

Insomnia in University Students with Premenstrual Syndrome and Dysphonic Disorder

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ABSTRACT

The common sleep problems associated with PMS and PMDD are sleep onset insomnia, frequent night time awakenings, and non-restoration of sleep. These sleep related problems also have daytime consequences in the form of poor concentration, daytime sleepiness, decreased alertness and poor performance at work. This study has been undertaken to understand the effects of problems associated to menstrual cycle like PMS and PMDD on insomniac conditions in women under the age group of 15-25 years, all of which were university students. The students were to answer a questionnaire, asking them of various questions related to the period cycles and sleeping hours, keeping their personal information protected. The survey also contained questions which are generally asked to patients in the diagnosis of PMS and PMDD. This study has been carried out on the basis of the answers received through the survey, and then producing a statistical data and analyzing it. It concludes that 75% of students of different age groups were experiencing symptoms similar to PMS and PMDD which lead them to suffering from insomniac conditions which generally interfered with their daily student activities.

Keywords: Insomnia, Luteal, Menstrual cycle, Ovulation, PMDD, PMS, Sleep, Women, Follicular, Hormone,

INTRODUCTION

The menstrual cycle is a natural process. It is a complex cycle controlled by female hormones that cause regular bleeding (periods). The menstrual cycle has four phases: menstruation, the follicular phase, ovulation and the luteal phase. Premenstrual syndrome (PMS) encompasses clinically significant somatic and psychological manifestations during the luteal phase of the menstrual cycle, leading to substantial distress and impairment in functional capacity. These symptoms disappear within a few days of the onset of menstruation.[1]. About 20% of women experience symptoms severe enough to disrupt their daily activities, and the remaining have mild to moderate symptoms. Symptoms of PMS include changes in appetite, weight gain, abdominal pain, back pain, low back pain, headache, swelling and tenderness of the breasts, nausea, constipation, anxiety, irritability, anger, fatigue, restlessness, mood swings and crying [1].

The premenstrual dysphoric disorder (PMDD) is a more severe form of the same, which has been included as a psychiatric disorder in the fifth edition of the diagnostic and statistical manual for mental disorders (DSM-5) [2]. The exact cause of PMS is not clear, but we do know that levels of estrogen and progesterone drop during the week before your period.

Many doctors believe this decline in hormone levels triggers the symptoms of PMS. PMS symptoms are closely linked to changing levels of estrogen, serotonin, and progesterone: Estrogen rises during the first half of the menstrual cycle and drops during the second half. In some women, serotonin levels stay mostly steady. But in women with PMS, serotonin drops as estrogen drops. Changes in brain chemicals or deficiencies in certain vitamins and minerals may also play a role.

Women with PMDD experience anger, irritability and other mood symptoms six days prior to menses, with a peak in severity two days prior to menses.

While symptoms can carry over into the next menstrual cycle, a diagnosis of PMDD requires freedom from symptoms during the pre-ovulatory period [3]. The common sleep problems associated with PMDD are sleep onset insomnia, frequent

night time awakenings, and non-restoration of sleep. These sleep related problems also have daytime consequences in the form of poor concentration, daytime sleepiness, decreased alertness and poor performance at work [4].

The etiology of PMDD is complicated by the fluctuations of hormonal levels during the normal menstrual cycle. In the luteal phase, there is an increased level of progesterone and decreased level of its metabolite, allopregnenalone, which can cause increased sleep disturbances.

Allopregnenalone increases dopamine levels thus leading to an increased anxiety state, which could cause sleep disturbances. Patients also experience daytime sleepiness, tiredness and fatigue [3]. The following study has been done on the bases of a questionnaire answered by women between the ages of 17-25years whom are mostly university students. This questionnaire quizzes them on the physical and psychological changes they observe within themselves before, during and after their menstrual cycle, and how much of their daily working hours and activities contribute to the changes they observe.

MATERIAL AND METHOD

The following study has been undertaken to understand the effects of the physical and psychological changes in connection with menstruation leading to insomnia. Insomnia is a condition caused due to stress, concerns about work, school, health etc.

Through this research we have attempted to understand how menstrual symptoms can lead to insomnia through an online questionnaire format via. Google forms wherein the subjects of this research had to answer multiple choice as well as subjective questions.

The subjects for the research were selected on the basis of them being university students in Mumbai and fall under the age group of 15 to 25 years of age. The study aims to quantify the effects of their daily student activities along with menstrual problems leading to them experiencing symptoms implying that they may be suffering from insomnia.

The respondents had to answer a questionnaire where they were asked various questions inquiring about the physical and psychological changes they observed before, during and after their individual period cycles.

