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Abstract

Background: Dysmenorrhea is the most common problem women of childbearing age face. It is defined as painful uterine cramping associated with menstruation. Many girls have faulty knowledge about dysmenorrhea that led to negative attitude and improper health practices to relive dysmenorrhea. The aim of study was to assess of knowledge, attitude and practices among female nursing students regarding dysmenorrhea. Research design: A descriptive study design was used to fulfill the aim of study. Setting: The study was conducted at Faculty of Nursing/Benha University. Subjects: A purposive sample of 125 female nursing students. Tools of data collection: Four tools were used for data collection; Tool I: A structured self-administrated questionnaire, Tool II: Students' knowledge Questionnaire, Tool III: Students' attitude Questionnaire and Tool IV: Students' reported health practices sheet. **Results:** The present study revealed that, more than half of the studied students had inadequate knowledge regarding dysmenorrhea. Also, less than two-thirds of them had negative attitude regarding dysmenorrhea. Moreover, less than three-quarters of them had unsatisfactory level of reported health practices regarding dysmenorrhea. There was a highly statistically significant positive correlation between total knowledge, attitude and reported health practices scores regarding dysmenorrhea. Conclusion: Many students had inadequate knowledge, negative attitude and unsatisfactory for reported health practices regarding dysmenorrhea. **Recommendations:** Health education programs for female nursing students must be reconstructed to improve students' knowledge about menstruation and dysmenorrhea and encouraging the female nursing students to follow the health practices during menses for relieving dysmenorrhea.

Keywords: Attitude, Dysmenorrhea, Female nursing students, Knowledge and Practices.

Introduction

Menses is natural condition that occurs throughout the reproductive system for all female once every month. Most females experience degree of pain and discomfort during their menstruation that is called dysmenorrhea. Dysmenorrhea is a menstrual disorder defined by the presence of painful cramps of uterine origin that occur during menstruation (Rodrigues et al., 2024).

The pain is usually located in the lower abdomen and may radiate to the inner thighs

and back. It is a very common gynecologic problem that ranged from mild to moderate menstrual cramping which is normal, but some female have such severe pain (Ahmed et al., 2025).

Dysmenorrhea is one of the most common causes of pelvic pain and short-term absenteeism from school or work among young and adult women. Dysmenorrhea has been shown to disrupt participation in school and social events (difficulty paying attention in class, decreased school performance,

difficulties engaging in physical activity, and an inability to socialize with friends) (Kusumawati et al., 2025).

Dysmenorrhea is classified into either primary or secondary types. **Primary** dysmenorrhea is when the condition occurs without an identifiable organic pathology. In contrast, secondary dysmenorrhea results from anatomic and/or evident pelvic pathology such as endometriosis, chronic pelvic inflammatory disease. adenomyosis (Correyero-León et al., 2024).

Prostaglandins (PGs) are thought to be the main cause of dysmenorrhea. Endometrial shedding begins due to the decreasing hormone levels in the menstrual cycle. The time of endometrial shedding during the beginning of menstruation is when the endometrial cells release PGs. Prostaglandins cause uterine contractions, and the intensity of the cramps is proportionate to the amount of PGs released. Uterine contractions cause tissue hypoxia and ischemia, which in turn cause pain and sometimes associated with nausea and diarrhea (Arik et al., 2022).

Various factors have been associated with exaggerated dysmenorrhea, including smoking, dietary habit, weight with both underweight and obese women at higher risk, socioeconomic status, stress and mental illness, family history, and genetic predisposition (Nyirenda et al., 2023).

Menstrual cramps usually starts 1 to 2 days before the onset of menses or just after the menstrual flow, with pain typically lasting for 8 to 72 hours. In addition to lower abdominal/pelvic pain, dysmenorrhea is usually associated with common symptoms such as headache, fatigue, sleepiness, tender breasts, heavy lower abdomen, backache, the gastrointestinal symptoms include an increase or decrease in appetite, nausea, vomiting, and bloating, and the elimination-related

symptoms comprise constipation, diarrhea, frequent urination, and sweating (Cherenack et al., 2023).

There are two kinds of treatment for managing dysmenorrhea; pharmacological and non-pharmacological. Pharmacological management consists of non-steroidal anti-inflammatory drugs (NSAIDs), oral contraceptives and taking supplement like vitamin D or magnesium. NSAIDs inhibit prostaglandin synthesis and are usually considered the first-line treatment for dysmenorrhea (Wal et al., 2024).

Non-pharmacological pain management include using hot water bottle on lower back or abdomen, massage on the lower back or abdomen, relaxation exercises such as (yoga, breathing exercises and getting extra rest), avoiding foods that contain caffeine, avoiding stress and acupuncture (Rodrigues et al., 2024).

Many girls have a faulty knowledge about dysmenorrhea and improper dysmenorrhea management which may affect their quality of life. So; nurse has a very significant role in proving proper health education and encouragement using health practices to relive dysmenorrhea. Health education plays a vital role in improving females understanding of health issues and empowering them to manage their health more effectively through enhancing knowledge, attitudes and health practices. Nurse creates a supportive environment in which adolescent females are encouraged to form a healthy physical, cognitive, emotional response to dysmenorrhea (Ahmed et al., 2025).

Conceptual Definitions:

 Knowledge: These are facts, information, and skills achieved through experience or education either as the theoretical or

practical understanding of a subject (Hannon, 2021).

