

Introduction of the Research

Background

In 1987 Premenstrual Dysphoric Disorder (PMDD) was included as a provisional diagnostic category in the appendices of Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R) then called the late luteal phase dysphoric disorder [1], and remained as an appendix in DSM-IV, after being renamed premenstrual dysphoric disorder (PMDD) (APA, 1997). The DSM-IV included PMDD as an example of a depressive disorder not otherwise specified. PMDD is characterized by depressed mood or labile mood, anxiety, anger and other symptoms occurring exclusively during the 2 weeks preceding menses. According to the Diagnostic and statistical Manual disorders fourth Edition (DSM-IV) published by the American Psychiatric Association, the symptoms must be severe enough to interfere with occupational and social functioning, in contrast to the more common PMS, PMDD is a severely distressing and disabling condition that requires treatment. First Frank in 1931 described this clinical phenomenon and use the term (Premenstrual Tension) [2].

Premenstrual disorders include a range of premenstrual symptoms from mild premenstrual syndrome (PMS) to PMDD [3]. Reports on prevalence of premenstrual symptoms differ in many studies, premenstrual symptoms are experienced by 90% of women of child bearing age, smaller subset meet the criteria for PMS and less than 10% of them are diagnosed as having PMDD [4]. Most current studies on premenstrual Dysphoric Disorder have been conducted in western countries which investigate the prevalence, severity, most common symptoms of PMS among various population, health and well being of women in reproduction age in that population. To my knowledge, there is no such study among Sudanese women of any age group had been conducted.

Literature Review

Premenstrual symptoms involves a variety of physical, emotional and psychological symptoms experienced by some women during the late luteal phase of menstrual cycle (7-14) days prior to menstruation and resolves in few days of the onset of menstruation [5]. The nature and severity of the symptoms could be within a spectrum from minimal to disabling. About 5% of women reports severe symptoms for several days and functional impairment. This group of women with the severest premenstrual symptoms often meet the diagnostic criteria for premenstrual dysphoric disorder (PMDD), a severe form of PMS [6]. PMS is one of the factors that make women more susceptible than men to depression, particularly during periods of rapid fluctuation of gonadal hormones, such as pre-menstruation and post partum period [7].

Women commonly experience mood, behavioral and somatic symptoms in the late luteal phase of the menstrual cycle. Symptoms can vary in intensity and duration, and may include depressed or dysphoric mood, anxiety, irritability, loss of energy, change in appetite or sleep, breast tenderness, or bloating [8]. It is estimated that twenty percent of women, however, have severe symptoms of PMS [9]. Moreover 4.6% - 6.4% meet the diagnostic criteria for PMDD [10]. Many researchers have explored the

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phenomenology, epidemiology, and treatment of PMDD, these researches have largely been conducted in western and European populations. It would be expected that the eastern countries would desire to optimize the mental health of women. Thus there has been increasing interest in examining the changes in mood present during women's hormonal fluctuations. Much of this research has focused on post-partum depression (PPD). To this author's knowledge, there has been no similar assessment of the research literature regarding PMDD in Sudan.

DSM-IV defines (PMDD) as a separate entity

Premenstrual symptoms must occur in the last week before menses and remit within a few days of the onset of menses. They must also be severe enough to interfere with work, family and social relationships; at least five symptoms (including at least one major dysphoric symptom) out of eleven must be present in the majority of the last 12 cycles. Symptoms must be confirmed prospectively by daily monitoring of at least 2 cycles, and cannot be an exacerbation of another disorder [11].

PMS is a serious problem affecting a woman's health it affects educated women more than non-educated women. Although it has been widely studied in many countries, little is known about PMS in Sudan. Exactly what causes premenstrual syndrome is not known, but several factors may contribute to the condition. It is often linked to genetic factors because twins often suffer with it. Current theory suggests that central nervous system neurotransmitter's interaction with sex hormones may be responsible for premenstrual syndrome. It is also linked with activity of serotonin, assuming that low levels of serotonin, an important chemical produced by brain, maybe a major cause of PMS responses. Serotonin helps to regulate sleep cycles, carbohydrates metabolism and influences the regulation of estrogen and progesterone.

Research point to hormonal level changes before menstruation begins, increased levels of male hormones however as well as increased prolactin can results in delayed ovulation and low levels of progesterone, leading to Premenstrual Syndrome. Cyclic changes in hormones seem to be an important cause, because signs and symptoms of premenstrual syndrome change with hormonal fluctuations and also disappear with pregnancy and menopause. Another theory involves inflammatory substances called prostaglandins, which is produced in the breast, brain, reproductive tract, kidney and gastrointestinal tract where

PMS symptoms originate, to be responsible to cramping, breast tenderness, gas, diarrhea and constipation.

Moreover, a theory also linked to low level of vitamins and minerals. Other possible contributors to PMS include eating a lot of salty foods which may cause fluid retention and drinking alcohol and caffeinated beverages, which may causes mood and energy level disturbances. Endorphin levels also implicated, it drops during the luteal phase of menstrual cycle; which may lead to nausea and various types of pain in some women. However it may be related to social, cultural, biological and psychological factors [12].

