

KNOWLEDGE OF MENSTRUAL DISORDERS AND HEALTH SEEKING BEHAVIOUR AMONG FEMALE UNDERGRADUATE STUDENTS OF UNIVERSITY OF IBADAN, NIGERIA

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ABSTRACT

Background: Menstrual disorders are physical or emotional problems that affect the normal menstrual cycle and bring about pain, unusually heavy or light bleeding and missed periods. They are one of the most occurring gynaecologic issues that affect women of child bearing age with a global prevalence of 30-70% and one of the frequent reasons women consult physicians worldwide.

Objectives: This study investigated the knowledge, prevalence of menstrual disorders, pattern of health seeking behaviours, association between age at menarche and prevalence of menstrual disorder, association between knowledge and health seeking behaviour among the female undergraduate students.

Methods: A descriptive cross-sectional study was employed to randomly select 381 respondents through a three-stage sampling technique. A pre-tested semi-structured questionnaire was used for data collection. Data collected were analysed using IBM SPSS version 20; statistical tests were conducted using Chi-square and Fischer exact test.

Results: The mean age of the respondents was 20.45 ± 2.66 and the mean age at menarche was 12.90 ± 1.84 . Majority of the respondents (79.3%) had good knowledge of menstrual disorders. The overall prevalence of menstrual disorders among the respondents was 90.4%. and only 28.3% had sought help for menstrual disorders. Inferential analysis showed a statistically significant association between knowledge and health seeking behaviour of menstrual disorders ($p < 0.05$).

Conclusion: Menstrual disorders are highly prevalent among young females of child bearing age in our environment; the role of mass media (Internet) and interpersonal relationships in health education is very knowledgeable and should be harnessed to improve young females' knowledge of positive health seeking behaviours with regard to menstrual disorders.

Keywords: Menstrual disorders, Knowledge, Prevalence, Health seeking behaviour, Female undergraduates

INTRODUCTION

Menstrual disorders are one of the most predominant gynaecologic issues in reproductive health. While some women go through their monthly periods without fears or minor discomfort, others experience huge physical and emotional symptoms, before and during menstruation; from heavy flow to missed periods, mood swings and painful menstruation which interfere with the quality of life of a woman.¹

A menstrual disorder affects the normal menstrual cycle, with pain, unusually heavy or light bleeding, delayed menarche, or missed periods. Menstrual abnormalities include but are not limited to; amenorrhea, abnormal uterine bleeding (menorrhagia,

oligomenorrhea, polymenorrhea, hypomenorrhea), dysmenorrhea and premenstrual syndrome which are the most recorded.² Irregular menstruation, absence of menstruation and non-menstrual vaginal bleeding has many causes, but in women of reproductive age, pregnancy should always be suspected,³ although abnormal vaginal bleeding in non-pregnant women is evaluated differently from vaginal bleeding in pregnant women because polycystic ovarian syndrome can cause same symptoms as menstrual abnormalities.

Amenorrhea is the absence of menstruation, and can either be primary (absence of onset of menstruation by the age of 15) or secondary (lack of menses for

three months or more after menarche).⁴ It is normal before puberty, during pregnancy and menopause not to menstruate but becomes a cause for concern between puberty and menopause. Primary amenorrhea is sometimes caused by low body weight associated with eating disorders, excessive exercise or medications. It can also be linked with problems of the ovaries or genetic abnormalities. Secondary amenorrhea can result from issues affecting oestrogen levels, including weight loss or gain, stress, illness or exercise.

Abnormal uterine bleeding may be heavy menstrual bleeding (menorrhagia) or bleeding in between periods (metrorrhagia). The International Federation of Gynaecology and Obstetrics (FIGO) classified it according to PALM-COEIN system, and PALM represents structural causes: polyps, adenomyosis/leiomyomas, malignancy and hyperplasia while COEIN represents non-structural causes: coagulopathy, ovulatory dysfunction, endometrial, iatrogenic and not yet classified.⁵ Menorrhagia is heavy or prolonged menstrual bleeding caused by hormone problem with the uterus or other health conditions (such as uterine fibroid) while metrorrhagia is bleeding at irregular intervals and it could be as a result of endometriosis, hormone imbalance, uterine fibroids or uterine cancer.⁶

