

Effects of Dysmenorrhea on Academic and Social Activities of Students in Tertiary Institutions in an Urban City, South East Nigeria

E. C. Iwuoha^{1*}

¹Department of Community Medicine, Abia State University Teaching Hospital, Aba, Nigeria.

Author's contribution

The sole author designed, analyzed, interpreted and prepared the manuscript.

Article Information

Editor(s):

(1) Prof. Ravi Kumar Chittoria, JIPMER, India.

Reviewers:

(1) Saurabh Kumar, Father Muller Medical College, Rajiv Gandhi University Health Sciences, India.

(2) Maria Camila Mejía Guatibonza, Fundación Universitaria Juan N. Corpas, Colombia.

Complete Peer review History: <https://www.sdiarticle4.com/review-history/75480>

Original Research Article

Received 10 August 2021
Accepted 21 October 2021
Published 27 October 2021

ABSTRACT

Background: Dysmenorrhoea is a medical condition that has physiological and psychological effects on females who suffer it. Dysmenorrhoea is still an important public health problem which has negative impact on female health and social relationships, school and work activities.

Aims and Objectives: The aim of this study was to determine the effect of dysmenorrhea on the academic and social activities of female students in tertiary institutions in Aba.

Materials and Methods: This was a descriptive cross-sectional study conducted among female students from four tertiary institutions in Aba in Abia State South East Nigeria from June to August 2019. Information on socio-demographic variables, prevalence of dysmenorrhoea and effects on academic and social life was obtained from consenting students using structured, self-administered pretested questionnaires. Data collected was cleaned and analyzed using Statistical Package for Social Sciences (SPSS) version 20.0. Level of statistical significance was set at $P < 0.05$.

Results: Out of the 400 questionnaires that were properly filled and retrieved, Dysmenorrhoea was reported in 288 (72%) of the participants. About half of these students with dysmenorrhoea (49.2%) reported being absent from school on account of the pain, 228 (79.1%) reported inability to concentrate in class during the menstrual pain and decreased school performance was recorded in

*Corresponding author: E-mail: driwuoha@gmail.com;

89 (30.9%). Adverse effects on daily routine were noted in 232 (80.7%) and affected social activities in 216 respondents (75%). A statistically significant association was found between age at menarche and absenteeism ($P=0.001$).

Keywords: Dysmenorrhoea; students; academics; social life.

1. INTRODUCTION

Menstrual cramps which are referred to as dysmenorrhea medically, begin on or just before the onset of bleeding and may continue for about 2-3 days. They may be throbbing, aching, dull or sharp and can range in severity from mild discomfort to severe pain that interferes with normal activities.[1] Dysmenorrhoea or menstrual cramps are the leading cause of absenteeism from work and it is the most common reason for school absenteeism among students. It is associated with psychological, behavioural and social distress. Morbidity due to dysmenorrhoea has a significant effect on academic and social activities [2]. Changing levels of oestrogen, serotonin and progesterone which manifests as abdominal pain, mood swings, depression, irritability, crying spells, withdrawing from friends and family, insomnia, angry outbursts, difficulty in concentration have been attributed to the occurrence of menstrual pain[3].The initial onset of primary dysmenorrhoea usually occurs within 6-12months after menarche with no organic basis whereas secondary dysmenorrhoea which occurs in the presence of an anatomical or macroscopic pelvic pathology as seen in women with endometriosis, chronic pelvic inflammatory disease (PID), cysts, fibroids or a small cervical opening, usually starts years after menarche[4].

The worldwide prevalence of dysmenorrhea varies considerably among countries ranging between 50% and 90% [5] and this is partly due to the definition of dysmenorrhea itself and/or the way it is measured. In a study of Turkish university students, the prevalence of 87.7%, [6] compared to 85.4% in Ethiopia, [7] 88% in young Australians, [8] 88.9% in university students in Iran [9] and 78.1% in a sample of Nigerian students [10]. A study carried out among 1000 healthy females aged 11-28 years in India showed absenteeism was more common in those with increasing severity of dysmenorrhea. The mean number of days of absence from schools and colleges for those with severe dysmenorrhea was 2.5 ± 1.3 days a month and 2.21 ± 1.2 days a month for those with moderate pain. Females experiencing mild pain on average absented for one and half day a month. The

absolute number of days of absenteeism ranged from half a day to 3 days. A significant association was found between the severity of dysmenorrhea and the limitation in the working capacity of these female students [11]. In another study among female students of University of Gondar, it was discovered that more than two-thirds (63%) of the respondents reported that they had encountered social withdrawal and 51.4% experienced a decrease in academic performance. More than one-third (40.9%) of the respondents experienced restrictions from day-to-day activities during the menstrual period and associated with this, about 31.1% were absent from class and reported poor concentration (43.4%) [4].