Two medications are approved by the Food and Drug administration (FDA) to treat PMDD: Fluoxetine and Sertraline. Some psychologist criticized jumping to conclusion and treating PMDD just as hormonal and nothing can be done about it. "If a women tells you she has PMS or PMDD, therapist should be supportive, ask about stress, relationships. "Explore some other things [13]: PMDD was a neglected diagnosis for many years. Many studies were conducted recently to assess its prevalence, incidence, stability in community, diagnostic criteria, co-morbidities, its effects on social and academic performances and work, etc.

An American study was conducted in Chicago 2007-2008-USA. 1246 women aged 13-55 years using a random sampling procedure, were studied, they completed daily symptoms questionnaires and screened for psychiatric disorders by trained interviewer. Result in final analysis. 1.3% met criteria for DSM-IV diagnosis [14]. A comparison of prevalence of PMDD and co-morbidities among adolescents in the United States and Nigeria-a research approached in 537 patients attending outpatient clinics (cross-sectional survey), in 3 sites, the mean age (13-21) years. The overall prevalence of PMDD was 4.1% (Maiduguri, Nigerian 6.5%, Lagos N 3.1% and 2.9% in Akron, USA [15].

In 1998, a study about prevalence, incidence and stability of premenstrual dysphoric disorder in the community was carried in Germany, 1251woemn aged (14-42) were studied by clinical interview using DSM-IV algorithms. Results were as: 5.8% met DSM-IV criteria for PMDD, life time incidence was 7.4% [16].

In November-December 2008, a study to assess the prevalence of premenstrual symptoms, Premenstrual syndrome and Premenstrual Dysphoric Disorder in a sample of Spanish women of fertile age, was approached as representative of the general Spanish population. 2108 women participated, they were personally interviewed at home and completed the PSST (premenstrual symptoms screening tool). 73.7% complained of some of the premenstrual symptoms during the last 12 premenstrual cycles. 91.0% of women (1415) presented isolated premenstrual symptoms and (8.9%) of them presented a moderate/ severe premenstrual syndrome. Only 1.1% fulfilled criteria for a diagnosis of PMDD [17].

Schudin T et al. [18] studied prevalence and predictors of PMS and PMDD in a population-based sample of European women, aged (15-54). They completed a questionnaire based on PSST. Results: A total of 3,913 women participated, 91% of participants reported at least one symptom, 10.3% had PMS and 3.1% fulfilled the criteria for PMDD according to DSM-IV [18]. The prevalence of PMS & PMDD was higher in non married women (Figure 1 & 2), in women aged (35-44) years. Both PMS & PMDD were strongly

associated with poor physical health and psychological distress.

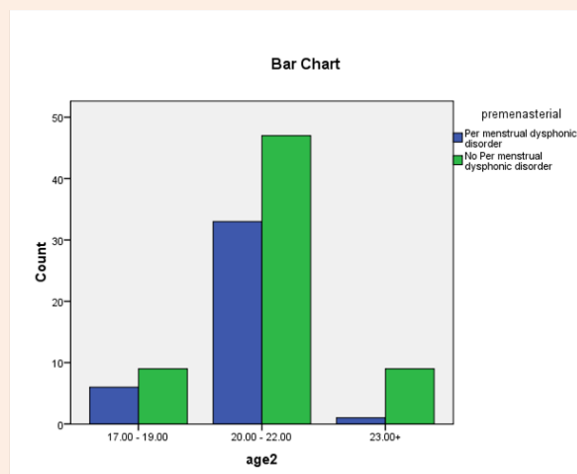


Figure 1: presence of PMDD according to age group.

In KSA (2009), in the area of Al Ahsa, across sectional study was done about the phenomenology of PMS in female medical students. The research was conducted over a six months period. 288 questionnaire were distributed, 271 were filled, of the 250 students approached PMS was diagnosed in 89 (35.6%) using the ACOG criteria. PMS had a significant trend for older age, rural residence, unstable family income, and earlier age of menarche, more regular cycles and positive family history of PMS [19].

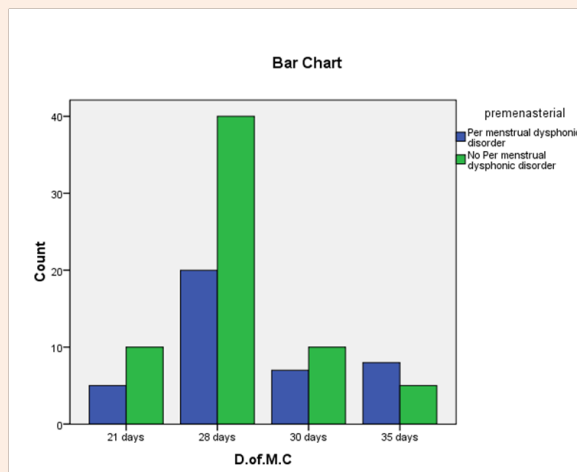


Figure 2: Presence of PMDD according to duration of menstrual cycle.