- Attitude: Feelings, believes, thoughts or opinions about something or someone or a way of behaving that is caused by it (American Psychological Association, 2023).
- Practices: Something that is usually or regularly done, often as habits or traditions (Cambridge University Press, 2024).
- Dysmenorrhea: Dysmenorrhea is the most common cause of menstrual disorders and has higher health and academic impacts on reproductive-age women. It is characterized by the presence of painful uterine cramps that occur during menstruation (Balis et al., 2025).

Significance of the study:

Dysmenorrhea remains one of the most important health problems worldwide since it is experienced by most young and adult females. A review of studies on the prevalence of dysmenorrhea covering nearly 20 countries reported that 70% of women suffer from dysmenorrhea, regardless of their country's economic status (Mizuta et al., 2023).

In Egypt, according to a study conducted in the Benha Governorate revealed that 90.3% of participants suffer from dysmenorrhea, most of students (57.7%) had severe dysmenorrhea. (Agwa et al., 2023). In addition, it was reported that the prevalence of dysmenorrhea was 89.9% of studied girls in a study conducted in the Zagazig Governorate (Kamal et al., 2024).

Dysmenorrhea is the most common menstrual disorder which has a negative impact on the females' quality of life because it affects relationships with family and friends, university performance, loss of motivation as well as leisure activities. Increasingly, students' quality of sleep declines, ability to concentrate on the courses and daily activities are affected in different ways (Kusumawatiet al., 2025). So, this study was designed as a survey questions to assess the knowledge, attitude and health practices among female nursing students regarding dysmenorrhea.

Aim of the study:

The aim of this study was to assess of knowledge, attitude and practices among female nursing students regarding dysmenorrhea.

Study questions:

- 1. What is the level of knowledge among female nursing students regarding dysmenorrhea?
- 2. What is the female nursing students' attitude regarding dysmenorrhea?
- 3. What are the female nursing students' practices regarding dysmenorrhea?

Subjects & Method:

Study design:

A descriptive study design was used to fulfill the aim of study.

Settings: The study was conducted at Faculty of Nursing/ Benha University.

Subjects:

Sample type: A purposive sample of female nursing students suffering from dysmenorrhea.

Sample size: (125) female nursing students complained of dysmenorrhea was attended the previously mentioned setting.

According to the following criteria:

- Students had (menstrual cramps, lower abdominal pain and fatigue) (Getahun et al., 2023).
- Students enrolled in the first academic year 2024 (second term).

Tools of data collection:

Four tools were used for data collection:

Tool I: A structured self-administrated questionnaire: It was designed by

researchers in Arabic language. It covered the following parts:

Part (1): General characteristics of studied students which included six items (age, marital status, residence, mother's education, mother's occupation and source of information).

Part (2): Menstrual history of studied students which included seven items (age of menarche, duration of menstruation flow, length of menstrual cycle, amount of blood flow, menstrual cycle regularity, duration of menstrual pain and location of menstrual pain).

Tool II: Students' knowledge **Ouestionnaire**: It was designed researchers after reviewing the related literatures (Awad et al., 2019, Bakro et al., 2023, Taleb et al., 2023 and Darajati et al., 2024) under guidance of supervisors and translated into Arabic language. It was used to assess female nursing students' knowledge regarding dysmenorrhea and included 10 questions (definition of dysmenorrhea, types of dysmenorrhea, causes of dysmenorrhea, risk factors of dysmenorrhea, physical symptoms of dysmenorrhea, psychological symptoms of dysmenorrhea, social and academic symptoms of dysmenorrhea, factors leading to increased dysmenorrhea, complications of dysmenorrhea and nonpharmacological methods for dealing with dysmenorrhea).

Scoring system:

Each knowledge question was given a score (1) for correct answer and score (0) for incorrect answer or I don't know. The total knowledge score was calculated by summation of the scores of each question (ranged from 0-10). The total knowledge score was classified into:

• Adequate knowledge when total score is: $\ge 60\% = (6-10)$

• Inadequate knowledge when total score is: <60% = (0-5)

Tool III: Students' attitude Questionnaire: It was adapted from (Santos et al., 2021 and Awad et al., 2019). It was 3-point Likert scale to measure students' attitude regarding dysmenorrhea and includes 13 statements (dysmenorrhea causes anxiety and fear, dysmenorrhea is annoying, dysmenorrhea is not common among girls, dysmenorrhea affects concentration, dysmenorrhea affects mood. dysmenorrhea affects self-care, attendance dysmenorrhea affects at university, dysmenorrhea may affect academic performance, dysmenorrhea affects participation university in activities, dysmenorrhea affects participation household chores and daily activities, I think females should avoid bathing during the menstrual cycle, mothers should not discuss menstrual pain with their daughter and doctor should not be consulted if unusual pain occurs).

Scoring system:

Each item was given a score (0) for agree, score (1) for uncertain and score (2) for disagree. The total attitude score was calculated by summation of the scores of each item (ranged from 0-13). The total attitude score was classified into:

- Positive attitude when total score is: $\ge 60\% = (8-13)$.
- Negative attitude when total percent is: <60% = (0-7).