Different researchers have argued that female university students experience less academic performance and other negative effects as a result of dysmenorrhoea. This research was therefore carried out to assess the situation in our environment using the tertiary institutions in the area. The results would be useful in health education, appropriate treatment and counselling services which will eventually improve the quality of the academic and social lives of a large population of female students.

2. MATERIALS AND METHODS

This was a descriptive cross-sectional study conducted among female students from four tertiary institutions in Aba in Abia State; Abia State University Teaching Hospital, Abia State Polytechnic, Rhema University and Temple Gate Polytechnic. Aba is the largest city in Abia State, Nigeria. It is located on 5.11 latitude and 7.37 longitude and is situated at elevation 64 meters above sea level. Aba has a population of about 897,560 making it the most populated city in Abia State. It is a major urban settlement and a commercial centre in a region that is surrounded by small villages and towns. Two government owned and two private institutions, which had higher number of students out of the six tertiary institutions in Aba were purposively selected for this study. The calculated sample size for this study was 384 however a total of 440 questionnaires were proportionately distributed

according to the size of each school. The pretested questionnaires were administered by simple random sampling of consenting female students in each school hostel as the school hostels have a mixed population of students from various ages, departments and levels of study. All menstruating students of these tertiary institutions were included in this study. Effect of menstrual pain on academic and social life was assessed with a total of 7 questions which included, hospital visits as a result of menstrual pain, effect of menstrual pain on school absenteeism, concentration in class, performance in exams (if menses occurred during examination), ability to carry out routine chores as well as inability to participate in other activities (recreational activities, sports, outings etc).

2.1 Data Management

A total of the 400 questionnaires that were properly filled and retrieved were cleaned and analyzed using Statistical Package for Social Sciences (SPSS) version 20.0. Level of statistical significance was set at $p < 0.05$. Results were presented in frequency tables and figures. Chi-square and fishers exact tests of significance were used to test for association between independent variables (Age group, Age group at

menarche, level of study, marital status), and dependent variable(absenteeism).

3. RESULTS

Table 1 above shows the socio-demographic variables of the respondents. Only 1 student was aged 15 years and 13 were between 16 and 17 years. The majority of the study participants (55.5%) were in the age group of 21 – 26 years. The mean age of 22 ± 3.0 years. Most were single (about 362 respondents, 90.5%). A higher proportion of respondents (114, 28.5%) were 4th year students. A total of 218 (54.5%) respondents had their first menstrual experience at age 11 – 13years.

From Table 2 above, prevalence of menstrual pain was 72%.

Of the 400 female students that participated in this study, 288 experienced menstrual pain, 142 (49.2%) reported being absent from school on account of the pain, 228 (79.1%) reported inability to concentrate in class during the menstrual pain and decreased school performance was recorded in 89 (30.9%). Adverse effects on daily routine were noted in 232 (80.7%) and affected social activities in 216 respondents (75%). (Fig. 1).

Table 1. Socio-demographic Characteristics of Respondents

Variable	Frequency (N=400)	Percentage (%)
Age group (in years)		
15-20	123	30.8
21-26	222	55.5
26+	55	13.8
Marital status		
Single	362	90.5
Married	37	9.3
Widowed	1	0.3
Religion		
Christianity	392	98.0
Islam	5	1.3
Others	3	0.8
Level		
1 st Year	100	25.0
2 nd Year	57	14.3
3 rd Year	56	14.0
4 th Year	114	28.5
5 th Year	63	15.8
6 th Year	10	2.5
Age of First Menstrual Experience		
8-10	26	6.5
11-13	218	54.5
>13	156	39.0

