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## Original Research Article

# Prevalence of dysmenorrhea and intention to seek care among in-school adolescents in Nigeria: a cross-sectional study

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## ABSTRACT

**Background:** Dysmenorrhea is a problem that girls face and often manage themselves with or without support from health professionals. The objective of this study was to assess the prevalence of dysmenorrhea and intentions to seek care among in-school adolescents.

**Methods:** Descriptive cross-sectional research design was utilized, and a two stage sampling technique was used in selecting 315 participants based on the required sample size. Data were analyzed using SPSS version 20, and results were summarized using descriptive and inferential statistics with level of significance set at  $p < 0.05$ .

**Results:** The mean age of respondents was  $15.49 \pm 1.44$  years. Dysmenorrhea was prevalent among 80% of the respondents. Predictors of intention to seek care for dysmenorrhea among the respondents were awareness about health services for dysmenorrhea (AOR=2.15, 95%CI=1.19-3.86,  $p=0.012$ ), cost of care for dysmenorrhea (AOR=0.29, 95%CI=0.12-0.62,  $p=0.002$ ), and perception on dysmenorrhea (AOR=0.21, 95%CI=0.10-0.40,  $p=0.001$ ).

**Conclusions:** Dysmenorrhoea is a common health problem among in-school adolescents in Nigeria. Health education campaigns should be organized to create awareness on availability of services for treatment of dysmenorrhea and correct the misconception that dysmenorrhea needs no care especially in situations where the pain is moderate to severe.

**Keywords:** Adolescents, Dysmenorrhea, Intention to seek care, Nigeria, Prevalence, Schools

## INTRODUCTION

Dysmenorrhea is a menstrual disorder which refers to painful menstrual periods and is one of the most common gynecological conditions that affect women worldwide, the pain is felt in the lower abdomen but may extend to the lower back and legs.<sup>1,2</sup> Dysmenorrhea can be primary or secondary. Primary dysmenorrhea is painful menses in the absence of an underlying pelvic pathology among young women (<25 years old). Secondary dysmenorrhea, on the other hand, is painful menses that is associated with an identifiable underlying pathology such as endometriosis.<sup>3</sup>

Dysmenorrhea is also associated with symptoms like headache, body weakness, nausea, vomiting, diarrhoea, mood swings, dizziness, etc.<sup>4</sup> Among adolescents (10-19

years), dysmenorrhea is a prevalent and burdensome issue which is often accompanied by physical discomfort, emotional distress, and disruptions in daily activities.

The prevalence of dysmenorrhea differs worldwide, ranging from 16.8% to 81% in a previous systematic review study.<sup>5</sup> In Nigeria, the prevalence of dysmenorrhea among adolescent school girls has been found to range from 42.5% to 71.8%.<sup>6,7</sup>

Women from adolescence and upwards experience regular short-term job and school absences due to dysmenorrhea. Similarly, dysmenorrhea is one of the leading causes of absenteeism from school and work. It has a significant impact on public health because it can lead to higher health costs, decreased productivity at work and in the classroom,

as well as a significant decline in the quality of life for those who are affected.<sup>8,9</sup>

Dysmenorrhea is psychologically exhausting and it poses a great challenge on adolescents as problems such as anxiety, loss of concentration, shame, excessive anger, and depression can be experienced.<sup>4,10</sup> The experience of dysmenorrhea affects school attendance, academic performance, and overall quality of life.

Several factors such as socio-economic status, dietary habits, anxiety, physical activity, age at menarche ( $\leq 12$  years), premenstrual syndrome and family history have been associated with dysmenorrhea and they may influence the prevalence and severity of dysmenorrhea.<sup>11</sup> Stress and depression have also been identified to increase the risk of dysmenorrhea.<sup>12</sup> Investigating these factors within the context of in-school adolescents in Nigeria can provide valuable insights into the determinants of intention to seek care for dysmenorrhea in this population.

