Prevalence, Perception And Management Practices of Dysmenorrhea Among Students of Delta State University, Abraka, South-south Nigeria

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Abstract

Introduction: Dysmenorrhea is a common gynaecological disorder among women of reproductive age worldwide. Undergraduate students may be particularly affected, as dysmenorrhea may negatively affect academic engagement and quality of life. This study assessed the prevalence and management of dysmenorrhea among DELSU undergraduates, and explored its self-reported association with examination stress and academic performance.

Materials and Methods: A descriptive cross-sectional survey design was conducted among 400 female undergraduate students recruited from all faculties of DELSU using a convenience sampling technique. Data were collected using a structured questionnaire and summarised using frequency/percentage distribution and Spearman rho to determine association with academic performance. Statistical significance was set at $p<0.05$.

Results: The prevalence rate of dysmenorrhea was 78.9%. Onset occurred at menarche in 53.6%, and 54.9% reported a family history. Lower abdomen was the commonest pain site (67.2%). Common associated symptoms were headache (30.1%), loss of appetite (19.8%), and vomiting (13.5%). Rest (40.9%) and drug use (22.6%) were the main management approaches, with piroxicam and paracetamol mostly used; 72.6% of drug users self-medicated. No significant correlation was found between dysmenorrhea and examination stress ($r=-0.013$, $p=0.804$) or self-reported academic performance ($r=-0.061$, $p=0.254$).

Conclusion: Dysmenorrhea is highly prevalent among DELSU undergraduates, and management remains largely non-pharmacological or informal, with substantial self-medication. No significant correlation was found between dysmenorrhea and self-reported examination stress or academic performance in this sample, although a considerable proportion of respondents reported dysmenorrhea-related absenteeism and reading difficulty.

Keywords: Dysmenorrhea; Prevalence, Management; Undergraduate students; Academic Performance

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INTRODUCTION

Painful menstruation, or dysmenorrhea, has been described as a gynecologic problem characterized by cramping pain experienced around the lower abdomen at the onset or during menstrual bleeding, constituting one of the most commonly observed gynecological problems in reproductive age women.[1,2] This medical term has been categorized into two broad classes of primary dysmenorrhea and secondary dysmenorrhea. The former is caused by higher levels of prostaglandin production and not related to any underlying pelvic pathologies while the latter is caused by pelvic disorders, such as endometriosis and adenomyosis.[3,4]

Internationally, the prevalence rate of dysmenorrhea among adolescents and young women is estimated between 45% and 90%, and this has earned its name as the most common gynecological problem for this demographic group. The health condition is the leading cause of school and work absenteeism among women of reproductive age in this population. Apart from causing physical discomfort, menstrual pain has been associated with poor concentration and performance in academics, poor sleep, social isolation, and reduced health-related quality of life.[5,6] One particular study conducted in Nigeria among female students corroborated the effect of dysmenorrhea on academic performance.[7]

Prevailing prevalence statistics for Nigeria include varying levels of prevalence rates which are between 25% and 83%. The variation results from differences in methodology, sample population and criteria used for diagnosing the condition.[8,9] This is further corroborated by findings from south-western Nigeria and from Ethopia which reported increased prevalence of dysmenorrhea and strong association with an increased proportion of student's absenteeism from classes due to the pain associated with menstruation.[3,10] With all these problems associated with dysmenorrhea among female students, Nigerians inclusive, many lack knowledge about treatment options and use self-medication techniques that are harmful to them.[5,11,12]

The burden of dysmenorrhea, its perception and management strategies among students in the Delta State University, Abraka, a major public institution of higher learning in South-South Nigeria, was never explored before this project. No literature had identified the association between dysmenorrhea prevalence and academic pressure, which is known as a causative factor of menstrual irregularities.[13,14] It is worth noting that there is a considerable level of coincidence between dysmenorrhea peak prevalence period and period when females study in higher institutions of learning.

The study was therefore geared towards: identifying the prevalence rate of dysmenorrhea among students of DELSU, investigating the perception and knowledge of students on the disease, describing the present management measures and finding out the connection between examination stress, dysmenorrhea, and academic achievement.

