The prevalence of PMDD among students of Medical Sciences

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Abstract

Introduction: Premenstrual syndrome (PMS), is known as periodic changes in physical, cognitive, behavioral and mood condition. These change could be so sever to interrupt patient's daily life. If PMS causes disruption in family attendance of patients its name changes to premenstrual dysphoric syndrome (PMDD). Given the effects of menstrual disorders on women's life in our country we aimed to investigate the prevalence of PMDD among students of Zahedan University of Medical Sciences.

Material and methods: This was a cross-sectional study conducted on 193 students studying in Zahedan University of Medical Sciences on 2015. Data was collected through standard PSTT questionnaire. The validity and reliability of this questionnaire has proved in Iran. Finally after collecting the data they were analyzed by SPSS v.19 and through descriptive statistics, chi-square test, Fisher's exact test and t test.

Results: The mean age was 21.56±2.68 among respondents. There wasn’t any significant relationship between PMDD and bleeding time (P>0.05). There was a significant relationship between PMDD and family history (P=0.02). Moderate to severe irritability and nervousness (100%) and problems in relations with family members (97.1%) were the most common signs of PMDD in this study.

Conclusion: This study had shown that PMS has a high prevalence among students in Zahedan University of Medical Sciences. This should be reduced by increasing knowledge about these signs among students by teaching them about this matter. Proper therapeutic methods for these patients should be conducted to prevent more problems in PMDD.

Keywords: Premenstrual dysphonic syndrome, PMDD, Students, Zahedan.
Introduction
Discussing sexual concepts had always emotional reactions in our country. Women always expect their physicians to pay attention to their mental health as much as they pay attention to their physical health. Premenstrual syndrome was defined for first time by Frank in 1931. He introduced premenstrual reactions as a new concept and got famous with it (1). Premenstrual syndrome (PMS), is known as periodic changes in physical, cognitive, behavioral and mood conditions. These changes could be so severe to interrupt patient's daily life (2). If PMS causes disruption in family attendance of patients its name changes to premenstrual dysphoric syndrome (PMDD) (3). PMDD is a kind of mood disorder. The signs of this disorder actually start in middle or end of the second decade of life. Researchers believe that those who have the signs named above can be named PMDD patients just. Otherwise he will be named as a PMS patient. This is may be one the reasons that PMS is most common among women in comparison with PMDD (4). The scientific cause of PMDD remains unknown (5). But it can be actually related to the sex hormones (6). Sex hormones particularly estrogen and progesterone can have effect on nervous system function (7). Menstrual disorders cause a lot of problems for women any different conditions. Unfortunately women who suffer PMDD are more likely to get psychological disease (8). Premenstrual disorders are hardly diagnosed and treated. 3 to 5 percent of women who have an ovulation have shown the PMDD signs approximately. These signs include mood disorders also (3, 9, and 10). Some signs of this disorder are: depression, despair, fatigue, changes in appetite, loss of interest in usual activities, insomnia, difficulty concentrating, headaches and muscle and joint pain (11). The prevalence of PMDD was reported 9.4% in a study in Kermanshah (12). Some studies had shown that most of women Suicide, absence on job, escaping from school and even crimes were performed during the PMDD period (13). Given the effects of menstrual disorders on women's life in our country and also according to this that less studies in our country used PSTT tool for conducting studies in this field we aimed to investigate the prevalence of PMDD among students of Zahedan University of Medical Sciences.

Material and methods:
This was a cross-sectional study. The sample volume was calculated through formula written bellow according to Farhadinasab's (14) study. 
\[ n = \frac{z_{1-\alpha/2}^2 \cdot p(1-p)}{d^2} \]
According to this formula the minimum sample volume was 193. The samples were chosen randomly. Data were collected through a questionnaire included two parts. The first part included demographic information. Second part included PSTT standard questionnaire which its reliability and validity was proved in Iran through Cronbach's alpha and it was 0.9 (15). PSTT questionnaire includes 19 questions and two parts. The first part includes 14 questions about mood, physical and behavioral signs. The second part included 5 questions which determined the effect of these signs on subject's life. Each question was answered through four scales (never, mild, moderate and severe) which were scored from 0 to 3. For PMDD diagnosis 3 following conditions must be established:

- Form question 1 to 4 at least one of them must be sever
- From question 1 to 14 at least four of them must be moderate or sever
- In the second part of questionnaire (5 last questions) there should be at least one sever
For data collection at first the researcher explained the aims of study for the respondent. After noticing ethical considerations to the respondent he was asked to fill the questionnaire respectfully after completing their menstrual period. Finally after collecting the data they were analyzed by SPSS v.19 and through descriptive statistics, chi-square test, Fisher's exact test and t test.

**Results:**
The mean age of respondents was 21.56±2.68. There was not any significant relationship between mean age and PMDD. 17.6% of respondents suffered from PMDD. 87.6% were single and 12.4% were married. 40.4% of respondents had a family history of PMS. 12.4% of respondents had less than 4 days bleeding, 69.4% had between 4 to 7 days bleeding and 18.1% had more than 7 days bleeding. There was not any significant relationship between PMDD and marriage status and bleeding duration (P>0.05). A significant relationship was found between PMDD and PMS family history (P=0.02). Moderate to severe irritability and nervousness (100%) and problems in relations with family members (97.1%) were the most common signs of PMDD in this study. Moderate to severe insomnia (26.5%) and moderate to severe bulimia (41.2%) had the lowest prevalence.

The relationship between PMDD and marriage status, duration of bleeding and family history of premenstrual syndrome, are respectively inserted in Tables 1, 2 and 3.

