

Experiences of undergraduates with dysmenorrhea: understanding the limitations of pharmacological management

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Abstract

Introduction: It has become imperative to revisit facilitating factors of dysmenorrheal painful menstruation in order to further understand contributory habits common in the affected population. Hence, the present study aimed to explore lifestyles common among female students experiencing dysmenorrhea.

Material and methods: The survey was carried out among 358 female students. Data were obtained using a researcher-administered questionnaire from a sample size of 208 that was derived using the multistage sampling method. The descriptive method of analysis was used to analyze responses from respondents.

Results: It was revealed that 175 (89.7%) experience dysmenorrhea, which is higher than the number of respondents (42.6%) with a family history of dysmenorrhea, and dysmenorrheal symptoms of 106 (60.6%) of respondents are aggravated by excessive intake of sweet drinks/snacks. On a 5-point Likert scale with criterion mean 3, management of dysmenorrhea among respondents shows that they likely needed medication (3.93 ± 0.72), used prescribed medications from varying sources (3.31 ± 1.47), with an increased likelihood to use any home remedies or self-care such as herbal mixtures and assuming a comfortable body position (3.42 ± 1.35) to ease period pain.

Conclusions: Critical empirical consideration is needed to review non-pharmacological interventions to relieve painful menstruation following a rise in the incidence of dysmenorrhea.

Key words: dysmenorrhea, non-pharmacological treatment, painful menstruation, diet and menstruation.

Introduction

Menstrual disorders according to Parker *et al.* [1] are highly widespread among adolescent girls, and common characteristics are period pain, fatigue, and mood changes. Dysmenorrhea is a regular gynecological problem comprising painful cramps that come with menstruation, which in the absence of any underlying pathology is known as primary dysmenorrhea. According to Bernardi *et al.* [2], primary dysmenorrhea is usually frequent in younger women and is consistent with good health outcomes, even though there is an association with reduced quality of life. The secondary forms of dysmenorrhea occur together with endometriosis and adenomyosis and may portray the key symptom of dysmenorrhea as reported by Kaya *et al.* [3]. Diagnosis is made based on the clinical history and the physical assessment and is confirmed by ultrasonography, which is very effective in ruling out certain secondary causes of dysmenorrhea, such as endometriosis and adenomyosis. To prove the cause, research documents that women with dysmenorrhea have increased levels of prostaglandins, hormones known to bring about cramping abdominal pain. Nonsteroidal anti-inflam-

matory drugs (NSAIDs) are medications that block the production of prostaglandin and inhibit the action of cyclooxygenase, an enzyme accountable for the formation of prostaglandins [4].

Iacovides *et al.* [5] stated that a literature review of previous studies showed that dysmenorrhea negatively impacts the quality of life of affected females including their interaction with family members and friends, school or work performance in addition to social and recreational pursuits. It is further reported that women with dysmenorrhea are more sensitive to pain in general even at the time when they have no menstrual pain.

Material and methods

This study was carried out among female students of PAMO University of Medical Sciences. The study design is descriptive cross-sectional. In total 208 students were selected from the study population of 358 using the multistage sampling technique. The instrument for data collection was a researcher-structured questionnaire designed to elicit responses in line with the study ob-

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jectives. The questionnaire had four sections with questions on respondents' sociodemographics, respondents' experience of dysmenorrhea, activities that impact respondents' dysmenorrheal experience and respondents' management practices during dysmenorrhea. Questions under the management section of the questionnaire included pharmacologic and non-pharmacologic measures used to relieve menstruation pain. Face and content validity of the questionnaire was ensured by assessing the judgmental validity. In addition, validity was ensured by assessing the agreement of the experts on appropriate utilization of a conceptual definition in the research instrument. Data were collected using a questionnaire with a reliability coefficient of 0.84. The completed questionnaires were collected by trained research assistants. The data collection procedure was supervised by the authors. Data were analyzed and descriptive (mean, standard deviation and percentage) data were computed using SPSS version 20.0.

The researcher obtained ethical approval for this research study from the University of Port Harcourt (UNIPORT) Ethics Review Committee, Rivers State, Nigeria after the submission and proper scrutiny of copies of the research instrument, chapter one, two and three of the study used by the research ethical committee of UNIPORT as a working guide.

Results

Social-demographic distribution

The socio-demographic profile as shown in Table 1 revealed that one hundred and twenty-nine respondents (66.2%) were aged 21–25 years. Sixty-four (32.8%) are in the Department of Nursing Sciences, 65 (33.3%) respondents were level 200, 158 (81%) were Anglican, and 194 (99.5%) were unmarried.

Respondents experiencing dysmenorrhea

The distribution of Table 2 shows that one hundred and twelve respondents (57.4%) have no family history of dysmenorrhea, while 83 (42.6%) have a family history of dysmenorrhea. Furthermore, only 20 (10.3%) have not experienced painful menstruation (dysmenorrhea), while 175 (89.7%) respondents experience dysmenorrhea. With respect to onset of menstrual pain, fifty-seven (32.6%) experience menstrual pain just before menstruation, 76 (43.4%) during menstruation and 42 (24%) after menstruation. Regarding the duration of dysmenorrhea, 17 (9.7%) respondents had less than 1-day duration of menstrual pain, 52 (29.7%) had 1–2 days, 101 (57.7%) had 3–4 days and 5 (2.9%) had 5 or more days.