MATERIALS AND METHODS

Study Design and Setting

This was a descriptive cross-sectional study conducted at Delta State University (DELSU), Abraka, Delta State, Nigeria (approximately 5.79°N, 6.10°E). DELSU is a public tertiary institution comprising of the following faculties: Faculty of Arts, Social sciences, Basic Medical sciences, Management sciences, Agriculture, Engineering, Science, Education, Law and

Pharmacy.

Study Population and Sampling

All female undergraduate students of DELSU constituted the target population. Convenience (quota) sampling technique was adopted. Forty questionnaires were distributed randomly to female students in each faculty of the institution giving a target sample size of 400 participants. Students from 100 level to final year were eligible. Of the 400 questionnaires distributed, 399 were retrieved and analysed (99.75% response rate). This is a non-probability sampling approach rather than random or stratified random sampling, and self-selection/ convenience bias is acknowledged as a limitation; findings may not be fully generalisable to the entire DELSU female student population.

Sample size was determined using the Cochran's formula as previously described [15] and expressed herein:

$$n = Z^2pq/e^2$$

Where Z = 1.96 (95% confidence level), p = 0.5 (assumed prevalence, used for maximum variability in the absence of a prior DELSU-specific estimate), q = 1-p = 0.5, and e = 0.05 (5% margin of error).

This gives a minimum required sample size of n ≈ 384, which was rounded up to 400 to allow for non-response, in proportion to DELSU's estimated undergraduate population of over 20,000 students across the different faculties.

Inclusion and Exclusion Criteria

Inclusion criteria included; (i) Female undergraduate student of DELSU, (ii) Female Undergraduate of adult age (18 years and above), and (iii) Willingness to participate voluntarily. Male students and those unwilling to participate were excluded.

Instrument for Data Collection

An instrument comprising a structured, self-administered questionnaire containing 37 questions (36 closed-ended and 1 open-ended) was developed by the researchers after an extensive literature review, and was reviewed for face and content validity by the study supervisor. The questionnaire was not adapted from a previously published, externally validated instrument, and no reliability coefficient (e.g. Cronbach's alpha) was computed prior to administration; this is acknowledged as a methodological limitation. Dysmenorrhea itself was assessed as a self-reported binary experience ("Do you experience painful menstruation? Yes/No") rather than through a validated pain-severity scale such as the Visual Analogue Scale (VAS) or Numeric Rating Scale (NRS); consequently, prevalence estimates in this study reflect self-reported occurrence of menstrual pain rather than a clinically graded diagnosis, and severity was not systematically scored. The questionnaire also did not include items to exclude secondary dysmenorrhea (e.g. endometriosis, adenomyosis, pelvic inflammatory disease); reported family history and menarche-onset patterns are therefore suggestive of, but cannot confirm, a primary dysmenorrhea aetiology in this sample. The questionnaire had five sections as follows:

Section A: Demographic information (age, marital status, religion, and faculty).

Section B: Incidence and characteristics of dysmenorrhea (nature of pain, when it started, how often it occurred, where it was felt, what other symptoms it was accompanied by, and menstrual history).

Section C: Perceptions about dysmenorrhea (knowledge, awareness, perception, attitude, and whether anyone in their family suffers from

dysmenorrhea).

Section D: Dysmenorrhea management (treatment used, drug type, pharmacological and non-pharmacological methods, and seeking medical care).

Section E: Influence of stress on dysmenorrhea and academics (ability to read, absenteeism in classes, examination results).

The questionnaires were distributed to students face-to-face after being informed about the study.

Ethical Approval and Reporting Guideline:

The study was conducted in compliance with regulations approved by the Ethical Committee on Human and Animal Research of the Faculty of Basic Medical Sciences, Delta State University, Abraka, Delta State (Approval No: RBC/FBMC/DELSU/18/0974). Written/verbal informed consent was obtained from all participants prior to administration of the questionnaire. Participants were informed of the study's purpose, that participation was voluntary, that responses would be anonymised, and that they could withdraw at any point without penalty. Only students who provided consent were included in the study. Moreover, the study is reported in line with the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) checklist for cross-sectional studies.

Data Analysis

The data were coded, inputted, and analyzed statistically using SPSS v.23.0 and Microsoft Excel. Frequency and percentage distributions were employed to characterize participants' demographics and the outcome variables. Spearman's rho was used to investigate the hypotheses on the correlations between (i) exam stress and dysmenorrhea; and (ii) dysmenorrhea and academic achievement. The significance level was considered at $p < 0.05$.