Another study was conducted in Nigeria by Baba A Issa et al, This study aimed to estimate the prevalence and associated factors of PMDD among medical students of a Nigerian University, across sectional sample of medical students of the university were studied (No=208) which involved completing a questionnaire to elicit socio-demographic and gynecological information's as well as the GHQ-12 and later interviewed with DSM-IV PMDD instrument. Results: 36.1% of the respondents met the criteria for the diagnosis of PMDD. (20.2%) were categorized as having probable psychiatric morbidity using GHQ 12 [20]. In 2005, in Iran, a cross-sectional study was carried out among female students, aged 18-

27 years to assess the frequency of premenstrual symptoms and prevalence of Premenstrual syndrome among Iranian women. 300 students were asked to complete a questionnaire assessing PMS, which was derived from DSM-IV diagnostic criteria for PMDD. The result was: 98.2% reported at least one mild to severe premenstrual symptom. 16% met the criteria of DSM-IV for PMS. Most common symptoms were feeling of sadness or tearfulness (70.3%), anxiety (70%), backache (69%), sleep problems (66%), depressed mood (72.4%) [21]. There was significant difference for severity of symptoms with younger women compared to older women.

A research was conducted in Ethiopia, Jimma University (2002). It was aimed to assess prevalence of PMS and its effect on academic and social performances of students in Jimma University. A cross sectional study was conducted among 242 randomly selected female students. A structured and pretested self-administered questionnaire was employed for data collection. The criteria proposed by the DSM-IV were used to diagnose PMS. The age of participants ranged from 17 to 38 years. Results: Almost all (99.6%) had at least one premenstrual symptom in many of the menstrual cycles in the last 12 months. The prevalence of PMS or PMDD was 27% (according to DSM-IV criteria). About 14% of the study participants frequently missed classes and 15% missed examinations or scored a lower grade at least once because of PMS. The study revealed a high prevalence and negative impact of PMS on students [22].

A research also was studied in India, to determine the prevalence of premenstrual symptoms in perimenopausal age. Women attending Health Care programme (HCP) for women around 40 year of age were included in the study. Last 200 women who attended from April 2002 to October 2004 were included for analysis, out of these 107 qualified for final analysis.

Results

Oms-(38.3%) had 3 or more symptoms whilst (14%) had 5 or more symptoms. (4.7%) reported that the symptoms were severe. The commonest symptom was mastalgia or heaviness of breasts.

Conclusion

Premenstrual syndrome was common between 36 and 55 years, about half of them have experienced 3 or more symptoms and 1 in 20 may require treatment [23]. A study was conducted in UAE (United Arab Emirates), to determine the prevalence and impact of premenstrual syndrome in adolescent school girls aged (12-18) years from five private schools and five public schools (n=700). Subjects were interviewed about cyclic and recurrent behavioral and somatic premenstrual symptoms during the last 3 months based on ACOG criteria and their impact on quality of life using structured and validated questionnaire. Result: The prevalence of premenstrual syndrome was 16.4% (n=115), it was significantly associated with Emirati nationality, presence of the condition in sisters and dysmenorrhea.

In Peshawar (Pakistan) an observational study at the Khyber medical college was conducted (Dec. 2005) to find out the frequency of PMS in young college girls and to describe the severity of emotional, physical and behavioral symptoms. Results: The frequency of PMS was 53% according to ICD-10 criteria, among which (31.7%) was severe, 42% were mild, 18.2% were moderate and 18.2% met the DSM-IV criteria for (PMDD). Most

frequent reported symptoms in PMDD group were anger, Anxiety, stress, depression, fatigue and general body discomfort [24].

A research conducted in Croatian students to assess prevalence and symptoms profile of PMDD. Data was obtained for 87 healthy women aged (18-30) at their regular gynecologic outpatient visits over the period of 2003-2004, they were assessed daily, during 2 cycles with the Daily Records of severity of problems (DRSP) and criteria of DSM-IV for PMDD. 15 of the 87 women fulfilled the criteria of DSM-IV for PMDD and reported statistically significantly higher prevalence of co-morbid disorder in their medical history compared to non PMDD group. Overall relatively high prevalence of PMDD in studied group indicates the need to continue the study [25].

Rational

PMDD is a relatively new concept, in 1998 October, a consensus was reached that PMDD was a distinct clinical entity, subsequently in November 1999, the US Food and Drug Administration (FDA) Neuro pharmacology supported this concept, since then several studies and several treatments options for PMDD have been investigated and developed. Therefore this study aimed to determine the prevalence of PMDD among Sudanese females. To my knowledge, there is no published data on PMDD in SUDAN. This fact prompt us to conduct a baseline survey on this serious problem affecting women health, particularly of the university students who are among the promising group to the country is development. So, this study was conducted on female's medical student of Al-Ahfad University.

Objectives

General objectives

To assess the prevalence of PMDD in Sudanese female university students.