Adolescents often employ various coping mechanisms to mitigate the pain and discomfort associated with dysmenorrhea as well as the impact on their daily lives. Exploring the coping strategies utilized by in-school adolescents to manage dysmenorrhea is essential for identifying effective strategies for symptom relief and self-care practices. While some adolescents may resort to over-the-counter medications, others may rely on traditional remedies, avoidance of physical activities, rest, heat therapy, or dietary habits during menstruation.<sup>1</sup>

Understanding these coping mechanisms can shed light on their resilience and adaptation to this common yet often overlooked health issue and it can inform the development of comprehensive menstrual health education programs provided for adolescents. Stigma, cultural taboos, and lack of awareness about available resources may hinder adolescents from seeking timely and appropriate care for menstrual pain, leading to unnecessary suffering and complications. However, there is uncertainty on traditional or cultural effects on the health seeking behaviour of adolescents on dysmenorrhea.<sup>7</sup> Therefore, understanding the intention of in-school adolescents to seek care for dysmenorrhea is essential for identifying the barriers to accessing available healthcare services and for designing appropriate interventions to ensure timely and effective management of symptoms which would subsequently help to improve health-seeking behaviours.

Research has shown that dysmenorrhoea can have substantial negative effects on a person's life, most people do not seek help from a medical professional.<sup>13,14</sup> In a survey of 1266 female university students, the prevalence of dysmenorrhoea was 88%; of those, only 19.1% consulted with a doctor.<sup>15</sup> In a qualitative study with 225 women with dysmenorrhoea, findings indicated that people did not seek medical help or advice due to beliefs that medical professionals would not offer help, feelings of embarrassment about reaching out, not being aware of

what types of treatment were available, and believing that dysmenorrhoea was normal.<sup>16</sup> Some also stated that when they did seek help, the doctor did not believe their symptoms required treatment. This is consistent with quantitative research by Armour and colleagues, which found that 83.8% of 4202 females surveyed believed that dysmenorrhoea was normal.<sup>17</sup> These beliefs have important implications for help-seeking behaviour. There has, however, been limited investigation of other potential predictors of help-seeking behaviour for individuals with dysmenorrhoea to date.

## METHODS

### Study area

The study was conducted in Ife Central local government area (LGA). The LGA is a heterogeneous urban LGA and one of the 10 LGAs in the Osun-East senatorial district in Nigeria. With an annual growth rate of 3.3%, the LGA had an estimated population of 295,715 by 2020. In the LGA, there were 71,149 (24.06%) adolescents, out of which 36,373 (12.31%) were the female, and only 44.55% (16,205) attended secondary school (18). The LGA occupies 111 km<sup>2</sup>. It is situated at Latitude 7.4905 ° N and Longitude 4.5521 ° E and is 47.9 km to Osogbo which is the Capital of Osun State (19). The LGA has 42 secondary schools, comprised of public (10) and private (32) types.

### Study design

The study was cross-sectional in design, undertaken among menstruating, in-school adolescents in the study area. The study took place between March and April 2024.

### Study population

Study population were adolescents who have experienced menarche attending public schools in the study area.

### Sample size

The minimum sample was calculated using the Leslie Fischer's formula for calculating sample size for simple proportion with Z at 95% confidence level = 1.96, P = Prevalence of dysmenorrhea and P in this case = 0.718.<sup>7</sup> Two hundred and eighty-six was the minimum sample size, adjusted for non-response (10%), to 315.

### Sampling technique

A two-stage sampling technique identified respondents as follows. In Stage one five secondary schools were selected using simple random sampling technique by balloting from the list of ten public secondary schools in Ife Central Local.

In Stage two, female students were screened through the question, "Have you experienced menstruation?" with "yes" and "no" response options. This helped to stratify

those who have attained menarche (study group) and those who have not. The proportions of menstruating adolescents in each of the five selected study schools constituted the school's sample frames for public schools. Those who attained menarche were randomized, and respondents were identified through the proportional-to-size method across all classes of study in the schools.

### ***Inclusion and exclusion criteria***

The study enrolled menstruating, in-school adolescents in randomly selected public schools who had parental consent and assented. In contrast, eligible respondents who were either sick or without parental consent or withheld personal assent were excluded

### ***Pretest and validation of data collection instruments***

The instrument used for data collection in this study is a pre-tested adapted semi-structured questionnaire prepared with reference to previous studies.<sup>20,21</sup> The instrument was pretested on 32 menstruating adolescent students in a secondary school at Ife East LGA. The pretest observations and findings were used to clarify instructions and modify questions or response categories where necessary before use for field data collection.

