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Prevalence, Lifestyle Factors and Health Effects of Dysmenorrhea Among Female Students at Private Universities in Osun State, Nigeria

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Abstract

Dysmenorrhea is a major gynaecological issue among female students in Nigeria. This study investigated the Prevalence, lifestyle factors, and health effects of dysmenorrhea among female students at private Universities in Osun State, Nigeria. The cross-sectional descriptive study used a multistage sampling procedure to select participants randomly across selected private Universities in Osun State. A validated-structured questionnaire was used to gather data from participants. Data analysis using descriptive and inferential statistics at $p<0.05$ was done with IBM SPSS Software version 27.0. A total of 365 female students participated in the study, with a mean age of 20.2 ± 1.88 years. The prevalence of dysmenorrhea was 68.8%, out of which 49.4% of the respondents reported they experienced moderate pain and 31.9% reported they experienced severe pain. Up to 58.4% of the participants engaged in some form of exercise, and 61.4% of the respondents have good dietary patterns, whereas close to half (46.8%) of the respondents were sometimes absent from work or school due to pain. There was a significant association between good dietary pattern and dysmenorrhea [X= 18.241; p-value= 0.008]. This study has shown that dysmenorrhea is a public health challenge among the female population. Therefore, a holistic health education intervention must be carried out among female University students on basic coping strategies to minimize menstrual pains.

Keywords: Dysmenorrhea, Female Students, Lifestyle, Menstrual Pain, Prevalence

Introduction

Throughout a woman's reproductive years, the menstrual period is a natural occurrence, which is accompanied by pains ranging from acute to severe. Dysmenorrhea, or painful cramping in the lower abdomen or pelvic area during menstruation, is one of the most common gynecologic issues young women face. It is also a painful period of menstrual cramps, a recurring, crampy pain experienced during menstruation.

Dysmenorrhea is one of the most common gynaecological disorders in adolescent girls. The global estimates of the Prevalence of dysmenorrhea

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range from 50% to 95% (Shehata, 2018). This condition has been documented to hurt the quality of life of women who suffer from it. It has also been reported to harms relationships, academic and professional performance, and social and recreational activities (Lacovides, 2015). It is a significant public health issue affecting many ethnic groups and is associated with missed school days and a lower quality of life (Ahuja, 2016). When there is no evidence of pelvic or hormonal pathology, dysmenorrhea is classified as primary. It is classified as secondary when the pain is caused by identifiable pathological conditions such as endometriosis, ovarian cysts, pelvic inflammatory disease, myomas, or intrauterine devices (Charu, 2012). Aches and pains in the back, leg, bladder, and joints, as well as headaches, weakness, appetite changes, bowel disturbances, skin changes, oedema, insomnia, and fatigue, are some of the common co-occurring physical symptoms experienced by individuals experiencing dysmenorrhea (Aziato, 2014). According to a study conducted by Dutta (2014), among women suffering from dysmenorrhea, approximately 15% to 20% of them were unable to perform their normal day-to-day activities during each menstrual period. Despite its frequent occurrence and significant impact on daily activities, many women fail to report pain or seek medical treatment, resulting in underdiagnosis and under-treatment of the condition (Santis, 2016).

In Nigeria, limited studies have been carried out on dysmenorrhea because the pain is perceived as normal for the female gender who are menstruating. This study, therefore, focused on investigating the Prevalence, lifestyle factors, and health effects of dysmenorrhea among female students in private universities in Osun State, Nigeria.

Methodology

Study Design

This research was conducted using a cross-sectional descriptive design with a validated self-administered questionnaire.

Study Location

This study was done in selected private Universities in Osun state, namely, Oduduwa University Ipetumodu, Kings University, Ode-Omu, and Redeemers University, Ede Osun State, Nigeria.

Population and Sampling

Female students from the participating universities were randomly selected using multistage sampling procedure to allow an equal chance of participating students from the selected schools.