Dysmenorrhea is severe menstrual cramp occurring during menstruation. Normal cramps happen at the lower pelvis when the uterus contracts to squeeze blood vessels in order to shed the uterine lining, but severe or excess cramping is an indication to hormonal, ovarian or uterine problems which can interfere with fertility if not treated.⁷

Premenstrual Syndrome (PMS) can be described as the various physical and psychological symptoms associated with menstrual cycle such as headache, fatigue, nausea, abdominal cramps, constipation, anxiety, depression, and so on. Several factors influence menstrual patterns, which are responsible for menstrual disorders. This include significant weight gain or loss, poor nutrition, stress, drug use, excessive alcohol consumption, which interferes with metabolism of oestrogen and progesterone in the liver, hormonal imbalance, recent child birth or miscarriage, etc.⁸

Menstrual disorders affect women globally and they account for most of the morbidity that occurs in women of child bearing age. Seventy five percent (75%) of young women in both developed and developing countries have menstrual complications.⁹ These disorders are the basis for major visits to the physician, especially menorrhagia.¹⁰

A study carried out by Chia *et al.*¹¹ revealed common impacts of menstrual disorders, which included, reduction in concentration ability, academic disturbance and changes in normal physical activities. Menstrual disorders led to restriction of activities and absenteeism, however only few sought medical help while majority resorted to self-medication which could be dangerous.¹² Menstrual disorders could start as early as menarche sets in, and this could continue beyond the teenage years when further stressors brought about by life challenges, academics and relationships further worsen the symptoms. Menstrual problems are relatively common, yet unclear how people suffering from it seek help or information pertaining to it.¹³ Problems related to menstruation are perceived as normal among women and are regarded as a condition that does not require medical attention. The few that sought medical help are compelled to do so when the situation becomes unbearable.¹⁴ Although many reasons have been given for inadequate attention to menstrual issues, some see it as a 'taboo' and not a subject for public discussion while others assume it is a personal affair.

Many studies have been carried out on menstrual disorders but further research is required for health seeking behavior (actions) of the affected population and not neglecting the fact that most of these females use over the counter (OTC) drugs which could be detrimental to their health. Hence this study assessed the prevalence, knowledge of menstrual disorders, health seeking behaviours, association between age at menarche and prevalence of menstrual disorder, association between knowledge and health seeking behaviour.

MATERIALS AND METHOD

A descriptive cross-sectional study was conducted among female undergraduate students of University of Ibadan, Nigeria. A total of 381 respondents were recruited into the study using a multistage sampling technique.

Sample size for this study was estimated from the Leslie Kish formula for single proportion which is calculated as:

$$N = \frac{Z^2 pq}{d^2}$$

N = Minimum sample size

Z = Standard normal deviation set at 1.96 normal interval

p = Proportion estimated to be obtained in the target population (prevalence of menstrual disorder among Students in University of Uyo in Southern Nigeria is 34.6% by Ekpeyong *et al.* in 2016)

q= Proportions that does not have the characteristics being investigated

$$(q=1-p) \quad q= 1 - 0.346= 0.654$$

d= Degree of accuracy set at 0.05 (precision set at 5% significant)

Therefore, the sample size $N= \frac{(1.96)^2 \times 0.346 \times 0.654}{0.05^2}$

$$N= \frac{0.8692}{0.0025}$$

$$N= 347.$$

A non-response rate of 10% of 347 = 34.7

Therefore, 34 was added to the sample size calculated to make the sample size 381 in order to address issues of incomplete response.

Eligible study participants were randomly selected from halls of residence through a multistage sampling technique, with proportionate allocations and systematic random sampling to select female undergraduate students who were registered residents of the university female halls of residence. Stage 1: The number of registered students in each hall of residence was ascertained, excluding the number of postgraduate students in the hall and proportions were allocated to each hall with respect to the sample size.

Proportionate allocation =

$$\frac{\text{Number of registered students in the selected hall}}{\text{Total number of registered students in all the female halls}} \times \text{Sample size}$$

Stage 2: The number of rooms in each hall was ascertained and number of rooms to recruit respondents from was decided with respect to the proportion allocated to each hall and systematic sampling technique was employed in selecting the rooms. Stage 3: Respondents in each of the selected rooms were chosen through random sampling.

