60.6%) of them stated that period pain affects their daily activity. It is contradicted with the previous study among medical students where most of them did not take any medications and did not have to be absent from daily activities [14]. Meanwhile, another study in Management and Science University, Shah Alam showed that 73.8% of the girls had treated themselves without medical prescription whereas they reported using various therapies to ease their symptoms such as hot tea (34.6%), herbal drink (67%), rest (68.5%), heating pad (60%), and exercise (24.6%) [18]. It could

be the fact that they were quite knowledgeable and have confident about using alternative therapies in handling their dysmenorrhea. It also indicated the need for further assessment on the nursing students' knowledge and the use of medicine.

Moreover, the current study indicated that there is no association between year of study and mother's academic background during their first menses with the knowledge of menstruation and menstrual hygiene. The findings from other studies showed that university students from higher level of study years have more knowledge and respondents whose mother with higher educational background has prior knowledge regarding menses [9, 11]. This difference could be due to their mean age of menarche at 11.4 years old, where they usually received the information about menstruation from that age. Moreover, it might be influenced by the culture of sharing information and knowledge among the Malaysian mothers and daughters related with their experiences in menstrual practices.

However, there is an association between years of study with their practices in which students from year 3 and 4 have good practices compared to those from year 1 and 2. Similar findings were seen in the study among under-graduate nursing students in West Bengal [8]. These findings may be influenced by the knowledge and experiences of the students from higher level study. Year 3 and 4 students from Kulliyah of Nursing have already learnt the obstetrics and gynecology subjects and have more exposure to the topic concerned compared to those with lower-level study (year 1 and 2).

## CONCLUSIONS

In conclusion, this study achieved its objective which were aimed to identify the knowledge level of menstruation and menstrual hygiene, the practices of menstrual hygiene, the screening of dysmenorrhea and the association between years of study and mother's academic qualification at the time of first menses with the knowledge and practices of menstruation and menstrual hygiene among nursing students in IIUM Kuantan.

This study showed a good level of knowledge and practices of menstrual hygiene among the nursing students. However, it also showed a high percentage of dysmenorrhea among nursing students. There is an association between some selected socio- demographic data such as year of study with the practices of menstrual hygiene, but no association was seen mother's educational background during first menses with neither knowledge nor practices of their menstrual hygiene.

The findings may reflect the good practices of students such as changing of pads, taking bath during

menstruation, methods of cleaning genitalia and others. However, it is still important for women adopt a healthy behavior such as appropriate nutrition, activities, proper use of medication as needed during their menstrual period. However, their knowledge and practice need to be improved in all aspects of menstrual hygiene due to their role as an educator and counselor for the community they serve in the future. In addition, the management and academic staffs should take note of the effect of dysmenorrhea in the students such as their academic performance, physical activity, psychology, and others since the percentage of dysmenorrhea was found to be higher among them.

In conclusion, the findings of this study provide important information about the knowledge and practices of menstruation and menstrual hygiene among nursing students and the screening of dysmenorrhea as a guideline for further improvement. However, further study is recommended to examine the cause of dysmenorrhea among the students including the possible contributions of psychological factors and other variables. In addition, further studies with different methodological approach are suggested to conduct among students from other programs.

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