

## Original Research Article

## Impact of Dysmenorrhea on the Quality of Life and Academic Performance of Adolescent Girls at a Semi-Urban High School in Cameroon

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**Abstract: Introduction:** Dysmenorrhea, defined as painful menstrual periods, is one of the most common gynecological complaints and is reported to have significant consequences on quality of life and daily activities. **Objective:** We aimed to assess the impact of dysmenorrhea on the quality of life and academic performance of adolescent girls at the Classical and Modern High School (CMGHS) of Sangmélina. **Methodology:** We conducted an analytical cross-sectional study, with data collection over a three-month period (January to March 2025). We included all adolescent girls attending the CMGHS of Sangmélina who gave their approval to participate and whose parents had provided their free and informed consent. Sampling was consecutive and exhaustive. The variables studied were the prevalence of dysmenorrhea, the characteristics of dysmenorrhea, quality of life (World Health Organization Quality of Life - BREF score), and academic performance. Proportions were compared using the chi-square test with a significance level set at 5%. **Results:** We recruited 318 girls with mean age 16.1 years  $\pm$  1.8 years. The prevalence of dysmenorrhea was 57.5%, and in 51.9% of girls with dysmenorrhea, the pain started at the first year of menstruation and was present every month in 65.02%. Common associated symptoms included headaches (52.5%) and depressed mood (51.4%). Regarding quality of life, only 15.3% of affected adolescent girls reported a good quality of life, compared to 52.6% of those without dysmenorrhea. The impact on school was marked by concentration difficulties (77% vs. 31.9%) and increased absenteeism (57.9% vs. 10.4%). **Conclusion:** As per our study, dysmenorrhea is a very common health condition and significantly impairs the well-being and academic performance of adolescent girls at the classical and modern government high school of Sangmelima.

**Keywords:** Dysmenorrhea, Adolescent Girls, Quality of Life, Academic Performance.

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## INTRODUCTION

Dysmenorrhea is one of the most common gynecological conditions affecting adolescent girls and women of childbearing age [1]. It is classified into two categories: primary (without underlying pathology) and secondary. Often characterized by intense abdominal pain during menstruation, dysmenorrhea affects a significant proportion of women of reproductive age. Studies indicate that the global prevalence of dysmenorrhea varies between 16% and 91% among women of reproductive age, with severe pain affecting 2% to 29% of those studied [2].

This disorder is reported to be a major cause of school absenteeism and to interfere with daily activities, reducing autonomy and social participation. In Cameroon, despite a reported prevalence of 75.5% in Yaounde [3], data remains limited in certain regions, such as the South region. This study aims to specifically assess the impact of dysmenorrhea on girls at the Classical and Modern Government High School (CMGHS) of Sangmélina, in order to guide local support strategies.

## METHODOLOGY

We conducted an analytical cross-sectional study with prospective data collection at the CMGHS of Sangmélíma over a 3-month period, from January to March 2025. We included all enrolled adolescent girls who gave their approval to participate in the study, and whose parents gave their free informed consent. Pregnant girls, girls undergoing medical treatment for dysmenorrhea, and girls with chronic illnesses were excluded. Sampling was consecutive and exhaustive. The calculated minimum sample size, using the Cochran formula, was 284, and 318 participants were successfully recruited. The variables studied were the prevalence of dysmenorrhea, the characteristics of dysmenorrhea (type, intensity, frequency, duration, associated signs, aggravating factors), the characteristics of the menstrual cycle (menarche, cycle length, menstrual duration), quality of life, and academic performance (concentration, absenteeism, grade point average). Quality of life was assessed using the World Health Organization Quality of Life - BREF (WHOQOL-BREF) score on 100, based on the average of scores of 04 health domains: physical health, psychological health, social health and the environment, each scored on 100. A score  $\geq 75$  was used to define good

quality of life (QoL), 50-74 average QoL, and  $\leq 49$  poor QoL [ref]. Academic performance was assessed using the first-term average, hours of absence, and concentration span. Odds ratios (OR) were calculated and a chi-square test was used to compare proportions with a 5% error threshold.

## RESULTS

Out of 606 females in the school, 334 met our inclusion criteria. However, we excluded 16 because of chronic illness (5), medical treatment for dysmenorrhea (09), and pregnancy (2). We, therefore, recruited 318 adolescent girls. The average age was 16.15 years and age range 12-19 years.

