

## Original Research Article

# Prevalence of menstrual morbidity in adolescents girls: a cross sectional study

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## ABSTRACT

**Background:** Menstruation is said to be a physiological process in women. The word 'menstruation' was derived from a Latin word 'menses'. Menstrual dysfunction was found to affect 75% of adolescent girls which includes dysmenorrhoea, menorrhagia and irregular cycles. Premenstrual syndrome constitutes a group of physical and emotional symptoms which occurs one week before menstrual cycle. It was found to be a cycle disorder which appears in the luteal phase. Adolescent girls are at high risk of developing premenstrual syndrome. Because of menstrual dysfunction and premenstrual syndrome, the adolescent girls are at high risk of menstrual morbidity.

**Methods:** After getting approval from institutional ethical committee of Madras Medical College, the study was carried out in adolescent girls. The study was carried out by giving questionnaire in nearly 505 students for the duration of 6 months. The study participants were explained about the study. The questionnaire was structured so as to obtain information regarding the age at menarche, duration of cycle, awareness about menstruation, source of information regarding menstruation, practices during menstrual cycles, regarding menstrual problems and treatment practices.

**Results:** The average age of participants was 17 years with an SD of 1.5. of 505 participants, about 6% had 45 days frequency, 10% had 38 days frequency and 2% had 60 days frequency of menstrual cycle. It was found around 1% had 8 days duration and 3% had 9 days duration of menstrual cycle. About 13% of Participants had mild flow, 7% had severe flow and 20% had variable quantity of menstrual flow.

**Conclusions:** From this study, it was found that menstrual dysfunction were prevalent among adolescent girls. These were found to cause menstrual morbidity among adolescent girls. Hence it is necessary to educate and create awareness about menstrual morbidity among adolescent girls.

**Keywords:** Adolescent girls, Menstrual dysfunction, Menstrual morbidity, Premenstrual syndrome

## INTRODUCTION

Menstruation is said to be a physiological process in women. The word 'menstruation' was derived from a Latin word 'menses'. Menstrual dysfunction was found to

affect 75% of adolescent girls which includes dysmenorrhoea, menorrhagia and irregular cycles. They frequently visit the physician for these problems. Premenstrual syndrome constitutes a group of physical and emotional symptoms which occurs one week before

menstrual cycle. It was found to be a cycle disorder which appears in the luteal phase. Adolescent girls are at high risk of developing premenstrual syndrome.

Premenstrual syndrome and premenstrual dysphoric disorder were listed under the heading of Premenstrual Tension Syndrome in ICD-9 code 625.4 by World Health Organisation's International classification of diseases. Commonly reported psychological symptoms of premenstrual syndrome are irritability, anxiety, depression, mood swings, sleep disturbances and headache. Physical symptoms which are commonly reported due to premenstrual syndrome are abdominal bloating, abdominal cramps, breast tenderness, low back ache, craving for carbohydrate rich food, diarrhea, constipation and acne. The symptoms are usually non-specific, and it varies from woman to woman and also from cycle to cycle.

These symptoms must be reported for at least two cycles and must resolve within 4 days of onset of menses.<sup>1</sup> These symptoms were found to interfere with normal day to day activities of adolescent girls. The symptoms of premenstrual syndrome usually subside with the onset of menstrual flow. Women whose mothers report premenstrual syndrome at are high risk of developing premenstrual syndrome.<sup>2,3</sup> More severe form of premenstrual syndrome was said to be premenstrual dysphoric disorder. Primary symptoms of PMDD include marked depression, anxiety, affective lability and increased interpersonal conflicts. These symptoms of PMDD should not occur as an exacerbation of another psychiatric condition.<sup>4</sup> The pathophysiology of premenstrual syndrome was found to be due to interaction between sex steroids and central neurotransmitters.<sup>5</sup> Women with premenstrual syndrome has normal levels of sex steroids, estrogen and progesterone which are subjected to fluctuations. These fluctuations are related to serotonin.<sup>6</sup> Not every woman responds to selective serotonin reuptake inhibitors since many other factors are involved in the pathophysiology of premenstrual syndrome.<sup>7-9</sup> Hence it is considered to be a multifactorial syndrome.

In developing countries, menstrual morbidities are an area of unmet needs for reproductive health services.<sup>10</sup> There are limited researches regarding the reproductive health of adolescent girls of rural setup. It is very necessary to educate adolescent girls regarding premenstrual syndrome to improve their quality of life. Hence a proper education program about menstrual dysfunction is needed. Aim and objectives of the study was to determine the prevalence of premenstrual syndrome and menstrual morbidity among adolescent girls.

