

The Relationship Between Dysmenorrhea Severity and Quality of Learning Among Female Students

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Abstract

Introduction: Dysmenorrhea is menstrual pain commonly experienced by women of reproductive age and may interfere with daily activities, including the learning process. Menstrual pain can reduce concentration, comfort, motivation, and participation in academic activities, potentially affecting learning quality. **Objective:** This study aimed to determine the relationship between dysmenorrhea severity and learning quality among female medical students from the 2024 class at the Faculty of Medicine, Christian University of Indonesia. **Method:** This study employed a quantitative descriptive correlational design with a cross-sectional approach. A total of 105 female students were selected using the Slovin formula. Dysmenorrhea severity was measured using the Work Ability, Location, Intensity, Days of Pain, and Dysmenorrhea Score, while learning quality was assessed using a Guttman-scale questionnaire. Data were analyzed using the Spearman rank correlation test. **Result and Discussion:** Most respondents experienced moderate dysmenorrhea (58.1%) and impaired learning quality (83.8%). A statistically significant relationship was found between dysmenorrhea severity and learning quality ($p = 0.042$), with a weak negative correlation ($r = -0.199$), indicating that greater dysmenorrhea severity was associated with poorer learning quality. **Conclusions:** Dysmenorrhea severity is significantly associated with learning quality among female medical students from the 2024 class at the Faculty of Medicine, Christian University of Indonesia.

Introduction

Dysmenorrhea is a common menstrual health problem among women of reproductive age and may interfere with daily functioning, particularly in adolescents and young adults (Aulya et al., 2021); (Narsih et al., 2024); (Azis & Idris, 2025). A systematic review and meta-analysis involving 21,573 young women reported a dysmenorrhea prevalence of 71.1%, including 74.9% among university students. Dysmenorrhea was also associated with school or university absence and impaired classroom concentration or performance (ANGELINA et al., 2024); (Ariyanti & Gumindari, 2026). In this study, learning quality refers to the effectiveness of the learning process, including concentration, understanding of learning materials, and participation. It differs from learning activity, which reflects participation in academic activities, and academic performance, which refers to measurable outcomes such as grades or examination scores.

Among medical students, dysmenorrhea may have a greater impact because of intensive academic workloads and prolonged study activities. Menstrual pain can interfere with concentration, attendance, participation, and study habits (Salamah et al., 2023); (Gustina et al., 2026); (Riskiyani & Rahmasari, 2025). Research among medical students in Indonesia found that primary dysmenorrhea was associated with impaired concentration, disruption of activities, absenteeism, poorer quality of life, depression, and stress (Shafa et al., 2021); (Nugraha et al., 2026); (Situmorang et al., 2024)

Evidence from other populations also supports the effect of dysmenorrhea on academic functioning. A study among female medical students in Saudi Arabia reported effects on attendance, concentration, study time, and classroom participation (. Similarly, dysmenorrhea was associated with reduced academic performance among university students (Fitri, 2020); (Itani et al., 2022). However, previous studies have mainly focused on learning activity or academic performance, while evidence specifically addressing learning quality remains limited. Previous Indonesian research also involved multiple institutions and broader outcomes rather than learning quality within a specific academic cohort

Understanding this relationship is important because the academic consequences of dysmenorrhea may support early health promotion, appropriate menstrual health management, and supportive learning environments. Therefore, this study aimed to determine the relationship between the severity of dysmenorrhea and learning quality among female medical students of the 2024 class at the Faculty of Medicine, Christian University of Indonesia.

Method

This study employed a quantitative descriptive correlational design with a cross-sectional approach. The study population consisted of female medical students from the 2024 class at the Faculty of Medicine, Christian University of Indonesia. A total of 105 respondents were selected using the Slovin formula. Dysmenorrhea severity was assessed using the Work Ability, Location, Intensity, Days of Pain, and Dysmenorrhea Score, while learning quality was measured using a Guttman-scale questionnaire. Data were collected through structured questionnaires and analyzed using the Spearman rank correlation test to determine the relationship between dysmenorrhea severity and learning quality. Statistical significance was determined at a p-value of less than 0.05.

Result and Discussion

1. Result

Respondent Characteristics

Based on Table 1, the age distribution of female medical students at the Faculty of Medicine, Christian University of Indonesia, Class of 2024, shows that 16 respondents (15.2%) were 18 years old. The majority of respondents were 19 years old, comprising 62 respondents (59.0%), followed by 25 respondents (23.8%) aged 20 years. The smallest proportion consisted of respondents aged 21 years, with 2 respondents (1.9%).

Table 1
Age Distribution of Female Medical Students at the Faculty of Medicine

Age Characteristics	Frequency	Percentage
18	16	15.2%
19	62	59.0%
20	25	23.8%
21	2	1.9%
Total	105	100.0%

Univariate Analysis

A. Severity of Dysmenorrhea:

The severity of dysmenorrhea among female medical students at the Faculty of Medicine, Christian University of Indonesia, Class of 2024, assessed using the WaLIDD Score, is presented in Table 3.2. The results showed that the majority of respondents, 61 students (58.1%), experienced moderate dysmenorrhea. Furthermore, 25 respondents (23.8%) experienced severe dysmenorrhea, while 16 respondents (15.2%) experienced mild dysmenorrhea. Meanwhile, only 3 respondents (2.9%) reported no dysmenorrhea.