Specific objectives

- To determine the Magnitude of PMDD in Al-Ahfad University Medical students.
- To know the impact of PMDD in social and work activities.
- To identify factors associated to the stress.

Methodology

Study design

The study was cross-sectional descriptive study.

Study Area (place of study)

The study was conducted in AL-AHFAD University-School of Medicine for Women which is located in Omdurman Province, Khartoum State. Capital of Sudan. It is a private university, but provides services for all citizens from different areas of Sudan and neighboring countries. The school of medicine was established in 1990 to adopt the approach of health promotion and education. It is recognized from Sudan National Council for Higher Education, Number of student admitted per year about 300-600.

Study population

This includes all medical students in school of medicine aged

(16-27) years from different areas of Sudan during the period of the study: July 1st 2012-August 2012.

Sampling

Total numbers of students were 105 students. The students were approached during their lecture period after obtaining the permission of the teachers and were asked to complete the questionnaire under close supervision of the researcher.

Data collection

Self-reported questionnaire-contained socio demographic, gynecological variables and items of the DSM -IV Diagnostic criteria for PMDD was filled by the students, it was administered in Arabic language which is the official language of communication in Sudan.

DSM- IV Diagnostic criteria of PMDD

A questionnaire was constructed based on these criteria including physical and mood symptoms. DSM- IV, the fourth edition of the diagnostic and statistical manual of mental disorder, requires a woman to have at least 5 out of 11 physical & mood symptoms to be diagnosed as having PMDD, one of the five symptoms must be mood symptom, which include depressed mood, anxiety, mood liability or irritability. Other symptoms include, fatigue, sleep changes, appetite changes, decreased interest, concentration difficulties, feeling over whelmed or out of control and physical symptoms such as breast tenderness, bloating and headaches. These symptoms must be confined to the luteal phase of the cycle and be severe enough to cause psychosocial impairment and must not merely being an exacerbation of another disorder.

Inclusion criteria

The study included all females medical students of school of medicine in AL-AHFAD University for Women (AUW), who aged (16-27) years, during the period of July- August 2012 who agree to participate in the study.

Exclusion Criteria

The students with concurrent medical, physical or gynecological disorder including pregnancy, OCPS use and current treatment with mood stabilizer or antidepressants medication.

Data Analysis

Data was analyzed by a statistician using computer software program: the statistical package for social sciences (SPSS). Spearman's correlation and Chi-square test, to test the significance of the result was used. The results were expressed in tables and figures.

Ethical Considerations

The study was approved by SMSB. Permission was obtained from college of medicine, al-ahfad University. Informed consent of participants was also obtained.

Results

The total number of the students participated in the study was (105) females. There was no refusal. All of them met the inclusion criteria. Their ages were between (16-27) years. The mean age

in the research sample was 20.8 years. Most of the students (98) were in the range (18-24) years. In the study there were only two married students (Figure 3 & 4). Age of menarche varied between (11-18) years with mean of 13.8 years. This is shown in Table 1. The prevalence of premenstrual dysphoric disorder in the study was found to be 38.1% (Table 2).

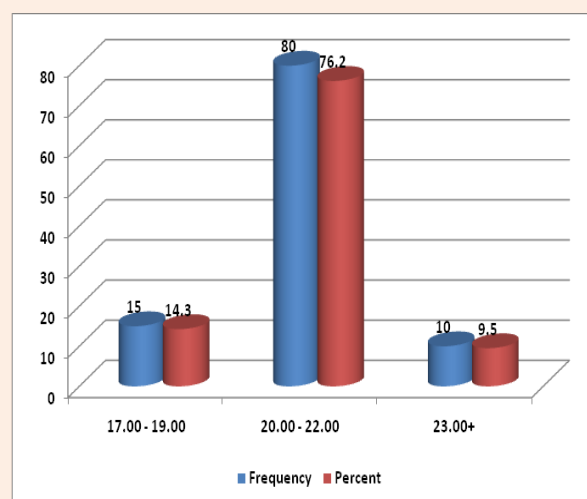


Figure 3: The distribution of the students according to their age.

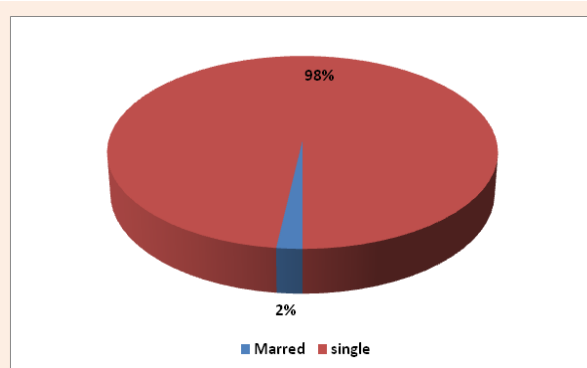


Figure 4: Distribution of the students according to the social status.

Table 1: Distribution of the students according to age of menarche.