The questionnaire included the following sections: Section A: Socio-Demographic Data of the Respondents. This section consisted of information including age as of the last birthday, the gender, ethnicity, religion, school, and class level. Section B: Menstrual History - Duration and Pattern of Menstrual Symptoms. This section consisted of information regarding the age at menarche, length of the menstrual cycle, the regularity of the menstrual cycle, and symptoms experienced during menses. Section C - Prevalence of Dysmenorrhea. This section consisted of information regarding the prevalence of dysmenorrhea among the respondents highlighting the severity of dysmenorrhea. Section D: Associated Factors Contributing to Dysmenorrhea. This section consisted of information regarding likely factors that tends to be associated with menstrual symptoms among in school adolescent females. Section E: Coping Mechanisms for Dysmenorrhea. This section consisted of information regarding the health seeking behaviours that can be carried out by in school adolescents experiencing menstrual symptoms. This explores both medical and other popular physical remedies routinely practiced in the locality. Section F: Intention to Seek Care for Dysmenorrhea. The section consisted of information regarding the intention to seek care regarding menstrual symptoms and from whom the respondents intend to seek care.

### ***Data collection***

This was done between January and March 2024, the pretested questionnaire was facilitated and self-administered on adolescents in the English and Yoruba languages but explained to the respondents in the Yoruba Language to ensure they understood the contents. The

native language of most of the respondents was Yoruba, and that was why provision was made for English and Yoruba explanations, while ensuring the privacy of respondents. In addition, the study ensured physical distancing to avoid contamination of respondents' responses and personal options.

### ***Data analysis***

Data were analyzed using Statistical Package for Social Science (SPSS) version 20. Data were presented using descriptive statistics such as frequencies, counts, percentages. Chi-square was used to test for the association between the prevalence of dysmenorrhea and the age of respondents at  $p < 0.05$  level of significance. The dataset was subjected to binary logistic regression statistics in exploring the predictors of intention to seek care for dysmenorrhoea.

### ***Measurement of dependent and independent outcomes***

Prevalence of dysmenorrhea: This was assessed with 10 questions with majority having either a "Yes" or "No" response. A yes response to dysmenorrhoea symptoms was categorized as having dysmenorrhoea. The intention to seek care was divided into two categories of "Yes" or "No" response. The dichotomized intention to seek care scores were the dependent variable in the binary logistic regression model. The propensity score guided the selection of a reference category in the logistic regression analysis.

## **RESULTS**

### ***Socio-demographic characteristics of respondents***

A total of 315 questionnaires were administered and they were properly filled giving a response rate of 100%. Table 1 shows the sociodemographic profile of the respondents. 84.8% of them were of the age category 14-17, 84.4% of them schooled in an urban setting, 83.8% were of Yoruba ethnicity. 56.2% of them had their menstrual cycle lasting for 5-7 days.

### ***Prevalence and symptoms of dysmenorrhea among respondents***

Eighty percent of the respondents experienced and the associated symptoms experienced by respondents. Lower abdominal pain emerged as the most commonly reported symptom, with 80.3% of the respondents experiencing it. Conversely, nausea was the least commonly reported symptom, it was experienced by 25.7% of respondents (Table 2).

### ***Severity of dysmenorrhea among respondents***

The majority of respondents reported experiencing mild to moderate pain, accounting for 38.3% each, while only 22.6% said they experienced severe pains. About thirty-seven percent of the respondent's said pain was severe

enough to impact daily activities, while 19.0% reported that they were absent from school as a result of menstrual pain in the last one year. Only 9.8% of the respondents said that have been admitted into a health facility due to menstrual pain (Table 3).