### Description of Dysmenorrhea

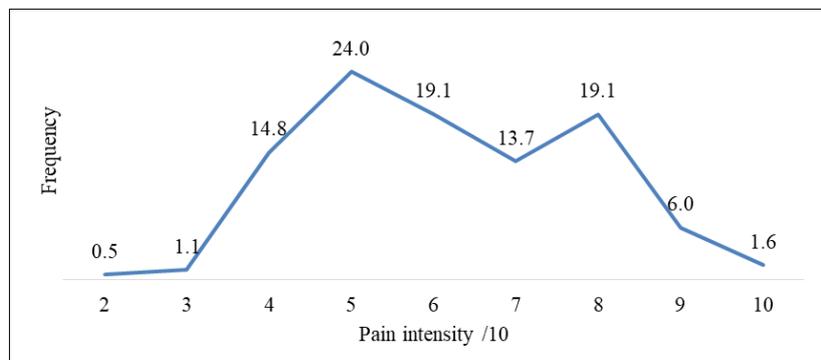
The prevalence of dysmenorrhea among the adolescent girls was 57.5%. In 51.9% of these girls with dysmenorrhea, the pain began during their first year of menstruation, and 65.0% of them experienced dysmenorrhea every month. The most frequently associated symptoms were headaches (in 52.5% of cases) and depressed mood (in 51.4%). Table I illustrates these results.

**Table I: Prevalence of symptoms associated with dysmenorrhea in adolescent girls at the CMGHS Sangmelima in 2025**

Associated signs (N=183)	Number	Percentage (%)
Nausea	55	30.1
Diarrhea	31	16.9
Breast pain	79	43.2
Vomiting	14	7.7
Abdominal bloating	35	19.1
Headaches	96	52.5
Fainting	10	5.5
Depressed mood	94	51.4
Nervousness	83	45.4
Insomnia	35	19.1
Irritability	33	18

Sugar consumption was identified in 80.9% of respondents as the main aggravating factor. Furthermore, the most commonly reported severity of dysmenorrhea, according to the numerical scale was 5/10 (24%).

However, more than half of them had moderate (meaning, 4-6?) to severe (7-10?) dysmenorrhea (Figure 1).



**Figure 1: Distribution of adolescent girls at the Classical and Modern Government High School of Sangmélíma, with respect to the intensity of dysmenorrhea on the numerical scale**

**Impact of Dysmenorrhea on Quality of Life**

Overall quality of life was poorer in girls with dysmenorrhea. Specifically, menstrual pain had a statistically significant negative influence ( $p < 0.001$ ) on physical health, psychological well-being and social relationships as demonstrated in Table II. The prevalence

of poor quality of life was 29.5% in girls with dysmenorrhea, compared to just 4.4% in adolescent girls without dysmenorrhea. Furthermore, in girls with poor QOL the odds of dysmenorrhea were much higher (OR=9.23; CI: 3.842-22.215) with  $p < 0.001$  (Table II).

**Table II: Relationship between dysmenorrhea and the WHOQOL-BREF score for quality of life (and its components) in adolescent girls at the Classical and Modern Government High School of Sangmélima, in 2025**

Variable	Categories	Dysmenorrhea (+) n (%)	Dysmenorrhea (-) n (%)	p-value
Physical health	Bad	9 (4.9)	0 (0.0)	0.000
	Average	71 (38.8)	12 (8.9)	
	Good	97 (53)	58 (43.7)	
	Very good	6 (3.3)	71 (22.3)	
Social relationship	Bad	4 (2.2)	0 (0.0)	0.000
	Average	52 (28.4)	8 (5.9)	
	Good	66 (36.1)	51 (37.8)	
	Very good	61 (33.3)	76 (53.3)	
Psychological health	Bad	2 (1.1)	0 (0.0)	0.000
	Average	60 (32.8)	15 (11.1)	
	Good	82 (44.8)	58 (43.0)	
	Very good	39 (21.3)	62 (45.9)	
Environment	Bad	1(0.5)	0(0.0)	0.000
	Average	45(24.6)	15 (11.1)	
	Good	10(54.6)	64 (47.4)	
	Very good	37(20.2)	56 (41.5)	
Quality of life (QOL)	Poor	54 (29.5)	6 (4.4)	<0.001
	Not poor	129 (70.5)	129 (95.6)	
Poor QOL and dysmenorrhea: OR=9.23; CI: 3.84-22.22; $p < 0.001$				

**Impact on Academic Performance**

Regarding academic performance, we observed that 77% of girls with dysmenorrhea reported difficulty concentrating during classes when they were menstruating, compared to 31.9% of their peers without dysmenorrhea. Furthermore, 57.9% of girls with dysmenorrhea missed classes due to pain, compared to 10.4% in girls without dysmenorrhea (Table III).