Age at Menarche	Frequency	Percent
11.00	5	4.8
12.00	12	11.4
13.00	28	26.7
14.00	29	27.6
15.00	19	18.1
16.00	10	9.5
17.00	1	1.0
18.00	1	1.0
Total	105	100.0

Table 2: Distribution of the students according to the presence of PMDD depending on DSM-IV criteria.

Presence of PMDD	Frequency	Percent
Premenstrual Dysphonic Disorder	40	38.1
No Premenstrual Dysphonic Disorder	65	61.9
Total	105	100.0

The most frequent premenstrual symptoms in this study were Anxiety & irritability (72.4%), fatigue & lethargy (72.4%), lack of

interest of daily activities like work and study (59%), insomnia or hypersomnia (49.5%) and sadness & blue mood (41%) (Table 3). The study showed a significant correlation (positive relationship) between older age of the studied group and PMS (p value 0.038) table??

The students who were found to have PMDD had the most frequent associated dysmenorrhoea (p value 0.028) (Table 4). Also there was significant correlation between PMS and amount of pain associated (P value 0.010). Also there was a significant correlation between length of the cycle and PMS (P value 0.042), it is more frequent with the duration of (28 days) (Table 5). There was no significant difference in PMDD categorization and age of menarche, duration of menstrual flow, marital status and regularity of cycles.

Table 3: The most frequent premenstrual symptoms in the study.

	The most frequent premenstrual symptoms in the study									
	Feeling sad and blue mood		Feeling anxious		Tiredness and lethargy		Hypersomina or insomnia		Lack of interest in daily activities	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Yes	62	59.0	59.0	59.0	76	72.4	52	49.5	62	59.0
No	43	41.0	41.0	100.0	29	27.6	53	50.5	43	41.0
Total	105	100.0	100.0		105	100.0	105	100.0	105	100.0

Table 4: Show the relationship between PMDD and dysmenorrhoea.

PMDD				
Presence of Pain		Pre Menstrual Dysphoric Disorder	No Pre Menstrual Dysphoric Disorder	Total
Yes	Count	32	54	86
	% within premenstrual	80.0%	83.1%	81.9%
	% of Total	30.5%	51.4%	81.9%
No	Count	8	11	19
	% within premenstrual	20.0%	16.9%	18.1%
	% of Total	7.6%	10.5%	18.1%
Total	Count	40	65	105
	% within premenstrual	100.0%	100.0%	100.0%
	% of Total	38.1%	61.9%	100.0%
PV=.691				

Table 5: Distributions of the students according to length of menstrual cycle.

Length of Menstrual Cycle	Frequency	Percent
21 days	15	14.3
28 days	60	57.1
30 days	17	16.2
35 days	13	12.4
Total	105	100.0

Discussion

This study sheds a light on the prevalence of PMDD in a sample of medical students in Sudan. The prevalence of 38.1 % in this study was high compared to previous studies among medical as well as non medical students, for example Niser et al. [26] in India reported a prevalence of 5.8% among females medical student based on DSM-VI criteria while a prevalence values of 6.1%, 17.2% & 18.2% were obtained in Nigeria [27], Croatia [28] and Peshawar (Pakistan) [24] respectively based on DSM IV criteria.

Some studies show similar result as Magdy Hassan Balah and his colleagues who reported a prevalence of PMS (35.6%) among medical students in AL-AHSA, KSA [19]. Also my study result (38.1%) was in accordance with the work of Issa BA et al. [20], Serfaty et al. [29] and Dean et al. [30], who reported prevalence of (36.1%), 35% and 19-30% respectively. The reasons for this variation in prevalence rates in studies can be attributed to the differences in diagnostic criteria , awareness of participants about their physical and emotional symptoms in general and prior or during menstruation in particular and methodological differences. Reasons for high rate of PMDD prevalence in my study may be due to problems associated with retrospective study of this nature with tendency to amplify the recall of symptoms frequency by these students, another reason could be the students over reporting of emotional aspects of PMDD questionnaire. The stress of medical education and its ability to induce emotional and affective morbidity might be inferred to be caused by menses.

A finding that was significantly related to PMDD in this study is dysmenorrhea (pain during menses), 32 of the 40 students who had PMDD reported that they suffered painful menses. 86 students (81.9%) reported dysmenorrhea overall. The respondents with moderate\severe pain were more represented among those who reported menstrual pain and had PMDD (Figure 5 & 6) (Table 6-8). This finding is similar to the finding of BABA A ISSA and colleagues who find the presence of pain as a correlate of PMDD among Nigerian medical students [20]. The relationship between pain and report of emotional problems is mutual.

Dysmenorrhoea causes distress and aggravates the emotional and behavioral responses to menstrual symptomatology and likelihood of PMDD reporting25. On the contrary, PMDD may make the women report premenstrual symptoms as painful or aggravate the pain associated with menstruation [27].