Data was collected using quantitative method with the aid of pretested self-administered semi-structured questionnaire. The questionnaire was developed to extract demographic information of the respondents, knowledge and prevalence of menstrual disorder and health seeking behaviour of the respondents that experience menstrual disorders. After the collection of data, the contents were extracted, coded and entered into Statistical Product and Service Solution (IBM SPSS version 20) for analysis. Percentages were calculated; Chi-square test and Fisher exact test were used to test for associations between dependent and independent variables of interest, then the results obtained from the analysis were summarized and presented using figures, tables and chart where necessary. Knowledge was scored on a scale of 0-56 with ≤ 28 as poor

knowledge, 28-37 as fair knowledge and 38-56 as good knowledge.

The study limitation is that female students who reside outside the school hostels was not included because of time and financial constraints. Also the quality of life of students who experience any form of menstrual disorder was not measured. Recall bias could be a challenge to the study.

RESULTS

Socio-demographic characteristics of respondents

Table 1 below, shows the socio-demographic characteristics of the respondents. Three hundred and eighty one questionnaires (381) were distributed but

Table 1: Socio-demographic characteristics of the respondents (N=363).

Socio-demographic variables	Frequency (N)	Percentage (%)
Age at last birthday		
15-20	200	55.1
21-26	154	42.4
27-32	9	2.5
Age at menarche		
9-16	355	97.8
17-25	8	2.2
Ethnicity		
Yoruba	302	83.2
Igbo	32	8.8
Hausa	6	1.7
Others	23	6.3
Religion		
Islam	85	23.4
Christianity	278	76.6
Marital status		
Single	354	97.5
Married	9	2.5
Students' halls of residence		
Female hostel 1 (OAH)	124	34.2
Female hostel 2 (QEH)	105	28.9
Female hostel 3 (QIH)	134	36.9
Student's faculty of study		
Arts	52	14.3
Social sciences	22	6.1
Law	22	6.1
Sciences	37	10.2
Technology	15	4.2
Basic medical sciences	7	1.9
Clinical medicine	11	3
Pharmacy	3	0.8
Agric and Forestry	101	27.8
Veterinary medicine	2	0.6
Education	42	11.6
Renewable natural resources	43	11.8
Dentistry	1	0.3
Economics	5	1.3
Student's level of study		
100	62	17.1
200	83	22.9
300	55	15.2
400	74	20.4
500	89	24.5

only three hundred and sixty three (363) were retrieved with complete response (95.3% response rate).

The age ranged from 15-32 years with a mean of 20.45 ± 2.7 while age at menarche was between 9 and 25 years respectively, with a mean of 12.90 ± 1.84 .

Table 2: Knowledge of Menstrual disorders (N=363).

Knowledge Variables	Frequency (N)	Percentage (%)
Awareness about menstrual disorders		
Yes	359	98.9
No	4	1.1
Sources of Information		
Internet (mass media)	114	31.4
School	46	12.8
Interpersonal	125	34.7
Seminar	7	1.9
Personal experience	23	6.3
Reading	9	2.5

The majority of the respondents (97.5%) were single, Yoruba (83.2%) and practiced Christianity (76.6%).

Awareness and knowledge of menstrual disorders

Almost all (98.9%) the respondents were aware of menstrual disorders. Their mothers (interpersonal) were the major (34.7%) source of information on menstrual

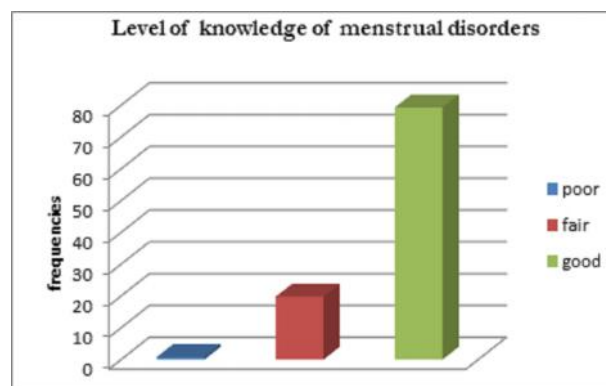


Figure 1: Bar chart showing the overall knowledge score of the respondents.