Mean age= 22 ± 3.0 years

Table 2. Prevalence of Dysmenorrhoea

Dysmenorrhoea	Frequency (n=400)	Percentage (%)
No	112	28
Yes	288	72

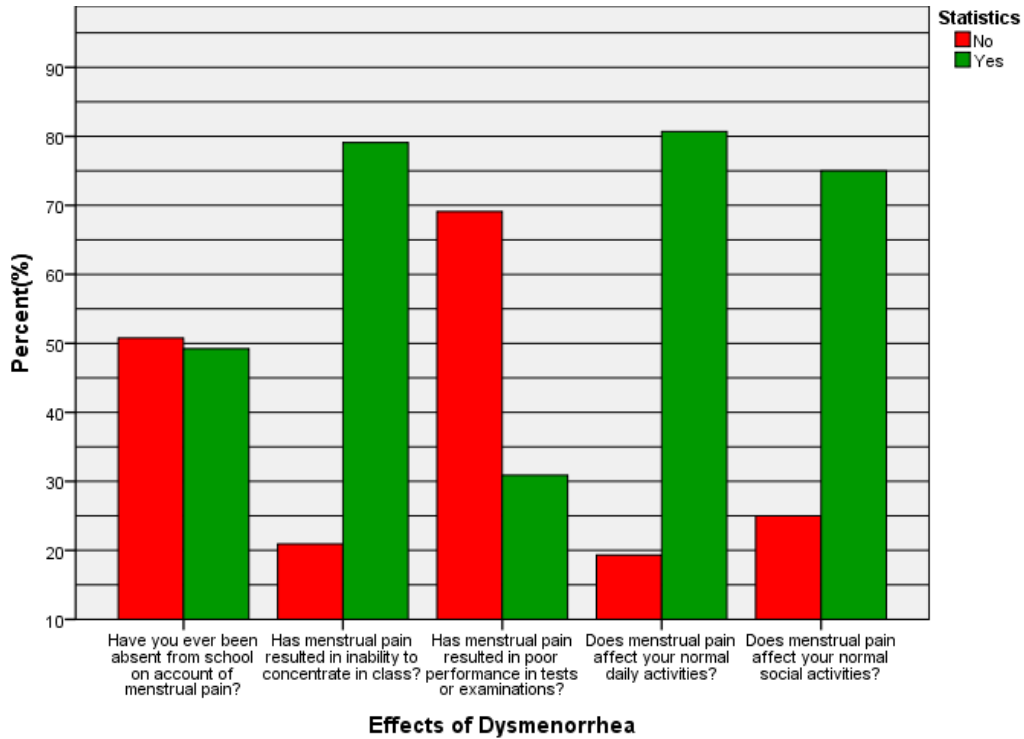


Fig. 1. Effect of dysmenorrhoea

Table 3. Association between Socio-demographic Variables and School Absenteeism

Variables	School Absenteeism from Dysmenorrhoea		χ^2	p-value
	No (N%)	Yes (%)		
Age group (in yrs)				
15-20	35(48.6)	36(51.4)	4.657	0.980
21-26	81(48.8)	85(51.2)		
>26	15(72.7)	6(27.3)		
Level of Study				
Year 1-3	63(46.0)	74(54.0)	.047	0.820
Year 4-6	68(56.2)	53(43.8)		
Age at Menarche				
8-10			14.371*	0.001**
11-13 years	2(11.1)	16(88.9)		
Above 13 years	68(50.0)	68(50.0)		
Marital Status				
Single	111(48.9)	116(51.1)	4.075	0.130
Married	18(66.7)	9(33.3)		
Widowed	0(0.0)	1(100.0)		

*Fisher's test, **Statistical significance

Table 3 above shows relationship between school absenteeism due to dysmenorrhoea and sociodemographic characteristics. School absenteeism was least in students in the above 26 years group but this was not statistically significant. Statistically significant association was found between age at menarche and absenteeism ($P=0.001$). No relationship was found between marital status and relief by self medication.