Table 2
Frequency Distribution of Dysmenorrhea Severity among Female Medical Students at the Faculty of Medicine, Christian University of Indonesia, Class of 2024.

Severity of Dysmenorrhea	Frequency	Percentage
No dysmenorrhea	3	2.9%
Mild dysmenorrhea	16	15.2%
Moderate dysmenorrhea	61	58.1%
Severe dysmenorrhea	25	23.8%
Total	105	100.0%

The WaLIDD Score consists of four assessment components: work ability, pain location, pain intensity, and pain duration, with the characteristics of the respondents presented in Table 3.3. Regarding work ability, 10 respondents (9.5%) reported no disruption to their activities. The largest proportion, comprising 50 respondents (47.6%), reported that their activities were almost never disrupted. Meanwhile, 39 respondents (37.1%) stated that their activities were almost always disrupted, and only 6 respondents (5.7%) reported that their activities were always disrupted due to dysmenorrhea. Dysmenorrhea-related pain may occur in various locations, including the lower abdomen, lower back, thighs, and lower legs. Based on the study results, the majority of respondents, 58 students (55.2%), experienced pain in 2–3 locations. Furthermore, 38 respondents (36.2%) reported pain in only 1

location. Six respondents (5.7%) experienced pain in 4 locations, while 3 respondents (2.9%) reported no pain location.

Table 3

Characteristics of Work Ability, Location, Intensity, Days of Pain, Dysmenorrhea (WaLIDD) Score

WaLIDD Characteristics	Frequency	Percentage
Ability to engage in activities		
Undisturbed	10	9.5%
Almost undisturbed	50	47.6%
Almost constantly interrupted	39	37.1%
Always distracted	6	5.7%
Location of pain		
There isn't any	3	2.9%
1 location	38	36.2%
2 – 3 location	58	55.2%
4 location	6	5.7%
Pain intensity		
No pain	4	3.8%
Mild pain	34	32.4%
Moderate pain	48	45.7%
Severe pain	19	18.1%
Duration of pain		
0 day	4	3.8%
1 – 2 days	80	76.2%
3 – 4 days	18	17.1%
≥ 5 day	3	2.9%
Total	420	100.0%

Regarding pain intensity, the majority of female students reported moderate pain, accounting for 48 respondents (45.7%). This was followed by 34 respondents (32.4%) who experienced mild pain and 19 respondents (18.1%) who experienced severe pain. The lowest frequency was observed among respondents who reported no pain, with only 4 respondents (3.8%). The final component, pain duration, showed that the majority of respondents, 80 students (76.2%), experienced pain for 1–2 days. Eighteen respondents (17.1%) experienced pain for 3–4 days. Four respondents (3.8%) reported no pain, while only 3 respondents (2.9%) reported pain lasting ≥5 days.

B. Quality of Learning

Table 4. presents the learning quality of female medical students at the Faculty of Medicine, Christian University of Indonesia, Class of 2024. A total of 88 respondents (83.8%) reported that their learning quality was affected by dysmenorrhea, while the remaining 17 respondents (16.2%) reported that their learning quality was not affected by dysmenorrhea.

Table 4

Frequency Distribution of Learning Quality among Female Medical Students at the Faculty of Medicine, Christian University of Indonesia, Class of 2024

Quality of Learning	Frequency	Percentage
Disturbed	88	83.8%
Undisturbed	17	16.2%
Total	105	100.0%

Bivariate Analysis

Based on Table 5, 3 respondents (2.9%) did not experience dysmenorrhea but still reported impaired learning quality. Furthermore, 16 respondents (15.2%) experienced mild dysmenorrhea with impaired learning quality. The largest number of respondents was found in the moderate dysmenorrhea group with impaired learning quality, comprising 50 respondents (47.6%), while 11 respondents (10.5%) experienced moderate dysmenorrhea but reported no impairment in learning quality. In the severe dysmenorrhea category, 19 respondents (18.1%) reported impaired learning quality, whereas 6 respondents (5.7%) experienced severe dysmenorrhea but reported no impairment in learning quality.

Table 5

The Relationship Between Dysmenorrhea Severity and Study Quality Among Female Medical Students (Class of 2024) at the Faculty of Medicine, Universitas Kristen Indonesia

Dysmenorrhea Severity	Learning Quality		Total	r (Rho)	p-value
	Not Impaired	Impaired			
	n	%	n	%	n
No dysmenorrhea	0	0.0	3	2.9	3
Mild dysmenorrhea	0	0.0	16	15.2	16
Moderate dysmenorrhea	11	10.5	50	47.6	61
Severe dysmenorrhea	6	5.7	19	18.1	25
Total	17	16.2	88	83.8	105
				-0.199	0.042

The negative direction of the correlation indicates that an increase in dysmenorrhea severity tends to be accompanied by a decrease in learning quality. Based on the Spearman rank correlation test, the correlation coefficient was $r = -0.199$, with a significance level of $p = 0.042$ ($p < 0.05$). This finding indicates a statistically significant relationship between dysmenorrhea severity and learning quality. Although the strength of the correlation was weak, the results suggest that dysmenorrhea may still be one of the factors affecting the learning quality of female medical students.