RESULTS

Demographic Characteristics of Study Participants

The demographics characteristics of the study participants is presented in Table 1. From a total of 399 questionnaires analysed, a large proportion of participants (58.9%) were within the age range of 21-25 years, while 30.8% were within the age range of 15-20 years. The vast majority of participants were single (96.0%) and Christian (99.5%). The sample was highly homogeneous with respect to religion (99.5% Christian) and marital status (96.0% single), which likely reflects the demographic composition of the university's undergraduate population and/or the convenience sampling method used, rather than deliberate stratification by these variables. This limits the generalisability of findings to more religiously or maritally diverse student populations, and the possibility of non-response bias among under-represented subgroups (e.g. Muslim or married students) cannot be excluded.

Table 1. Demographic characteristics of study participants (N = 399)

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	15–20	123	30.8
	21–25	235	58.9
	26–30	36	9.0
	31–35	4	1.0
	36–40	1	0.3
Marital Status	Single	383	96.0
	Married	13	3.3
	Divorced	3	0.8
Religion	Christian	397	99.5
	Muslim	2	0.5

Prevalence and Pain Characteristics in Patients with Dysmenorrhea

Table 2 shows details on prevalence and pain characteristics in students experiencing dysmenorrhea. The prevalence rate of dysmenorrhea among the subjects was 78.9% (n = 315). The onset of dysmenorrheal pain occurred during menarche in 53.6% of patients whereas 41.6% experienced dysmenorrhea during later stages of their lives. Among those, 30.3% of respondents experience it regularly whereas 50.6% experience it occasionally. Abdomen was the most common site for pain in 67.2%, followed by lower back (8.8%), hips (3.0%), and thighs (1.8%). In total, 54.9% of respondents had a family history of dysmenorrhea.

Table 2. Prevalence and pain characteristics of dysmenorrhea (N = 399)

Characteristic	Category	Frequency (n)	Percentage (%)
Experience painful menstruation	Yes	315	78.9
	No	84	21.1
Age at menarche (years)	10–15	214	53.6
	16–20	132	33.1
Onset of pain	At first period (menarche)	156	39.1
	Later in life	166	41.6
Frequency of pain	Always	121	30.3
	Sometimes	202	50.6
Pain location	Lower abdomen	268	67.2
	Lower back	35	8.8
	Hip	12	3.0
	Thigh	7	1.8
Family history of dysmenorrhea	Yes (not the only one in family)	219	54.9
Heavy menstrual flow	Yes	183	45.9

Symptoms associated with dysmenorrhea

As shown in Table 3, headache (30.1%) was the most frequently reported symptom associated with dysmenorrhea, followed by loss of appetite (19.8%), vomiting (13.5%), other symptoms (11.0%), and nausea (5.8%). This table reflects the 320 respondents who reported at least one associated symptom (a subset of the 315 respondents who experienced dysmenorrhea, as some respondents skipped this item or the item allowed limited multiple responses); percentages are calculated on valid responses to this item.

Table 3. Symptoms associated with dysmenorrhea (N = 320)

Symptom	Frequency (n)	Percentage (%)
Headache	120	30.1
Loss of appetite	79	19.8
Vomiting	54	13.5
Other symptoms	44	11.0
Nausea	23	5.8

Perception of Dysmenorrhea among Undergraduate Students of DELSU

As shown in **Table 4,** Familiarity with the term 'dysmenorrhea' was indicated by 45.9% of participants, with 39.6% having never heard about dysmenorrhea. Of those familiar with dysmenorrhea, the main sources of their knowledge included classroom learning (35%), social networking sites (30%), various sources (25%), and friends (10%). The majority of respondents (60.7%) were comfortable speaking freely about the topic, whereas 23.6% did not feel at ease. With regard to perceived causes of dysmenorrhea, the highest number mentioned excessive sugar consumption (45.4%), followed by stress (18.0%), infection (7.3%), genetic predisposition (6.8%), prostaglandins (5.0%), and nutrition (1.5%). Majority (59.9%) thought dysmenorrhea can be treated.