Tool IV: Students' reported health practices sheet: It was designed researchers after reviewing the related literatures (Awad et al., 2019, Mohamed et al., 2023, Bakro et al., 2023 and Yadlapalli et al., 2024) and translated into Arabic It was used to assess female language. nursing students' reported healthy practices regarding dysmenorrhea and included 12

items (using warm towels on the abdomen to reduce menstrual pain, using an abdominal massage to relieve pain, drinking hot drinks such as cinnamon and fenugreek, avoid drinking coffee and tea during menstrual pain, eating foods rich in iron and folic acid during menstruation, taking nutritional supplements to compensate for lost blood and deficiency, avoiding eating foods that increase menstrual pain such as spicy foods, practicing relaxation exercises such as breathing exercises and yoga, taking a rest after performing any effort, getting enough hours of sleep at night (8 hours), taking a nap for 1-2 hours during the day and changing sanitary pads regularly every (3-4) hour to avoid infection).

Scoring system:

Each reported health practice was given a score (1) for done practice, and score (0) for not done. The total reported health practice score was calculated by summation of the scores of each item (ranged from 0-12). The total practice score was classified into:

- Satisfactory practices: $\geq 60\% = (8-12)$
- Unsatisfactory practices: <60%= (0-7)

Validity and reliability of tools:

Content validity

Data collection tools were reviewed by a panel of three experts in the field of obstetrics & gynecological nursing at faculty of nursing Benha University who reviewed the content of tools for comprehensive, accuracy, clarity, relevance and applicability. The questionnaires were modified according to the expert's comments and recommendations. The jury results were done.

Reliability:

The reliability of tool was applied for the internal consistency of the tools utilizing the cronbach's alph test and resulted. Reliability

of Knowledge was (r=0.89), attitude was (r=0.78) and for practices were (r=0.80).

Ethical considerations:

Ethical aspects were considered before starting the study as the following:

- The study approval was obtained from Scientific Research Ethical Committee (ethical code: REC-OBSN-M14) of the Faculty of Nursing at Benha University for fulfillment of the study.
- An official permission from the selected study settings was obtained for the fulfillment of the study.
- Before applying the tools, the researchers explained the aim and importance of the study to gain students' confidence and trust.
- The researchers took oral consent from students to participate in the study and confidentialities were assured.
- The study wasn't having any physical, social or psychological risks on the students.
- All tools of data collection were burned after statistically analysis to promote confidentiality of the participating students.
- The study tools were ensured that will not include any immoral statements and respect human rights.
- The students had the right to withdraw from study at any time.

Pilot study:

The pilot study was conducted on 10% (13 students) of the total sample of the study to test the applicability, clarity, objectivity and feasibility of the tools and estimate the time needed for data collection. According to the results of pilot study, the needed modification was done in the form of formulating some questions and statements. Pilot study was excluded from main studied sample.

Field work:

The researchers started the data collection from beginning of April, 2024 to the end of June, 2024 covering three months. The study setting was visited two times/week from 9 A.M. to 12 P.M. until all available female nursing students suffering from dysmenorrhea included in the study. A number of interviewee students/day was around 5-6 students according to their available time depending on the theoretical and practical schedules. The following steps were followed:

- At the beginning of the interview the researchers greeted the students, introduced herself to each student and explained the purpose of the study and provided the students with all needed information.
- Then, oral consent was taken from the students by the researchers to participate in the study.
- The researchers distributed (tool I: A structured self-administrated questionnaire) to assess the general characteristics and menstrual history of studied students. Average time for the completion of this tool was around (5-10 minutes).
- The researchers distributed (tool II: Students' knowledge Questionnaire) to assess the knowledge of studied students regarding dysmenorrhea. Average time for the completion of this tool was around (15-20 minutes).
- The researchers distributed (tool III: Students' attitude Questionnaire) to assess the attitude of studied students regarding dysmenorrhea. Average time for the completion of this tool was around (5-10 minutes).
- The researchers distributed (Tool IV: Students' reported health practices sheet) to

- assess the reported health practices of studied students regarding dysmenorrhea. Average time for the completion of this tool was around (10 minutes).
- All the previously mentioned steps were repeated until all available students suffering from dysmenorrhea included in our study.

Statistical analysis:

Data was verified prior to computerized entry. The statistical package for social sciences (SPSS version 25) was used for that purpose, followed by data tabulation and analysis. Descriptive statistics were applied (e.g., mean, standard deviation, frequency and percentages). Test of significance (independent t-test, chi-square and Pearson correlation coefficients) were used. A significant level value was considered when $P \le 0.05$, and a highly significant level value was considered when $P \le 0.001$.

Results:

Table (1) clarifies that, less than two-thirds (65.6%) of the students were in the age group of 18 years old with mean age of 18.24±0.67 years. Also, the majority (96.8%) of them were single. As well as, more than three-quarters (75.2%) of the students were lived in a rural area. Moreover, more than half (58.4%) had mothers with secondary education and more than two-thirds (67.2%) of their mothers were housewives.

Table (2) reveals that, more than half (52.0%) of the nursing students had their menarche at the age group of 11-13 years and that the duration of menstrual flow for less than two-thirds (60.0%) of them ranged from 3 to 5 days. The amount of blood flow for more than three-quarters (77.6%) of the students was 2–3 pads/day and the length of the menstrual cycle for the majority (87.2%) of them was 21–35 days. Finally, the majority (81.6%) of the students had regular menstrual

cycle. The duration of menstrual pain of more than half (54.4%) of the students was one day, this pain is located in lower abdomen and back in less than three-quarters (71.2%) of the students.

