

# Menstrual Health of In-School Adolescents in Ibadan: Knowledge, Attitudes and Consequences.

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## Summary

*We evaluated the knowledge, attitudes to and consequences of menstrual morbidities among in-school adolescents in Ibadan and determined their effect on school attendance. The pattern of drug use for menstrual symptoms was also assessed. Self-administered questionnaires were given to 1194 respondents in secondary schools chosen by randomization. The mean age of respondents was 15.7± years while 86.1% were aged between 10-17 years. The most prevalent menstrual disorder was dysmenorrhea (87.3%). The commonest source of information about the menstrual cycle was from mothers (71%) while 0.5% of adolescents obtained information from health care givers. Menstrual symptoms were treated with non-pharmacological means in 53.1%. Of girls using pharmacologic agents 44% of them obtaining over the counter medications (OTC). Forty four percent of respondents missed school for 6-7 weeks per session following dysmenorrhea while 19% of them required hospital admission. It was concluded that there is insufficient knowledge of the menstrual cycle and its abnormalities among adolescents. Menstrual health should be introduced as part of reproductive health programs in school curricula in Nigeria.*

**Key Words:** Menstrual health, adolescents, Ibadan

## Introduction

Adolescence marks the onset of attainment of gonadal maturity, associated changes in body habitus and psychological adjustment to adult life. It encompasses puberty which includes the occurrence of thelarche, puberche and menarche (1). A normal menstrual cycle depends on complex interactions between the hypothalamus, pituitary, ovaries and endometrium and abnormalities in these organs results in menstrual dysfunction.

In adolescent females, menstrual disorders affect up to 75% and are a common reason for seeking medical attention (2). They are also a major cause of short-term school absenteeism (3-5). The most prevalent disorders among teens are dysmenorrhea, irregular menses and pre-menstrual syndrome (PMS) (5,6). Dysmenorrhea is usually associated with recurrent abdominal cramps, nausea, vomiting and back pain. It affects about 60-90% of adolescents (4,5,7-9). PMS has also been found to be highly prevalent among teenagers with 73% of a surveyed population reporting at least one pre-menstrual symptom, most frequently fatigue and irritability (10). Poor preparation for menarche leads to negative expectations; an adolescent is more likely to report dysmenorrhea and pre-menstrual syndrome (PMS) pain prior to menarche if she expects pain (6,11,12).

Morbidity due to dysmenorrhea and PMS represents a substantial public health burden (13). Various studies have shown that symptoms of these disorders are a

significant cause of school absence and lost working hours (13). Despite the implications of these findings, surveys have found that many adolescents do not report their symptoms. Klein reported that only 14% of teens in the United States of America (US) with dysmenorrhea sought help from a physician (4); in another study, 57% of girls that took OTC drugs for pain used medications less often than the maximum daily dosage (9). Majority of girls in an Australian school survey received advice to use non-pharmaceutical treatment such as hot water bottles, exercise or bed rest (8).

This study was undertaken to evaluate the knowledge, attitudes and expectations of in-school adolescents regarding menstrual health. We also assessed the pattern of drug use for menstrual complaints and the effect of symptoms on school attendance and performance.

## Methods and Materials

This cross-sectional study was conducted between 15<sup>th</sup> September and December 15<sup>th</sup>, 2008 in 210 secondary schools in 11 Local Government Council Areas of Ibadan, Southwest Nigeria during one academic term. Approval was obtained from the State Ministry of Education. Questionnaires were pre-tested and validated in 3 schools before administration. The respondents were female adolescents in Senior Secondary School classes 1-3. For this study, adolescents were females between the ages of 10 and 19 years of age at the time of enrolment (1). The questionnaires were self administered. It contained items on demographic data and assessed the respondents' knowledge and attitudes to menstruation, drug use during menses and effects of menstrual disorders on school attendance. The questionnaire was written in English and designed to include simple terminology for easy

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understanding. Informed consent was obtained following explanation of the purpose of the study.

The inclusion criteria were female adolescents in the school classes above while exclusion criteria were learning disabilities and refusal to consent. The null hypothesis stated that there is no association between adolescents' knowledge of and attitudes to menstruation and their experience of menstrual related disorders.