The questions to be answered by the respondents included generic questions inquiring them about their current age, the age at which they first began their period cycle and their academic working hours and questions specific to their menstrual cycle.

Respondents were asked whether they experienced the following symptoms before starting their period cycle as well as if they experienced the same symptoms 3 days after finishing their cycle, the symptoms were namely;

- Symptoms of anger or irritability.
- Anxiety or tension.
- Difficulty in sleeping.
- Increased sensitivity.
- Abdominal pain, feeling depressed.
- Bread tenderness, abdominal swelling and bloating.
- Headache and lesser gain of appetite.

The other questions were inquiring about the hours of sleep they would get a few days leading to, during and after their menstrual period as well as if their cycle interfered with their work.

With the approximately 150 responses received we can estimate quantitatively, the effect menstruation has on insomnia in women.

Observation

Have menstrual problems ever interfered your work ?

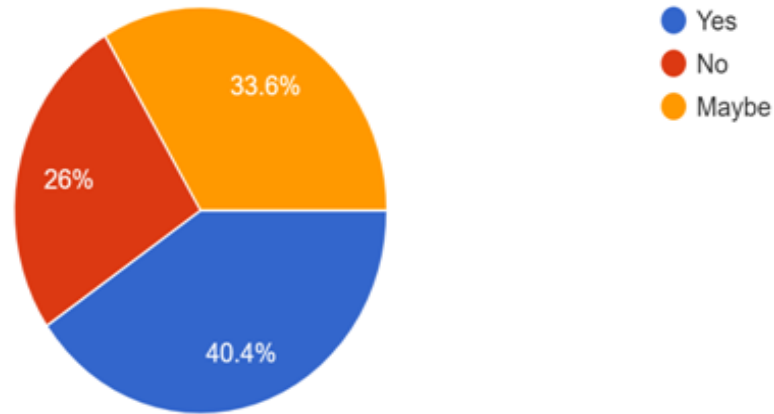


Figure 1 -Graph Showing 40% of the Students Claim That Period Problems Do Interfere and Cause Hiderency in Their Student Activities

Do you [or did you] usually experience the following symptoms the days before or around your menstrual periods ?

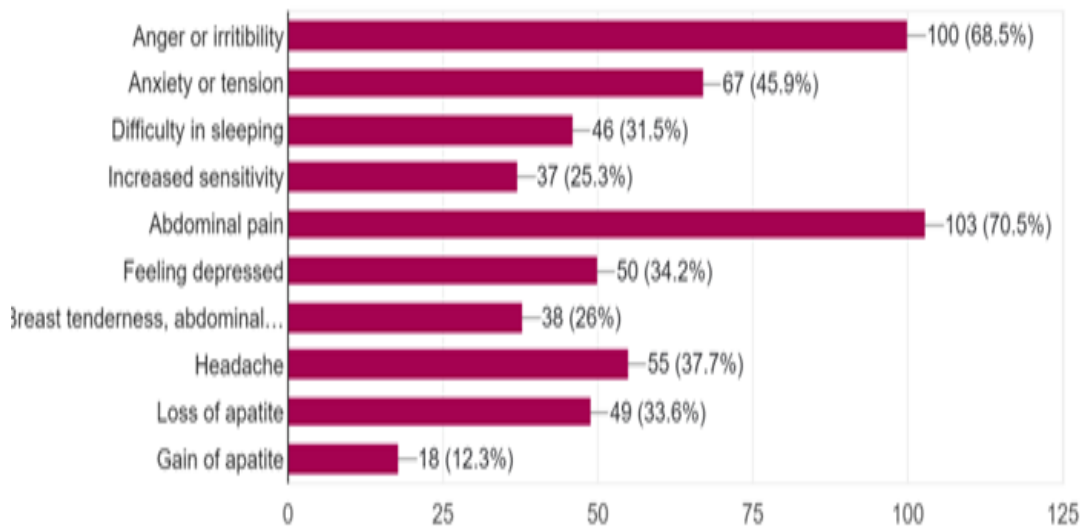


Figure 2-The Graph Shows Students Experiencing Varying Symptoms Like Anxiety ,Anger, Irritability, Sleep Problems, Breast Tenderness, Loss or Gain of Appetite Etc Before Beginning Their Menstrual Cycles Which are Diagnostic Symptoms for PMS And PMDD