Table (3) reveals that, more than threequarters (76.8%), more than two-thirds (68.8%), less than two-thirds (62.4%) and more than half (56.0%) of studied students had (correct answer) about "definition of dysmenorrhea, physical symptoms, social and academic symptoms and psychological symptoms of dysmenorrhea" respectively. However, the majority (86.4%) (84.8%) (83.2%) and less than three quarter (73.6%) of had (Incorrect answer) them "complications of dysmenorrhea, risk factors, types and non-pharmacological methods for dealing with dysmenorrhea" respectively.

Figure (1) illustrates that, more than half (59.2%) of the studied students had inadequate knowledge regarding dysmenorrhea, while more than two-fifths (40.8%) of them had adequate knowledge.

Table (4) clarifies that, more than half (58.4%) (57.6%) and less than half (48.8%) (46.4%) of studied students agreed on the variable "Dysmenorrhea affects participation in household chores and daily activities, dysmenorrhea affects mood, dysmenorrhea affects participation in university activities dysmenorrhea affects self-care" and respectively. However, less than two-thirds (60.0%), less than one-third (32.8%),(32.8%), (32.0%) and more than one third of them (36.8%) disagreed on the variable "Mothers should not discuss menstrual pain with their daughter, dysmenorrhea affects attendance at university, dysmenorrhea may affect academic performance, I think females should avoid bathing during the menstrual

cycle and dysmenorrhea causes anxiety and fear" respectively.

Figure (2) illustrates that, less than two-thirds (64.8%) of the studied students had negative attitude regarding dysmenorrhea, while more than one-third (35.2 %) of them had positive attitude.

Table (5) shows that, more than half of studied students (51.2%), more than twofifths (44.0%) and more than one-third (37.6%) of them reported the practice of "getting enough hours of sleep at night (8 hours, changing sanitary pads regularly, every (3-4) hours to avoid infection and drinking hot drinks such as cinnamon and fenugreek" respectively. However, all (100.0%), the majority (89.6%) (88.8%), (85.6%), (82.4%), more than three quarter (79.2%) and less than three quarter (72.8%) of them reported not practicing of "taking nutritional supplements to compensate for lost blood and iron deficiency, practicing relaxation exercises such as breathing exercises and yoga, eating foods rich in iron and folic acid during menstruation, avoid drinking coffee and tea during menstrual pain and avoiding eating foods that increase menstrual pain such as spicy foods, using an abdominal massage to relieve pain and using warm towels (compresses) on the abdomen to reduce dysmenorrhea" respectively.

Figure (3) illustrates that, less than three-quarters(71.2%) of the studied students had unsatisfactory level of reported health practices regarding dysmenorrhea, while more than one-quarter (28.8%) of them had satisfactory level of reported health practices.

Table (6) clarifies that, there was a highly statistically significant positive correlation between total knowledge, attitude and reported health practices scores regarding dysmenorrhea ($p \le 0.001$).

Table (1): Frequency distribution of the studied students according to their general

characteristics (n= 125).

General characteristics	No.	%
Age in (years)	<u> </u>	
17	17	13.6
18	82	65.6
19	26	20.8
$\mathbf{Mean} \pm \mathbf{SD} = 18.2$	24±0.67	
Marital status		
Single	121	96.8
Married	4	3.2
Residence	-	-
Rural	94	75.2
Urban	31	24.8
Mothers' education		
Not read & write	8	6.4
Basic education	11	8.8
Secondary education	73	58.4
University education	33	26.4
Mothers' occupation		
Housewife	84	67.2
Employed	41	32.8

Table (2): Distribution of the studied students according to menstrual history (n=125).

Menstrual history	No.	%
Age at Menarche		
<11 years	24	19.2
11-13 years	65	52.0
>13 years	36	28.8
Duration of menstrual flow	-	-
< 3 days	30	24.0
3–5 days	75	60.0
>5 days	20	16.0
Length of menstrual cycle		
< 21 days	4	3.2
21–35 days	109	87.2
>35 days	12	9.6
Amount of blood flow		
1 pad/day	3	2.4
2–3 pads/day	97	77.6
>3 pads/day	25	20.0
Menstrual cycle regularity		
Yes	102	81.6
No	23	18.4
Duration of menstrual pain:		
One day	68	54.4
Two days	38	30.4
Three days or more	19	15.2
Location of menstrual pain		
Lower abdomen only	12	9.6
Lower abdomen and back	89	71.2
Lower abdomen, back and thigh	24	19.2

Table (3): Distribution of studied students according to their knowledge regarding dysmenorrhea (n= 125).