**Table 1: Socio-demographic and menstrual history of respondents.**

| Variables                       | Frequency (n=315) | Percentage (%) |
|---------------------------------|-------------------|----------------|
| <b>Age range (years)</b>        |                   |                |
| Early adolescence (10-13)       | 17                | 5.4            |
| Mid adolescence (14-17)         | 227               | 72.1           |
| Late adolescence (17-19)        | 71                | 22.5           |
| Mean±SD                         | 15.49±1.44        |                |
| <b>School location</b>          |                   |                |
| Urban                           | 266               | 84.4           |
| Rural                           | 49                | 15.6           |
| <b>Ethnicity</b>                |                   |                |
| Yoruba                          | 264               | 83.8           |
| Igbo                            | 37                | 11.7           |
| Hausa                           | 6                 | 1.9            |
| Others                          | 8                 | 2.5            |
| <b>Duration of menstruation</b> |                   |                |
| ≤ 2 days                        | 12                | 3.8            |
| 3-4 days                        | 117               | 37.1           |
| 5-7 days                        | 177               | 56.2           |
| ≥ 8 days                        | 9                 | 2.9            |

**Table 2: Prevalence and symptoms of dysmenorrhea among respondents.**

| Variables                   | Frequency | Percentage (%) |
|-----------------------------|-----------|----------------|
| <b>Pain during periods?</b> |           |                |
| Yes                         | 252       | 80.0           |
| No                          | 63        | 20.0           |
| <b>Breast pain</b>          |           |                |
| Yes                         | 135       | 42.7           |
| No                          | 180       | 57.3           |
| <b>Lower abdominal pain</b> |           |                |
| Yes                         | 253       | 80.3           |
| No                          | 62        | 19.7           |
| <b>Back pain</b>            |           |                |
| Yes                         | 116       | 37.2           |
| No                          | 199       | 62.8           |
| <b>Nausea</b>               |           |                |
| Yes                         | 82        | 25.7           |
| No                          | 233       | 74.3           |
| <b>Headache</b>             |           |                |
| Yes                         | 106       | 33.9           |
| No                          | 209       | 60.2           |
| <b>Emotionally unstable</b> |           |                |
| Yes                         | 189       | 60.2           |
| No                          | 126       | 39.8           |
| <b>Excessively tired</b>    |           |                |
| Yes                         | 201       | 63.7           |
| No                          | 114       | 36.3           |

**Table 3: Severity of dysmenorrhea among respondents.**

| Variables                                                                              | Frequency (n=315) | Percentage (%) |
|----------------------------------------------------------------------------------------|-------------------|----------------|
| <b>Severity of pain</b>                                                                |                   |                |
| Mild (1-3)                                                                             | 97                | 38.5           |
| Moderate (4-6)                                                                         | 98                | 38.9           |
| severe (7-10)                                                                          | 57                | 22.6           |
| <b>Experience menstrual pain with every menstrual period?</b>                          |                   |                |
| Yes                                                                                    | 157               | 49.8           |
| No                                                                                     | 158               | 50.2           |
| <b>Does menstrual pain affect daily activities?</b>                                    |                   |                |
| Yes                                                                                    | 116               | 36.8           |
| No                                                                                     | 199               | 63.2           |
| <b>Does menstrual pain negatively affect your academic performance?</b>                |                   |                |
| Yes                                                                                    | 44                | 14.0           |
| No                                                                                     | 271               | 86.0           |
| <b>Ever missed any school day due to menstrual pain in the last year?</b>              |                   |                |
| Yes                                                                                    | 60                | 19.0           |
| No                                                                                     | 255               | 81.0           |
| <b>Have you ever been admitted to a hospital/clinic/sickbay due to menstrual pain?</b> |                   |                |
| Yes                                                                                    | 31                | 9.8            |
| No                                                                                     | 284               | 90.2           |

#### *Intention to seek care among respondents*

More than half of the respondents (51.7%) has an intention to seek care. Sixty-four percent of the respondents, indicated a preference for seeking care from friends and family members, rather than from healthcare professionals such as doctors and nurses (50.2% and 49.2% respectively) (Table 4).

