

Premenstrual dysphoric disorder among medical students of a Nigerian university

Page | 118

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Abstract

Background/Objective: This study aimed at estimating the prevalence and associated factors of premenstrual dysphoric disorder (PMDD) among medical students in a University in the North-Central State of Nigeria. PMDD is the severest form of premenstrual symptoms and is associated with impairment of social and role functioning.

Methods: A cross-sectional study of female medical students of the University of Ilorin College of Health Sciences (n=208), which involves completing a questionnaire to elicit socio-demographic and gynecological information as well as the GHQ-12 questionnaires. They were later interviewed with DSM-IV PMDD instrument.

Results: Seventy-five (36.1%) of the respondents met the criteria for the diagnosis of PMDD. Sixty-five (%) of the PMDD cases reported having pain during menses among whom 14 (21.5%) reported mild, 32 (49.2%) moderate and 19 (29.2%) severe form of menstrual pain. Forty-two persons (20.2%) were categorized as having probable psychiatric morbidity using a cut-off of ≥ 3 on GHQ 12. There was neither a causal relationship between psychiatric morbidity (≥ 3 score), and PMDD, nor any association between gynecological factors and PMDD. However, menstrual pain was significantly associated with PMDD ($P=0.019$).

Conclusion: The rate of PMDD in this study is high. Dysmenorrhoea of moderate/severe intensity correlated significantly with the possibility of having PMDD. Efforts should therefore be made to alleviate the pain associated with menses. In addition, the College's health-care providers should take into account the issues of dysmenorrhoea and its management more seriously by intensifying health education on dysmenorrhoea and PMDD in order to improve the quality of life of the students.

Keywords: Dysmenorrhoea, medical students, premenstrual dysphoric disorder

Résumé

Contexte/Objectif: Cette étude visait à estimer la prévalence et les facteurs associés de trouble dysphorique prémenstruel (PMDD) parmi les étudiants en médecine dans une université dans le nord-centrale de l'État du Nigéria. Le PMDD est la forme la plus sévère des symptômes prémenstruels et est associée à une insuffisance de fonctionnement social et rôle.

Méthode: Une étude transversale d'étudiantes en médecine de l'Université d'Ilorin Collège des sciences de la santé (n = 208) ont rempli un questionnaire visant à obtenir des informations socio-démographiques et gynécologiques, ainsi que le GHQ-12 questionnaires. Ils ont ensuite été interrogés avec le PMDD-DSM-IV instrument.

Résultats: Soixante-cinq (36,1%) des répondants ont rempli les critères pour le diagnostic du trouble dysphorique prémenstruel. Soixante-cinq (%) des cas de trouble dysphorique prémenstruel ont déclaré avoir des douleurs pendant les règles, parmi lesquels 14 (21,5%) avaient doux, 32 (49,2%) modérées et 19 (29,2%) ont déclaré forme sévère de douleurs menstruelles. Quarante-deux personnes (20,2%) ont été classés comme ayant une morbidité psychiatrique probables en utilisant un seuil de ≥ 3 sur le GHQ 12. Il n'y avait ni lien de causalité entre la morbidité psychiatrique (score ≥ 3), et le PMDD, ni aucune association entre les facteurs gynécologiques et PMDD. Toutefois, des douleurs menstruelles était significativement associée à trouble dysphorique prémenstruel ($P = 0,019$).

Conclusion: Le taux de PMDD dans cette étude est élevé. Disménorrhée modérée / intensité sévère corrélation significative avec la possibilité d'avoir le PMDD. Des efforts doivent donc être faits pour atténuer la douleur associée

aux menstruations. En outre, la santé du Collège des prestataires de soins doivent prendre les questions de la dysménorrhée et de sa gestion plus au sérieux par l'intensification de l'éducation sanitaire sur la dysménorrhée et PMDD en vue d'améliorer la qualité de vie des étudiants.