Aggravating dysmenorrhea

The above Table 3 reveals that 67 (38.3%) respondents indicated that walking aggravates symptoms of dysmenorrhea, while 106 (60.6%) and 2 (1.1%) participants' symptoms are aggravated by excessive intake of sweet drinks/snacks and cold or hot water respectively.

Management of dysmenorrhea

Findings shown in Table 4 revealed that the study participants are likely to have need of pain medication

Table 1. Socio-demographic data

Variables	Frequency (N = 195)	Percentage (%)
Age		
15–20	38	19.5
21–25	129	66.2
26–30	28	14.3
Total	195	100
Department of study		
Anatomy	11	5.6
Biochemistry	37	19
Medical laboratory sciences	19	9.7
Medicine and surgery	13	6.7
Nursing science	64	32.8
Pharmacology	16	8.2
Physiology	28	14.4
Radiography and radiation sciences	7	3.6
Total	195	100
Level of study		
100	80	41.0
200	65	33.3
300	30	15.4
400	20	10.3
Total	195	100
Religion		
Catholic	19	9.7
Anglican	18	9.2
Pentecostal	158	81
Total	195	100
Marital status		
Married	1	0.5
Unmarried	194	99.5
Total	195	100
Residency		
On-campus	195	100
Off-campus	0	0.0
Total	195	100

Table 2. Distribution of respondents experiencing dysmenorrhea

Items	Responses	Frequency (N = 195)	Percentage (%)
Family history of dysmenorrhea?	No	112	57.4
	Yes	83	42.6
Experienced painful menstruation (dysmenorrhea)?	No	20	10.3
	Yes	175	89.7
Onset of menstrual pain	Before flow	(N = 175) 57	32.6
	During flow	76	43.4
	After flow	42	24
Duration of menstrual pain	< 1 day	17	9.7
	1–2 days	52	29.7
	3–4 days	101	57.7
	5 days and above	5	2.9

Table 3. Habits that increase dysmenorrhea

Item	Frequency (N = 175)	Percentage (%)
Walking	67	38.3
Intake of sweet drinks/snacks	106	60.6
Cold or hot water	2	1.1

during dysmenorrhea with a mean of 3.93 ± 0.72 , use prescribed medication for menstrual pain (3.31 ± 1.47), use home remedies or self-care to ease period pains, e.g. exercise, heat therapy, herbal remedies, positioning (3.42 ± 1.35). The decision is so because the means are greater than the criterion mean of 3.00 on a 5-point Likert scale. However, there is no likelihood that respondents experienced side effects from any drug taken for dysmenorrhea (1.88 ± 1.07); nor do they seek medical care due to menstruation pain (2.76 ± 1.23). In general, the weighted mean (3.06 ± 1.38) showed that participants are more likely to take actions to relieve dysmenorrhea because the mean is more than the criterion mean of 3.0.

Table 4. Management of dysmenorrhea among respondents

Items	Never (%)	Rarely (%)	Sometimes (%)	Often (%)	Always (%)	Total (%)	Mean \pm SDT	Decision
Need pain medications during menstrual pain	0 (0)	0 (0)	35 (29.4)	57 (47.9)	27 (22.7)	119 (100)	3.93 ± 0.72	Likelihood
Used prescribed medication for menstruation pain	17 (14.3)	29 (24.4)	9 (7.6)	28 (23.5)	36 (30.3)	119 (100)	3.31 ± 1.47	Likelihood
Experienced side effects from any drug taken for menstruation pain	55 (46.2)	38 (31.9)	17 (14.3)	3 (2.5)	6 (5)	119 (100)	1.88 ± 1.07	Not likelihood
Use any home remedies or self-care to ease period pains e.g. herbal mixtures, positioning	19 (16)	10 (8.4)	18 (15.1)	46 (38.7)	26 (21.8)	119 (100)	3.42 ± 1.35	Likelihood
Total	109 (18.3)	114 (19.2)	116 (19.5)	144 (24.2)	112 (18.8)	595 (100)	3.06 ± 1.38	Likelihood

Discussion

Menstrual periods as reported by Lobo *et al.* [6] are a cyclic physiological phenomenon, in which several problems can arise including irregular cycles, excessive bleeding, and dysmenorrhea. Dysmenorrhea is commonly described as a severe, painful, cramping sensation in the lower abdomen that is often associated with other symptoms, such as sweating, headaches, nausea, vomiting, and diarrhea. Globally, it is the paramount problem of motherhood, but there is limited evidence on the incidence of dysmenorrhea in the study area as well as in Nigeria.

