Influence of Sports Participation on Dysmenorrhea and Menorrhagia among University Female Students in Osun State Nigeria

Akinnubi, Caroline Funmbi & Akinbiola, O. O.
Department of Physical and Health Education
Obafemi Awolowo University Ile Ife Nigeria

Abstract
The study examined the influence of sports participation on dymenorrhoea and menorrhgia among university female students in Obafemi Awolowo University Osun State, Nigeria. Thirty physical and health educators and 70 non-physical and health educators were selected for the study making a total of 100 female respondents. A validated self-structured questionnaire with agreed and disagreed format was used to collect the data. The data collected were subjected to statistical computation using simple percentages, t-test, and chi-square analyses at 0.05 alpha level of significance. The findings of the study revealed that majority of the respondents agreed that they usually experienced dysmenorrhea (severe pain) and menorrhagia (heavy bleeding) during menstruation. There was a significant difference between physical education female students and non-physical education female students in the incidence of dysmenorrheal and menorrhagia. Sports participation had significant influence on dysmenorrhea and menorrhagia among the female students. Verbal interview with some female students revealed that engaging in sports frequently can help get rid of dysmenorrheal and menorrhagia. Based on the findings, it was recommended that the sports participation should be encouraged among reproductive age of female students by the University authority.

Key Words: Influence, University Female Students, Dysmenorrhea, Menorrhagia, Sports participation

Introduction

Menstruation is a significant factor in the life of women of reproductive age. Although it usual occurs monthly but contribute significantly to the health of women (Kanout, Hawai, Altuwaijri, 2012, Poureslami, Osati-Ashtiani 2002). Dysmenorrhoea is identified as painful menstruation commencing few hours before the start of menstrual period and may cover hours or days (Hacker, et al 2010). Menorrhagia can be explained as a heavy and untiring menstrual bleeding among women (Grant, Gallier, Fahey, Pearson, & Sarangi, 2000; Kamatemesi-Mugisha, Oryem-Origa, and Olwa-Odyek 2007). The occurrence of dysmenorrhea in Asia starts from 58.8% to 48.9% (Chan, Yiu, Yuen, Sahota, & Chung, 2009; Mahkam, Joffres, Corber, Bayanzadeh, & Mahnaz, 2011). While in Europe and America, the frequency of dysmenorrhea was reported to be between 52.4% and 85.7% (Grandi, Serena, & Angolo 2012: Kaunitz & Smith 2014).

Sports according to Cagical (1990), is a vital part of educational programme that contributes to students' welfare and abilities. Exercise and sports can assist one to improve blood circulation and stay healthy (healthyliving.azcentral.com). According to Darst and Pangrazi, (2006); Pangrazi (2004), sports play various and significant roles that are valuable to individual and groups depending on how it is explored and attained. Universally, much attention has not been given to menstrual disorders and this has been among adolescents, people believed that it should not be considered publicly, because it is seen as individual and private problems. Some women do have shocking knowledge due to monthly menstrual period (Harlow and Campbell 2004, Walraven, Ekpo, Coleman, Scherf, Morison, & Harlow 2002).

In a study carried out by Cakir, Mungan, Karakas, Girisken, and Okten (2007), it was observed that the frequency of dysmenorrhea among the respondents was high with 89.5%, and that most adolescents did not have suitable and required information about menstrual problems. According to Nakame, Kwanuka & Robert (2018), girls at school continue to tolerate the pain associated with menstruation till when they start bearing child/children. In the African tradition, the girls child should be able to discuss secretly with their parents and elder women in their environment in which they live (Aziato, Dedey, & Clegg-Lamptey 2014). Dysmenorrhea could be primary and secondary. Primary dysmenorrhea happens naturally between the age of 17 and 22, whereas secondary dysmenorrhoea is common among elder women with very aching menstruation and pelvic irregularities (Hacker, Gambone, and Hobel 2010).