The multistage sampling procedure includes.
Stage 1: Universities in Osun State were stratified into government and private-own institutions
Stage 2: The private-own institutions were purposively selected to participate in this study
Stage 3: Three private Universities were randomly selected among the five private universities in Osun State using balloting without replacement.
Stage 4: Participants were selected randomly across the three selected Universities in Osun State

Sample Size Determination

Using the Leslie-Kish formulae for calculating sample size $n=\frac{Z\alpha^2Pq}{d2}$

Zα= Standard normal deviation corresponding to the significance level (at 5.0%), 1.96.
P= Prevalence of outcome of interest from previous studies (P=50%, Nwankwo *et al*., 2010; Amu, 2014)

Q=1-P
D= Level of precision (absolute 5%)
Therefore $n=\frac{(1.96)^2\times0.5\times1-0.5}{(0.05)^2}$

$n=\frac{3.4816\times0.5\times0.5}{0.0025}$

$n=\frac{0.8704}{0.0025}$

n=348.16

10% of n is 34.8 =35; and it was added to the number of questionnaires because of missing questionnaires.
35+348.16= 383,

Therefore, a total of 383 questionnaires were administered to the female students in the selected Universities. However, 365 were retrieved,

accounting for a 95.3% response rate accepted to be adequate.

Reliability and Validity of study instrument

The study instrument was pre-tested among students of Adeleke University, Ede, Osun State- a similar population group for the study. Cronbach Alpha measure was done after the pre-test, and a co-efficient of 0.882 was obtained, which made the instrument reliable. Face, content and construct validity was ensured by seeking experts' opinions on the variables in the questionnaire and subjecting the draft questionnaire to peer review. An adequate review of the literature was also done to ensure content validity (Dada et al., 2021).

Data Analysis

Data analysis was done using IBM SPSS Software version 27.0. Descriptive analysis statistics such as frequency and percentages and inferential statistics such as the Chi-Square test were done at $p<0.05$.

Ethical Consideration

Participants were provided with an information sheet to obtain their informed consent. No form of identifier was on the data collection instrument. Participants were given liberty to withdraw from the study at any time. The principles of justice, non-malfeasance, goodwill, and respect for person were adhered to throughout the study. Also, ethical approval was obtained from the Adeleke University ethics review committee before the commencement of the study. There was no risk that participants were exposed to in this study.

Results

Overall, a total of 365 students participated in the study, where 38.4% were from Oduduwa University, 22.2% were from Kings University, and 39.4% were from Redeemers University. Table 1 presents the respondents' socio-demographic characteristics. The Prevalence of dysmenorrhea among the participants is presented in table 2. Almost a third (31.2%) did not experience painful dysmenorrhea, while a majority (68.8%) did experience painful dysmenorrhea. Out of those respondents who experienced dysmenorrhea, almost half (49.4%) reported they experienced moderate pain, 31.9% reported severe pain, and 18.7% reported mild pain.

Table 1: Participants' socio-demographic

Variables	Frequency	Percentage
Institutions		
Oduduwa University	140	38.4
Kings University	81	22.2
Redeemers University	144	39.4
Age		
18-21years	96	26.3
22-25 years	216	59.2
26-29 years	53	14.5
Married status		
Single	326	89.3
Married	39	10.7
Ethnicity		
Yoruba	293	80.3
Igbo	22	6.0
Hausa/Fulani	4	1.1
Others	46	12.6

Table 2: Prevalence of dysmenorrhea

Variables	Frequency	Percentag
Do you experience painful dysmenorrhea?		
No	114	31.2
Yes	251	68.8
Level of Pain		
Moderate	124	49.4
Continuous	80	31.9
Mild	47	18.7
Onset of dysmenorrheal		
1 week before menstruation	23	9.2
2-3 days before menstruation	88	35.1
On the day of menstruation	119	47.4
After the day of menstruation	21	8.3
Length of the menstrual cycle		
Every 15 -20 days	30	8.2
Every 21-25 days	46	12.6
Every26-30days	286	78.4
Every 31days or more	3	0.8

Table 3 presents the frequency distribution of respondents by physical activities on

dysmenorrhea. A higher percentage (58.4%) did engage in some form of physical activity, with the majority (66.7%) affirming they did stretch exercise.

