Prevalence of Premenstrual Dysphoric Disorder and its Associated Factors among Students of Tabor Secondary and Preparatory School in Hawassa City, Ethiopia, Cross-Sectional Study

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Abstract

Background: The premenstrual dysphoric disorder is a severe and disabling form of premenstrual Syndrome affecting 3%-8% of menstruating women. The disorder consists of a cluster of affective, behavioral, and somatic symptoms that recur monthly during the luteal phase of the menstrual cycle. Premenstrual dysphoric disorder was added to the list of depressive disorders in the diagnostic and statistical manual of mental disorders in 2013. The exact pathogenesis of the disorder is still unclear.

Objective: To assess the Determinants of Premenstrual dysphoric disorder and its effect on academic performance among Hawassa tabor secondary and preparatory school students.

Methods: A cross-sectional institutional based was conducted among 351 randomly selected female students of Hawassa tabor school. Data were collected by three students were facilitate the works with a closed-ended structured questionnaire and they were trained on how to collect the data. The collected data was entered, analyzed, and cleaned by SPS.

Results: The prevalence of each symptom is more than ninety percent or 324 (92.3%) respondents may not have experienced unpleasant physical or emotional symptoms peculiar to the five days before the onset of menses and 27 (7.7%) participants have shown the symptoms. Among those 26 (7.4%) have present for the past ≥ 3 consecutive cycles. 46 (13.1%) have a family history of such symptoms.

Conclusion: These findings have implications for both women and medical providers, who should be aware that PMS symptoms are prevalent and often distressing, yet also understand that the severity of symptoms may remit over times.

Keywords: Prevalence; Premenstrual; Dysmenohea; High school students

Introduction

Premenstrual Dysphoric Disorder (PMDD) is a severe and disabling form of premenstrual syndrome affective 3%-8% of menstruating women. The disorder consists of a cluster of affective behavioral and somatic symptoms that recur monthly during the luteal phase of the menstrual cycle. Premenstrual Dysphoric Disorder (PMDD) was added to the list of depressive disorders in the diagnostic and statistical manual of mental disorders in 2013. The exact pathogenesis of the disorder is still unclear. Most reproductive women appear to experience recurrent premenstrual physical

and/or emotional symptoms. It is the appearance of physical, psychological symptoms recurring periodically [1].

At least 80% of menstruating women have some premenstrual symptoms. About 40% of menstruating women have the premenstrual syndrome and 10% have severe symptoms, a condition called Premenstrual Dimorphic Disorder (PMDD). Nine million women or approximately five to seven (5%-7%) percent of women of childbearing age have PMDD [2]. Because there is no adequate pathophysiologic explanation for PMDD and no consistently effective therapy available, the issue is confusing. Different researchers agreed on the following criteria to diagnose PMDD. The diagnosis of PMDD is based on fulfilling the following criteria. Presence of one or more of the following somatic symptoms (abdominal bloating, breast fullness and tenderness, perceived weight gain, headache, low back pain, and arthralgia). Psycho-behavioral symptoms (anxiety, irritability, confusion, depression, difficulty in concentration, fatigue, emotional liability, and sleep disturbance). Three or more cyclic recurrence during the five days before menses, and symptoms so severe and debilitating the social and/or occupational function [3].

Risk factors for PMDD include advancing age (beyond 30 years) and genetic factors. However, as indicated above, PMS symptoms are identified in adolescents and can begin around age, or 20 years post-menarche, and persist until menopause.