Knowledge items		Correct answer		Incorrect or don't know	
		%	No.	%	
Definition of dysmenorrhea	96	76.8	29	23.2	
Types of dysmenorrhea	21	16.8	104	83.2	
Causes of dysmenorrhea	46	36.8	79	63.2	
Risk factors of dysmenorrhea	19	15.2	106	84.8	
Physical symptoms of dysmenorrhea	86	68.8	39	31.2	
Psychological symptoms of dysmenorrhea	70	56.0	55	44.0	
Social and academic symptoms of dysmenorrhea	78	62.4	47	37.6	
Factors leading to increased dysmenorrhea	52	41.6	73	58.4	
Complications of dysmenorrhea	17	13.6	108	86.4	
Non-pharmacological methods for dealing with dysmenorrhea	33	26.4	92	73.6	

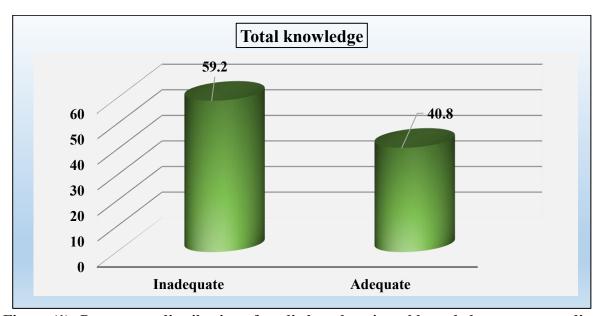


Figure (1): Percentage distribution of studied students' total knowledge score regarding dysmenorrhea (n= 125).

Table (4): Distribution of the studied students according to their attitude regarding dysmenorrhea (n=125).

Attitude statement Agree		gree	Uncertain		Disagree	
Attitude statement	No.	%	No.	%	No.	%
Dysmenorrhea causes anxiety and fear.	20	16.0	59	47.2	46	36.8
Dysmenorrhea is annoying.	48	38.4	43	34.4	34	27.2
Dysmenorrhea is not common among girls.	17	13.6	74	59.2	34	27.2
Dysmenorrhea affects concentration.	66	52.8	28	22.4	31	24.8
Dysmenorrhea affects mood.	72	57.6	31	24.8	22	17.6
Dysmenorrhea affects self-care.	58	46.4	35	28.0	32	25.6
Dysmenorrhea affects attendance at university.	22	17.6	62	49.6	41	32.8
Dysmenorrhea may affect academic performance.	44	35.2	40	32.0	41	32.8
Dysmenorrhea affects participation in	61	48.8	27	21.6	37	29.6
university activities.	01	70.0	21	21.0	31	27.0
Dysmenorrhea affects participation in household	73	58.4	21	16.8	31	24.8
chores and daily activities.	13	30.7	21	10.6	31	27.0
I think females should avoid bathing during	49	39.2	36	28.8	40	32.0
the menstrual cycle.	77	37.2	30	20.0	70	32.0
Mothers should not discuss menstrual pain with	15	12.0	35	28.0	75	60.0
their daughter.	13	12.0	33	20.0	13	00.0
Doctor should not be consulted if unusual pain occurs.	23	18.4	67	53.6	35	28.0

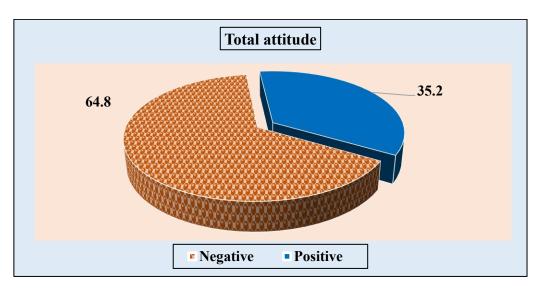


Figure (2): Percentage distribution of the studied students according to their total attitude regarding dysmenorrhea (n = 125).

Table (5): Distribution of the studied students according to their reported health practices regarding dysmenorrhea (n = 125).

Practices items		Done		Not done	
		%	No.	%	
Using warm towels (compresses) on the abdomen to reduc dysmenorrhea.	34	27.2	91	72.8	
Using an abdominal massage to relieve pain.	26	20.8	99	79.2	
Drinking hot drinks such as cinnamon and fenugreek.	47	37.6	78	62.4	
Avoid drinking coffee and tea during dysmenorrhea.	18	14.4	107	85.6	
Eating foods rich in iron and folic acid during menstruation.	14	11.2	111	88.8	
Taking nutritional supplements to compensate for lost blood and iron deficiency.	0	0.0	125	100.0	
Avoiding eating foods that increase dysmenorrhea, such as spic foods.	22	17.6	103	82.4	
Practicing relaxation exercises such as breathing exercises and yoga.	13	10.4	112	89.6	
Taking a rest after performing any effort.	42	33.6	83	66.4	
Getting enough hours of sleep at night (8 hours).	64	51.2	61	48.8	
Taking a nap for 1-2 hours during the day.	40	32.0	85	68.0	
Changing sanitary pads regularly, every (3-4) hour to avoid infection.	55	44.0	70	56.0	

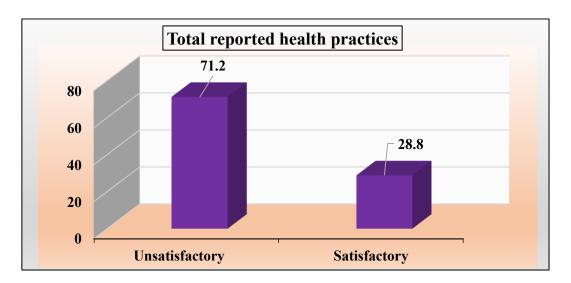


Figure (3): Percentage distribution of the studied students according to their total reported health practices regarding dysmenorrhea (n = 125).

Table (6): Correlation coefficient between studied students' total knowledge score and (attitude & reported health practices) scores regarding dysmenorrhea (n = 125).