Table 3: Prevalence of menstrual disorders (N=363).

Variables	Frequency (N)	Percentages (%)
Days of period flow		
<2days (not good)	39	39
2-7days (good)	306	306
>7days (not good)	18	18
Length of monthly cycle		
<24days (not good)	102	28.1
24-38 days (good)	239	65.8
>38 days (not good)	22	6.1
Menorrhagia (Heavy period)		
Yes	75	20.7
No	288	79.3
How often does your monthly period flow?		
Regular	308	84.8
Irregular	55	15.2
Metrorrhagia (Bleeding between periods)		
Yes	18	5
No	345	95.5
Amenorrhea (Missed period)		
Yes	143	39
No	220	60
Duration of missed period (N=143)		
<3months	124	86.7
≥3months	19	13.3
Dysmenorrhea (painful menstruation)		
Yes	257	70.8
No	106	29.2
Premenstrual syndrome (several signs and symptoms before period)		
Yes	262	72.2
No	101	27.8
Abdominal pain¹		
	94	53.4
Mood-swing		
	171	47.1
Loss of appetite		
	111	30.6
Headache		
	96	26.4
Dizziness		
	84	23.1
Vomiting		
	48	13.2
Overall Prevalence of Menstrual disorders		
Yes	328	90.4
No	35	9.6

Table 4: Association between age at menarche and prevalence of menstrual disorder (N=328).

Socio-demographic variables	Prevalence of menstrual disorders		X ²	Df	P-value
	Yes	No			
Age at menarche					
9-16	34	321		1	0.559*
17-25	7	1	0.077		

Age is grouped based on normal menarche and delayed (late) menarche

*fisher exact

Table 5: Health seeking behaviour of respondents.

Variables	Frequency (N)	Percentage (%)
Do you seek help for your menstrual disorders?		
Yes	93	28.3
No	235	71.7
If yes, which one?		
Amenorrhea (N=143)		
Yes	31	21.7
No	112	78.3
Dysmenorrhea (N=257)		
Yes	52	20.2
No	205	79.8
Metrorrhagia (N=18)		
Yes	7	38.9
No	11	61.1
Menorrhagia (N=75)		
Yes	21	
No	54	
Premenstrual syndrome (N=262)		
Yes	33	12.6
No	229	87.4
Where do you receive help? (N=93)*		
Hospital		
Yes	11	11.8
No	82	88.2
Chemist		
Yes	11	11.8
No	82	88.2
Pharmacy		
Yes	17	18.2
No	76	81.8
Traditional		
Yes	21	22.5
No	72	77.5
Non-medical home remedies		
Yes	38	40.8
No	55	59.2
What type of treatment have you taken? (N=93)		
Pain relief		
Yes	38	40.8
No	55	59.2
Hormone drug		
Yes	16	17.2
No	77	82.8
Herbal medication		
Yes	9	9.6
No	84	90.4
Surgery		
Yes	3	3.2
No	90	96.8
Taken medications to postpone your period before		
Yes	2	0.6
No	326	99.4
If yes, why		
To engage in activities	2	0.6
Not applicable	326	99.4
Coping strategies for monthly period (N=363)		
Taking medications and a lot of water	3	0.8
Rest	11	3.0
Eating	1	0.3
I do nothing	310	85.4
Drink hot liquid	23	6.3
Exercise	8	2.2
Hot baths	4	1.1
Reduce sugary foods	1	0.3
Take garlic	1	0.3
Get busy	1	0.3

*Multiple responses

disorders, followed by the internet (mass media) (31.4%). A majority of the respondents (79.3%) had good knowledge of menstrual disorders (Figure 1). The overall mean knowledge score of the respondents was 42.9 ± 7.5 .