Table 4. Perception and awareness of dysmenorrhea (N = 335)*

Variable	Frequency (n)	Percentage (%)
Heard of dysmenorrhea: Yes	183	45.9
Comfortable discussing: Yes	242	60.7
Perceived cause: Excess sugar	181	45.4
Perceived cause: Stress	72	18.0
Perceived cause: Infection	29	7.3
Perceived cause: Genetics	27	6.8
Perceived cause: Prostaglandins	20	5.0
Believes dysmenorrhea is treatable	239	59.9
Believes diet plays a role	199	49.9
Positive family history	219	54.9
Feel anxious before period	210	52.6

**Table reflects 335 valid responses to perception items; N differs from the total sample of 399 due to item non-response*

Management Practices of Dysmenorrhea among Undergraduate Students of DELSU

Tables 5 and 6 respectively, depicts the self-reported responses by study participants as regards the different methods employed in managing their episodes of dysmenorrhea. Table 5 shows the different self-reported management practices employed by undergraduate students of DELSU against dysmenorrhea (N=348 valid responses to this item; N differs from the total sample due to item non-response or skip logic for students who reported no management practice). As shown, resting was the most frequently employed method in dealing with menstrual pain (40.9%), followed by drug-taking (22.6%), warm bath (13.5%), massage (6.5%), and exercise (3.8%). Additionally, Table 6 shows the specific drugs used among the 208 respondents who reported taking medication; piroxicam (brand name: Felvin; 17.5%) and paracetamol (17.0%) were the most frequently used, followed by ibuprofen (10.0%), diclofenac (3.3%), other drugs (2.5%), and herbal preparations (1.8%). Piroxicam and paracetamol are two distinct medications with similar (but not identical) usage rates in this sample; this is not a double-count. The largest proportion of drug users (34.3%) took medication during menstrual bleeding, while 17.8% took medication prior to onset of the period. Self-medication was practiced by 72.6% of drug-taking respondents

Table 5. Management practices for dysmenorrhea (N = 348)*

Management Method	Frequency (n)	Percentage (%)
Rest	163	40.9
Drugs	90	22.6
Warm bath	54	13.5
Massage	26	6.5
Exercise	15	3.8

**N=348 valid responses to this item; N differs from the total sample due to item non-response or skip logic for students who reported no management practice*

Table 6. Drugs used for dysmenorrhea management (N = 208)*

Drug	Frequency (n)	Percentage (%)
Felbinac (Felvin)	70	17.5
Paracetamol	68	17.0
Ibuprofen	40	10.0
Diclofenac	13	3.3
Other drugs	10	2.5
Herbal preparations	7	1.8

**N=208 valid responses to this item; N differs from the total sample due to item non-response or skip logic for students who reported specific drug used to manage pain during dysmenorrhea*

Associative Effect of Stress and Dysmenorrhea on Academic Performance

These findings are shown in Table 7. In terms of self-reported effects on academics, 30.6% of participants stated that they could not read while menstruating, 31.8% reported that they could read, and 23.8% could sometimes read. Of those who could read, 21.6% rated their assimilation as low, 43.4% average, and 4.8% high. School absence due to dysmenorrhea was reported as always occurring by 14.5% of respondents, sometimes by 22.3%, while 49.9% reported no absenteeism. 9.8% believed dysmenorrhea definitely affects their academic performance, 63.2% said it does not, and 13.8% said it sometimes does. Nearly half of respondents (47.4%) felt they performed well in examinations despite dysmenorrheic pain. All academic-performance items in this section were self-reported perceptions; no objective measure such as GPA/CGPA or examination scores was collected.

The perceived effect of stress on dysmenorrhea was reported as "yes" by 46.4% of participants (sometimes: 25.6%; no: 17.5%). Spearman's correlation between perceived examination stress and frequency of dysmenorrhea produced a negligible, non-significant coefficient ($r = -0.013$, $p = 0.804$), indicating essentially no linear association rather than merely a lack of statistical significance. Similarly, the correlation between dysmenorrhea and self-reported academic performance was negligible and non-significant ($r = -0.061$, $p = 0.254$). It should be noted that Spearman's rho is not the ideal test for these largely categorical/ordinal variables; a chi-square test of association or ordinal logistic regression may have been more appropriate and is recommended for future analyses of this dataset.