Methodology

The study was conducted in Hawassa tabor preparatory and secondary high schools, on female students. Tabor senior secondary school is established in 1968 E.C. It is one of the biggest public schools in south Ethiopia. Hawassa is one of the capital cities of SNNPR and 272 km far from Addis Abeba. A facility-based cross-sectional study was conducted after stratifying students based on their class and section. All-female students of Hawassa tabor school were selected for the study and those who have seen their menses at least three times consecutively were included in the study. The sample size was calculated by using single population proportion formula with the following parameters.
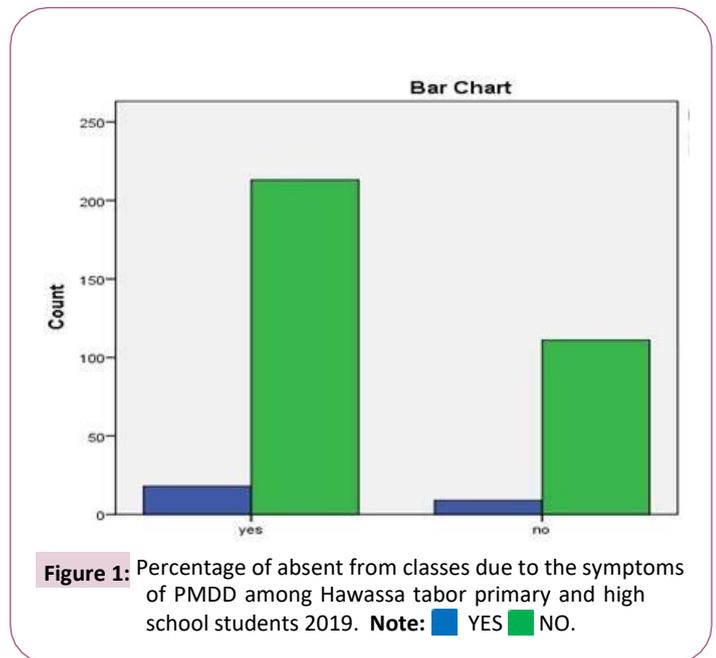
Data collection

The study participants were given a general introduction to the study as well as the opportunity to ask questions about the study and questionnaire were distributed. The principal investigator and the supervisor had checked the completed questionnaires for consistency and completeness on a daily basis.

Data analysis

After the data were collected it was sorted, entered, cleaned and analyzed by using manual scientific calculator and tally sheet and presented by **Table 1** and **Figure 1**.

Data quality assurance

To increase the quality of data; pre-testing of questionnaire, training of data collectors, consistent supervision during data

Figure 1: Percentage of absent from classes due to the symptoms of PMDD among Hawassa tabor primary and high school students 2019. **Note:** ■ YES ■ NO.

collection by the coordinator, cross checking of questionnaire for their completeness and double entry of data to assure data quality will done.

Finally, after stratifying the students on their class, stratified random sampling techniques were used, a screening instrument to assess premenstrual dysphoric disorder as conceptualized in DSM-5, biodemography Data were used as a questionnaire. The data quality was kept by giving training for data collectors and supervisors, as well as strict; follow up was done by the Researcher during data collection [4-6].

The Questionnaire was pre-test before the actual data collection. Ethical clearance was obtained from the ethical review board of Hawassa University College of Medicine and Health Science by Daka and Bedaso. Respondents were informed about the purpose, procedure, risks, and benefits of the study and assured about the confidentiality of the data. Written informed consent was obtained from the next of kin/legal representatives for the under 18 age of study participants. The parents of the eligible participants were approached by the study team for consent to participate in the study [7]. Information about the study, its potential risks, and its benefits to the students were elaborated on to the students/relatives in simple and concise language. Approval for conducting the study in the high schools was provided from the Hawassa University College of Medicine and Health Science Research and Ethics Committee. Participants were also given the option to withdraw from the study at any point during the interview if they did not feel comfortable with proceeding. Codes were used in place of names and other identifying information [8].

Independent variables

- Age

- Marital status

- Parity
- Religion
- Ethnicity
- Average of last semester
- Class attendance during menstruation
- Medication use

Dependent variables

- Premenstrual Dysphoric Disorder (PMDD) Yes/No

Operational definitions

Premenstrual Disphoric Disorder (PMDD) is very severe form of premenstrual syndrome. Distressing, physical, psychological and behavioral symptoms not caused by organic disease. It relatively recurs during the same phases of menstrual cycle and which disappears or significantly regress during the remainder of the cycle. The client must report at least one of the effective or/and somatic symptoms during the five days before menses with other medical and psychological condition ruled out.