The risks in the incidence of primary dysmenorrhoea among adolescent could result to school absenteeism (Wong, and Khoo. 2010, Nwankwo, Aniebue, Aniebue, 2010 & Eryilmaz, Ozdemir, and Pasinlioglu, 2010). According to the study conducted by Adebimpe, Farinloye, and Adeleke (2016), majority of the respondents had discussed menstruation with some significant others such as the parents, siblings, and friends. Durain (2004) reported that Dysmenorrhea which is characterized by pelvic cramp for 1–3 days may lead to emotional and behavioural difficulties. Health-related problem may occur among adolescent as a result of dangerous impact of dysmenorrhea on them (Dom, et al 2009). Dysmenorrhea is the major cause of sports activities among many female adolescents (Chantay, Banikarim, Mariam, Chacko, Steve, & Kelder. 2000). Women with headache and abdominal pain during menstrual period were significantly likely to be uneasy with normal daily activities (Davis & Westhoff, 2001; Liasu, Orji, & Lawani 2008).

Dysmenorrhea could affect sports activities (Sharma, Taneja, Sharma, Saha, 2008). Dysmenorrhoea and menorrhagia were said to usually limit activities such as sports and presence in school (El-Gilany, *et al.*, 2005). Performing regular aerobic exercise which is part of sporting activity can help to improve and treat primary dysmenorrhea and other menstrual disorders (Dehnavi, Jafamejad & Kamali 2018). According to Banikarim, Chacko, and Kelder **(**2000), and IIiyasu, Galadanci, Abubakar, Ismail, and Aliyu (2012), numerous studies also indicated that adolescents usually reported that dysmenorrhea did disturb their sporting activities In a study conducted by Adebimpe, Farinloye, and Adeleke (2016), about 82.8% respondents had consistent menstrual flow monthly, 65.8% experienced menstruation associated with

dysmenorrhea while 12.9% did experience menorrhagia.

Study conducted by Nakame, Kwanuka & Robert (2018), revealed that prevalence of dysmenorrhea was 75.8%. It was further revealed that 266 (75.8%) respondents reported experiencing dysmenorrhea while 41% reported that they often experienced dysmenorrhoea within 1 to 2 days. According to a study conducted by Titilayo, Banjo, Agunbiade, and Lawani (2009), it was revealed that menorrhagia was significant among the females with menstrual disruption. In a study conducted by Alaettin, Unal, Tozun, Arslan, and Calik (2010), there was no significant difference between females with dysmenorrhea and without dysmenorrhea. According to Chantay, Mariam, and Steve (2000), most adolescents have inappropriate and insufficient information about menstrual problems. In a study conducted by Adebimpe, Farinloye, and Adeleke (2016), it was observed that menstrual disorders are common among Nigerian university students

Therefore, these university students may think that dysmenorrheal and menorrhagia are common monthly activities during menstruation, but may lack the necessary information on the influence of sports participation on dysmenorrheal and menorrhagia, hence this study.

Objectives

Specific objectives of the study are to examine the students' experience about dysmenorrheal and menorrhagia, and the role of sports participation in eradicating the problems

Research Hypotheses

(1) There will be no significant difference between physical education female students and non physical education female students in the incidence of dysmenorrhea.
(2) There will be no significant difference between physical education female students and non physical education female students in the incidence of menorrhagia.
(3) Sports participation will have no significant influence on dysmenorrheal and menorrhagia among the female students in Obafemi Awolowo University, Ile Ife.

Methodology

Descriptive survey research design was adopted for the study. Obafemi Awolowo University Ile-Ife was selected for the study using convenient sampling. The population of the study consisted of all the students in the university. However, only 100 students of which 30 physical education and 70 non physical education female students were selected using accidental sampling techniques. Ten female students were also interviewed verbally relating to this research topic to elicit some vital information to assist in the course of this study. The instrument used for data collection was a validated self-developed structured questionnaire titled "influence of sports performance on dysmenorrhea and menorrhagia of university female students (IDMSP). The questionnaire contained two sections. Section A sought information on demographic variables such as age, and student's status (physical education and non-physical education female students). While section B was developed on 'Agreed'/'Disagreed' alternative responses that elicited information on influence of sports

participation on dysmenorrheal and menorrhagia of university female students. A verbal interview was conducted with 10 female students on this study. The questionnaire was given to two research experts for content validity, and thereafter subjected to a test-retest reliability which yielded an index of 0.87. The questionnaire was therefore deemed fit for the study. The researchers administered the instrument used to the respondents on the university campus with two research assistants. Data collected were coded and analyzed using percentages, chi-square and t-test. Inferences were made at 0.05 alpha level of significant.