## METHODS

This was a cross sectional study and was carried out in 505 adolescent girls after getting approval from institutional ethical committee of Madras Medical

College by giving questionnaire for the duration of 6 months between January 2015 to June 2015. The study participants were explained about the study. A prior written informed consent was obtained from the study participants. Questions were provided to them in their regional language also, for better understanding.

### Inclusion criteria

- Normal and healthy adolescent girls
- Age: 16 to 19 years

### Exclusion criteria

Adolescent girls who had;

- Chronic illness
- Surgical conditions
- Bleeding disorder
- Mental illness

The subjects were informed about the confidentiality of the information collected by us, so as to get appropriate and reliable answers from them. The study tool used was a pre-designed, pre-tested, semi-structured and self-administered questionnaire on menstrual cycle. The questionnaire was structured so as to obtain information regarding the age at menarche, duration of cycle, awareness about menstruation, source of information regarding menstruation, practices during menstrual cycles, regarding menstrual problems and treatment practices.

### Statistical analysis

The data obtained were analyzed using Statistical Package for Social Sciences (SPSS) version 20. The categorical variables were expressed in percentage.

## RESULTS

The data obtained was analyzed using SPSS software version 20. The average age of participants was 17 years with an SD of 1.5. of 505 participants, 41% had 30 days frequency of menstrual cycle, 4% had 35 days frequency, 12% had 28 days frequency, 8% had 26 days frequency, 8% had 27 days frequency of menstrual cycle (Figure 1). About 6% had 45 days frequency, 10% had 38 days frequency and 2% had 60 days frequency of menstrual cycle (Figure 1).

Figure 2 shows that around 22% of the participants had 3 days duration, 23% had 4 days duration, 35% had 5 days duration, 8% had 6 days duration and 6% had 7 days duration of menstrual flow. It also shows that around 1% had 8 days duration and 3% had 9 days duration of menstrual cycle. Figure 3 shows that around 61% of participants had moderate quantity of menstrual flow. It also shows that 13% of Participants had mild flow, 7% had severe flow and 20% had variable quantity of menstrual flow.

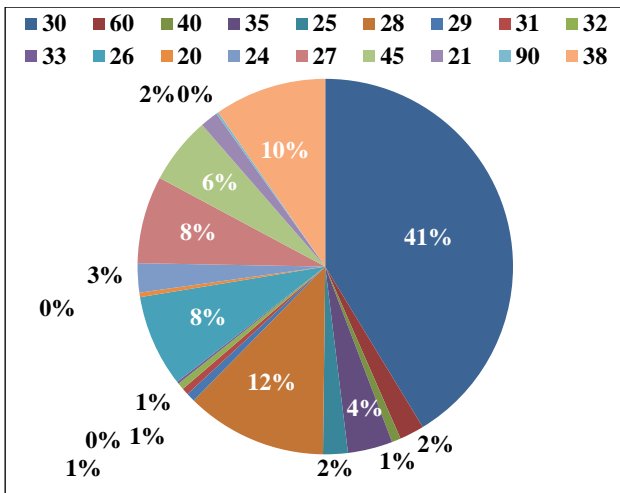


Figure 1: Frequency of menstrual cycle.

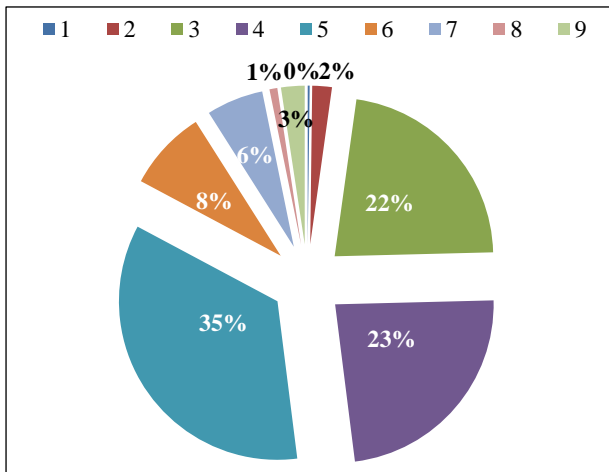


Figure 2: Duration of menstrual flow.

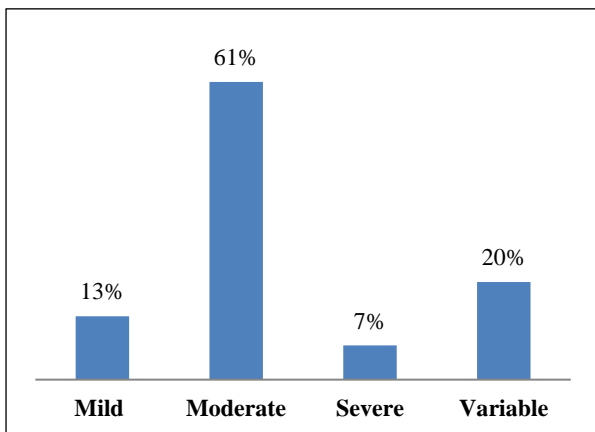


Figure 3: Quantity of menstrual flow.