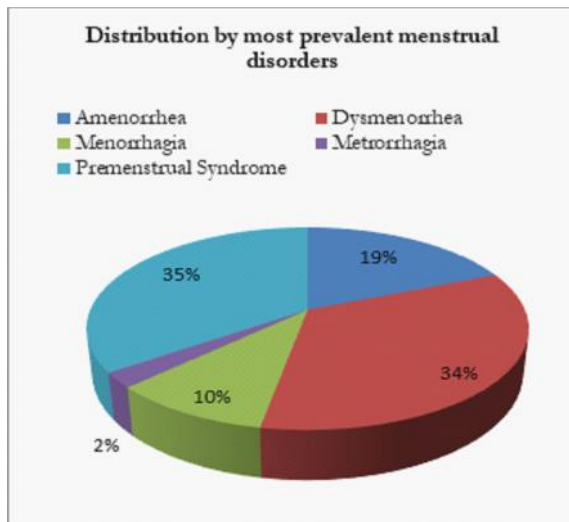


Figure 2: Distribution prevalence of menstrual disorders.

Prevalence of Menstrual Disorders

The monthly cycle of the respondents were as follows; normal cycle (65.8%), less than 24 days (28%) and greater than 38 days (6.1%). Majority (84.8%) reported regular monthly menstrual flow, normal days of period flow (84.3%) and no bleeding between periods or metrorrhagia (95.5%). The respondents stated menstrual disorders ranging from amenorrhea (39%),

between age at menarche and prevalence of menstrual disorders ($p=0.599$).

Health Seeking Behaviour

Less than one third (28.3%) of the respondents who had experienced menstrual disorder sought any form of help. Respondents sought for help from various sources, however, less than half (40.8%) adopted non-medical home remedies. Less than half (40.8%) also reported pain relief medications as a form of treatment (Table 5). Inferential analysis showed no statistical significant association between age at menarche and prevalence of menstrual disorders ($p=0.599$). But there was a statistically significant association between knowledge of menstrual disorders and pattern of health seeking behaviour for menstrual disorders ($p<0.001$), specifically for menorrhagia ($p=0.001$) and amenorrhea ($p=0.001$), and for type of help sought (from chemist ($p=0.021$) and non-medical home remedies ($p=0.042$)) (Table 6).

DISCUSSION

The results of this study on mean age at menarche compared closely to previous study findings of 13.6 years in a South Western State of Nigeria by Adebimpe *et al.*¹⁵ 13.7 years in Northern Nigeria,¹⁶ 12.3 years in Hong Kong,¹⁷ but differs to other studies; 14.2 years reported by Esimai and Esan² and 14.0 years in the study by Ekpeyong *et al.*¹⁸ There was no statistically significant association between age at menarche and prevalence of menstrual disorder in this study; this findings were different from the study by Ekpeyong *et al.*¹⁸ where age at menarche was significantly

Table 6: Knowledge of menstrual disorders and health seeking behaviour.

Health Seeking Behaviour	Level of knowledge			X ²	Df	P-value
	Poor	Fair	Good			
Menorrhagia						
Yes	0	5	70	12.185	2	0.001*
No	3	67	218			
Amenorrhea						
Yes	1	12	118	15.944	2	0.001*
No	2	60	170			
Seek help (Chemist)						
Yes	0	4	503	6.978	2	0.021*
No	68	238				
Self-help						
Yes	1	20	123	5.581	2	0.042*
No	2	52	165			

*Fischer exact**

dysmenorrhea (70.8%) to premenstrual syndrome (72.2%), with abdominal pain (53.4%) reported as the main premenstrual symptom (Table 3). Overall prevalence of menstrual disorders was 90.4%. Table 4 shows there was no statistically significant association

associated with prevalence of menstrual disorder. Age at menarche has been reported to be associated with the time needed to achieve regular ovulatory cycles; a younger age at menarche is associated with 50% ovulatory cycles after a year while older year at

menarche is not associated with full ovulatory cycles for 8-12 years¹⁹ hence a much later age at menarche could predispose more to menstrual disorders.²⁰