Variables	Total knowledge			
v at lables	r	P value		
Total attitude	0.537	0.000**		
Total reported health practices	0.629	0.000**		

^{**}A Highly Statistical significant $p \le 0.001$.

Discussion:

Dysmenorrhea defined as painful uterine cramping associated with menstruation, and considered as one of the most common gynecological disorders among females of childbearing age, regardless of race, age, and/or economic status (Esan et al., 2024). The dysmenorrhea is frequently accompanied by other biological symptoms like exhaustion, perspiration, headaches, nausea, vomiting, and diarrhea. The worldwide prevalence of dysmenorrhea ranges from 45% to 95% in females of reproductive age and 2 to 29% of women experience severe pain (Mendiratta and Lentz, 2022)

Dysmenorrhea can be classified as primary or secondary dysmenorrhea. Primary dysmenorrhea is defined as painful cramping in the lower abdomen during the menstrual cycle that begins before or at the onset of menses in the absence of an organic cause. While secondary dysmenorrhea is menstrual pain associated with an underlying pelvic pathology. This pathology can include endometriosis, **chronic** pelvic inflammatory disease, adenomyosis, fibroids, endometrial polyps, ovarian cysts, congenital anomalies (**Kirsch et al., 2024**).

Regarding general characteristic of the studied sample, the results of the present study showed that less than two-thirds of the students were in the age group of 18 years old with mean age of 18.24±0.67 years. Also, the majority of them were single. As well as, more than three-quarters of the students were lived in a rural area. Moreover, more than half had mothers with secondary education and more than two-thirds of their mothers were housewives. This result agreed with the result of Mohamed et al., (2020) who conducted a study on "traditional practices self-reported by nursing students to relieve dysmenorrhea" reported that less than three quarters of studied sample aged from 17≤18 years with mean age 16.6±0.6 years, less than two-thirds of the studied sample lived in rural and mothers were housewives Moreover, less than two thirds of studied sample mother's education was secondary education.

As well as, this result was in the same line with the result of **El-Houfey et al.**, (2023) who conducted a study on "Effect of implementing audio-educational measures on the severity of primary dysmenorrhea among blind female students" reported that less than two thirds of students had mothers with secondary education and less than two thirds

of students had mothers not work, but over half of the participants came from urban areas. Also, this result was supported with the result of Afifi et al., (2024) who conducted a study on "effect of william's flexion exercises on menstrual pain, depression and sleep quality among nursing students with primary dysmenorrhea" showed that nearly than two thirds of the female students were in the age group of 18 -<19 years old with mean age of 18.05±0.58 years. Also, the majority of them were single. As well as, more than half of the female students were lived in a rural area. Moreover, less than half had mothers with secondary education and more than two thirds of their mothers were housewife.

Also, this result was consistent with the result of **Elsayed et al., (2025)** who conducted a study on "assessment of knowledge regarding primary dysmenorrhea among nursing students" revealed that 48% of studied students aged (18 :< 19) years with the mean and SD 17.76±0.68, more than two thirds of studied students lived in rural area, less than two thirds had mothers with secondary education.

Regarding menstrual history of the studied sample, the results of the present study showed that, more than half of the nursing students had their menarche at the age group of 11-13 years and that the duration of menstrual flow for less than two-thirds of them ranged from 3 to 5 days. The amount of blood flow for more than three-quarters of the students was 2-3 pads/day and the length of the menstrual cycle for the majority of them was 21-35 days. Finally, the majority of the students had regular menstrual cycle. The duration of menstrual pain of more than half of the students was one day and this pain is located in lower abdomen and back in less than three-quarters of the students.

This result agreed with the result of **Afifi** et al., (2024) who revealed that 59.2% of the female nursing students had their menarche at the age group of 11-13. The amount of blood flow for 77.6% of the female students was 2–4 pads/day and the length of the menstrual cycle for 88.2% of them was 21–35 days, 78.9% of the female students showed regular menstrual cycle and the duration of menstrual flow for 61.9% of the female students ranged from 3 to 7 days.

As well as, this result supported with the result of Goda et al., (2020) who conducted a study on "prevalence of primary dysmenorrhea among secondary girl students at Assiut city" revealed that more than three quarters of the secondary girl students their menstruation started in age 11-13 years. Regarding to the average length of menstrual period, it was observed that more than half of them their ranged from 3-4 days. Also it was found that slightly more than three quarters of regular menstrual them had periods. According to number of pads changed daily, the majority of secondary girl students mentioned that they used 1-3 pads per day.

Moreover, this result matched with the result of **Mammo et al., (2022)** who conducted a study on "Prevalence of Primary Dysmenorrhea, Its Intensity and associated factors among female students at high schools of Wolaita zone, southern Ethiopia" demonstrated that the majority of students had the length of the menstrual cycle range from 21–35 days. The amount of blood flow for most of students was 2–4 pads/day.

Pertaining to knowledge regarding dysmenorrhea; the findings of the present study showed that more than three-quarters, more than two-thirds, less than two-thirds and more than half of studied students had correct answer about "definition of dysmenorrhea, physical symptoms, social and academic

symptoms and psychological symptoms of dysmenorrhea" respectively. However, the majority and less than three quarter of them had incorrect answer about "complications of dysmenorrhea, risk factors, types and nonpharmacological methods for dealing with dysmenorrhea" respectively. Additionally, the findings of the present study showed that more than half of the studied students had inadequate knowledge regarding dysmenorrhea, while more than two-fifths of them had adequate knowledge. These results answered the first question "What is the level of knowledge among female nursing students regarding dysmenorrhea?"