The selection of sample size was based on a 60-90% rate of school absenteeism secondary to dysmenorrhea (5). A sample size of 1168 participants was obtained using a precision of 0.05(95% confidence interval); this was rounded up the nearest hundred to obtain a sample size of 1200 participants. The selected schools from within the local government areas and classes within the schools were chosen using simple randomization from a list.

Data was entered using the Software Package for Social Sciences (SPSS) for Windows version 11. Initial analysis was done by generation of frequency tables. Further analysis was done by cross tabulation of various factors. Observed differences were subjected to Chi-square analysis and the level of statistical significance was defined as  $p < 0.05$ .

## Results

One thousand and two hundred questionnaires were given and 1194 returned (retrieval rate: 99.5%). The mean age of participants was 15.7 years with 86.1% of the respondents being young adolescents (10-17 years). Demographic data is summarized in **Table 1**.

**Table 1: Demographic Data of Respondents**

Variables	Numbers	Percentage (%)
<b>Age group (yrs)</b>		
10-13	70	5.9
14-17	958	80.2
18-19	166	13.9
<b>Educational level</b>		
SS1	428	35.8
SS2	434	36.3
SS3	332	27.8
<b>Tribe</b>		
Yoruba	1000	83.5
Hausa	33	2.8
Ibo	113	9.5
Others	48	4.0
<b>Religion</b>		
Christianity	787	65.9
Islam	395	33.1
Others	12	1.0

Dysmenorrhea occurred in 87.3 % ( 1042) and PMS consisting of tiredness, mood changes, headache, acne and a feeling of bloating was found in 12.7% of respondents. (**Table 2**). Most participants (91%) were informed about menstrual health before menarche. The commonest sources of information in these girls were from

their mothers (72%) and their teachers (12.3%). In respondents who discovered information about menstruation, common sources were television (47.6%) and magazines (12.9%). Only 6 females (0.5%) were informed by health care providers.

**Table 2: Prevalence of Menstrual Related Morbidity\***

Symptom	Number	Percentage (%)
Dysmenorrhea	1042	87.3
Tiredness	146	12.2
Mood swings	116	9.7
Loneliness	26	2.2
Feeling of heaviness	20	1.7
Headaches	28	2.3
Acne	34	2.8
Others	84	7.1
Dysmenorrhea before onset	550	46.1
Dysmenorrhea during menses	492	41.2

\*: Some respondents had more than one symptom

**Table 3** assesses the knowledge and attitudes of participants about menstrual health, 35.6% and 16.2% of participants could not accurately determine the normal duration of menstrual cycle length and flow respectively. About 26.8% could not determine if their cycles were regular or not and 66.1% could not predict the timing of their next menstrual period. Only 3.2% of all participants would discuss their menstrual problems with either doctors or trained nurses.

**Table 3: Knowledge and Attitude of Participants to Menstrual Health**

Length of menstrual cycle (21-35days)	Numbers (%)
Correct	578(48.4)
Incorrect	434(35.6)
Not known	192(16)
Duration of menstrual cycle (2-7 days)	
Correct	954(79.9)
Incorrect	194(16.2)
Not known	46(36.9)
<b>Discussion of menstrual health</b>	<b>Numbers (%)</b>
Friends	118(9.9)
Mother	788(66.0)
Father	12(1.0)
Doctors/Nurses	38(3.2)
Teachers	4(0.3)
Religious leader	6(0.5)
Others (sisters, aunts)	228(19.1)

Non-pharmacologic treatment of dysmenorrhoea was found in 53.1% of respondents. The commonest methods were bed rest (31.8%) and exercise (17%). Pharmacologic agents included analgesics in 28% (paracetamol, ibuprofen, piroxicam) and antibiotics in 4.8% (ampicillin, tetracycline) of respondents. Antispasmodics were used in 7.3% of patients. The pharmacological agents used for

dysmenorrhoea showed that 44.9% of respondents obtained the medications as OTC drugs from local chemist shops, 9.4% were given medications by their parents. Only 8.7% were given prescriptions from a hospital.

