Premenstrual Syndrome among Female University Students in Thailand

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Abstract

This paper presents the results of research of premenstrual syndrome (PMS) among female students at Assumption University in Bangkok, Thailand. A cross sectional descriptive survey, including a total of 266 female students between the ages of 16 and 35, was utilized. The subjects were selected using a simple random sampling technique. The mean age of the respondents was 20 years, and they represented all faculties at Assumption University, including the graduate school. The most common symptoms were breast discomfort/swelling, lower abdominal cramp, stress, irritability, depression, confusion, headache, sadness, weight gain, irritability, ineffective coping and conflicts with friends. Various drug and non-drug treatments were used for PMS including acetaminophen, sleep, exercise, vitamins and dietary changes. Age, sleep, stressful lifestyle and caffeine consumption were the most common factors associated with PMS symptom and severity. Although symptoms, severity and treatment strategies differ among women, it is clear that it affects their quality of life. Understanding the severity of PMS in reproductive age women is important in order to explore premenstrual dysphoric disorder (PMDD) and create treatment options. A suggestion for future study is to develop a prospective reporting method of PMS symptoms in Thailand.

Keywords: Breast discomfort, lower abdominal cramp, stress, irritability, depression, confusion, headache, sadness, weight gain, irritability, ineffective coping, lifestyle, socio-demographics.

Introduction

Premenstrual syndrome (PMS) is the name given to a collection of physical and psychological symptoms that some women experience during the late luteal phase of each menstrual cycle (7 to 14 days prior to menstruation). Symptoms seem to worsen as menstruation approaches and subside at the onset or after several days of menstruation. A symptom-free phase usually occurs following menses. The exact causes of PMS are not clearly understood but have been attributed to hormonal changes, neurotransmitters, prostaglandins, diet, drugs, and lifestyle. The PMS symptoms reported in the literature fall into three domains: emotional, physical, and behavioral. The most common emotional and mood-related symptoms of PMS include depression, irritability, tension, crying, over sensitivity (hypersensitivity), and mood swings with alternating sadness and anger. Physical discomforts include abdominal cramps, fatigue, bloating, breast tenderness (mastalgia), acne and weight gain. Behaviorally, symptoms include food cravings, poor concentration, social withdrawal, forgetfulness and decreased motivation. Research studies have reported up to 200 premenstrual symptoms of varying degrees of severity (Henderson 2000).

The severity of premenstrual symptoms varies widely from person to person. When premenstrual dysphoric disorder (PMDD), symptoms become severe they can interfere with daily life and cause severe disability. According to research, severe symptoms can affect work, school performance, and lead to problems/conflicts in interpersonal relationships. It has been found that mild to moderate symptoms can be relieved by various lifestyle changes. However, severe symptoms often require more aggressive treatment that requires
pharmacological intervention in addition to non-pharmacological treatments (Freeman and Sondheimer 2003). PMS has been studied and evaluated extensively in the West and only a handful amount of research studies have been conducted in Asia, particularly in China. However, no research studies on PMS have been conducted in Thailand. In order to promote the health and well being of reproductive age women in Thailand, it is imperative to understand whether PMS has an impact on their lives.

Methods

A descriptive cross-sectional survey was conducted by using a self-administered questionnaire. Development of the instrument was based on literature review, while three experts conducted validity testing. Reliability testing was performed among twenty Students from Bangkok University and Cronbach’s alpha value is 0.80.

The questionnaire was in English language since Assumption University (AU) is an international university. The first part of the questionnaire consisted of questions about socio-demographics and lifestyle. The second part of the questionnaire included an adaptation of the premenstrual assessment form (PAF) published by the American Academy of Family Physicians (Daugherty 1998). Students were asked if they experience any of the symptoms during the week prior to their period. The final portion of the questionnaire was composed of questions regarding severity of PMS symptoms and its treatment.

The study population consisted of 266 female students at AU in Bangkok, Thailand. The age of the participants ranged from 16 to 35; they were selected by utilizing the simple random sampling technique.

Written informed consent was obtained from the respondents before data collection. Descriptive statistics, frequencies and percentages were calculated. For hypothesis testing, multivariate (binary logistic regression) analysis and Chi square tests were carried out.

Results

The majority of the respondents was between the age of 16 and 20 (60.9%), and single (98.9%). Although the students were from each and every faculty of AU, 36.5% were Business Administration students, 19.9% were Nursing students, 10.2% were from Faculty of Arts, and 8.6% from Faculty of Law. Less than 7% each were from the Faculties of Architecture, Biotechnology, Communication Arts, Education, Engineering, Graduate School, Risk Management, and Science and Technology; 37.2% were first year students, 23.7% were fourth year, 22.9% were second year, 11.7% were third year, and 4.5% were graduate students; 83.5% were Thai, around 5% each were Chinese and Burmese, less than 2% each were Bhutanese, Indian, Bangladeshi, Japanese, Vietnamese, Turkish, mix Thai German and mix Thai American; 83.5% were Buddhist, 8.6% were Christian, less than 4% each were Islam and Hindu.