Results

Table 1: Demographic characteristics of the respondents (N=100)

Variables	Responses	Athletes (Female) Frequency Percentage		Non- Athletes (Female) Frequency Percentage	
Age	Below 17yrs	0	(0%)	01	(1.0 %)
	18-22yrs	18	(18.0 %)	50	(50.0%)
	23-25yrs	10	(10.0 %)	14	(14.0 %)
	26yrs & above	02	(02.0%)	05	(05.0 %)
Religion	Christianity	28	(28.0 %)	57	(57.0%)
	Islam	02	(02 %)	13	(13.0%)
	Others	0	(0%)	0	(0%)

Table 2: Percentages analysis in the incidence of dysmenorrhea and menorrhagia among Physical Education Female Students and Non Physical Education Female Students

No	VARIABLES	Physical Education Female students		Non Physical Educat Female students	
		Agreed	Disagreed	Agreed	Disagreed
1	I usually experience dysmenorrhea (severe pain) during menstruation	22(22%)	08 (08%)	39(39%)	31 (31%)
2	I usually experience menorrhagia (heavy bleeding) during menstruation	20 (20%)	10(10%)	40(40%)	30(30%)
3	I do engage in sports regularly	30 (30.%)	0(0%)	15(15%)	55(55%)
4	Participating in Sports during menstruation eases dysmenorrheal	28(28.%)	02(02%)	08(08%)	62(62%)
5	Participating in Sports during menstruation eases Menorrhagia,	26 (26%)	04(04%)	06(06%)	64(64%)

From table 2, a total of 22 (22%) physical education female students and 39 (39%) non-physical education female students agreed that they usually experience dysmenorrhea (severe pain) during menstruation, while a total of 08 (08 physical education female students and 31 (31%) non-physical education female students disagreed to this statement. A total of 20 (20%) physical education female students and 40 (42%) non-physical education female students agreed that they usually experience menorrhagia (heavy bleeding) during menstruation., As regards engaging in sports regularly, a total of 30 (30%) physical education female students and 15 (15%) non-physical education female students agreed; while none physical education female student and 55 (55%) non-physical education female students disagreed. A total of 28 (28%) physical education female students and 08(08%) non-physical education female students agreed that participating in Sports during menstruation eases dysmenorrhea, while 02 (02%) physical education female students and 62(62%) non-physical education female students disagreed. Finally, a total of 26(26%) physical education female students and 06 (06%) non-physical education female students agreed that participating in Sports during menstruation eases Menorrhagia, while 04 (04%) physical education female students and 64(64%) non-physical education female students disagreed with this statement.

Test of Hypotheses

Research Hypothesis 1: There will be no significant difference between physical education female students and non-physical education female students in the incidence of dysmenorrhea

Table 3: t-test analysis on the incidence difference of dysmenorrhea

Variables	***No***	**Mean**	**Sd**	**t-value**	**df**	**P**	**Decision**
Physical education female students	30	1.480	0.513	6.159	98	0.001	Significant
Non physical education female students	70	1.652	0.735				

$P < 0.05$

Table 3 showed t-test analysis on the incidence of dysmenorrhea among the respondents. The data analysis showed that the t-test value is 6.159, p= 0.001, p< 0.05 alpha level. Based on this result the null hypothesis which stated that there will be no significant difference between physical education female students and non-physical education female students in the incidence of dysmenorrhea was rejected. Hence, there was a significant difference between physical education female students and non-physical education female students in the incidence of dysmenorrhea. This showed that the level at which the physical education female students and non-physical education female students operated was not on the same level.