Reviewing the incidence of dysmenorrhea, obstetric and gynecological related characteristics among respondents revealed that all (100%) participants have commenced menstruation. Among study participants, 112 (57.4%) have a positive history of dysmenorrhea and 175 (89.7%) experience painful menstruation, which is higher than the findings reported by Azagew *et al.* [7], where about half (50.7%) of the participants complained of lower abdominal pain and recorded varying intensities of pain during menstruation: 83 (29%), 174 (60.8%), and 29 (10.2%) reported having mild,

moderate, and severe menstrual pain, respectively. In line with our findings, another study by Kwabena *et al.* [8] added that dysmenorrhea affects more than 80% of women in the reproductive age. Our data revealed that 76 (43.4%) participants started feeling menstrual pain during menstruation, while the onset of menstrual pain among 57 (32.6%) participants is before menstrual flow. A total of 101 (57.7%) participants experience menstrual pain for 3 to 4 days. One hundred and eighty-three (41.4%) study participants reported a positive family history of dysmenorrhea in the study of Azagew *et al.* [7], which is quite similar to our findings shown in Table 2. The high incidence of dysmenorrhea among university students could be linked to young age (less than 30 years old) as a risk factor which was observed by Ju *et al.* [9], but our study revealed daily activities of life that aggravate painful menstruation.

There are recorded activities of daily living that increase and worsen dysmenorrhea. Data from this survey indicate that dysmenorrhea is aggravated by walking among 67 (38.3%) respondents; dysmenorrheal symptoms increased when excess amounts of sweet drinks/snacks (though no specific class of food was indicated) were consumed by 106 (60.6%) participants. This result agrees with the findings of Bajalana *et al.* [10], who opined that inconsistent results were reported among participants experiencing dysmenorrhea on consumption of some nutritional groups. Another study by Najafi *et al.* [11] indicated that nutrition can play a key role in the prevalence and severity of dysmenorrhea. It further showed that subjects who ate mixed food items and snacks had a higher likelihood of experiencing moderate to severe dysmenorrhea in comparison with subjects who were lacto-vegetarians. Even though the evidence on the association between dietary factors and dysmenorrhea is not conclusive, Fjerbaek *et al.* [12] suggest that high consumption of fish, fruits and fiber may reduce the intensity of menstrual pain. However, our data could not prove this, as it contrarily reported that 2 (1.1%) participants' symptoms are aggravated by ingestion of cold or hot water (cold or warm compress), which should have provided a therapeutic effect but on the contrary aggravated and worsened menstrual pain.

To help respondents attain tranquility, the present study noted the likelihood of respondents to need pain medications during menstrual pain. It also observed that medications used by respondents were prescribed drugs but more often home remedies such as ingestion of herbal mixtures prepared with Bitter and Scent leaf extracts and assuming a comfortable body position were coping mechanisms to ease period pains (Table 4). These are less empirically proven strategies that serve as alternatives to pharmacological pain-relieving drugs (non-steroidal anti-inflammatory drugs) and offer hope for treating menstrual pain when front-line courses

of actions fall short, are short of supply or are inaccessible. Oladosu *et al.* [13] recorded that about 18% of women experiencing dysmenorrhea are unresponsive to NSAIDs, leaving them and their physicians to seek unproved alternatives. Concordant with this are studies suggesting potential mechanisms fundamental to non-steroidal anti-inflammatory drug resistance and further explaining the reasons alternative options may help in stubborn cases. Hence, this review recognizes key areas for further study to advance menstrual pain treatment and suggests investigation of the influence of body positioning, ingestion of herbal preparations and activities of daily living such as exercises on release of prostaglandin and subsequent spasmodic contraction of the uterus during menstruation.

Furthermore, assessment of the effect of medications taken for dysmenorrhea revealed that our respondents are not likely to experience side effects from any drug taken for menstrual pain. Contrary to this observation is the report by Oladosu *et al.* [13], which highlighted molecular contributors to NSAID-resistant dysmenorrhea, suggesting processes that may cause a decline in the use of NSAIDs for treating menstrual pain. Another report opined that side effects accompanying NSAIDs such as gastrointestinal discomfort limit medication adherence. This informs the reason our respondents are not likely to seek care during menstruation pain as a means of keeping safe while in pain rather than worsening their condition.

One of the well-known processes involved in dysmenorrhea as documented by Harel [14] is the elevated delivery of prostaglandins into the uterine tissue at the onset of menstruation, which increases vasoconstriction and myometrial contractions, leading to uterine ischemia and pain. In order to ease menstrual pain, records prove that NSAIDs and oral contraceptive pills (OCPs) are the most preferred medicines used by women [14], but the respondents in our study have limited access to OCPs as all students live on the campus and the university clinic is short of these supplies because its scope of healthcare provision is within primary prevention and subsequent referrals for expert management. However, the study under review did not assess the use of OCPs provided by other sources such as relatives and staff of the university to the respondents.

Conclusions

The incidence of dysmenorrhea is rising. Onset and duration vary considerably among indigenous people as certain food items worsen the experience of painful menstruation. Non-pharmacological agents such as positioning and herbal mixtures are becoming effective in offering comfort, thereby calling for further empirical support.

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Disclosure

The authors report no conflict of interest.

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