Among the respondents, 12% reported having a stressful lifestyle. Around 40% of the respondents had the habit of taking caffeine, 50% had the habit of drinking tea. Almost 60% of the respondents got enough sleep. 22.9% of the respondents used evening primrose oil (EPO). Although only 1% of the respondents were married, 9.8% admitted the use of oral contraceptive pills.

Almost 60% of the respondents expressed breast pain and discomfort during the premenstrual period. Around 50% complained of lower abdominal cramp or discomfort, headache, and increasing stress before period. Around 40% of the respondents noticed that sadness, depression, confusion, weight gain, irritability and conflicts with friends / boyfriends were common before menstruation. Less than 30% reported high rate of anxiety, withdrawal feeling, ineffective coping, and bloated body image. 28% of the respondents suffered these symptoms before every period.

A total of 41% of the respondents had symptoms with mild severity that is the symptoms were present but not a problem and did not interfere with daily functioning. But 53% reported moderate PMS symptoms with
significant discomfort. 6% of the respondents reported severe PMS symptoms interfering daily function (such as school performance, interpersonal relationships). When they noticed the symptoms, 41.4% of the PMS victims used Paracetamol, 24.4% used Ponstan, and 3.4% used Advil. Other non-pharmacologic treatments were sleep (75.9%), exercise (23%), and dietary change (10%).

Table 1 describes that the older age is associated with less severe symptoms (p value 0.02) There was also a significant association between younger women and breast discomfort or swelling (p value 0.001) The significant association was found between more severe PMS symptoms and not getting enough sleep (p value 0.001) (Table 2). There were significant associations between stressful lifestyle and depression (p value 0.012) and withdrawal mood (p value 0.02) during premenstrual phase. Taking caffeine is directly associated with breast discomfort and pain before period (p value 0.001) (Table 3). Tea consumption is significantly associated with lower abdominal discomfort or cramp before menstruation (p value 0.04). The use of oral contraceptive pill is significantly associated with increased rate of depression (p value 0.000) and conflict with peers/friends (p value 0.003) during premenstrual period. Not getting enough sleep is significantly associated with anxiety (p value 0.001), depression (p value 0.021), increased conflicts (p value 0.000), and ineffective coping (p value 0.006) before menstruation. A statistically significant association was found between the age of the respondents and the use of medications for PMS symptoms (p value 0.006). The younger women rely more on medications to relieve the symptoms than the older age group. A significant association was found between those with severe symptoms and taking pharmacologic treatment (p value 0.000).

**Discussion**

This study was limited to AU students in Bangkok and does not represent the whole female university student population in Thailand. Since the topic is sensitive for the Asian culture, some respondents might not want to reveal their real personal problems. The use of retrospective questionnaires is not the best method for data collection of PMS symptoms. The ideal way is by the prospective logging of symptoms by the respondents over at least two cycles.

The results from the self-reported questionnaire indicate that PMS is very common among females at AU. According to the data, more than 98% of the respondents indicated one or more PMS symptoms. However, only 28% reported feeling of PMS symptoms before every period. This result is consistent with previous research studies showing that 25 to 95% of women suffer from PMS (Dickerson et al., 2003). Estimates of PMS vary substantially in the research literature because of the differences in instruments, symptom’s patterns, the number of symptoms reported and the use of prospective or retrospective protocols. In addition, the research literature does not agree as to the number of symptoms that must be present to warrant a diagnosis of PMS. However, in spite of these inconsistencies, it is apparent from our sample population that the reproductive age of women in Thailand suffer PMS and it interferes with daily functioning among 6% of the respondents. These data supports the previous research studies conducted in the United States, showing that severe PMS or PMDD occurs in 2 to 10% of the population (Bhatia and Bhatia 2002).

From the survey, the only socio-demographic factor associated with severity and treatment of PMS is age. According to the research literature on PMS, the symptoms are more severe for women as they get older, especially between the ages of 20-35. (Freeman et al., 1995) But from our sample population, the symptoms are more severe among 16-25 years of age. This raises the question “under what conditions can PMS symptoms be more severe in younger age group?” Younger women in our study were more likely to complain of breast pain, discomfort, swelling, and tenderness when compared to older women.

This association, however, has not been proven by previous research yet. In general, research indicates that breast swelling during
Table 1. Severity of PMS symptoms and Socio-demographic characteristics*

<table>
<thead>
<tr>
<th>Socio-demographic characteristics</th>
<th>Modeled coefficient (B)</th>
<th>Wald</th>
<th>P value</th>
<th>Modeled odds ratio for more severe symptoms (Exp B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-25 years of age</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>25-35 years of age</td>
<td>-2.13</td>
<td>5.28</td>
<td>0.02</td>
<td>0.11</td>
</tr>
</tbody>
</table>

* The non-significant variables were marital status, GPA, year of study, faculty, nationality, and religion. “B” is the modeled coefficient or regression coefficient. The characteristics *® indicates the reference group.