**Table 1. Relationship between PMDD and marriage status. (Fisher's exact test)**

<table>
<thead>
<tr>
<th>Marital status</th>
<th>Total</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single</td>
<td>Married</td>
</tr>
<tr>
<td>PMDD Yes</td>
<td>30</td>
<td>4</td>
</tr>
<tr>
<td>% within ME</td>
<td>88.2%</td>
<td>11.8%</td>
</tr>
<tr>
<td>PMDD No</td>
<td>139</td>
<td>20</td>
</tr>
<tr>
<td>% within ME</td>
<td>87.4%</td>
<td>12.6%</td>
</tr>
<tr>
<td>Total</td>
<td>169</td>
<td>24</td>
</tr>
<tr>
<td>% within ME</td>
<td>87.6%</td>
<td>12.4%</td>
</tr>
</tbody>
</table>

**Table 2. Relationship between PMDD and duration of bleeding. (Chi-square test)**

<table>
<thead>
<tr>
<th>Bleeding duration</th>
<th>Total</th>
<th>Count</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Less than 4 days</td>
<td>4 to 7 days</td>
<td>More than 7 days</td>
</tr>
<tr>
<td>PMDD Yes</td>
<td>6</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>% within ME</td>
<td>17.6%</td>
<td>70.6%</td>
<td>11.8%</td>
</tr>
<tr>
<td>PMDD No</td>
<td>18</td>
<td>110</td>
<td>31</td>
</tr>
<tr>
<td>% within ME</td>
<td>11.3%</td>
<td>69.2%</td>
<td>19.5%</td>
</tr>
<tr>
<td>-------------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>Total Count</td>
<td>24</td>
<td>134</td>
<td>35</td>
</tr>
<tr>
<td>% within ME</td>
<td>12.4%</td>
<td>69.4%</td>
<td>18.1%</td>
</tr>
</tbody>
</table>

Table3. Relationship between PMDD and family history of premenstrual syndrome. (Fisher’s exact test)

<table>
<thead>
<tr>
<th>PMS family history</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMD Yes Count</td>
<td>20</td>
<td>14</td>
<td>34(17.6%)</td>
<td>0.02</td>
</tr>
<tr>
<td>% within ME</td>
<td>58.8%</td>
<td>41.2%</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td>PMD No Count</td>
<td>58</td>
<td>101</td>
<td>159(82.4%)</td>
<td></td>
</tr>
<tr>
<td>% within ME</td>
<td>36.5%</td>
<td>63.5%</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td>Total Count</td>
<td>78</td>
<td>115</td>
<td>193</td>
<td></td>
</tr>
<tr>
<td>% within ME</td>
<td>40.4%</td>
<td>59.6%</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

Discussion:
The results of present study had shown that 17.6% of respondents were suffering from PMDD. This result was consistent with Tabassum et al. (16) study which reported the prevalence of PMDD 18.2% and also Rojnić Kuzman and colleagues study which reported the prevalence of PMDD 17.24% (17). The prevalence of PMDD in present study was more than Wittchen and colleagues study (PMDD prevalence 9%), Alavi et al. (PMDD prevalence 4.3%) and Tatari’s study in Kermanshah (PMDD prevalence 9.4%) (18-20). These results can be concerning because PMDD can effect students’s life strongly. Facotrs such as Insecurity in socio-educational environment, family life and the psychological stress can result in intensification of PMDD symptoms (21). The prevalence of PMDD in present study was less than Nosrat's study (22.8%) and Bakhshani and colleagues study (57.7%) (22, 23). Scientists believe that negative attitude toward the menstruation made it a bad matter among people during the history. They believe that this negative attitude comes from our patriarchy society. Opinions which are against patriarchy must be improved in the society. So then studies can give accurate results about investigation of PMS and PMDD (1). The difference in the results of present study can be cause of this that present study was conducted on medical students who have enough knowledge about this issue. Positive attitude toward menstruation among medical students can be another reason for the difference in results of present study because a negative attitude toward menstruation can result in PMS signs and symptoms.

There wasn’t any significant relationship between PMDD and bleeding. Also there wasn’t any significant relationship between age and marriage status, and PMDD. While a significant relationship was found between PMDD and age in Nosrat’s study (22) which was not
consistent with our study. This difference can be cause of different tools used in two studies for data collection.

A significant relationship was found between family history of PMS and PMDD in present study which was consistent with Tatari et al. (20). In this research the results showed that those who didn’t have a family history of PMS had a higher rate of PMDD. This result was not consistent with present study. The number of respondents in two studies can be a reason for this difference. Kaplan mentioned the relation between family history of PMS and PMDD in his study (4). In Tatari's study (20) physical signs were more common than behavioral signs. While in present study Irritability, anger and disruption of communications, were more common. Historical reports had shown that women always got sensitive and aggressive when the menstruation was near. Hippocrates's medicine also proved the changes in mood during the menstruation (4).

Parent's educational status was not considered in this study then this was considered as a limitation for this study. May be the higher educational level in parents could give a better vision about menstruation to their girls to tell their menstrual disorders to parents instead of hiding it. Tatari et al. study had shown that PMS had a low rate among girls who had educated mothers. Another limitation for this study was the lack of an accurate tool for direct PMDD measurement. So self-reported method was used in this study.

Conclusion:

Paying attention to results of this study can help to improve social relations and life quality among students. The results of this study had shown that PMDD had a high prevalence among medicine students. Changes in mood in menstruation period must be considered and these changes shouldn’t be punished as indiscipline works in university. Improving public knowledge about these disorders and conducting much more investigations in this field can help us to prevent these disorders and cure them easily.

Competing Interests

The authors declare that they have no competing interests.

Acknowledgments:

This study was an outcome of a research project at the Zahedan University of Medical Sciences. Gratitude is expressed to medical students who participated in this study as well as university officials that assisted and supported scientifically and financially us for conducting this research.

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