

# Prevalence of Sleep Disturbances in Menstrual Cycle Irregularities: A Pilot Study

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## ABSTRACT

**Introduction:** The poor sleep pattern of adolescents may disturb circadian rhythm which affect the menstrual cycle of female adolescent. Thus this study aimed to find out the prevalence of sleep disturbances in Menstrual Cycle Irregularities among female students of Adesh University Bathinda.

**Materials and Methods:** The current study was conducted in female students of Adesh University Bathinda and 100 subjects were included on the basis of inclusion and exclusion criteria. Self administered Questionnaire was used to assess prevalence of sleep disturbances in menstrual cycle irregularities. The data was collected and percentage analysis was used to interpret the results.

**Result:** Duly filled Questionnaire was analyzed for each component. 11 questions were asked from 100 subjects, the result showed that 47% are taking 4-7 hour sleep during menstruation, 64% were feeling trouble in falling asleep at night, 66% female students did not have sound sleep during Menstruation and 61% were having breaks in between sleep at night.

**Conclusion:** Current study concluded that most of female students were having disturbed sleep during menstrual cycle irregularities and they were also having breaks during sleep and trouble falling asleep at night.

**Keywords:** Menstrual cycle, Irregularities, Sleep Quality, Sleep Disturbance, Prevalence

## INTRODUCTION

Menstrual cycle is a normal physiological process that shows periodic and cyclic shedding of progestational

endometrium followed by blood loss. The 28 day's cycle is normal part of women's life as it releases the hormones and renewal of uterine lining occurs during menstrual cycle.<sup>1</sup> The hormonal changes in uterus and ovary during menstrual cycle are indispensable for sexual reproduction and it prepares the uterus for pregnancy with the production of eggs.<sup>2</sup>

There are various menstrual disorders in which problems vary from heavy painful periods to no periods at all but the women should worry in three conditions if periods come fewer than 21 days or the gap of three months in periods or if periods remain more than 10 days.<sup>3</sup> Due to an ovulatory cycles during first year of menarche the menstrual cycles are irregular. The problem with menstrual irregularities includes hyper or hypo menorrhagia, poly and oligomenorrhagia, dysmenorrhagia, amenorrhagia, menorrhagia and premenstrual syndrome.<sup>4</sup>

As the irregularities becomes the major problem in adolescence age along with physiological variations the following factors are considered responsible for irregularities like environmental factors, nutritional, drugs, poor sleep quality, physical activity and stress.<sup>5</sup>

The prolonged and heavy bleeding in irregular periods leads to iron deficiency anemia in rare cases blood transfusion is also required.<sup>6</sup> Irregular cycles are the major source of anxiety, especially in adolescent girls. There is difficulty in assessing the

young girls as most of the girls do not share their gynecological problems with their parents and some young girls even do not know that they have irregular cycle or missed cycles which may be a major attributable to underlying health issues.<sup>7,8</sup> it also have impact on mental health and associated with symptoms of depressive disorders which ultimately effects the quality of life, academic performance and psychological functions<sup>9,10,11,12</sup>

Recently the sleep is gaining attention to be associated with menstrual cycle irregularities. The previous studies also shows the association of poor sleep quality, premenstrual and menstrual phases.<sup>13</sup> So the current study has been conducted to check the prevalence of sleep disturbances in menstrual cycle irregularities so as to get the database for general awareness of women for the prevalence of sleep disturbances in menstrual cycle irregularities.

## MATERIAL AND METHODS

A pilot study was done on 100 participants for which the approval was taken from ethical committee of Adesh University. The female subjects with

menstrual cycle irregularities were included in the study. The verbal and written consent was taken from the subjects. The subjects who were taking medication for irregularities, pregnant and breast feeding subjects and the subjects who were taking sleeping pills were excluded from the study. The self structures questionnaire was distributed among the subjects and dully filled questionnaire was collected and analyzed

Statistical methods: The statistical analysis of data collected was done using mean percentage to check the prevalence of sleep disturbances during menstrual irregularities.

## RESULTS

The data collected from self structured questionnaire was analyzed for each component and it shows that only 47% subjects were taking 4-7 hours sleep daily whereas 64% subjects were having trouble in falling asleep at night and 66% do not have sound sleep and 61% had breaks during sleep in the night. 63% were feeling depressed, teary or sad. 63% were having anxiety and 54% were feeling frizzy in head at the time of menstruation.

Sr. No	Questions	Yes	No
1.	Sound Sleep	34%	66%
2.	Breaks during sleep	61%	39%
3.	Trouble falling asleep	64%	36%
4.	Depressed, Teary or sad during menstruation	63%	37%
5.	Anxiety, worry or panicky during menstruation	63%	37%
6.	feeling fuzzy in head at times during menstruation	54%	46%
7.	Irregular menstruation cycle due to disturbed sleep	60%	40%
8.	Menstrual cycle generally shorter than 26 days	36%	64%
9.	menstrual cycle generally longer than 31 days	51%	49%
10.	Miss periods or break between periods	53%	47%

## DISCUSSION

The study was done on students of Adesh University with the main objective to find the prevalence of sleep disturbances in menstruation cycle irregularity. The results of the study showed that 66% subjects were not having good sleep during menstruation and 61% were having breaks in between sleep at night. Whereas 64% had trouble in falling asleep at night. Proper sleep is necessary for good physiological

functioning of the body. The poor sleep affects both mood and menstrual cycle regularity which are necessary for normal development in females.

The population based cross sectional study done by Kim T. et.al in 2017 on association between sleep duration and menstrual cycle irregularity in Korean adolescents in which they found negative correlation between sleep duration and menstrual cycle irregularity as menstrual

cycle irregularity decreases with increased sleep duration.<sup>14</sup>

Menstrual problems may affect girls' sleep and increase risk of sleep disturbance because both sleep and menstruation are associated with the hypothalamic-pituitary axis activities<sup>15,16</sup> and because sleep disturbance and mental health problems are bidirectional.<sup>17,18</sup>

Another study conducted by Liu Xianchen et.al on Early Menarche and Menstrual Problems association with Sleep Disturbance in Chinese Adolescent Girls and they found that that irregular periods and period pain appear to be associated with sleep disturbance and that early menarche may have short-term impact on sleep in adolescent girls.<sup>19</sup> The results of this study support the results of current study.

## CONCLUSION

The current study concluded that most of the female students experiencing menstrual cycle irregularity have disturbed sleep and they also have breaks during sleep and trouble falling asleep. The current study highlights the importance of adequate sleep duration in menstrual cycle irregularities in females. A replication study is needed to increase the reliability and validity of findings of the current study. Specific interventions to increase the sleep duration are required at large scale.

**Conflict of Interest:** Nil

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