Results

Socio-demographic characteristics of respondents. The total response rate was 351, from those total respondents 192 (54.7%) of the respondents were between the age of 20-24 year and 137 (39.0%) respondents were between the age group of 13-19 as shown in **Table 1.**

This result supports the recent findings of studies in which premenstrual disorders were shown to be major problems in adolescence that markedly interfered with school and social activities. Significant differences were observed in the prevalence of all premenstrual symptoms between the 'absent' group and the 'non-absent' group in the present study. This result indicated that premenstrual symptoms may lead to school absenteeism in any girl that has menses and ovulates. An analysis of factors interfering with work, activities, and relationships showed that 'reduced social life activities' was a risk factor for school absenteeism, conversely indicating that girls in the 'absent' group were having problems not only in their school lives but also in other social activities, such as hobbies or after-school activities. In our study most of respondents 172 (49.0%) have using medication to relief the symptoms, changing diet 81 (23.1%), Exercise 41(11.7) most of them are 191 (54.4%) using anti-pain to relief the symptoms. Majority of the respondents 246 (70.1%) are having history of discuss to your problems with your family or friends. 147 (41.9%) have visited health institution for your symptoms. Exercise may improve premenstrual symptoms mainly in emotional and physical conditions by increasing beta-endorphin levels and physical well-being. Previous studies have reported the effectiveness of exercise towards physical symptoms, including breast tenderness and fluid retention symptom. We previously demonstrated that physical premenstrual symptoms were related to the high frequency of school absenteeism.

Table 1: Distribution of students by their socio-demographic characteristics of female students in Hawassa Tabor high school and preparatory, January 2019 Hawassa, Ethiopia (n=351).

Socio demographic characteristics		Frequency	%
Age of respondents	13-19	137	39.00%
	20-24	192	54.70%
	25 and above	22	6.30%
	Orthodox	131	37.30%
	Catholic	39	11.10%
	Muslim	34	9.70%
	Protestant	144	41.00%
	Others	3	0.90%
Living with	Parent	220	62.70%
	Dorm	23	6.60%
	Alone	70	19.90%
	Others	38	10.80%
Marital status	Single	244	69.50%
	Marred	91	25.90%
	Widowed	11	3.10%
	Others	5	1.40%

Discussion

In this the study, we conducted school-based cross sectional study to show how premenstrual disorders affect the school and daily lives of adolescents. According to the results obtained in this study a total no. of 351 girls 231(65.6%) were classified into the 'absent' and 163 (46.4%) respondents have effect on academic performance, which demonstrated that premenstrual symptoms affected school attendance. Although the prevalence of absent girls increased based on the severity of PMS. According to DSM-5 criteria 27 (7.7%) respondents have with PMDD and 324 (92.3%) have not include the criteria. Among those 17 (63.0%) respondents have 20-24 age group, 7 (25.9%) have 13-19 age group and 3 (11.1%) have 25 and above age group.

In total, 65.6% of female students were absent from school due to premenstrual symptoms. Premenstrual symptoms, such as tender breasts, feeling bloating, headache, joint or muscle pain, and weight gain' were risk factors for school absenteeism. In addition, 'a preference for salty food' and 'lack of regular exercise' was risk factors of absence. Considering the difficulty of medical treatment in adolescents, education on proper exercise and eating habits is important and may lead to an improvement in premenstrual symptoms and the life qualities of adolescents. According to DSM-5 criteria 27 (7.7%) respondents have with PMDD and 324 (92.3%) have not. Among those 17 (63.0%) respondents have 20-24 age group, 7 (25.9%) have 13-19 age group and 3 (11.1%) have 25 and above age group.

Conclusion

Our results suggest that a greater proportion of women than previously identified may experience a negative impact of PMS symptoms on their daily lives. However, these women appear to vary greatly in their assessment of the burden of their PMS

symptoms over time. These findings have implications for both women and medical providers, who should be aware that PMS symptoms are prevalent and often distressing, yet also understand that the severity of symptoms may remit over time. Our findings call for close monitoring of women for PMS symptoms, frequent reassessment of women who report distressing PMS symptoms, and careful consideration before initiation of long-term treatment.

Declaration

Ethics approval and consent to participate. Ethical clearance was obtained from the Institutional Review Board of Hawassa University College of medicine and health science (Ref. No HU/T2366/51514) by Mr. Deresse Daka and Asres Bedaso. Written informed consent was obtained from the next of kin/legal representatives for under 18 ages of study participants. The parents to the eligible participants were approached by the study team for consent to participate in the study. Information about the study, its potential risks and its benefits to the students were elaborated to the students/relatives in simple and concise language. Approval for conducting the study in the high schools was provided from the Hawassa University College of Medicine and Health science Research and Ethics Committe.

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