2. Discussion

Dysmenorrhea is a painful condition that occurs during menstruation and originates from uterine activity. It is one of the most common gynecological problems experienced by women of reproductive age. Primary dysmenorrhea is characterized by menstrual pain occurring in the absence of structural or pathological abnormalities in the reproductive organs. This condition is associated with increased prostaglandin synthesis, which triggers uterine contractions accompanied by constriction of the uterine blood vessels. This combination subsequently results in ischemia of the uterine tissue. This condition increases the sensitivity of pain nerve fibers and triggers pelvic pain.

The results of the study involving 105 female medical students at the Faculty of Medicine, Christian University of Indonesia, Class of 2024, showed that the majority of respondents were 19 years old, which falls within the late adolescent to young adult age group. This age range is known to have a relatively high prevalence of dysmenorrhea, approximately 60–90%, due to hormonal activity and relatively high prostaglandin production, thereby increasing the risk of dysmenorrhea.¹⁵ Univariate analysis of the dysmenorrhea severity variable indicated that most respondents were classified as having moderate dysmenorrhea (58.1%), followed by severe dysmenorrhea (23.8%), while the proportions of respondents reporting mild dysmenorrhea or no dysmenorrhea were relatively small. These findings are consistent with those reported by Mergy Rochmi and Dwi Nastiti, who found that among 170 respondents, 82 experienced moderate dysmenorrhea and 69 experienced severe dysmenorrhea.⁹ This pattern reflects the characteristics of primary dysmenorrhea, in which prostaglandin production increases during menstruation. Elevated prostaglandin levels can trigger stronger uterine contractions and increase pain sensations; therefore, individuals with greater prostaglandin responses tend to experience moderate to severe dysmenorrhea.¹⁶

The severity of dysmenorrhea in this study was assessed using the WaLIDD Score, which includes several indicators, such as the impact on work ability, pain location, pain intensity, and pain duration. Based on the distribution of the WaLIDD Score components, most respondents reported mild (47.6%) to moderate (37.1%) disruption of activities, experienced pain in 2–3 locations (55.2%), reported moderate pain intensity (45.7%), and experienced pain primarily for 1–2 days (76.2%). The accumulated scores across all components indicated that the majority of respondents were classified as having moderate dysmenorrhea. Analysis of the learning quality variable showed that most female medical students from the 2024 class experienced disruption to their learning process due to dysmenorrhea. The findings showed that 88 respondents (83.8%) reported impaired learning quality, whereas only 17 respondents (16.2%) reported no impairment. The high proportion of respondents experiencing impaired learning quality indicates that menstrual pain may have a considerable impact on the academic activities of female students. The learning difficulties experienced by respondents included decreased concentration during lectures, discomfort during the learning process, and difficulties participating in discussions and completing academic assignments. These findings support the study by Angelina et al., which reported that 73.5% of female nursing students experienced disruption of learning activities due to dysmenorrhea-related pain. Increased pain intensity was associated with greater disruption of learning activities.

Based on the Spearman rank statistical test, the bivariate analysis revealed a significant relationship between dysmenorrhea severity and learning quality, with a significance value of $p = 0.042$. The negative direction of the relationship indicates that an increase in dysmenorrhea severity tends to be accompanied by a decrease in learning quality. Although the strength of the correlation was weak ($r = -0.199$), the findings indicate that dysmenorrhea contributes to impaired learning quality among female students. These findings also support the study by Wahyuni et al., which reported that moderate to severe dysmenorrhea pain could interfere with students' daily activities, including academic activities. Such disruption occurs through pain mechanisms that cause fatigue, reduced concentration, and physical discomfort during the learning process.

Conclusion

Based on the findings of this study involving 105 female medical students at the Faculty of Medicine, Universitas Kristen Indonesia, Class of 2024, the majority of respondents experienced moderate dysmenorrhea (61 respondents; 58.1%), while 25 respondents (23.8%) experienced severe dysmenorrhea. Furthermore, 88 respondents (83.8%) reported impaired learning quality due to dysmenorrhea. The Spearman rank correlation test demonstrated a statistically significant relationship between dysmenorrhea severity and learning quality ($p = 0.042$; $p < 0.05$), with a weak negative correlation ($r = -0.199$). This negative correlation indicates that higher dysmenorrhea severity tends to be associated with lower learning quality among the respondents. Therefore, the findings confirm that dysmenorrhea severity is significantly associated with learning quality among female medical students at the Faculty of Medicine, Universitas Kristen Indonesia, Class of 2024, although the strength of the observed association is weak.

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