**Table 4: Intention to seek care among respondents.**

| Variables                                             | Frequency | Percentage (%) |
|-------------------------------------------------------|-----------|----------------|
| <b>Do you intend to seek care for menstrual pain?</b> |           |                |
| Yes                                                   | 163       | 51.7           |
| No                                                    | 152       | 48.3           |
| <b>*From whom do you intend to seek care?</b>         |           |                |
| Phone helpline                                        | 83        | 26.3           |
| Doctor                                                | 158       | 50.2           |
| Nurse                                                 | 155       | 49.2           |
| Religious leaders                                     | 31        | 9.8            |
| Others (parents, friends)                             | 203       | 64.4           |

\*Multiple responses

#### *Factors influencing intention to seek care*

About two-third of the respondents that had intention to seek care were aware of health services for



dysmenorrhoea. There is a statistically significant relationship between awareness about health services for dysmenorrhoea and willingness to seek care for it ( $\chi^2=6.608$ ,  $p=0.010$ ). There is a statistically significant relationship between difficulty in accessing care for dysmenorrhea, cost of accessing care and intention to seek care for dysmenorrhea ( $\chi^2=10.423$ ,  $p=0.001$ ,  $\chi^2=12.148$ ,  $p<0.001$  respectively) (Table 5).

**Table 5: Factors influencing intention to seek care for dysmenorrhoea among respondents (<0.05).**

| Variables                                         | Intention to seek care |              | Statistical indices          |
|---------------------------------------------------|------------------------|--------------|------------------------------|
|                                                   | Yes (163) (%)          | No (152) (%) |                              |
| Stigma                                            |                        |              |                              |
| Yes                                               | 10 (38.5)              | 16 (61.5)    | Chisquare =2.003<br>P=0.157  |
| No                                                | 153 (52.8)             | 136 (47.2)   |                              |
| Awareness about health services for dysmenorrhoea |                        |              |                              |
| Yes                                               | 40 (66.7)              | 20 (33.6)    | Chisquare =6.608<br>P=0.010  |
| No                                                | 123 (48.2)             | 132 (51.8)   |                              |
| Difficulty accessing care                         |                        |              |                              |
| Yes                                               | 12 (28.6)              | 30 (71.4)    | Chisquare =10.423<br>P=0.001 |
| No                                                | 151 (55.3)             | 122 (44.7)   |                              |
| Cost of care                                      |                        |              |                              |
| Yes                                               | 10 (25.6)              | 29 (74.4)    | Chisquare =12.148<br><0.001  |
| No                                                | 153 (55.4)             | 123 (44.6)   |                              |
| Dysmenorrhea is Normal no need for care           |                        |              |                              |
| Yes                                               | 15 (23.1)              | 50 (76.9)    | Chisquare =26.959<br><0.001  |
| No                                                | 148 (59.2)             | 102 (40.8)   |                              |
| Age (in years)                                    |                        |              |                              |
| 10-14                                             | 15 (60.0)              | 10 (40.0)    | Chisquare =0.741<br>0.389    |
| 15-19                                             | 148 (51.0)             | 142 (49.0)   |                              |

#### Predictors of intention to seek care

Using binary logistic regression, respondents that were aware about health services for dysmenorrhea were twice likely to seek health care for dysmenorrhea compared with those who were not aware (AOR=2.15, 95%CI=1.19-3.86,  $p=0.012$ ), respondents that had difficulty accessing care for dysmenorrhea were 67% less likely to seek care for dysmenorrhea compared with their counterpart that had no difficulty accessing care (AOR=0.33, 95%CI=0.16-0.65,  $p<0.001$ ), respondents that think it is expensive to treat dysmenorrhea were 71% less like to seek care for dysmenorrhea (AOR=0.29, 95%CI=0.12-0.62,  $p=0.002$ ), respondents that think dysmenorrhea needs no care were 79% less likely to seek care compared to those that think it needs care (AOR=0.21, 95%CI=0.10-0.40,  $p=0.001$ ) (Table 6).

**Table 6: Predictors of intention to seek care for dysmenorrhoea among respondents (<0.05).**

| Variables                                                | AOR  | 95%CI     | p value |
|----------------------------------------------------------|------|-----------|---------|
| <b>Stigma</b>                                            |      |           |         |
| Yes (Ref)                                                |      |           |         |
| No                                                       | 0.56 | 0-22-0.76 | 0.069   |
| <b>Awareness about health services for dysmenorrhoea</b> |      |           |         |
| No(Ref)                                                  |      |           |         |
| Yes                                                      | 2.15 | 1.19-3.86 | 0.012   |
| <b>Difficulty accessing care</b>                         |      |           |         |
| No (Ref)                                                 |      |           |         |
| Yes                                                      | 0.33 | 0.16-0.65 | <0.001  |
| <b>Cost of care</b>                                      |      |           |         |
| No (Ref)                                                 |      |           |         |
| Yes                                                      | 0.29 | 0.12-0.62 | 0.002   |
| <b>Dysmenorrhea need no care</b>                         |      |           |         |
| No (Ref)                                                 |      |           |         |
| Yes                                                      | 0.21 | 0.10-0.40 | 0.001   |
| <b>Age (in years)</b>                                    |      |           |         |
| 10-14 (Ref)                                              |      |           |         |
| 15-19                                                    | 1.42 | 0.59-3.58 | 0.312   |