Moreover the other frequent symptoms in this study were

lethargy & tiredness (72.4%), anxiety & irritability (72.4%), decrease interest in daily activities like work & study 59%, insomnia or hypersomnia 49.5% (Table 9-11), feeling sad or depressed or hopelessness 41% and dysmenorrhea 81.9% in overall. Other studies reported symptoms like (abdominal bloating, breast tenderness) and psychological symptoms (confusion, irritability, anxiety and depression) [19]. In this study PMDD had a significant association with older age in the sample (direct relation), Cleckneder-smith et al found that symptoms were more intense in the (16-18) years group compared to (13-15) years age group [25].

Menarche, regularity of the menstrual cycle and development of PMDD, while Magdy H Balah et al found an association [19]. Also in this study we didn't find difference or relation to PMDD explained by marital status.

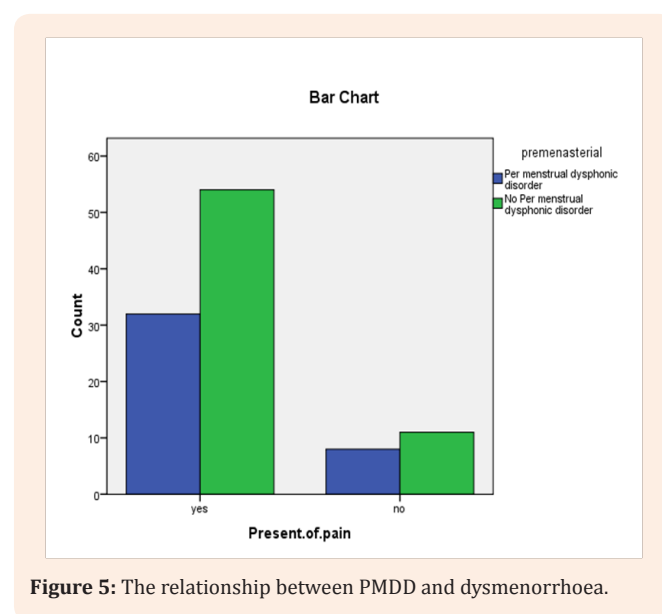
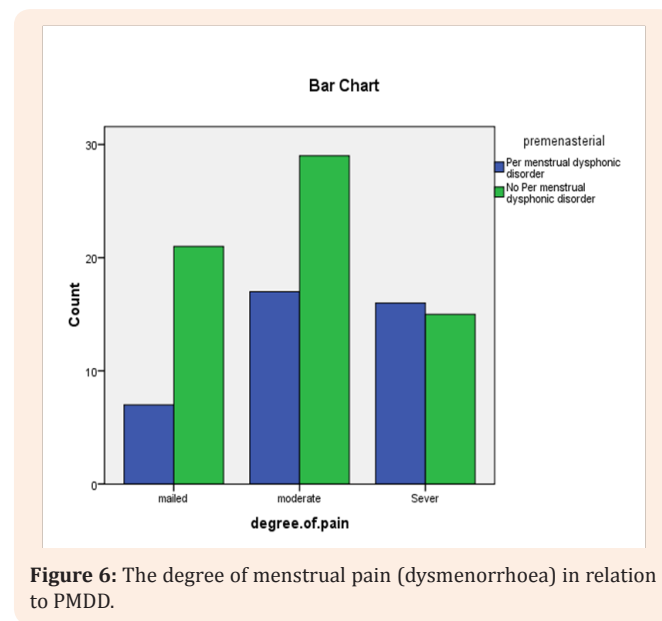
**Figure 5:** The relationship between PMDD and dysmenorrhoea.**Figure 6:** The degree of menstrual pain (dysmenorrhoea) in relation to PMDD.

Table 6: The relationship between length of the cycle and PMDD.

Premenstrual DD				
Duration of Menstrual Cycle		Pre Menstrual Dysphonic Disorder	No Pre Menstrual Dysphonic Disorder	Total
21 days	Count	5	10	15
	% within premenstrual	12.5%	15.4%	14.3%
	% of Total	4.8%	9.5%	14.3%
28 days	Count	20	40	60
	% within premenstrual	50.0%	61.5%	57.1%
	% of Total	19.0%	38.1%	57.1%
30 days	Count	7	10	17
	% within premenstrual	17.5%	15.4%	16.2%
	% of Total	6.7%	9.5%	16.2%
35 days	Count	8	5	13
	% within premenstrual	20.0%	7.7%	12.4%
	% of Total	7.6%	4.8%	12.4%
Total	Count	40	65	105
	% within premenstrual	100.0%	100.0%	100.0%
	% of Total	38.1%	61.9%	100.0%
PV=.282				

Table 7: Distribution of the students according duration of menstrual flow.

Duration of Menstrual Flow	Frequency	Percent
1 - 3 days	26	24.8
4 - 8 days	76	72.4
More than 8 days	3	2.9
Total	105	100.0

Table 8: Distributions of the student according to frequency of dysmenorrhoea.

Presence of Dysmenorrhoea	Frequency	Percent
Yes	86	81.9
No	19	18.1
Total	105	100.0

Table 9: Distribution of the students according to degree of pain.

