

Original Research Article

Effect of nurse-led training on the pharmacological knowledge and management of dysmenorrhea among female undergraduates of Lagos State University ojo Lagos, Nigeria

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ABSTRACT

Background: Dysmenorrhoea is very common among female adolescents and the associated pain could be severe and significantly impact their daily and academic lives. Dysmenorrhea can be effectively managed if properly understood and given proper management, hence, this study determined the outcome of educational intervention on pharmacological knowledge and management of dysmenorrhea among undergraduates in Lagos State University.

Methods: The study utilized a one-group pre-post-test quasi experimental design. Total enumeration of 126 respondents female accounting students were selected. Two instruments of Self-Report Questionnaire (SQR) and Test Paper on Knowledge and Management of dysmenorrhea (TRKM) were used to collect data. Descriptive statistics of frequencies, percentages, mean scores and standard deviation were used to analyze the research questions.

Results: Findings showed that majority of the participants 91 (72.2%) were between the ages of 20-24 years, 97 (77.0%) started menstruation between 10-15 years of age, and 76 (59.9%) only menstruated for 3 days. The pre and post intervention mean scores on knowledge of pharmacological management of dysmenorrhea were (2.981 ± 1.176) and (8.115 ± 0.997) with a mean gain of 6.670. Also, there is significant difference between pre and post intervention of knowledge on dysmenorrhea with knowledge gained 16.130, $t=47.806$ at $p=0.00$.

Conclusions: The organized education programs on knowledge and management of dysmenorrhea benefited the participants, therefore, resulting in an increase in knowledge and management of dysmenorrhea. It was recommended that Community health practitioners, public health educators and social workers should plan appropriate technique to modify the attitude and beliefs of females on management of dysmenorrhea.

Keywords: Dysmenorrhea, Knowledge, Non-Pharmacological management, Pharmacological management, Training

INTRODUCTION

The early reproductive years of females are physically and psychologically challenging for many female adolescents and young women, though it is an exciting and important landmark in the transition from girl childhood to womanhood. Characterised by menstruation, this pathway can be frustrating and be wildering because of the variations and symptoms which may accompany it. These range from having to menstruate every month,

vulnerability to reproductive tract infection to severe painful cramps known as dysmenorrhea in some females.¹

Menstruation is a natural occurrence in females and a determining factor of reproductive life which every fertile female must past through.² Proper management of menstruation and disorders associated with it among female students is essential in sustaining good school attendance of a girl child, participating in school

activities, accomplishing success in her academics and later on contributing to the development of the country. However, many young women in developing countries lack appropriate knowledge and sufficient information regarding management of menstruation disorders, though some information might be available from schools and friends which may not be adequate to manage these disorders.³

In 2014, a study was carried out by North American Society for Adolescent Gynaecology among sets of female adolescents of Turkey who received detailed information about the mechanism or physiology of dysmenorrhea and their Ghanaian counterpart who did not receive any information. The latter, despite the high prevalence of dysmenorrhea perceived the problem completely normal, hence they relied on coping mechanism, inadequate self-care method, do not want to seek professional treatment and were embarrassed to talk about it, while the former were free to talk about it and always visit gynaecologist for treatment. The Association concluded that education of females on menstruation related problem like dysmenorrhea would have a positive impact in improving adolescents' girls and young female's knowledge in nurturing a positive attitude toward menstruation - related matters at home, school, hospital and community.⁴

Dysmenorrhea is defined by Olayinka, as painful menstrual flows which is common or mainly found among female teenagers and young women.³ The incidence was recorded to range between 40% – 80% in different countries including Malaysia, Ghana and Nigeria. Dysmenorrhea has been identified as the commonest gynaecological complaint among adolescents and young females as well as the most vital reason why some adolescents and young female students have been absenting themselves from schools in developing countries.⁵ It has been observed that majority of adolescents and young women experience some degree of menstrual cramping especially during their early reproductive lives which affect their productivity in various ways. They lack knowledge about causes and appropriate treatment for dysmenorrhea which determine their perception about dysmenorrhea.⁶

According to American Institute of Preventive Medicine, the incidence of dysmenorrhoea is reported to be on the high side, at least, 4 in 10 of young women experience dysmenorrhea during their productive years.⁷ The problem does not only cause discomfort, but also cause many physical, social, emotional and economic difficulties for women all round the world. Egade reported that despite the high prevalence of this disorder almost all the female adolescents, young women even mothers lack knowledge about causes of dysmenorrhea and appropriate management.⁸ When asked about causes of dysmenorrhea some stated that it was black blood trying to escape through tight vagina, while some said it was due to pretence or low pain threshold and requires no

treatment. Hence about 10% of young women with dysmenorrhea experienced an absenteeism rate of 1 to 3 days per month at work or school are unable to carry out their daily routine or task due to the excruciating pain. He further reported that dysmenorrhoea is the prominent reason for short term school absence; it is linked with negative influence on academic, social and sports activities of many female teenagers and ladies.⁸