Almost all the respondents were aware of menstrual disorders which was contrary to a report from a systematic review on “Epidemiology of Menstrual Disorders in Developing Countries; A call for Health Education” documented by Harlow *et al.*²¹ where lack of awareness was reported. This may however be due to respondents’ high level of education. Also, majority of the respondents in this study had good knowledge of menstrual disorders, and this could be as a result of the study setting where higher learning takes place and respondents are bound to interact with each other and get information and also by use of the internet. This assumption was reflected in the study findings which reported the highest source of information for menstrual disorders as interpersonal (family, friends) and internet. Also, the high knowledge reported in this study corroborates with adequate knowledge of dysmenorrhea among students in a private university.²² The overall prevalence of menstrual disorders among female undergraduate students in this study was high (90.4%) and this finding was similar to 91% prevalence in a study by Nazish and Mona among students of Health Sciences at Imam Abdulrahman Bin Faisal University, Dammam, Saudi Arabia²³ and also close to a prevalence of 80.7% reported among Lebanese nursing students.²⁴ On the contrary, the prevalence of menstrual disorder was higher than that of a study conducted among female undergraduate students of University of Uyo by Ekpenyong *et al.*¹⁸ where an overall prevalence of 34.6% was reported.

The prevalence of dysmenorrhea, menorrhagia and metrorrhagia in this study were 70.8%, 20.7% and 5% respectively. These findings were lower compared to the results of a study conducted by Amu and Bamidele²⁵ among adolescent girls in Oshogbo, Osun State, where prevalence of dysmenorrhea was 77.8%, menorrhagia 57.4% and metrorrhagia 18.6%. This difference could be due to the fact that menstrual disorders are more common among younger females. Despite the high prevalence of menstrual disorders in this study, two-thirds of the respondents reported that they had their monthly period regularly. Abnormal cycle length occurred in 34.2% of the respondents contrary to 43% reported by Abdelmoty *et al.*²⁶ 13.2% by Houston *et al.*¹² and 37.2% by Lee *et al.*²⁷ This disparity could be attributed to the range that was used to determine the length of normal cycle listed in those studies, and environmental factors. Findings from this study showed that the prevalence of dysmenorrhea and premenstrual syndrome were the most occurring menstrual disorders amongst the students; this was

corroborated by findings from studies by Fawole *et al.*²⁸ and Sivadasan *et al.*⁹

Respondents in this study employed a variety of measures to get relief from menstrual disorders. A higher percentage of respondents practiced non-medical home remedies; this was also reported in studies conducted by Olowokere *et al.*³⁰ and Abdelmoty *et al.*²⁶ where the most common form of management adopted by the respondents were non-medical home remedies.

Respondents also sought help from chemists (patent medicine vendors - PMV), who might not have the appropriate knowledge (skills) to address the gynaecological needs of these females, thus putting them (respondents) at risk. More importantly noted was the fact that most of the respondents did nothing and just endured the menstrual disorders; this could probably be that they see it as a normal condition that they have to live with. Only very few of the respondents employed exercise as a means of relief contrary to 48% that engaged in exercise as reported by Olowokere *et al.*³⁰ In addition, only few respondents drank warm beverage, while less than half used pain reliefs and 3% rested as a form of health seeking behaviour. This was contrary to a study by Chia *et al.*¹¹ where 67% reported that they drank warm beverage, 57% used pain reliefs, and 45% reported that they slept. Knowledge of menstrual disorders was significantly associated with health seeking behaviour. This contradicted the study by Farotimi *et al.*²² where there was no significant association between level of knowledge and health seeking behaviour of the respondents towards dysmenorrhea (regardless of the fact that they had adequate knowledge of dysmenorrhea).

CONCLUSIONS

Menstrual disorders are prevalent among young females of child bearing age in our environment. The role of mass media (especially internet), interpersonal relationships and health education are very vital and should be harnessed to improve young females’ knowledge of positive health seeking behaviours with regard to menstrual disorders. Also health facilities should have youth friendly clinics accessible for issues relating to menstrual disorders in order to reduce prevalence of non-medical home remedies.

ACKNOWLEDGEMENTS

We acknowledge all the respondents who participated in this study. We are grateful to the ethical committee who provided approval for this study.

Ethical approval was obtained from UCH/UI research ethics committee with the registration number

(UI/EC/19/0256) before the collection of data. Also, written informed consent was attached to the questionnaires distributed for data collection.

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