Mots clés: Dysménorrhée, étudiants en médecine, trouble dysphorique prémenstruel

Introduction

Premenstrual syndrome (PMS) involves a variety of physical, emotional and psychological symptoms experienced by some women during the late luteal phase of menstrual cycle (7 to 14 days prior to menstruation).^[1] The nature and severity of the symptoms could be within a spectrum from minimal to disabling. About 5% of women report severe symptoms for several days with functional impairment. This group of women with the severest premenstrual symptoms and impairment of social and role functioning often meet the diagnostic criteria for premenstrual dysphoric disorder (PMDD), a severe form of PMS.^[2] The symptoms of PMS seem to worsen as menstruation approaches and subside at the onset or after days of menstruation, and a symptom-free phase usually occurs following menses. These symptoms have been categorized into three domains: emotional, physical, and behavioral and these are evident from studies that have reported somatic, affective, and behavioral symptoms during the premenstrual phase of the menstrual cycle of most ovulatory women.^[1,2] Factors that affect the syndrome include pregnancy, oral contraceptives, and inhibition of ovulation, menopause and may also correlate with parity.^[1]

The diagnostic criteria

The fourth edition of the Diagnostic and Statistical Manual of mental disorders (DSM-IV)^[3] requires a woman to have at least 5 out of 11 mood and physical symptoms to be diagnosed as having PMDD. One of the five symptoms must be a mood symptom, which includes depressed mood, anxiety, mood lability, or irritability. Other symptoms include fatigue, sleep changes, appetite changes, decreased interest, concentration difficulty, feeling overwhelmed or out of control, and physical symptoms such as breast tenderness, bloating, or headaches. These symptoms must be confined to the luteal phase of the cycle and be severe enough to cause psychosocial impairment. The DSM-IV also states that the symptoms must not merely be an exacerbation of another disorder.

The Prevalence

The prevalence rates reported in both prospective and retrospective studies were between 4.6% and 6.7%.^[4-9] Studies^[7,8] have also reported that 18.6%–20.7% of women have “sub-threshold PMDD,” in which the full criteria are not met because they have

less than 5 symptoms or because they fail to meet the functional impairment criterion.

In a study^[9] conducted in western Nigeria, correlates of PMDD were found to include older age, painful menstruation, and high score on neuroticism scale. Compared with participants without PMDD, the study also found that participants with PMDD had significantly higher rates of dysthymia, major depressive disorder, panic disorder, and generalized anxiety disorder. To date, the quoted study is the only study that has compared the rate of PMDD with other psychological factors in Nigeria. The present study, therefore, aimed at estimating the prevalence of PMDD among medical students in a University in the North-Central State of Nigeria. It thus adds to the data base on the available prevalence studies on PMDD, particularly in Nigeria and importantly in the Northern part of the country where such study has not been previously undertaken. The findings from this study might be useful for planning of health care for young women with PMDD.

Materials and Methods

Subjects: All the subjects were the female medical students of the College of Health Sciences, University of Ilorin, Nigeria, and written consent was obtained from them. Ilorin is the capital of Kwara State, a north-central state, and one of the 36 states in Nigeria. The University is a microcosm of Nigeria because the students of the University (and invariably, the College) were drawn from all parts of Nigeria and beyond, thus all major ethnic and religious groups are represented. The students were approached during their lecture period after obtaining the permission of the respective teachers and were asked to complete the questionnaire under the close supervision of the researchers.

Exclusion criteria included the use of hormonal contraceptive method and current treatment with mood stabilizers or antidepressants since it has been reported that hormonal contraception and antidepressants could affect the symptoms of PMDD.^[10,11] All respondents who indicated the use of hormonal contraceptives and any of the drugs belonging to a class mentioned above were excluded from the analysis.

Ethical consideration: Permission was obtained

from the College of Health Sciences and the University of Ilorin Teaching Hospital Ethical Review Committee for approval of the study protocol. Informed consent of the participants was also obtained.

Procedure: All the subjects subsequently completed the following:

1. A questionnaire on socio-demographic variables, menstruation variables, and gynecological characteristics.
2. The 12-item General Health Questionnaire (GHQ-12) to determine psychiatric morbidity.

They were subsequently interviewed with the DSM-IV PMDD instrument by the Psychiatrists irrespective of the GHQ 12 scores.