**Table 4: Consequences of Menstrual Related Morbidity**

Factors	Numbers (%)
Affectation of school performances	
Yes	416(34.8)
No	778(65.2)
School absenteeism due to dysmenorrhoea	
None	668(55.9)
Duration of school absenteeism due to dysmenorrhoea (n=526)	
1-3 days	488(40.8)
≥ 4 days	38(3.3)
Hospital admission due to dysmenorrhea	
Yes	230(19.3)
No	964(80.7)

**Table 5: Cross Tabulation of Determinant Factors**

Factors	Degree of freedom	P-value
Discussion of menstrual health vs. source of drug	15	0.056
Discussion of menstrual health vs. dysmenorrhea	20	0.058
Discussion of menstrual health vs. drug taken	5	0.972
Discussion of menstrual health vs. absence from school	5	0.783
Discussion of menstrual health vs. regularity of menses	10	0.277
Premenstrual signs vs. absence from school	7	0.186

Menstrual problems affected academic performance in 34.8% of girls with 44.1% missing school for a range of 1-4 days and 19.3% being admitted at least once on account of dysmenorrhoea. (Table 4). No significant relationship was however found between menstrual symptoms and absence from school (P=0.186) There was also no significant relationship between the person or persons with whom menstrual health was discussed and the kind of drug taken (Table 5).

## Discussion

Menstrual disorders are the commonest cause of short term school absenteeism among female adolescents (3-5). Unfortunately, many of them lack adequate information about the menstrual cycle before menarche. The mean age of menarche in this study was 13.34±4.1years; this was similar to findings among African and Hispanic female adolescents (14-16).

This study highlighted that though majority of our respondents (91%) had prior knowledge of menstrual health before menarche, only 0.6% had received information from a health care provider that who have giving accurate and better understanding of menstrual health, its expectations, implications and consequences. This is similar to findings by Houston et al (6). This emphasizes need for provision of either health care provider in our schools or inclusion of reproductive health in school curriculum.

A poor knowledge about the menstrual cycle was observed. About 35.6% of participants could not state the accurate length of a normal menstrual cycle while 16% did not know what the menstrual cycle entails. The correct duration of menstrual blood flow was not known in about 20% of the adolescents; similarly poor knowledge about menstrual health has been reported in a previous study on adolescents in Nigeria (5).

Dysmenorrhea was the commonest menstrual morbidity affecting 87.3% of adolescents. Previous studies have reported prevalence rates between 57-93% (4,5,9,16). In our study, dysmenorrhea was responsible for school absenteeism of up to 4 days in 44.1%, lack of concentration in 4.8% and hospital admission for severe symptoms in 19.3%. These findings are in agreement with other studies showing that dysmenorrhea is a significant cause of absenteeism and poor performance in school. PMS was observed to affect 12.7% of our respondents; this differs from other studies that suggest a higher prevalence of PMS in adolescents (5,6).

This study also evaluated different ways by which adolescents cope with dysmenorrhea symptoms; these included pharmacological and non-pharmacological agents. Most of the participants used varied prescription and OTC drugs obtained from their parents or friends. There was limited use of more effective drugs such as non-steroidal anti-inflammatory drugs (NSAIDs) with the majority of respondents using paracetamol and non-pharmacological agents. An earlier study has shown that adolescents rely on sub-therapeutic doses of medications and non-pharmacologic treatments for dysmenorrhoea. (17)

Our analyses did not obtain a significant relationship between negative period expectations or previous access to information about the menstrual cycle and school absenteeism, withdrawal from friends and missed social activities. This is in contrast to the findings of Houston et al (6). We also did not observe any association between tribe, ethnicity and menstrual morbidities.

Completion of secondary school education with good grades is a goal of all adolescents; this may be jeopardized by perpetual absence from school due to menstrual morbidities. Forty four percent of the study population complained of an estimated total loss of 6-7 weeks of schooling per session on account of dysmenorrhoea.

We found that we could not accurately determine if there was equal expectation in younger adolescents who had recently attained menarche. The periods of

absenteeism from school were obtained from the responses of the adolescents; records from the schools could not be readily obtained to compare with the responses.