Table 7. Spearman's correlation between stress, dysmenorrhea, and academic performance

Correlation	Rho (r)	p-value	Significance
Exam stress vs. dysmenorrhea	-0.013	0.804	Not significant
Dysmenorrhea vs. academic performance	-0.061	0.254	Not significant

DISCUSSION

Prevalence of Dysmenorrhea

In the current study, the prevalence of dysmenorrhea was 78.9%, reflecting the high prevalence that is reported amongst Nigerian and African universities. In Nigeria, Esan et al. (2024) recorded prevalence of 76.4% amongst female university undergraduate students[16], whereas in Ethiopia, a prevalence of 74.7% was reported among students of Haramaya University in 2022[10], while a 2023 study reported prevalence up to 80.2% in Ghana.[11] These results corroborate the world prevalence range of 60-93%.[17]

The fact that 53.6% of participants started suffering from dysmenorrhea at menarche and 54.9% of participants have a family history of the condition corroborate the current scientific literature on the association between early onset of menstrual cramps and the genetic factor, as well as prostaglandins.[3,4] In this way, these results further emphasise the contribution of genetics to the etiology of the problem and prove the possibility of using family health education for its prevention. The dominance of the lower abdominal pain site (67.2%) coincides with the findings in Iran[12], Ethiopia[10], and South East Nigeria.[5]

The most frequently associated symptom among participants (30.1%) was headache, which is an observation different from what is found in the larger literature wherein fatigue and irritability are more frequent.[5,12] Nevertheless, such an observation is particularly relevant considering the established link between prostaglandin-induced vasospasm and the development of headaches.[2] Other symptoms frequently observed were lack of appetite (19.8%) and vomiting (13.5%), which align with the established role of prostaglandins in the digestive tract.[11] Lastly, 52.6% of the respondents felt anxious prior to the commencement of menstruation, which is consistent with studies that have qualitatively analysed the psychological impact experienced by university students in Ethiopia[10] and Australia.[18]

Perception and Awareness

Awareness of the term "dysmenorrhea" was found to be relatively low at only 45.9%. The lack of knowledge about the condition that nearly all females suffer from corresponds to results reported by researchers in Nigeria and sub-Saharan Africa.[11,19] Moreover, excess sugar intake was perceived as the reason for the development of this problem by 45.4% of the participants. Such an opinion contradicts medical literature where the increased production of prostaglandins during the late luteal phase is recognised to be the principal mechanism of dysmenorrhea.[4,20] At the same time, 18.0% mentioned stress and only 5.0% correctly identified prostaglandins, indicating a limited understanding of the underlying hormonal mechanism. This knowledge gap plausibly links to the high rate of self-medication observed in this study (72.6% of drug users): students who misattribute dysmenorrhea to diet rather than to a treatable, prostaglandin-mediated process may be less likely to seek evidence-based pharmacological management or professional advice, and more likely to rely on informal remedies. Lack of accurate information on the condition may lead students toward inappropriate self-management rather than evidence-based care. However, a relatively large number of respondents (60.7%) felt that they could comfortably discuss their condition compared to respondents from other studies conducted among public universities in southern Ethiopia and Ireland, who felt that stigma prevented them from seeking help.[5,21]

Management Practices

Non-pharmacological strategies formed the majority of management practices, with rest being the most common (40.9%). This is similar to findings from previous studies in Nigeria, Ghana, Turkey, and Ireland[5,8,11,22,23,24], where rest, heat, and bathing were popular self-management approaches. Overall, 67.7% of respondents reported using some form of management (rest and/or drugs), indicating that utilisation of management strategies was not itself low; rather, the appropriateness of the strategies used is of concern, since rest alone only temporarily relieves pain and does not address the prostaglandin-mediated pathway underlying primary dysmenorrhea. Furthermore, repeated reliance on rest across multiple cycles may itself contribute to increased absenteeism among students.

Regarding medication use, NSAIDs used by respondents included ibuprofen (10.0%), diclofenac (3.3%), and piroxicam (brand name: Felvin; 17.5%), alongside paracetamol (17.0%), a non-NSAID analgesic/antipyretic. NSAIDs remain a first-line pharmacological option for dysmenorrhea because of their dual mechanism of prostaglandin-synthesis inhibition and analgesia.[23,24,25]. This is supported by the Cochrane review by Marjoribanks et al., as well as a study

from Ireland which found NSAIDs more effective than placebo for dysmenorrhea-related pain.[19,24] The relatively high combined use of paracetamol and piroxicam relative to other NSAIDs such as ibuprofen may reflect availability, cost, and habit rather than adherence to a specific evidence-based first-line recommendation, and suggests a need for pharmacist- or clinician-led counselling on optimal NSAID choice, dosing, and timing (started before or at the onset of pain) for dysmenorrhea management.