On dietary patterns, the majority (68.8%) of the respondents often ate vegetables, 43.0% did skip breakfast, and only a few (8.5%) often consumed caffeinated drinks. About a third (33.2%) often consumed sugar-containing drinks or beverages. A majority (59.2%) often ate fruits and a balanced diet.

Table 4 present the frequency of experiences of the effect of dysmenorrhea among the participants. Most participants were absent from school, had a heavy flow, and had abnormal pain.

Association between Dietary Habits and Dysmenorrhea

Table 5 presents the analysis of the association between dietary patterns and dysmenorrhea. Results showed a significant association between dietary patterns and dysmenorrhea (X= 18.241; p-value= 0.008). Therefore, the null hypothesis was rejected, which states that there was no significant association between dietary patterns and dysmenorrhea.

Table 3: Frequency Distribution of Respondents by Physical Activities on Dysmenorrhea

Variables	Responses	Frequency	Percentage
Do you engage in any form of physical activity?	Yes	214	58.6
	No	151	41.4
What kind of physical activities do you engage in?	Stretching	176	66.7
	Aerobic	18	14.4
	Pilate	20	18.9
How many days per week	1-2 days	131	61.2
	3-4 days	66	30.9
	5-7 days	17	7.9

Table 4: Experience of the effect of dysmenorrhea among the participants

Statements	Responses		
Due to dysmenorrhea, how often do you;	Often (%)	Sometimes (%)	Never (%)
Absent from work or school	70 (19.2)	171 (46.8)	123 (34.0)
Have abnormal heavy flow	61 (16.7)	234 (64.1)	70 (19.2)
Experience abdominal pain	90 (24.7)	75 (20.5)	200 (54.8)
Experience migraine headache	77 (21.1)	161 (44.1)	127 (34.8)
Experience lower back pain	182 (49.9)	123 (33.7)	60 (16.4)
Experience dizziness	54 (14.8)	205 (56.2)	106 (29.0)
Experience digestive problem	63 (17.3)	123 (33.7)	179 (49.0)
Experience insomnia	53 (14.5)	143 (39.2)	169 (46.3)
Feel you are under stress	59 (16.2)	234 (64.1)	72 (19.7)

Table 5: Association between Dietary Pattern and Dysmenorrhea

		Dysmenorrhea			
		No pain	Painful	X-cal	p-value
Dietary pattern	Good	87	137	18.241[a]	.008
	Poor	27	114		

Discussion

This study has shown a high prevalence of dysmenorrhea (68.8%). This value was similar to the study by Derseh *et al*. (2017) among female undergraduate students at Debre Berhan University, which reported a prevalence of 66.8%. This finding also supports the study by Bello *et al.* (2017) among female medical and undergraduate students at a teaching hospital in Southwestern Nigeria which showed an 83.1% prevalence of dysmenorrhea. This evidence shows that most female students are experiencing menstrual pain, which makes it imperative for necessary health interventions to be carried out to ease the pain of the female gender. Meanwhile, menstrual pains vary among the respondents. However, a majority reported that they experienced mild to severe pain.

More than half of the respondents engaged in some form of physical activity to reduce menstrual pain; however, a significant percentage did not engage in physical activities of any form. This implies that their body structure, as well as the internal metabolism of their body, may not be well regulated as a result of physical activities. Meanwhile, among those who exercise, they only did it for one to two days, which shows that their muscles could have probably been relaxed before another turn. This is supported by the study of Unsal *et al.* (2010) who argue that primary dysmenorrhea could be caused by a lack of exercise, among many other factors.

The dietary intake assessment in this study is adequate, which corroborates the study by Parazzini *et al.* (2004), where they found that vegetarian diets and/or the consumption of fruits and vegetables are related to the decrease of estrogen activity and, therefore, the decrease of the frequency of dysmenorrhea. This established the need to encourage females on the importance of healthy dietary intake, especially the regular intake of fruits and vegetables in the appropriate proportion (Dada et al., 2021). The study has also shown a significant association between physical activities and dysmenorrhea among respondents. However, over half of the respondents engaged in physical activities, which is good enough and probably responsible for the association. However, the exercise most respondents engaged in was stretching, which is not the recommended moderate to vigorous physical activity.