Intensive education is needed to ensure that adolescents have useful information on menstrual health. We found sub-optimal drug use and poor health-seeking behavior in the majority of our respondents. Parents should be involved in receiving information about the menstrual cycle and how to cope with symptoms and disorders. Adolescents should have detailed information on menstruation and its abnormalities to enable early recognition of dysfunction.

Reproductive health should be introduced into the school curriculum and school clinics should be equipped with adolescent-friendly services that give information to students, mothers and teachers regarding menstrual health and effective medications. Effective management of dysmenorrhea should be emphasized.

### Conclusion

There is sub-optimal knowledge and treatment of menstruation and menstrual disorders, especially dysmenorrhea, among female adolescents. Effective information dissemination and education is required for teens to ensure success and fulfillment in their academic careers and social interactions respectively. More attention should be given to inclusion of recognition of abnormalities and proper treatment of menstrual complaints within reproductive health programs particularly in developing countries.

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### References

1. Emuveyan EE. Puberty. *Comprehensive Gynecology In The Tropics*. Kwawukume & Emuveyan (Ed), 2005. Chapter 32. 294-299.
2. Slap GB. Menstrual Disorders in Adolescence. *Best Pract Res Clin Obstet Gynaecol*. 2003; 17: 75.
3. Johnson J (1988): Level of Knowledge among adolescent girls regarding effective treatment for dysmenorrhoea. *J Adolesc Health Care*. 9: 398.
4. Klein JR, Litt IF. Epidemiology of adolescent dysmenorrhoea. *Pediatrics*. 1981; 68:661.
5. Fakeye O, Adegoke A. The characteristics of the menstrual cycle in Nigerian School girls and implications for school health programmes. *Afr J Med Med Sci*. 1994; 23: 13 – 17.
6. Houston AM, Abraham A, Huang Z and D' Angelo LJ. Knowledge, Attitudes, and Consequences of Menstrual Health in Urban Adolescent Females. *J Pediatr Adolesc Gynecol*. 2006; 19: 271- 275.
7. Wilson CA, Keye WR. A Survey of adolescent dysmenorrhoea and premenstrual symptom frequency. A model program for prevention, detection, and treatment. *J Adolesc Health Care*. 1989; 10: 317.
8. Hillen TIJ, Grbavac SL, Johnston PJ. Primary dysmenorrhoea in young Western Australian women: Prevalence, impact, and knowledge of treatment. *J Adolesc Health*. 1999; 25: 40.
9. Campbell MA, McGrath PJ. Use of medication by adolescents for the management of menstrual discomfort. *Arch Pediatr Adolesc Med*. 1997; 151: 905.
10. Norris E, Sullivan C. The PMS prescription. *Family Circle*. 1983; 156–8.
11. Scott CS, Arthur D, Panizo MI. Menarche. The Black American experience. *J Adolesc Health Care*. 1989; 10: 363.
12. Koff E, Rierdan J. Premenarcheal expectations and post menarcheal experiences of positive and negative menstrual related changes. *J Adolesc Health*. 1996; 18: 286.
13. Ylikorkala O, Dawood MY. New concepts in dysmenorrhoea. *Am J Obstet Gynecol*. 1978; 130: 833.
14. Thomas KD, Okonofua FE, Chiboka O. A study of the menstrual patterns of adolescents in Ile – Ife, Nigeria. *Int J Gynecol Obstet*. 1990; 33: 1 – 4.
15. Kwawukume EY, Adanu MK. The Menstrual Cycle. *Comprehensive Gynaecology In The Tropics*. Kwawukume & Emuveyan (Ed). 2005; Chapter 31. 287-293.
16. Banikarim C, Chacko MR and Kelder SH. Prevalence and Impact of Dysmenorrhoea on Hispanic Female Adolescents. *Arch Pediatr Adolsc Med*. 2000; Vol 154. 1226 – 1229.
17. O'Connell K, Davis AR, and Westhoff C. Self – treatment Patterns Among Adolescent Girls with Dysmenorrhoea. *J Pediatr Adolesc Gynecol*. 2006; 19: 285 – 289.