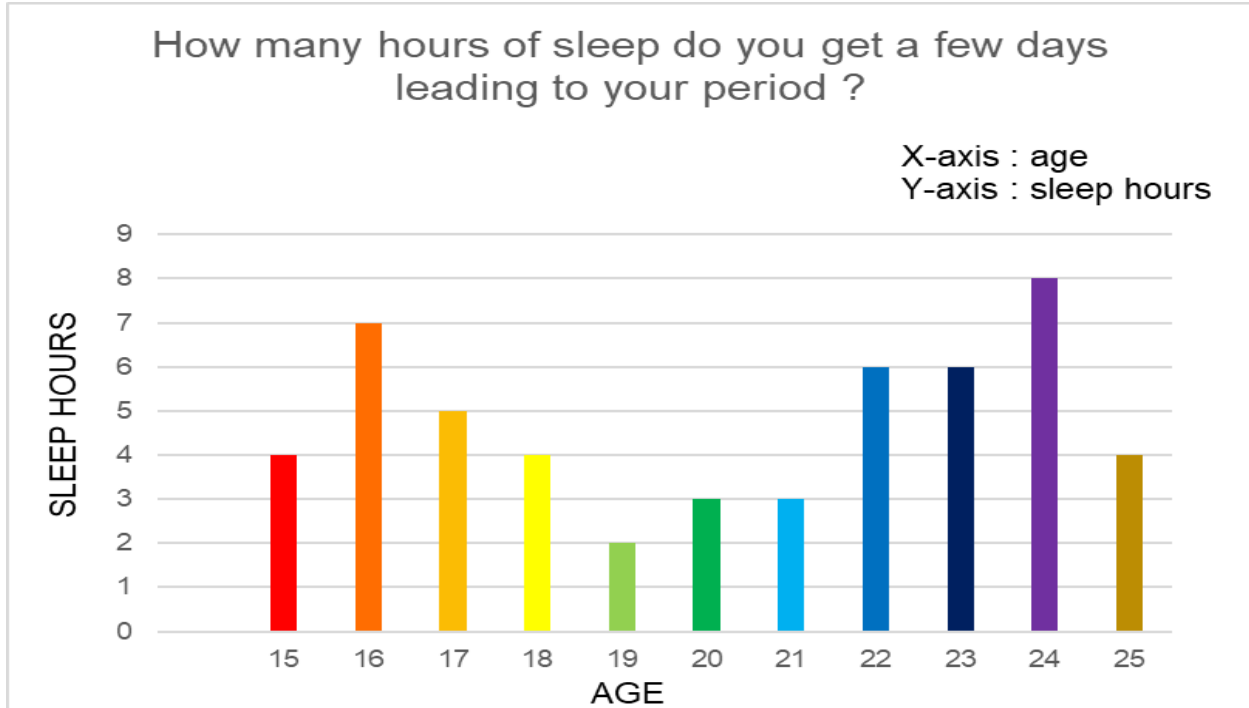


Figure 3-The Above Graph Has Been Acquired By Calculating A Mean of The Hours of Sleep Each Age Group Obtains A Few Days Leading To Their Period Cycles Which Ranges Between 0-8 Hours of Sleep. Where the Student under the Ages 15 to 25 Are Obtaining Below Average Hours of Sleep during Their Periods That Is., They Are Experiencing Insomnia Conditions