Table 2. Severity of PMS symptoms and Lifestyle*

<table>
<thead>
<tr>
<th>Lifestyle</th>
<th>Modeled coefficient (B)</th>
<th>Wald</th>
<th>P value</th>
<th>Modeled odds ratio for more severe symptoms (Exp B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enough sleep®</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Not enough sleep</td>
<td>0.88</td>
<td>10.23</td>
<td>0.001</td>
<td>2.42</td>
</tr>
</tbody>
</table>

* The non-significant variables were stressful lifestyle, drinking tea and caffeine, taking sweet and salty food, physical exercise, smoking, and using oral contraceptive pills and using evening primrose oil. “B” is the modeled coefficient or regression coefficient. The characteristics “®” indicates the reference group.

Table 3. Association between caffeine consumption and breast discomfort/pain

<table>
<thead>
<tr>
<th>Caffeine consumption</th>
<th>Breast discomfort</th>
<th>Total n (%)</th>
<th>Chi-square</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes n (%)</td>
<td>No n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes (%)</td>
<td>73 (70.9)</td>
<td>30 (29.1)</td>
<td>103 (100)</td>
<td>10.36</td>
</tr>
<tr>
<td>No (%)</td>
<td>83 (50.9)</td>
<td>80 (49.1)</td>
<td>163 (100)</td>
<td></td>
</tr>
</tbody>
</table>

premenstrual period tends to affect women of child bearing age. The association between age and drug treatment for PMS was significant. The younger women in our study were more likely to take drugs like Paracetamol or Ponstan for the treatment of certain PMS symptoms compared to older respondents in our study. Although there is no research to support this association, it indicates the need for further exploration of drug treatment of PMS among reproductive age women in Thailand.

There were some associations between lifestyle factors and PMS. Students with breast discomfort were more likely to take caffeine compared with those having mild symptoms. The association supports a study conducted by Rossignol (1985) who pointed out that caffeine consumption was strongly related to the presence of PMS. Women with stressful lifestyles were more likely to complain of depression and withdrawal mood during the premenstrual phase than those without stress. Research studies have shown that chronic stress can exacerbate PMS symptoms and some claim that PMS, itself, is a stress related phenomenon (Deuster et al., 1999). The use of oral contraceptive worsens depression and increases conflicts among the respondents. Literature shows that current contraceptive use is associated with an increase rate in depression, divorce, suicide and other violent and accidental deaths (Robinson et al., 2004). With regards to sleep, females with mild symptoms reported adequate sleep at a higher rate than those with severe symptoms. According to the research literature, women with PMS may suffer from sleep difficulties like insomnia or
excessive sleepiness and are encouraged to establish regular sleeping patterns (Moline and Zendell 2000). Inadequate sleep was also associated with ineffective coping, anxiety, depression, and increased conflicts. Although previous research findings on PMS do not include these associations, treatment guidelines by the American Academy of Family Physicians and the American College of Obstetrics and Gynecology recommend adequate sleep as one of the lifestyle alterations used to treat PMS (Dickerson et al., 2003). Interestingly, 76% of the students in our study use sleep as a treatment for PMS. In fact, it is the most commonly reported treatment in this study.

Conclusion and Recommendations

This study was a preliminary examination of PMS prevalence in Thailand. Socio-demographic and lifestyle factors related to PMS prevalence and severity were examined, along with treatment strategies for PMS symptoms. Although a full grasp of the concept of PMS in Thailand has not been covered, this study revealed that university aged women have symptoms similar to those in Western countries and some report so severe symptoms that they interfere with daily functioning. In addition, several associations were found between PMS symptoms and the various factors including socio-demographic and lifestyle factors, such as stress and adequate sleep. Socio-demographic factor, particularly age is a non-modifiable factor, but lifestyle factor is the one they can modify to relieve the symptoms. Therefore, this paper wants to suggest that changes in lifestyle factors may be an important approach for dealing with problematic PMS symptoms.

Since this research study is one of the first to investigate PMS in Thailand, there is need for further research aimed at understanding symptoms of PMS and its effect on different populations within Thailand. Understanding the severity of PMS among university students in Thailand is important in order to explore PMDD and create treatment options. As researchers, we need a better understanding of Thai women’s beliefs and attitudes about menstruation and premenstrual syndrome in order to conduct studies using culturally sensitive instruments that would assess PMS in Thailand. In addition, a suggestion for future studies is to develop a prospective reporting method of PMS symptoms. Furthermore, future research should be aimed at various populations within Thailand that include non-university and minority populations.

References