From the researchers point of view, this inadequate knowledge could be related to intermediate educational level of mothers which is reflected on knowledge of their daughters. In addition, the culture and believes of most of Egyptian families prevent girls from talking about such sensitive topic.

The findings of the current study agreed with the result of **Taleb et al., (2023)** who reported that more than two-thirds of students had correct answer about the symptoms of menstrual pain. Increasingly, this result matched with the result of **Bakro et al., (2023)** who conducted a study on "assessment of prevalence, knowledge and health-related practices of dysmenorrhea among Malaysian women in Kuala Lumpur" revealed that less than two thirds of respondents had low knowledge on dysmenorrhea.

Moreover, this result agreed with the result of **Mohamed et al.**, (2020) who cleared that less than two thirds of the studied sample had unsatisfactory knowledge about dysmenorrhea, while more than one third them had satisfactory knowledge. The previously mentioned results emphasize the crucial role of conducting educational

programs to enhance students' awareness dysmenorrhea and management.

Pertaining attitude to regarding dysmenorrhea; the findings of the present study showed that more than half and less than half of studied students agreed on the variable "Dysmenorrhea affects participation in household chores and daily activities, Dysmenorrhea affects mood, Dysmenorrhea affects participation in university activities Dysmenorrhea affects self-care" respectively. However, less than two-thirds, more than one third and less than one-third of them disagreed on the variable "Mothers should not discuss menstrual pain with their daughter, Dysmenorrhea causes anxiety and fear, Dysmenorrhea affects attendance at university, Dysmenorrhea affect may academic performance and I think females should avoid bathing during the menstrual cycle "respectively. Moreover, the findings of the present study showed that less than two-thirds of the studied students had negative attitude regarding dysmenorrhea, while more than one- third of them had positive attitude. These results answered the second question "What is the female nursing students' attitude regarding dysmenorrhea?"

This result agreed with the result of Esan et al., (2024) who conducted a study on "Prevalence of dysmenorrhea and its effect on the quality of life of female undergraduate students in Nigeria" reported that menstrual pain affects routine work in 50.2%, 44.8% withdraw socially during menstruation, 53.8% withdraw from physical activities during menstruation and menstruation affects mood in 69.6% and Dysmenorrhea affects the day-to-day activities of 43.1%, but disagree with 33.1% of students have ever been absent from class due to painful. Also, this result supported with the result of Ogunyemi et al., (2022)who conducted study

"prevalence, lifestyle factors and health effects of dysmenorrhea among female students at private universities in sun state, Nigeria" stated that the minority believed that dysmenorrhea cause absent from work or school and 16.2% of students often feel under stress due to dysmenorrhea.

This result was in the same line with the result of Darajati et al., (2024) who conducted a study on "adolescents' knowledge, attitudes, and non-Pharmacology practice of treating dysmenorrhea" revealed that more than one half of adolescents had negative attitude with treating dysmenorrhea and less than one half of them had positive attitude. From the researchers point of view, this could be due to the students had inadequate knowledge about dysmenorrhea that lead to negative attitude.

On the other hand, this result disagreed with the result of Astutiet al., (2024) who study conducted a on "impact dysmenorrhea management health education on adolescent girls' knowledge and attitude about dysmenorrhea management" showed that less than two third of girls had a positive attitude and more than one third of girls had a negative attitude. From the researchers point of view, these differences between these studies and current study may be related to differences in level of knowledge of studied samples.

According to reported health practices of the studied students, the findings of the present study showed that more than half of studied students, more than two-fifths and more than one-third of them reported the practice of "getting enough hours of sleep at night (8 hours, changing sanitary pads regularly, every (3-4) hours to avoid infection and drinking hot drinks such as cinnamon and fenugreek" respectively. However, all, the majority, more than three quarter and less

than three quarter of them reported not practicing of "taking nutritional supplements to compensate for lost blood and iron deficiency, practicing relaxation exercises such as breathing exercises and yoga, eating foods rich in iron and folic acid during menstruation, avoid drinking coffee and tea during menstrual pain, avoiding eating foods that increase menstrual pain, such as spicy foods, using an abdominal massage to relieve pain and using warm towels (compresses) on the abdomen to reduce menstrual pain "respectively.

As well as, the findings of the present study showed that less than three-quarters of the studied students had unsatisfactory level of reported health practices regarding dysmenorrhea; while more than one-quarter of them had satisfactory level of reported health practices. From the researchers point of view, this could be reflection of students' inadequate knowledge about dysmenorrhea and health practices to overcome it. These results answered the third question "What are the female nursing students' practices regarding dysmenorrhea?"