The Mini International Neuropsychiatric Interview (MINI)^[12] was designed as a brief structured interview for the major axis I psychiatric disorders in DSM-IV. Clinicians can use it after a brief training session, but lay interviewers require training that is more extensive.^[9] Validation and reliability studies have been done for MINI and showed that it has acceptably high validation and reliability scores. GHQ-12 is a twelve-item, self-administered questionnaire that sorts respondents into cases or non-cases of psychiatric morbidity. It has also been used extensively in this environment and a cut off of 3 has been recommended in this environment.^[13] The questionnaires were administered in English language, which is the official language of communication in Nigerian schools.

Statistical Analysis: The Statistical Package for the Social Sciences 11 (SPSS Technical Support, 2000) program was used for statistical analysis. Participants were classified as cases or non-cases of PMDD on the basis of the DSM-IV criteria as contained in the MINI. Results were calculated as frequencies, means, standard deviations (SD), cross-tabulation, and chi-square figures, with *P*-value set at 0.05.

Results

Two-hundred and twelve female students participated in the study, but only 208 met the inclusion criteria. Most (203 or 97.6%) of the participants were single. Their mean age \pm S.D was 21.3 ± 3.0 (range, 16–38). One-hundred and thirty (62.5%) were Christians while 78 (37.5%) were Muslims. The age at menarche varied between 9 and 18 years with a mean \pm S.D of 12.9 ± 1.5 . The length of menstrual cycle was 21–40 days with a mean \pm S.D of 28.3 ± 2.1 while the mean \pm S.D duration of menstrual flow was 4.6 ± 1.0 (range, 1– 8 days).

One-hundred and fifty-nine (76.4%) answered “yes” to the questionnaire item “is there pain during menses?” while only 49 (23.6%) did not indicate that they had dysmenorrhoea. Fifty-three (33.5%) of those who had pain during menses described the pain as mild, 78 (49.1%) as moderate while 28 (17.6%) described their menstrual pain as severe.

Seventy-five (36.1%) of the respondents met the criteria for the diagnosis of PMDD. Sixty-five (86.7%) of the PMDD cases reported having pain during menses among whom 14 (21.5%) had mild, 32 (49.2%) moderate and 19 (29.2%) reported severe form of menstrual pain.

The mean \pm S.D score on the GHQ-12 was 1.5 ± 2.1 (range, 0–9). Forty-two persons (20.2%) were categorized as having probable psychiatric morbidity having scored 3 or more on GHQ-12.

There was no relationship between psychiatric morbidity (GHQ-12 positivity) and PMDD categorization in this study. However, menstrual pain and the severity of the pain are important. Presence of pain during menses is significantly associated with the PMDD categorization. Similarly, the moderate-severe pain was significantly correlated with PMDD.

There was no significant difference between the PMDD categorization and the age of respondents, age at menarche, and length and duration of menstrual flow [Table 1]. The regularity of the cycle was also found to have no significant relationship with PMDD.

Discussion

Prevalence of PMDD

The prevalence of 36.1% PMDD in this study was high compared to previous studies among medical as well as non medical students. For example, Niser

Table 1: Analysis of variance of means of some variables and PMDD

Means values	PMDD categorization		Statistics
	PMDD cases	Non-PMDD cases	
Age of respondents	21.57 (± 3.37)	21.07 (± 2.71)	F=1.35, P=0.25
Age at menarche	12.88 (± 1.68)	12.89 (± 1.36)	F=0.000, P=0.988
Length of menstrual flow	28.63 (± 1.59)	28.16 (± 2.37)	F=2.266, P=0.134
Duration of menstrual flow	4.72 (± 1.17)	4.59 (± 0.92)	F=0.814, 0.368