Research Hypothesis 2: There will be no significant difference between physical education female students and non-physical education female students in the incidence of menorrhagia

Table 4: t-test analysis in the incidence of menorrhagia between physical education female students and non-physical education female students

Variables	No	Mean	Sd	t-value	df	P	Decision
Physical Education female students	30	1.542	1.248				
Non-Physical education female students	70	1.693	1.486	8.137	98	0.023	Significant

P< 0.05

Table 4 showed t-test analysis on the incidence of menorrhagia among the respondents. The data analysis showed that the t-test value = 8.137, p= 0.023, p< 0.05 alpha level. Based on this result the null hypothesis which stated that there will be no significant difference between physical education female students and non-physical education female students in the incidence of menorrhagia was rejected. Hence, there was a significant difference between physical education female students and non-physical education female students in the incidence of menorrhagia. This implied that the respondents' responses was not in the same proportion.

Research Hypothesis 3: Sports participation will have no significant influence on dysmenorrheal and menorrhagia among the female students in Obafemi Awolowo University, Ile Ife.

Table 5: Percentage and chi-square in the influence of sports participation on incidence of dysmenorrhea and menorrhagia

Variable	Agreed	Disagreed	Total	df	x^2	P	Remark
Menorrhagia	68 (68%)	32 (32%)	100(100%)				
Dysmenorrhagia	62 (62%)	38 (38%)	100(100%)	1	12.861	0.121	Significant

P<0.05

Table 5 showed the chi-square analysis of the influence of sports participation in menorrhagia and dysmenorrheal among Obafemi Awolowo University female students. The data analysis showed the calculated x^2 value 12.861, p= 0.121, p< 0.05 alpha level. Based on this result, the null hypothesis which stated that Sports participation will have no significant influence on dysmenorrheal and menorrhagia among the female respondents was rejected. Hence, Sports participation will have a significant influence on dysmenorrheal and menorrhagia among the female students in Obafemi Awolowo University, Ile Ife. This result implied that participation in sports will ease dysmenorrheal and menorrhagia among the respondents.

Discussion

The results of this study revealed that the female students usually experience dysmenorrhea and menorrhagia during menstruation. This is similar to the earlier findings of Adebimpe, Farinloye, and Adeleke (2016), who stated that 65.8% respondents experienced menstruation associated with dysmenorrhea and Titilayo, Banjo, Agunbiade, and Lawani (2009), who revealed that menorrhagia was significant among the females with menstrual disruption.

Another key finding indicated that the physical education female students revealed that participation in sports during menstruation did ease dysmenorrheal and menorrhagia. This contradicts the findings of earlier researchers Sharma, Taneja, Sharma, Saha, (2008), that dysmenorrhea could affect sports activities and El-Gilany, et al., (2005), who stated that dysmenorrhoea and menorrhagia were said to usually limit activities such as sports and presence in school, while the finding of the study is similar with the research conducted Dehnavi, Jafamejad & Kamali (2018), that performing regular aerobic exercise which is part of sporting activity can help to improve and treat primary dysmenorrhea and other menstrual disorders. The non-physical and health educators' responses revealed that participation in sports during menstruation did not ease dysmenorrheal and menorrhagia. This favours the statement of Banikarim, Chacko, and Kelder (2000), and IIiyasu, Galadanci, Abubakar, Ismail, and Aliyu (2012), that numerous studies also indicated that adolescents usually reported that dysmenorrhea did disturb their sporting activities.

One of the results of this study involved verbal interview with 10 female students, 7 out of the 10 female students said that during participating in sports, "dysmenorrheal (severe pain) is easily controlled gradually until the pain is not felt again". They further added that engaging in sports frequently can help get rid of dysmenorrheal and menorrhagia totally. This may be that these students did engage in sports therefore knew the benefits of exercise and sporting activities to the body. These students further explained that menorrhagia (heavy bleeding during menstruation) can only cause discomfort because you have to change so that your dress did not get stained but it is not painful and harmful.

Conclusion

Based on the results of the study, the following conclusions were drawn:

a. There was a significant difference between physical education female students and non-physical education female students in the incidence of dysmenorrhea
b. There was a significant difference between physical education female students and non-physical education female students in the incidence of menorrhagia
c. Sports participation had significant influence on dysmenorrheal and menorrhagia among the female students in Obafemi Awolowo University, Ile Ife.