A significant association was found between dysmenorrhea and poor academic performance (average <10 in the 1<sup>st</sup> trimester result 2024-2025). Female students experiencing painful periods were approximately twice as likely to have poor academic results (OR = 2.09; 95% CI: 1.23–3.57).

**Table III: Relationship between dysmenorrhea and academic performance among adolescent girls at the Classical and Modern Government High School of Sangmélima, in 2025**

Variable	Categories	Dysmenorrhea (+) n (%)	Dysmenorrhea (-) n (%)	p-value
Difficulty concentrating during menstruation	Yes	141 (77.0)	43 (31.9)	0.000
	No	42 (23.0)	92 (68.1)	
Absence from class due to menstruation	Yes	106 (57.9)	14 (10.4)	0.000
	No	77 (42.1)	121 (89.6)	
Poor academic results (average <10)	Yes	59 (32.2)	25 (18.5)	
	No	124 (67.8)	110 (81.5)	
The odds of dysmenorrhea among girls who failed in the first term are about double the same in girls who passed (OR = 2.094; 95% CI: 1.228 – 3.569; $p = 0.006$ ).				

**DISCUSSION**

**Profile of Dysmenorrhea**

The prevalence of dysmenorrhea in our study was 57.5%. This prevalence is lower than that reported by Balde *et al.*, in 2022 in Guinea (83.6%) [4], and by

Fouedjio *et al.*, in 2019 in Bafoussam, Cameroon (75.5%) [3]. This variation can be explained by differences in selection criteria and study populations, as the other studies included a mix of pupils and students. Furthermore, we observed that dysmenorrhea began in the first year on menstruation in 51.9% of adolescent

girls, indicating primary dysmenorrhea. Indeed, in 2023, Nagy *et al.*, demonstrated that girls who have their first period before age 12 had a significantly higher probability of suffering from primary dysmenorrhea compared to those who experience menarche at a normal or late age [5].

Furthermore, 83.4% of adolescent girls presented with moderate to severe dysmenorrhea. These results corroborate those of Habibi *et al.*, in Iran in 2015, who found a 69.7% frequency of moderate to severe dysmenorrhea [6]. The data from these studies indicate that adolescent girls are more prone to experiencing pain. Similarly, Vincent *et al.*, demonstrated through sensory tests that adolescent girls with primary dysmenorrhea experience pain more rapidly than adults, even in response to stimuli unrelated to the uterus [7].

### Impact on Quality of Life

The strong association between dysmenorrhea and impaired quality of life (OR=9.23) is consistent with the findings of Mboua *et al.*, in 2023 in Yaoundé, which equally demonstrated a major impact on the well-being of school-aged girls [8]. Our results also align with those of Amza *et al.*, in 2024, where 73.9% of participants considered their QOL to be significantly affected [9]. The presence of systemic symptoms such as headaches or fatigue, as described by Iacovides *et al.*, in 2015 [10], explain why this condition goes beyond simple pelvic pain to affect different aspects of physical and psychological health. Therefore, it would be crucial to implement multidisciplinary care for these adolescent girls, involving both a gynecologist and a psychologist.

### Impact on Academic Performance

Absenteeism (57.9%) and concentration difficulties (77%) were common among adolescent girls with dysmenorrhea. Nkechinyere Nwofor *et al.*, in Nigeria also found an absenteeism rate of 57% among students suffering from dysmenorrhea [11]. These difficulties could contribute to a decline in academic performance. Similarly, Tanner-Smith and Wilson, in their 2013 meta-analysis, highlighted that repeated absenteeism is a direct predictor of academic failure [12]. The proportion of students with an average <10 (32.2% vs 18.5%) confirms the real academic impact reported by Fouedjio *et al.*, in 2025 [13].

## CONCLUSION

This study shows that dysmenorrhea is very common among adolescent girls in Sangmélina, with a major impact on their quality of life. Menstrual pain significantly degraded the physical and psychological health of adolescent girls, as well as their social relationships, and hinders their academic success.

This highlights the need for a holistic multidisciplinary approach, including gynecologists and psychologists, and to strengthen awareness within schools in order to better support adolescent girls suffering from dysmenorrhea. There is also a need for further studies to establish a nation-wide situation of the condition.

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