F= ANOVA; P= P-value

and his colleagues^[14] in India reported a prevalence of 5.8% among female medical students based on DSM IV criteria while prevalence values of 6.1%, 17.2% and 18.2% were obtained in Nigeria,^[9] Croatia^[15] and Peshawar (Pakistan)^[16] respectively based on DSM IV criteria. The reason for this high rate, despite the strict diagnostic requirements that 5 of the 11 items including at least a mood symptom must be present for repeated menstrual cycles, may be a subject of speculation. A reason for this might be due to problems associated with retrospective study of this nature with tendency to amplify the recall of symptoms' severity and frequency by these women.^[2] Also, it is known that there are many physical or psychological illness-induced symptoms mimicking the symptoms of PMDD, among which is premenstrual exacerbation of underlying major psychiatric disorders. In fact, a study found that 40% of women diagnosed as suffering from PMS/PMDD were actually cases of affective or anxiety disorders.^[17] In this study, these other probable confounding factors were not ruled out and therefore limits whatever definite inferences that could be made. Nevertheless, with or without mood or anxiety disorder being ruled out, this high rate suggests that the students might have been distressed by these symptoms as expressed by them and might therefore need help in alleviating distressful feelings that could reduce not only patients' quality of life, but also their working activities.^[2] Another reason for this high rate could perhaps be due to the students' over reporting of emotional aspects of the PMDD questionnaire as they (symptoms) affect the students rather than as being the effect of menses on them (students). This is because out of the 11 symptoms of PMDD, 10 are either emotional or behavioral with only one criterion relating to physical symptoms. The stress of medical education and its ability to induce emotional and affective morbidity might be inferred to be caused by menses, thus capturing emotional disturbance that could otherwise have arisen without menses. To forestall this, we measured the level of psychiatric morbidity among the respondents.

Psychiatric morbidity and PMDD

About two of every five respondents (20.2%) had probable psychiatric morbidity according to the GHQ-12 and the relationship between having psychiatric morbidity and PMDD was not statistically significant [Table 2]. Thus this finding may be a true reflection of the students' feeling. A finding that was significantly related to having PMDD is dysmenorrhoea (pain during menses). Sixty-five (86.7%) of the 75 students who had PMDD reported that they suffered painful menses, a finding that correlated significantly with PMDD (One-hundred and fifty-nine (76.4%) reported

Table 2: Relationship between PMDD and GHQ-12-caseness and menstrual pain

	PMDD categorization		
	PMDD cases	Non-PMDD cases	
GHQ-12			$\chi^2 = 1.718, P=0.190$
GHQ positive	19	23	Pearson correlation not significant
GHQ negative	56	110	
Pain during menses			$\chi^2 = 5.488, P= 0.019;$
Yes	65	94	Pearson correlation=-162,
No	10	39	Stand. error=0.63, P=0.019; OR=0.419; 95% CI= 0.19-0.80
Severity of pain			$\chi^2 = 13.021, P=0.01;$
Mild	14	39	Pearson correlation=0.280,
Moderate	32	46	Stand. error=
Severe	19	9	0.075, P=0.0000

OR= Odds Ratio; CI= Confidence interval

dysmenorrhoea overall). Not surprisingly, therefore, the respondents with moderate/severe menstrual pain were more represented among those that reported menstrual pain and had PMDD [Table 2]. This finding is similar to the finding of Adewuya and colleagues who found the presence of pain as a correlate of PMDD among Nigerian students.^[9] The relationships between pain and report of emotional problems is mutual and bidirectional; dysmenorrhoea causes distress and aggravates the emotional and behavioral responses to menstrual symptomatology and the likelihood of PMDD reporting.^[9] On the contrary, PMDD may make the women report premenstrual symptoms as painful or aggravate the pain associated with menstruation.^[9]

In conclusion, the rate of PMDD among medical students in this study was higher than that among young students in previous studies. Dysmenorrhoea of moderate/severe intensity correlated significantly with the possibility of having PMDD. Efforts should therefore be made to alleviate the pain associated with menses. College health-care providers should take issues of dysmenorrhoea and its management more seriously by intensifying health education on dysmenorrhoea and PMDD in order to improve the quality of life of the students.

Limitations: In addition to the limitations mentioned above, the severity of pain was self-reported and therefore subject to bias reporting as what one regards as moderate might be regarded as mild or severe by another. A more standard pain assessment method would be more desired.

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Page | 122

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<p>Source of Support: Nil, Conflict of Interest: None declared.</p>