#### DISCUSSION

This study investigates the occurrence of dysmenorrhea among in-school adolescents in Ile-Ife. It finds that 80% of the respondents suffer from menstrual pains, characterized as cyclical lower abdominal pain accompanying menstrual flow. Our results align with findings from other studies on similar populations in Nigeria. For instance, a study involving public secondary school students in Lagos, Nigeria, reported a dysmenorrhea prevalence of over 75%.<sup>6</sup> Another study done in Ibadan among adolescent secondary school students recorded a slightly lower prevalence of 73%.<sup>2</sup> Additionally, a study from the eastern part of Nigeria reported a closely matching prevalence of 83%, suggesting that dysmenorrhea is commonly experienced by adolescent school girls.<sup>22</sup> These figures are within the global dysmenorrhea prevalence rates, which range from 50% to 90%.<sup>23,24</sup>

The severity of menstrual pain in this study revealed that two-thirds of the respondents experienced mild to moderate pain, while about one-fifth had severe pain. These pains were significant enough to affect the daily activities of more than a third of the respondents. One fifth of the respondents reported that the menstrual pain was severe enough to prevent them from going to school. This is higher than finding of a study conducted on female secondary school adolescents in Ibadan, Nigeria, by Femi Agboola et al.<sup>2</sup> that showed absenteeism due to dysmenorrhea to be about 13%. Our value is lower than that of a study performed in Asia which showed markedly higher rates of school absenteeism with as much as 31.8% of respondents reporting being absent from school.<sup>25</sup> About half of the respondents intend to seek care for

dysmenorrhea and they expressed desire to seek care from multiple sources which include seeking care from friends and family when experiencing menstrual pain, seeking care from help line and seeking care from health care provider with the intention to seek care from family and friends having higher percentage. This is similar to finding of a study done by Ogunfowokan et al, where family and friends served as the primary sources of help on menstrual pain for 85% of respondents.<sup>26</sup>

Predictors of intention to seek care for dysmenorrhea among respondents in this study include cost, difficulty in accessing care and awareness about availability of health services for dysmenorrhea. This is similar to findings of a study done by Bhavna et al, in India which revealed that that awareness and knowledge are among the factors shaping attitude and influencing health seeking behavior.<sup>27</sup> It is also similar to finding of a study done by Ly et al in Taiwan that revealed that Medical expenses due to dysmenorrhoea increase with age; therefore, the topic of women's menstrual health and accompanying emotional challenges should be taken seriously and that cost can influencing intention to seek care among females.<sup>28</sup>

The study has certain limitations. First, self-administered data collection was applied that might add social desirability bias. However, anonymity and confidentiality were assured to reduce such bias. Second, the nature of self-perceived reporting may have resulted in recall bias and over/under-reporting of some variables. Third, no differentiation was made in the type of dysmenorrhoea suffered by the students. Besides, other confounders like presence of disease/illness were not considered in this study.

## CONCLUSION

Dysmenorrhoea was a common health problem among in-school adolescents. The awareness about health services for dysmenorrhea, difficulty accessing care for dysmenorrhea cost of treatment of dysmenorrhea were predictors of intention to seek care in this study. The degree of discomfort is greatly dependent on the severity of the symptoms. Furthermore, as this current study suggests that menstrual pain interferes with activities of females, school administrators and parents should provide enough support for females when their school or work activities are affected due to menstrual pain. Also, awareness should be created on availability of treatment for dysmenorrhea. Health education campaigns should be organized to correct the misconception that dysmenorrhea needs no care. Treatment for dysmenorrhea should be made available in our schools' sick bays. Training should be organized for teachers on management of dysmenorrhea.

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