4. DISCUSSION

In this study, 72% of the participants experienced menstrual pain. This finding is lower than findings of 87.7% [6] and 85.4% in Ethiopia,[8] as well as 88% in young Australians. In another study among healthy students of Guilan University a prevalence of 88% was documented among the non-athletic students.[12] This higher than the finding of 52% in our study and could be attributed to pain threshold of the individuals in the study,

Absenteeism was one of the effects of dysmenorrhea on the students with 49.2% of them experiencing absence from school. This was higher than a study carried out in Debre Berhan University in Ethiopia where out of 197 subjects, 32% were absent from school on those days [13]. Our finding was as well as a Saudi Arabia study that recorded absenteeism in 28.3% of the students with dysmenorrhoea [14]. Our finding was however lower than what was found in a sample of 100 third year medical students residing in slum areas of Vadodara city, Gujarat, India, where 65% reported school absenteeism.[1] Closely related to our finding with regards to school absenteeism is another Ethiopian study in which 56.3% reported class absence [15].

In this study 79.1% of students with dysmenorrhoea experienced a lack of concentration in academic work. This finding is higher than an Ethiopian study where among the students suffering from dysmenorrhoea, 34.5% had difficulty concentrating in class [13] as well a finding of poor concentration in 43.4% of participants in a study in an Indian University². Our finding is however close to 66.8% reported loss of class concentration in a study in a female University in Ethiopia.[15] Another study in Ondo State Nigeria documented poor concentration in 36% of respondents.[16].

Concerning academic performance, 30.9 % of respondents with dysmenorrhoea in this study experienced poor academic performance. The result of our study is in contrast with another study carried out in the University of Gondar, North Western Ethiopia in which a decrease in academic performance ranked the highest prevalence of 51.4%. [3] In Cairo, while most students (90.7%) did not miss exams, 48.7% reported poor satisfaction with their academic performance because of dysmenorrhea [17]. The differences in prevalence maybe attributed to the fact that individuals have varying threshold of pain and also to the grades of dysmenorrhoea in terms of mild, moderate and severe.

Effect of dysmenorrhoea on normal daily activities ranked the highest prevalence in our study with a rate of 80.7%. Regarding this, similar results were reported from Jof university, Saudi Arabia and Vadodara university, Gujarat of which 87% and 73% of the participants respectively recorded adverse effect in daily routine. [17,2,15] This study found effect of menstrual pain (absenteeism) to be statistically related to age at menarche ($P=0.001$). A study in Palestine among female students also found statistically significant relationship between dysmenorrhoea and age at Menarche [18]. In this study, 75% of students had their social activities (recreational activities, sports, outings etc) affected by menstrual pain. In a study on effect of dysmenorrhoea among 440 female students in an Ethiopian University, 37.8% reported limited sport participation while 31.7% reported limitation in going out with friends [19]. This is lower than findings from our research and could be attributed to differences in preferences for various sports as well as individual coping mechanisms.

5. CONCLUSION

In this study there was a high prevalence of dysmenorrhoea among female tertiary students in Aba. The effect on school absenteeism was high and particularly worse on the performance of daily and social activities.

6. RECOMMENDATION

Education and support on coping (including provision of medical care) with dysmenorrhoea will be of great relevance in helping these students and others female students experiencing dysmenorrhoea to live with this public health problem.

CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline participant's consent and ethical approval has been collected and preserved by the authors.

COMPETING INTERESTS

Author has declared that no competing interests exist.