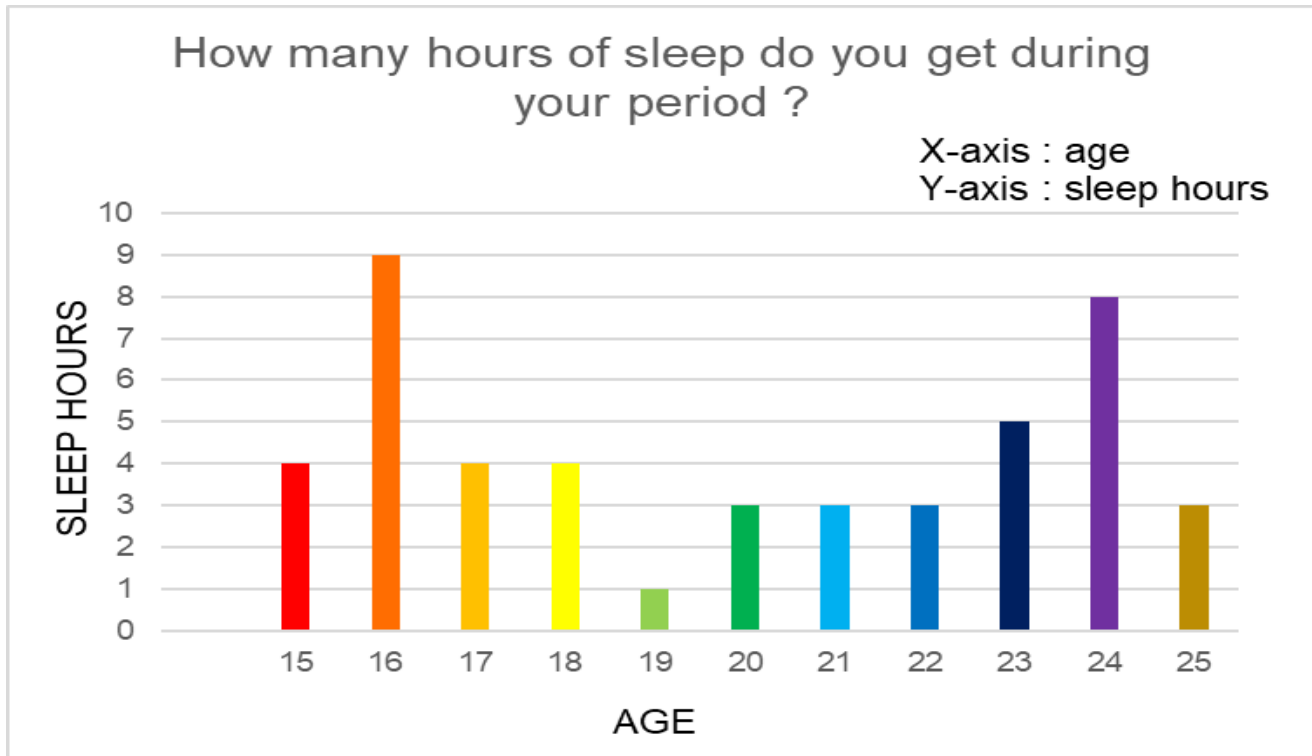


Figure 4-The above graph has been acquired by calculating a mean of the hours of sleep each age group obtains during their period cycles which ranges between 0-9 hours of sleep. Where the student living under the ages 15 to 25 are obtaining below average hours of sleep during their periods that is, they are experiencing insomniac conditions

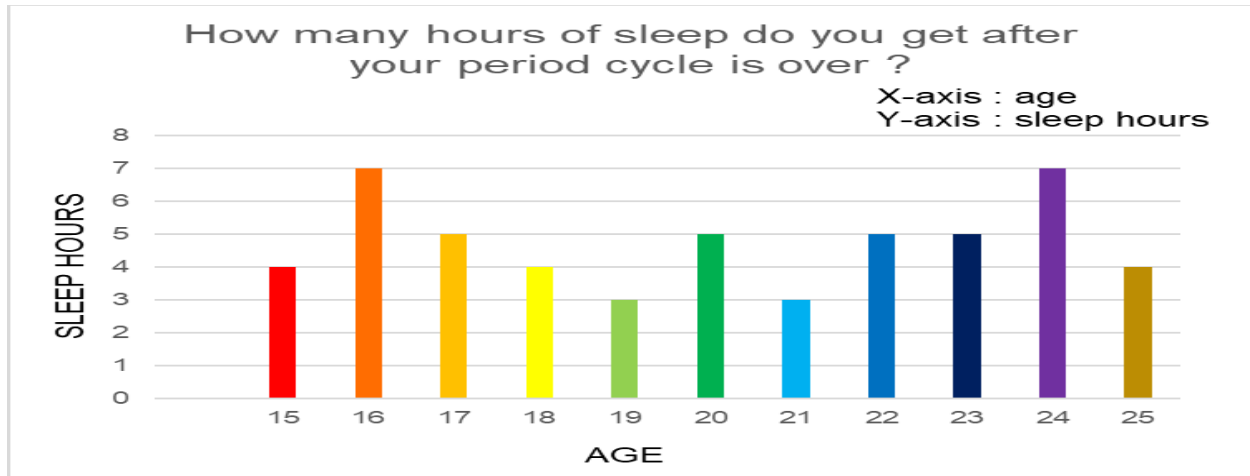


Figure 5- The above graph has been acquired by calculating a mean of the hours of sleep each age group obtains after their period cycles are over which ranges between 0-7 hours of sleep. Where students falling under the ages 15 to 25 years are obtaining below average hours of sleep after their periods that is, they are experiencing insomnia conditions

CONCLUSION

PMS and PMDD are a cluster of symptoms which usually occurs one week before the menstrual cycle. Symptoms include depressed mood, anxiety, sudden tearfulness, irritability, sleep disturbances, breast tenderness and bloating. This study concludes that 40% students are experiencing problem in acquiring less sleep hours during periods and before periods as compared to after periods. These sleep related problems also have daytime consequences in the form of poor concentration, daytime sleepiness, decreased alertness and poor performance at work.

According to this data, 75% of students with PMS and PMDD having insomnia symptoms before their periods due to that serious anxiety and depression is increased because of progesterone level is increasing and allopregnenalone is decreasing.

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