This result supported with the result of Esan, (2024) who showed that 29.8% of them avoiding caffeine and sugary foods, (34.4%) of them used lower back and abdomen massage, (15.7%) of them made breathing exercise and yoga. Also, this result was in the same line with the result of Elsawy et al., (2023) who conducted a study on "effect of progressive Muscle Relaxation Technique on Menstrual Cramps among Adolescent students" reported that more than half of students sleep from 6-9 hours. On the other hand, this result disagree with Mohamed et al., (2023) who conducted a study on "attitude and practice of self-medication and paradigm of primary dysmenorrhea self-care among adolescents female" revealed that

more than half of the study sample was drinking Fenugreek also three quarters of the study sample taken rest at home during menstrual period. From the researchers point of view, this difference between the two studies could be related to the traditional, cultural beliefs and practices around menstruation vary between countries due to education, economic factors, influence from religion and changes in traditional lifestyles.

As well as, this result agreed with the result of Bakro et al., (2023) who revealed that less than two third of the respondents had poor general practices and only more than one third of them had good practices towards dysmenorrhea. From the researchers point of view, this could be due to the students had inadequate knowledge about health practices regarding dysmenorrhea that lead to poor health practices to relive pain. The previously mentioned findings support the necessary need of establishing awareness programs to improve the ability of students to deal with dysmenorrhea through practicing healthy behaviors to overcome menstrual pain with minimal need to analgesics.

The findings of the present study showed that there was a highly statistically significant positive correlation between total knowledge and (attitude and reported health practices) scores regarding dysmenorrhea (p ≤ 0.001). This result agreed with the result of Bakro et al., (2023) who revealed that there was a significant association between knowledge and practices levels regarding dysmenorrhea (p=.001*, .007*) respectively, where the of the respondents majority dysmenorrhea had low knowledge and poor practices.

Also, this result supported with the result of **Mohamed et al.**, (2020) who reported that a highly statistically significance correlation between total knowledge level of the students

and their total practical level regarding dysmenorrhea (p < 0.001). From the researchers point of view, this could be due to inadequate knowledge about dysmenorrhea; in turn, it will lead to poor practices and negative attitude regarding dysmenorrhea. This correlation indicates the importance of acquiring information and the role it that plays in positively changing attitudes or improving practices towards dysmenorrhea.

Conclusion:

More than half of the studied students had inadequate knowledge regarding dysmenorrhea. Also, less than two-thirds of negative attitude them had regarding dysmenorrhea. Moreover, less than threequarters of them had unsatisfactory level of reported health practices regarding dysmenorrhea. Additionally, more than half the studied students severe had dysmenorrhea. There was a highly statistically significant positive correlation total knowledge, between attitude reported health practices scores regarding dysmenorrhea. Hence the aim of the study was achieved and questions were answered.

Recommendations:

- Health education programs for female nursing students must be reconstructed to improve student's knowledge about menstruation and dysmenorrhea.
- Encouraging the female nursing students to follow the health practices during menses for relieving dysmenorrhea.
- Providing female nursing students with simple instructions or brochure for assurance and enhancement their knowledge regarding dysmenorrhea.

Further research:

 Designing an awareness program for mothers to improve their knowledge about dysmenorrhea because the mothers are the

- primary source of knowledge and health practices for their daughters.
- Conducting many studies using a wider geographic scope and a larger sample size that should include various groups such as young females in different secondary schools, adult females and women with dysmenorrhea.

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تقييم معلومات وإتجاهات وممارسات طالبات التمريض تجاه ألم الطمث

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الم الطمث هو أكثر المشاكل شيوعًا لدى السيدات في سن الإنجاب. ويُعرّف بأنه تقاصات رحمية مؤلمة مصاحبة للدورة الشهرية. العديد من الفتيات لديهن معلومات خاطئة عن ألم الطمث، مما يؤدي إلى سلوكيات سلبية واتباع ممارسات صحية غيرصحيحة لتخفيف الألم. لذا هدف هذا الدراسة إلى تقييم معلومات وإتجاهات وممارسات طالبات التمريض تجاه ألم الطمث. تصميم البحث: وتم استخدام التصميم الوصفى. مكان البحث: كلية التمريض بجامعة بنها في محافظة القليوبية. عينة الدراسة: أجريت الدراسة على عينة غرضية مكونة من التمريض بجامعة بنها في محافظة القليوبية. الما الطمث. أدوات جمع البيانات: الأداة الأولى: استبيان ذاتي منظم ويشمل الخصائص العامة للطالبات وتاريخ الدورة الشهرية للطالبات, الأداة الثانية: استبيان معلومات الطالبات، الأداة الثالثة: استبيان إتجاهات الطالبات, و الأداة الرابعة: إستبيان الممارسات الصحية المبلغ عنها. النتائج: أوضحت الدراسة أن أكثر من النصف (٩٠,١٠٪) من الطالبات المدروسات كان لديهن معلومات غير كافية بألم الطمث, أقل من ثلثي (٨,٤٢٪) الطالبات كان لديهن اتجاهات سلبية تجاه ألم الطمث و أقل من ثلاثة أرباع الاستنتاج: كان لديهن مستوى غير مرضي من الممارسات الصحية المبلغ عنها فيما يتعلق بألم الطمث. الاستنتاج: كان هناك ارتباط إيجابي ذو دلالة إحصائية عالية بين إجمالي المعلومات و درجات الإتجاه الاستنتاج: كان المبلغ عنها فيما يتعلق بألم الطمث. التوصيات: وأوصت الدراسة ببناء برامج التثقيف الصحي لطالبات التمريض لتحسين معلوماتهن حول الدورة الشهرية وألم الطمث.

JNSBU 499