Degree of Pain	Frequency	Percent
Mild	28	26.7
Moderate	46	43.8
Severe	31	29.5
Total	105	100.0

Table 10: The table shows the relationship between PMDD and age.

Premenstrual				
Age		Premenstrual Dysphoric Disorder	No Pre Menstrual Dysphoric Disorder	Total
17.00 -19.00	Count	6	9	15
	% within premenstrual	15.0%	13.8%	14.3%
	% of Total	5.7%	8.6%	14.3%
20.00 -22.00	Count	33	47	80
	% within premenstrual	82.5%	72.3%	76.2%
	% of Total	31.4%	44.8%	76.2%
23.00+	Count	1	9	10
	% within premenstrual	2.5%	13.8%	9.5%
	% of Total	1.0%	8.6%	9.5%
Total	Count	40	65	105
	% within premenstrual	100.0%	100.0%	100.0%
	% of Total	38.1%	61.9%	100.0%
PV=.157				

Table 11: Show the relationship between PMDD and degree of pain associated.

Crosstab				
Degree of Pain		PMDD		Total
		Pre Menstrual Dysphoric Disorder	No Pre Menstrual Dysphoric Disorder	
Mild	Count	7	21	28
	% within premenstrual	17.5%	32.3%	26.7%
	% of Total	6.7%	20.0%	26.7%
Moderate	Count	17	29	46
	% within premenstrual	42.5%	44.6%	43.8%
	% of Total	16.2%	27.6%	43.8%
Severe	Count	16	15	31
	% within premenstrual	40.0%	23.1%	29.5%
	% of Total	15.2%	14.3%	29.5%
Total	Count	40	65	105
	% within premenstrual	100.0%	100.0%	100.0%
	% of Total	38.1%	61.9%	100.0%
PV=.107				

Limitations

Our study included limitations, among which we should keep in mind that in diagnosing PMDD we didn't take into account all of diagnostic exclusions except for concurrent major psychiatric & medical disorder beside pregnancy. Despite the students were included in the study based on absence of medical chronic disorders, they were not screened for other possible medical diagnoses when they reported PMDD symptoms. We were also unable to use prospective diaries across at least 2 cycles. A further important limitation of the study is that we studied exclusively students aged (16-27) years, thus the results refer to adolescents and young adults. My study included a highly selective sample

comprising of medical students from one institute which will limit generalization of the findings.

We depend on the retrospective analysis using a questionnaire. Despite the questions asked were standardized and used before [20], but the questionnaire filling likely to pose biases, either in over or under reporting. In addition to the limitations above, the severity of pain was self reported and therefore subject to bias as what one regards as moderate could be regarded as mild or severe by others.

Conclusion

Premenstrual Dysphoric Disorder or severe Premenstrual

Syndrome is a common problem in young women in this part of the world. 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 possibility of having PMDD. Older age group and length of menstrual cycle (28 days) also correlates significantly with the disorder. The result in this study indicates that none of participants seeks medications or medical advice for her premenstrual symptoms.

Recommendations

- I. Assessment and treatment of PMDD are as important as other medical & psychiatric disorders (e.g. Anxiety & Depression), so we suggest a new process for diagnosing PMDD based on our findings. As some other researchers like Halbreich et al. [31] have argued that symptoms counts are arbitrary under the current diagnostic criteria, and suggest that the prevalence of clinically relevant PMDD is probably higher than DSM-IV estimates.
- II. Efforts should be made to alleviate the pain associated with menses; health-care providers should take issue of dysmenorrhoea and its management more seriously by increase health education on dysmenorrhoea and PMDD. A more standard pain assessment method would be more desired.
- III. Further studies on large sample of population with more preferably prospective approach need to be conducted to confirm these results and to plan out strategies for better detection & management of PMS in young women.
- IV. Providing more education about reproductive health, premenstrual symptoms, PMS & PMDD and support to the young women in order to improve the quality of life of the students.