Recommendations

Based on the findings of the study, the following recommendations were made.

- Sports participation should be encouraged among the female students of reproductive age by the University authority. This will assist them to ease the problem of dysmenorrheal and menorrhagia.

- The university authority should endeavour to improve on the sports facilities and equipment so as to encourage more female students' participation.

.

References

Adebimpe O. A., Farinloye E. O., and Adeleke N. A. (2016). Menstrual Pattern and Disorders and Impact on Quality of Life among University Students in South-Western Nigeria *Journal of Basic and Clinical Reproductive Sciences* 5:1 27-32

Alaettin U., Unal A., Mustafa., Gul A., and Elif C. (2010). Prevalence of dysmenorrhea and its effect on quality of life among a group of female university students Ups *Journal of Medical Science*; 115(2): 138–145. Published online 2010 April 7. Online Retrieved on 22/01/2014

Aziato L., Dedey F., & Clegg-Lamptey J. (2014). The experience of dysmenorrhea Ghanaian senior high and university students: Pain characteristics and effects.Reproductive Health Journal, 11,58. http://doi.org/10.1186/1742-4755-11-58

Banikarim C, Chacko MR, Kelder SH (2000). Prevalence and impact of dysmenorrhea on Hispanic female adolescents. *Archives of Pediatrics and Adolescent Medicine. Dec; 154(12):1226-9.*

Cagical, J.M. (1990). Sports and Education. *The International Bulletin of Physical Education*.60 (2), 7-16

Cakir M, Mungan I, Karakas T, Girisken I, Okten A.(2007). Menstrual pattern and common menstrual disorders among university students in Turkey. *Pediatrics international,* 49 (6) 738-42 http://www.ncbi.nlm.nib.gov/pubmed/18045301 online Retrieved on 22/01 2014

Chan, S.S., Yiu, K.W., Yuen, P.M., Sahota, D.S., & Chung, T. K., (2009). Menstrual problems and health seeking behavior in Hong Kong Chinese girls. *Hong Kong Medical Journal,* 15, 18-23

Chantay Banikarim, MD; Mariam R. Chacko, MD; Steve H. Kelder. (2000). Prevalence and Impact of Dysmenorrhea on Hispanic Female Adolescents FREE *Archives of Pediatrics of Adolescent Medicine*; 154(12):1226-1229.

Darst, P. W.& Pangrazi, R. P. (2006) Dynamic physical education for secondary School students (5th ed.) San Francisco: Pearson Benjamin Cummings.

Davis, A. R. & Westhoff, C. L. (2001). Primary dysmenorrheal in adolescent girls and treatment with oral contraceptive. *Journal of Pediatric and Adolescent Gynecology* 14, 3-8.

(Dehnavi,Z. M., Jafamejad, F., and Kamali, Z., 2018). The effect of aerobic exercise on primary dysmenorrhea: A clinical trial study. *Journal of education and Health Promotion*.7(3): 1-22

Dom LD, Negriff S, Huang B, Pabst S, Hillman J, Braverman P, Susman EJ.(2009). Menstrual symptoms in adolescent girls: association with smoking, depressive symptoms, and anxiety. *Journal of Adolescent Health care* 44 (3) 237-43

Durain D. (2004). Primary Dysmenorrhea: Assessment and Management Update. Journal of Midwifery of women in Health; 49: 520-8

El-Gilany, A. H., Badawi, K. & El-Fedawy, S. (2005). Epidemiology of dysmenorrhoea among adolescent students in Mansoura, Egypt. *Eastern Mediterranean Health Journal* 11 (1/2), 155-163.

Eryilmaz G, Ozdemir F, Pasinlioglu T. (2010). Dysmenorrhea prevalence among adolescents in eastern Turkey: Its effect on school performance and relationships with family and friends. *Journal of Pediatric of Adolescent Gynecology*;23:267–72.

Grandi, G., Serena,F., & Angolo, C., (2012). Prevalence of menstrual pain in young women: What is dysmenorrhea? *Journal of pain research*, 5, 169-174. http://doi.org/10.2147/JPR.530602

Grant, C., Gallier, L., Fahey, T., Pearson, N. & Sarangi, J. (2000). Management of menorrhagia in primary care - impact on referral and hysterectomy: data from the Somerset Morbidity Project. *Journal of Epidemiology and Community Health* 54, 709–713.