Nijesiri and Suresh stated that dysmenorrhoea is a common problem among women in their reproductive age and may have negative effect on the academic performance of the young women at various stages of their professional and academic career or development.⁹ Some of them grow tired of complaining or visiting the doctor and end up believing they are abnormal. Many studies have consistently reported that the experience of pain and cramps with menstruation is common for 70 - 91% of young women.¹⁰

Some adolescents' lack of knowledge about dysmenorrhea and its management in developing countries like Nigeria have made them to become strong analgesic dependent, caused them to endure unnecessary excruciating menstrual pain, made them record preventable absence in schools leading to poor academic performance and has generally reduced their quality of life.¹¹ He further stressed that school based program teaching is considered an effective way to reach large audience of young females with information about dysmenorrhea and its management, especially in a country like Nigeria where there is ineffective drug control measures. Akinlolu reported in her studies that in some developing part of the world, due to ignorance about the cause of dysmenorrhea, adolescents and young females seek the opinion of their friends about treatment are often give options of treatments like: having sexual intercourse regularly, getting pregnant, having dilatation and curettage done or childbirth to end the pain, which they blindly or innocently complied with as they lack basic knowledge of dysmenorrhea and its' management.¹²

The problem of dysmenorrhea if not addressed properly may lead to inappropriate use of opioid analgesic which may later lead to addiction. Therefore effective Nurse-led training intervention and counselling is essential for adolescents and young females. Such training which is definitely essential among female undergraduates is a reliable tool for educating this group of females about causes of dysmenorrhea and its appropriate management.

Dysmenorrhea has different effect on individuals and the community. For instance, school and work absenteeism, interference with daily living activities, limitation in socialization and higher intake of sedative medication are positively associated with higher prevalence and intensity.¹³ In 2016, the International Association for the Study of Pain estimated that at each menstrual period approximately 15% to 20% of dysmenorrheic females were not able to attend school or work for 1 to 3 days,

thereby causing an annual loss of nearly 140 million working hours, 82% practiced self-medication and 62% take inappropriate medications.¹ Okoro, Malgwi and Okoro reported that many females with dysmenorrhoea do not visit gynaecologists and more than half reported self-medicating with many wrong and strong analgesics and complimentary medicines methods.¹⁴ They seek advice from their friends who suggested wrong and weird treatments like taking dangerous alcohols (gin, whisky) which often have many negative effects on their future. According to him most young females suffering from dysmenorrhoea use ineffective coping methods, take wrong medication and also stay away from performing important daily activities.

Based on the above picture of the enormity of the problem posed by dysmenorrhea, the researcher went to assess LASU female undergraduates' pharmacological knowledge and management of dysmenorrhoea, organised and carried out training sessions for them on knowledge and available effective management of dysmenorrhoea and then evaluated their post-training level knowledge.

Research questions

- What are the pre and post mean scores of nurse-led training of female undergraduates on the knowledge of pharmacological management of dysmenorrhea?
- What are the pre and post mean scores of nurse-led training of the female undergraduates on the knowledge of dysmenorrhea?
- What are the pre and post mean scores of nurse-led training of female undergraduates on knowledge of non-pharmacological management of dysmenorrhea?

Hypothesis

There is a significant difference between pre and post intervention knowledge of female undergraduates on pharmacological management of dysmenorrhea.

METHODS

This study utilised one group quasi experimental pre and post-test design. The target population for this study were 2806 female undergraduates of Lagos State University, Ojo Lagos State, Nigeria. Multistage and purposive sampling techniques were used to select the sample size for this study.

Stage 1: There are 4 faculties in main LASU Campus, Faculty of Management of Sciences was randomly selected through balloting.

Stage 2: Out of the three departments in the Faculty of Management Sciences, Accounting Department was also randomly selected through balloting.

Stage 3: During the researcher's investigation in the Accounting department it was discovered that among the 4 levels of the students in the department, the first 2 levels have lectures from 9am to 5pm in and out of the department in the non-residential institution. The fourth level students are out on internship. Only 300 levels were steadily available in the department for the study.

Sampling technique

Total enumeration sampling technique was used for this study. The 300 level female undergraduates of the Accounting Department are 126 in number. All of them took part in the study. The researcher used the participants (300 level) for this study from the Accounting Department because they were the only set that was readily available in the department.