Crucially, 72.6% of drug users self-medicated, while only 9.5% sought medical advice. This high prevalence of self-medicating among drug users is consistent with a systematic trend seen among African university communities[6,11,26], which can be explained by factors such as lack of accessibility to health facilities at universities, economic concerns, stigma around menstruation, as well as the idea that dysmenorrhea is a 'normal' phenomenon that does not require medical assistance.[3] The 2024 study conducted in Nigeria by Esan et al. came to very similar conclusions regarding over-the-counter painkiller use and lack of healthcare seeking behaviors.[16] The persistent focus of the WHO on menstrual health care services which are accessible and evidence-based in educational institutions[27] highlights the importance of tackling such structural issues.

Academic Performance and Exams Stress

Unlike several previous studies, there were no statistically significant correlations observed between dysmenorrhea and exam stress ($r = -0.013$, $p = 0.804$) or self-reported academic performance ($r = -0.061$, $p = 0.254$) in this sample; both coefficients are close to zero, indicating negligible linear association rather than a borderline non-significant one. The relationship between dysmenorrhea and academic performance is not uniformly reported across student populations, with variation across study designs and institutional contexts.[28] Individual coping mechanisms, resilience, and study practices may play a role, and the near-zero correlation may also partly reflect a mismatch between the largely dichotomous/ordinal outcome measures used here and the continuous assumptions of Spearman correlation, rather than a true absence of any relationship. This is therefore acknowledged as a key limitation of the current study null hypothesis interpretation.

Nevertheless, the descriptive data tell a different story altogether: 30.6% could not read when on their period; 14.5% would always miss class because of pain; and 22.3% would do so sometimes. Furthermore, 9.8% reported perceiving dysmenorrhea as having a negative impact on their school work, while 13.8% experienced such a situation sometimes. Collectively, all these data show that while there may be no statistical significance when it comes to overall impact, especially given the diversity in pain intensity and coping abilities among individuals, there remains a significant number of students affected academically.

The findings have mostly been confirmed through multiple-site studies carried out in Nigeria[5,28] Ethiopia[10,29], Turkey[23], and Ireland[24], where the challenges related to dysmenorrhea involved absenteeism, inability to focus, and decreased academic involvement. A study by Bolado et al. using the qualitative approach on university students enrolled at publicly funded institutions in southern Ethiopia in the year 2025 revealed that dysmenorrhea posed several challenges for the participants, which were portrayed through a first-person account where the participants had trouble concentrating on classwork, missing practical sessions, and test anxiety due to their menstrual period.[30]

CONCLUSION AND RECOMMENDATIONS

Dysmenorrhea is highly prevalent (78.9%) among female undergraduate students of Delta State University, Abraka, but awareness of its underlying mechanism remains limited, and management relies predominantly on rest and informal or self-medicated drug use rather than evidence-based pharmacological care. Most respondents did not correctly identify prostaglandins as the principal cause of primary dysmenorrhea. No statistically significant correlation was found between dysmenorrhea and self-reported examination stress or self-reported academic performance in this sample; however, descriptive findings indicate that a substantial proportion of students experience dysmenorrhea-related absenteeism, reading difficulty, and perceived academic impact, suggesting this remains an area of concern despite the null correlation. These findings should be interpreted in light of the study's cross-sectional, non-probability-sampled design and self-developed, non-validated instrument.

On this basis, the following recommendations are proposed:

1. Dysmenorrhea-related health education programmes which discuss its etiopathogenesis, evidence-based management and treatment options need to be introduced in university orientation programmes as well as promoted through social media platforms due to their widespread use as a source of information.
2. Gynaecological health care must be provided at universities where it is affordable and accessible. It will also be necessary to facilitate the accessibility of NSAIDs.
3. Accommodating academic policies such as extended deadlines for assignments during menstruation should be considered.
4. Further research must use longitudinal studies along with pain assessment tools to evaluate the differential effect of dysmenorrhea among Nigerian university students.
5. Education regarding menstrual problems needs to be included in high school science programmes.

CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest.

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