Hacker, N. F, Gambone, J. C., Hobel C. J., Hacker and Moore's (2010). Essentials of Obstetrics and Gynecology. 5th ed. Philadelphia, PA: Saunders/Elsevier; 256–7.

Harlow, S. D., and Campbell, O. M. R., (2004). Epidemiology of Menstrual Disorder in Developing Countries. *An international journal of obstetrics and gynaecology 111, 1 6-16*

healthyliving.azcentral.com). Azcectral What Are the Benefits of Sports & Physical Activities Retrieved on 2/ 09/ 2017

IIiyasu, Z, Galadanci, H. S., Abubakar, I.S., Ismail, A.O., and Aliyu M. H., (2012). Menstrual patterns and gynecologic morbidity among university students in KANO, Nigeria. *Journal of Pediatrics and Adolescent Gynecology* 25(40): 1-6

Kamatenesi-Mugisha, M., Oryem-Origa, H. & Olwa-Odyek (2007) Medicinal plants used in some gynecological morbidity ailments in Western Uganda. *African Journal of Ecology* 45 (Suppl. 1), 34-40

Kanout N., Hawai S. M., Altuwaijri S. (2012). Prevalence and Pattern of Menstrual Disorder among Lebanese Nursing Students.. *Eastern Mediterranian Health Journal*; 18(3):46-42

Kaunitz, A. M., & Smith, P. R., (2014). Primary dysmenorrhea in adult women: clinical features and diagnosis. Retrieved from http://www.uptodate.com/home/index.htm

Liasu, A., Orji, E.O. & Lawani, A. (2008). Menstrual disorder among young female workers and its implication on job performance (case study of Obafemi Awolowo University, Nigeria). *Ife Psychologia. An International Journal of Psychology in Africa* 16, 224- 238.

Mahkam, T., Joffres,M., Corber,S., Bayanzadeh,M., & Mahnaz, M., (2011). Prevalence of menstrual pain and associated risk factors among Irainan workers. Journal of Obstetric

and Gynecological Research, 37(5), 442-451.

Nakame, Kwanuka& Robert (2018), Dysmenorrhoea among Students aged 18-45years attending University in Uganda: A cross-sectional multicenter study of three univerties in Uganda. https://obgyn. Onlinelibrary.Wiley.com doi. Retrieved on 24/ 11/2018

Nwankwo, T. O., Aniebue, U. U., Aniebue, P. N. (2010). Menstrual disorders in adolescent school girls in Enugu, Nigeria. Journal of Pediatric Adolescent Gynecology.;23:358–63.

Pangrazi, R. P., (2004) Dynamic physical education for elementary school children (14th) San Francisco: Pearson Benjamin Cummings.

Poureslami, M., Osati-Ashtiani, F., (2002). Attitudes of Female Adolescent About dysmenorrhea and Menstrual Hygiene In Tehran Suburbs. *Arch Iran Med* 25:2 19-24

Sharma, A., Taneja, D. K., Sharma, P., Saha, R., (2008). Problems Relating to Menstruation and their Effect on Daily Routine of Students of a Medical College in Delhi India. *Asia Pacific Journal of Public Health* 20:234-41

Titilayo, A., Banjo O., Agunbiade , O.,M., Lawani, A.,(2009). Menstrual discomfort and its influence on daily academic activities and psychosocial relationship among undergraduate female students in Nigeria. *Tanzania Journal of Health Research, Vol. 11, No. 4, October, 2009, pp. 181-188*

Walraven, G., Ekpo, G., Coleman, R. Scherf, C., Morison, L., & Harlow, S. D., (2002). Menstrual Disorders Rural Gambia. *Studies In Family Planning*. 33, 3 261-268

Wong, L. P., Khoo, E. M., (2010). Dysmenorrhea in a multiethnic population of adolescent Asian girls. *International Journal of Gynaecology and Obstetrics*. 2010;108:139–42.