Instrumentation

Two instruments were used for this study: a Self-Report Questionnaire (SRQ) and Test Paper on Knowledge and Management of dysmenorrhea (TPKM) were used to collect data. The Self-Report Questionnaire (SRQ) was to elicit the demographic data of the participants while the Test Paper on Knowledge and Management of dysmenorrhea (TPKM) was to assess the participants' knowledge on pharmacological and non-pharmacological management of dysmenorrhea. The reliability of the instrument was achieved by administering them to 300 level Law students on same campus. Thirteen copies of the instruments were administered. The result was subjected to Cronbach's Alpha coefficient to determine the reliability of the instrument which yielded 0.79 (knowledge 0.782, Management 0.788).

Method of data collection

A letter of introduction was obtained from the Dean, School of Nursing Science, Babcock University and taken to the LASU Head of Accounting Department. The letter was to seek permission to collect data. The researcher discussed the protocol of the study with them. That is, when and where to meet with the students. Data collection was done in 3 phases: pre-intervention, intervention sessions, and evaluation of the trainings.

Method of data analysis

The returned questionnaire were sorted and coded after which data were entered into the Statistical Package for Social Science (SPSS) software version 21. Descriptive statistics of frequencies, percentages, mean scores and standard deviation was used to provide answers to the three research questions of the study. Inferential statistics of students T-test was used to analyse the three hypothesis of the study at 0.05 level of significance.

Ethical approval was obtained from the Babcock University Health Research Ethical Committee

(BUHREC). Permission was also obtained from the institution management and at departmental level. The participants were informed about the study and their participation was voluntary. The ethical principles of respect for persons, beneficence, non-maleficence and justice were utilized. The researcher ensured that information received from the respondents was strictly for intervention and academic purposes. This information was kept as confidential as possible, before and after the study, and the participants' anonymity was guaranteed. The outcome of the research will benefit the participants and other students as a sound educational system will impact the society positively. No conflict of interest existed between the researcher, participants and the society at large.

RESULTS

Table 1 shows the response of the participants on the pharmacological management of dysmenorrhea pre and post intervention, 2.38% had knowledge that medication should commence one or two days before menstruation pre intervention while it rose to 98.41% post intervention. Pre intervention 73.02 had knowledge that dilatation and curettage was one of pharmacological management but reduced to 1.59 after the training intervention. Only 4.6% had knowledge that analgesic oral medication could be used in management of dysmenorrhea pre intervention but increased to 93.65% post intervention.

Table 1: Pre and post intervention participants' response on knowledge pharmacological management of dysmenorrhea.

Test paper on knowledge of pharmacological management	Pre-intervention				Post-intervention			
	Yes		No		Yes		No	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Management of dysmenorrhea should start								
1-2 days before the onset of menstruation	3	2.4	123	97.6	124	98.4	2	1.6
At the onset of menstruation	117	92.9	9	7.1	123	97.6	3	2.4
When pain becomes unbearable	120	95.2	6	4.8	7	5.6	119	94.4
Pharmacological management involves using of								
Analgesic oral medication e.g. Ibuprofen	6	4.8	120	95.2	118	93.7	8	6.4
Opioids/strong analgesic: Tramadol, injections e.g. fortwin and morphine	119	94.4	7	5.6	2	1.6	124	98.4
Sedatives- Sleeping tablets e.g. Diazepam (Valium)	115	91.3	11	8.7	6	4.8	120	95.2
Contraceptive	4	3.2	122	96.8	116	92.1	10	7.9
Dilatation and Curettage (D and C)	92	73.0	34	10.1	2	1.6	124	98.4

Table 2: Summary of the knowledge of pharmacological management of dysmenorrhea.

Knowledge of pharmacological management of dysmenorrhea	Category of scores	Pre-intervention		Post-intervention	
		Freq.	%	Freq.	%
Low	0-3	102	81.0	13	10.3
Average	4-7	21	16.8	48	38.1
High	8-10	3	2.4	65	51.6
Total		126	100.0	126	100.0
Mean		2.981		8.115	
Standard dev.		1.176		0.997	
Mean difference		6.670			
Maximum		4.00		10.00	
Minimum		1.00		4.00	
Range		3.00		6.00	

Table 2 presents the pre and post mean scores of nurse-led training of the female undergraduates on the pharmacological management of dysmenorrhea. The

undergraduates' knowledge of pharmacological management of dysmenorrhea mean score at pre-test was 1.281 which is equivalent to 29.8%. Thus, it could be said that the female undergraduates' knowledge of pharmacological management of dysmenorrhea before intervention was poor. This is because their mean score is less than 50%. After the intervention, the study revealed that undergraduates' pharmacological management of dysmenorrhea mean score was 8.115 (81.2%).