This study also reported that dysmenorrhea contributed to school absenteeism among the participants due to excruciating pain experienced during menstruation. This evidence corroborates the research conducted by Minaleshewa *et al.* (2017) among Gondar students in Northwestern Ethiopia, where it was reported that being absent from school, sleep disorder, depression, poor concentration, and behavioural changes such as restriction and social withdrawal was significant effect of dysmenorrhea. Overall, this study has established dysmenorrhea as a public health challenge among the female population. Therefore, a holistic health education intervention must be carried out among female University students on basic coping strategies to minimize menstrual pains.

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Conflict of Interest

The authors declare no conflict of interest

References

Ahuja A., Sharma M.K., & Singh A., (2016). Impact of dysmenorrhea on quality of life of adolescent girls of Chandigarh. *Journal of Child and Adolescent Behavior*, 4, 295. doi:10.4172/2375-4494.1000295.

Aziato L., Dedey F., & Clegg-Lamptey J.N., (2014). The experience of dysmenorrhea among Ghanaian senior high and university students: pain characteristics and effects. *Reproductive Health,* 11(1), 58.

Bello, F., Akinyotu, O., & Odubamowo, K., (2017). Dysmenorrhea Among Female Students at a Teaching Hospital in South- Western Nigeria.

Tropical Journal of Obstetrics Gynecology, 34, 129-33.

Charu S, Amita R, Sujoy R, Thomas G.A. (2012). Menstrual characteristics and Prevalence and effect of dysmenorrhea on quality of life of medical students. *International Journal of Collaborative Research on Internal Medicine and Public Health* 4 (4), 276–94.

Dada S.O., Oyewole O.E., Desmennu A.T., (2021). Knowledge as Determinant of Healthy Eating Among Male Postgraduate Public Health Students in a Nigerian Tertiary Institution. *International Quarterly Community Health Education*, 42(1), 103-114. doi:10.1177/0272684X20972895.

Derseh, B., Afessa, N., Temesgen, M., Semayat, Y., Kassaye, M., Sieru., S., Gizachew, S. & Ketseta, K., (2017). Prevalence of Dysmenorrhea and its Effects on School Performance: A Cross-sectional Study. *Journal of Women's Health Care* 6, 361. doi:10.4172/2167-0420.1000361.

Dutta D., (2014). DC Dutta's Textbook of Gynecology: Including Contraception. Jaypee Brothers Medical Publishers (P) Limited. e0201894. https://doi.org/10.1371/journal.

Lacovides S., Avidon I., Baker F.C., (2015). What we know about primary dysmenorrhea today: a critical review. *Human Reproduction Update*, 21(6), 762–778.

Minaleshewa, B., Abebe, B., Yonas, G. & Dagmawi, A., (2017). Prevalence, Impact and Management Practice of Dysmenorrhea among University of Gondar Students, Northwestern Ethiopia: A Cross-Sectional Study. *International Journal of Reproductive Medicine*, (3):1-8.

Nwankwo, T., Aniebue, U., & Aniebue, P., (2010). Menstrual Disorders in Adolescent School Girls in Enugu, Nigeria. *Journal of Paediatrics and Adolescent Gynecology*, 23:358-363.

Parazzini F, Chiaffarino F, Surace M, Chatenoud L, Cipriani S, Chiantera V, Benzi G, Fedele L., (2004). Selected food intake and risk of endometriosis. *Human Reproduction* 19(8), 1755-1759.

Sanctis DV., Soliman A, Bernasconi S., (2016). Definition and self-reported pain intensity in adolescents with dysmenorrhea: A debate report. *Journal of Pediatricand& Child Health Care*, 1:1006.

Shehata N., Arafa A., El Wahed H., (2018). Epidemiology of Dysmenorrhea among university students in Egypt. *International Journal of Women's Health Wellness,* 4:2474–353.

UnsalAlaettin, UnalAyranci, Mustafa T., Gul Arslan & ElifCalik (2010). Prevalence of dysmenorrhea and its effect on quality of life among a group of female university students, Upsala. *Journal of Medical Sciences*, 115 (2), 138-145.