References

1. Dell DL (2004) Premenstrual syndrome, PMDD and premenstrual Exacerbation of another Disorder. *Clin Obstet Gynecol* 47(3): 568-575.
2. Lajoie F, Desines S (2002) Improving treatment for premenstrual syndrome. *Canadian Journal of CME*: 81-93.
3. Friedman D, Jaffe A (1985) Influence of life style on premenstrual syndrome. Analysis of questionnaire survey *J. Reprod Med* 30(10): 715-719.
4. American psychiatric association (2000) Diagnostic and statistical manual of mental disorders; DSM-IV- TR. (6th edn), Washington, USA.
5. Nourjah P (2008) Premenstrual syndrome among teacher training university student in Iran. *J Obstet Gynecol India* 58(1): 49-52.
6. Pearlstein T, Steiner M (2008) Premenstrual dysphoric disorder: Burden of illness and treatment update. *J Psychiatry Neurosci* 33(4): 291-301.
7. Young E, Kroszun A (1998) Psycho-endocrinology of depression. Hypothalamic general axis. *Psychiatr Clin North Am* 21(2): 309-323.
8. Kessler RC, McGonagle KA, Zhao S, Nelson CB, Hughes M (1994) Lifetime and 12-month prevalence of DSM-111-R psychiatric disorders in the United States. Results from the National Comorbidity survey. *Arch Gen Psychiatry* 51(1): 8-19.
9. Jarivis CL, Lynch AM, Morin AK (2008) Management strategies for premenstrual syndrome/premenstrual dysphoric disorder. *Ann Pharmacother* 42(7): 967-978.
10. Cohen LS, Soares CN, Otto MW, Sweeney BH, Liberman RF (2002) Prevalence and predictors of PMDD in older premenopausal women. *J Affect Disorder* 70(2): 125-132.
11. American Psychiatric Association (APA)(1994) Diagnostic and statistical Manual of mental disorders. (4th edn), Washington, USA pp. 714-718.
12. *Journal of Affective Disorders, causes of premenstrual syndrome* (2011). 88(1): 9-18.
13. Daw J (2002) Researchers, Physician and psychologist fall on various sides of debate over premenstrual dysphoric disorder. *Am Psych Assoc* 33(9): 58.
14. Gehlert S, Song IH, Chang C-H, Hartlage SA (2008) The prevalence of premenstrual dysphoric disorder in a randomly selected group of urban and rural women. *Psychol Med* 39(1): 129-136.
15. Ogebe O, Abdulmalik J, Bello-Mojeed MA, Holder N, Jones HA, et al. (2011) A comparison of prevalence of PMDD and comorbidities among adolescents in united states of America and Nigeria. *J pediater Adolesc Gynecol* 24(6): 397-403.
16. Wittchen HU, Becker E, Lieb R, Krause P (2002) Prevalence, incidence and stability of PMDD in the community. *Psychol Med* 32(1): 119-132.
17. Duenas JL, Ltete I (2011) Prevalence of premenstrual syndrome and premenstrual dysphonic disorder in a sample of Spanish women of fertile age. *EJOG* 156(1): 72-77.
18. Tschudin S, Berteau PC, Stutz EZ (2010) Prevalence and predictors of premenstrual syndrome and premenstrual dysphonic disorder in a population-based sample. *Archives of women's mental health* 13(6): 485-494.
19. Balaha MH, Amr MA, Saleh Al Moghannum M, Saab Al Muhaidab N (2010) The phenomenology of premenstrual syndrome in female medical students. *Pan Afr Med J* 5: 4.
20. Issa BA, Yussuf AD, Olatinwo AW, Ighodalo M (2010) Premenstrual dysphoric disorder among medical students of a Nigerian University. *Ann Afr Med* 9(3): 118-122.
21. Bakhshani NM, Mousari MN, Khodabandeh G (2009) Prevalence and severity of premenstrual symptoms among Iranian female university students. *J Pak Med Assoc* 59(4): 205-208.
22. Tenkir A, Tisseha N, Ayele B (2003) Premenstrual syndrome: Prevalence and effect on academic and social performance of students in Jimma University, Ethiopia. *Ethiopia J Health Dev* 17(3): 181-188.
23. Joshi JV, Pandey SN, Galvankar P, Gogate JA (2010) Prevalence of premenstrual symptoms: Preliminary analysis and brief review of management strategies. *J Midlife Health* 1(1): 30-34.
24. Tabassum S, Afridi B, Aman Z, Tabassum W, Durrani R (2005) Premenstrual syndrome: frequency and severity in young college girls. *J Pak Med Assoc* 55(12): 546-549.
25. Cleckner-Smith CS, Doughty AS, Grossman JA (1998) Premenstrual symptoms: prevalence and severity in an adolescent sample. *J Adolesc health* 22(5): 403-408.
26. Nisar N, Zehra N, Haider G, Nunir AA, Sohoo NA (2008) Frequency, intensity and impact of premenstrual syndrome in Medical students. *J Coll physicians Surg Pak* 18(8): 981-984.

27. Adewuya AO, Loto OM, Adewumi TA (2008) Premenstrual dysphoric disorder among Nigerian University students: Prevalence, comorbid conditions, and correlates. *Arch Womens Ment Health* 11(1): 13-18.
28. Rojnic Kuzman M, Hotujac L (2007) Premenstrual dysphoric disorder A neglected diagnosis? Preliminary study on a sample of Croatian students. *Coll Antropol* 31(1): 131-137.
29. Serfaty D, Mangneron AC (1997) Premenstrual syndrome in France: Epidemiology and therapeutic effectiveness of 1000 mg micronized purified flavonoid fraction 1473 gynecological patients. *Contracept Fertile Sex* 25 (1): 85-90.
30. Dean BB, Borensten JE, Knight K, Yonkers K (2006) Evaluating the criteria used for identification of PMS. *J Women Health (Larchmt)* 15(5): 546-555.
31. Halbreich U (2003) The etiology, biology, and evolving pathology of premenstrual syndromes. *Psychoneuroendocrinology* 28(Suppl 3): 55-99.