Results in Table 3 show a significant difference between pre and post intervention mean scores of female undergraduates on pharmacological management of dysmenorrhea (Knowledge gained = 6.670; $t = 25.331$; $p = .00$). The earlier set hypothesis was accepted. It could be deduced from this findings that the difference observed between pre and post intervention groups could not have been by chance but as a result of the educational intervention the participants were exposed to. Going through the pharmacological management of dysmenorrhea mean scores as shown above, one can say that there is an improvement between pre-intervention

(2.981) and the post-intervention (8.543). It could be deduced from this findings that the difference observed in between pre and post intervention groups could not have

been by chance but as a result of the educational intervention the participants were exposed to.

Table 3: Independent t-test showing the difference between pre and post intervention mean scores of female undergraduates on knowledge of pharmacological management of dysmenorrhea.

	N	Mean	Std. Deviation	Std. Error Mean	Df	t	Mean diff	Sig
Pre	126	2.981	1.176	0.991				
Post	126	8.543	0.997	0.547	124	25.331	6.670	0.000

DISCUSSION

The outcome of this study showed that the undergraduates' pre-intervention knowledge of pharmacological management of dysmenorrhea mean score was 29.8%. Thus, it could be said that the undergraduates' pharmacological management of dysmenorrhea before intervention was poor, only 2.4% of the participants had knowledge that management should commence one to two days before the onset of menstruation while 91.3% thought sedatives were suitable and 92.0% were of the opinion that dilatation and curettage was the appropriate pharmacological management for dysmenorrhea, which means they have not had adequate training on appropriate pharmacological management of dysmenorrhea but after they were exposed to nurse-led intervention in form of training the mean on knowledge of dysmenorrhea score increased to 81.2%.

The nurse led training has been able to add to their knowledge about pharmacological management of dysmenorrhea which will influence their management and treatment seeking behaviour and application of this management. The outcome of the poor knowledge on pharmacological management of dysmenorrhea pre intervention among the participants of this study is in line with the previous study of Esimai and Esan that only 10% of the respondents seek medical attention for menstrual abnormalities.¹⁵ The result of the study by Titilayo and others reported 17% of their respondents ever sought for medical attention due to dysmenorrhea.¹⁶ Okoro, Malgwi, and Okoro reported that only few of the respondents ever consulted a doctor for menstrual disorders.¹⁴ The result of these studies still revealed that there is still poor medical health seeking behavior for menstrual related problems among girls due to lack of adequate knowledge the disorder and available management.

The outcome of the post intervention revealed the undergraduates' knowledge on pharmacological management of dysmenorrhea was good indicating the effectiveness of the nurse-led training on pharmacological management of dysmenorrhea. This is consistent with the previous study conducted in 2014 by

North American Society for Adolescent Gynaecology among sets of female adolescents of Turkey who received detailed information about the mechanism or physiology of dysmenorrhea and their Ghanaian counterpart who did not receive any information. The Association concluded that education of menstruation related problem like dysmenorrhea had a positive impact in improving adolescents' girls and young female's knowledge in nurturing a positive attitude toward menstruation related matters at home, school, hospital and community.

The results of the indicated a significant difference between pre and post intervention mean scores of female undergraduates on pharmacological management of dysmenorrhea. It could be deduced from this findings that the difference observed in between pre and post intervention groups could not have been by chance but as a result of the educational intervention the participants were exposed to.

CONCLUSION

The research was carried out among female undergraduates who has had so many interactions among themselves, although many of them started menstruation before the age of 15 most of them they did not have adequate knowledge about dysmenorrhea and its management pharmacologically. Nurse-led training has proven to be effective in improving the pharmacological knowledge of female adolescents and young women. The knowledge of a disease condition has been found out to influence the treatment applied and health seeking behaviour of individual. Based on the study and analysis carried out in this research, the researcher hereby concluded that there is a significant difference between pre and post intervention mean scores on undergraduates' pharmacological management of dysmenorrhea.

Recommendations

In view of the findings stated earlier, there is an urgent need to pay more attention to creating more awareness on practice and methods of reducing of severe menstrual pains among females of reproductive age in Nigeria. Nurses and midwives have a lot of work to do as clients'

advocates. To help them accomplish the great task, the following recommendations are made:

- Female empowerment should include education on the pharmacological and non-pharmacological management of dysmenorrhea.
- Motivational counseling for women needs on management of dysmenorrhea must be emphasized. Community health and school health nurses should make focus on management of dysmenorrhea pharmacologically.
- Information, education and communication causes and management of dysmenorrhea must be intensified in order to reach all segments of the population.
- Community health practitioners, public health educators and social workers should plan appropriate technique to modify the attitude and beliefs of females on causes and management of dysmenorrhea.

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