REFERENCES

1. Grishma DC., Anuj HK. A study of prevalence and impact of dysmenorrhea and its associated symptoms among adolescent girls residing in slum areas of Vadodara city, Gujarat. *International Journal of Medical Science and Public Health*. 2016;5(03):510.
2. Sharma N., Sagayaraj M., Sujatha B. Menstrual characteristics and prevalence of dysmenorrhea in college students. *International Journal of Scientific and Research Publications*. 2014;4(10):1-6.
3. Afreen F., Mamatha KR., Banapura A., Kavitha R. Self-medication practice in primary dysmenorrhea among medical and paramedical students: A cross-sectional questionnaire study. *National Journal of Physiology, Pharmacy and Pharmacology*. 2017;7(5):459
4. Vincenzo DS, Ashraf TS, Heba E, Nada AS, Rania E, Mohamed EK. Dysmenorrhoea in adolescents and young adults: A review in different countries. *Acta Biomed*. 2016;87(3):23
5. Margaret A, Manjubala D. Relationship between BMI (body mass index) and dysmenorrhea among adolescents in a college of nursing at Puducherry, India. *Int Res J Med Sci*. 2016;4(3):4-6.
6. Midilli TS., Yasar E., Baysal E. Dysmenorrhea Characteristics of Female Students of Health School and Affecting Factors and Their Knowledge and Use of Complementary and Alternative Medicine Methods. *Holist Nurs Pract*. 2015;29(4):194-204. Available: <https://www.ncbi.nlm.nih.gov/pubmed/26086463/>.
7. Hailemeskel S., Demissie A., Assefa N. Primary dysmenorrhea magnitude, associated risk factors, and its effect on academic performance: evidence from female university students in Ethiopia. *Int J Womens Health*. 2016;19(8):489-496. Available: <https://www.ncbi.nlm.nih.gov/pubmed/27695366/>.
8. Subasinghe AK., Happo L., Jayasinghe YL., Garland SM., Gorelik A., Wark JD. Prevalence and severity of dysmenorrhoea, and management options reported by young Australian women. *Aust Fam Physician*. 2016;45(11):829-834. Available: <https://www.ncbi.nlm.nih.gov/pubmed/27806454/>.
9. Habibi N., Huang MS., Gan WY., Zulida R., Safavi SM. Prevalence of Primary Dysmenorrhea and Factors Associated with Its Intensity Among Undergraduate Students: A Cross-Sectional Study. *Pain ManagNurs*. 2015;16(6):855-61. Available: <https://www.ncbi.nlm.nih.gov/pubmed/26328887/>.
10. Nwozichi C., Ojediran T., Ojewole F., Farotimi A., Esike J. Knowledge, attitude, and healthcare-seeking behavior towards dysmenorrhea among female students of a private university in Ogun State, Nigeria. *Journal of Basic and Clinical Reproductive Sciences*. 2015;4.(1):35. Available: <https://www.researchgate.net/publication/27693252>.
11. Shabnam O., Fatemeh B., Khyrunnisa B. Primary dysmenorrhea and menstrual symptoms in Indian female students: Prevalence, impact and management. *Global Journal of Health Science*. 2016;8(8):135-144. Available: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5016343>
12. Omidvar S, Bakouei F, Amiri FN, Begum K. Primary Dysmenorrhea and Menstrual Symptoms in Indian Female Students: Prevalence, Impact and Management. *Glob J Health Sci*. 2016;8(8):53632. DOI: 10.5539/gjhs.v8n8p135. PMID: 27045406; PMCID: PMC5016343.
13. De Sanctis V, Soliman A, Bernasconi S, Bianchin L, Bona G, Bozzola M, Buzi F, De Sanctis C, Tonini G, Rigon F, Perissinotto E. Primary Dysmenorrhea in Adolescents: Prevalence, Impact and Recent Knowledge. *Pediatr Endocrinol Rev*. 2015;13(2):512-20. PMID: 26841639.
14. Derseh BT, Afessa N, Temesgen M, Semayat YW, Kassaye M, et al. Prevalence of Dysmenorrhea and its Effects on School Performance: A Cross-

- sectional Study. J Women's Health Care. 2017;6(361).
DOI: 10.4172/2167-0420.1000361
15. Nahla Kl., Manar SA., Alanoud NA., FatimaAA., Huda AA., Arwa KA., et al. Dysmenorrhea among female students in King Abdulaziz University: Prevalence, Predictors and Outcome. Pakistan Journal of Medical sciences. 2015;31(6): 1312-1317.
 16. Hailemeskel S., Demissie A., Assefa N. Primary dysmenorrhea magnitude, association risk factors, and its effect on academic performance: evidence from female university students in Ethiopia. International Journal of Women's Health. 2016;8:489-496.
 17. Caroline FA. Influence of dysmenorrhea and menorrhagia on academic performance among female students in tertiary institutions in Ondo state. World Journal of Social Science. 2016;3(2):34.
 18. Kamel DM., Tantawy SA., Abdelsamea GA. Experience of dysmenorrhea among a group of physical therapy student from Cairo University: an exploratory study. Journal of Pain Research. 2017;10: 1079-1085.
 19. Heba. A, Areen. A, Suha. A. Prevalence of dysmenorrhea and predictors of its pain intensity among Palestinian female university students. BMC Women's Health. 2018; 18(6).
Available: <https://doi.org/10.1186/s12905-018-0516-1>

© 2021 Iwuoha; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

*The peer review history for this paper can be accessed here:
<https://www.sdiarticle4.com/review-history/75480>*