Similarly, prevalence of premenstrual symptoms was calculated to determine the prevalence of premenstrual syndrome. Figure 4 shows that 17% had tiredness, 8% had breast pain, 2% had frequent vomiting, 8% had headache, 6% breast engorgement, 11% had feeling

heaviness, 4% had vomiting, 6% had irritability, 8% had depression, 7% had sleep disturbances.

Also, the symptoms during menstruation was calculated to determine the prevalence of menstrual dysfunction. Figure 5 shows that 9% of the participants had abdominal pain, 3% had increased urine frequency, 8% had headache, 3% had vomiting, 20% had leg pain, 18% had tiredness, 14% had back pain, 7% had tension, 3% had giddiness, 3% had loose stools and 4% had insomnia. Thus, the prevalence of menstrual dysfunction and premenstrual syndrome was calculated.

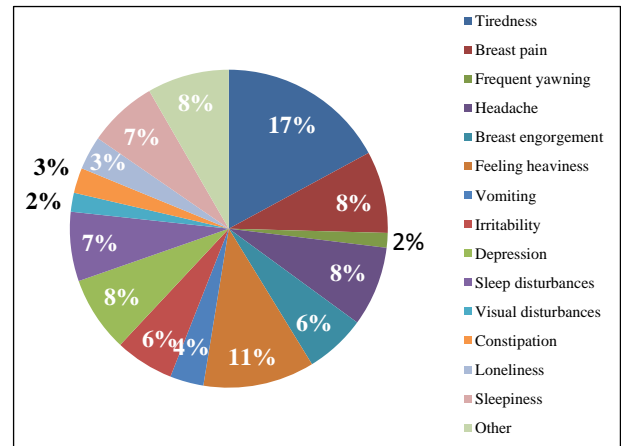


Figure 4: Premenstrual symptoms.

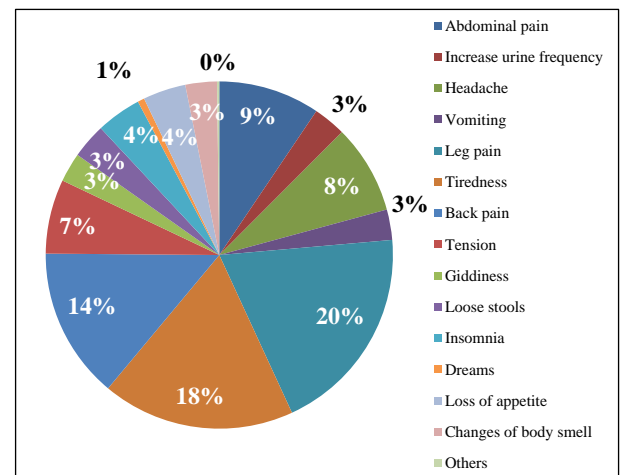


Figure 5: Symptoms during menstruation.

## DISCUSSION

Menstrual cycle is said to be a complex process involving interactions of central nervous system, Hypothalamus, Pituitary and Ovaries. Normal menstrual cycle is due to pulsatile release of GnRH leading to a pulsatile LH and FSH secretion which stimulates the ovaries. It was found to be influenced by physiological, psychological and pathological changes occurring during the adolescent period.

Adolescence is said to be a transitional period of physical and psychological development between the childhood and adulthood which is influenced by hormonal changes. Menstrual dysfunction is an important area of reproductive health which can affect the quality of life of a woman called as menstrual morbidity. Menstrual morbidity is more prevalent among developing countries woman. Menstrual dysfunction which includes menorrhagia, polymenorrhea, oligomenorrhea, dysmenorrhea, anovulation, luteal phase deficiency was found to cause menstrual morbidity. Evaluation and treatment of menstrual dysfunction is very necessary improve the quality of life among adolescent girls.

The etiology of menstrual morbidity among adolescent girls is multifactorial. Premenstrual syndrome is proposed to be one of the most common cause of menstrual morbidity. Premenstrual syndrome is more prevalent among adolescent girls due to hypothalamic-pituitary-adrenal axis immaturity. This results in hormone imbalance in adolescent girls, which is the pathophysiology of premenstrual syndrome. It is proposed that premenstrual syndrome is associated with luteal phase dysfunction. Stress, drugs and chronic illness was found to affect the pulsatile release of GnRH.<sup>11</sup> Symptoms of premenstrual syndrome are severe and recurrent that affects the day to day activities of adolescent girls. In this study almost all the patients have the symptoms of premenstrual symptoms predominantly tiredness which is inconsistent with the previous studies

The menstrual cycle gets regulated from menarche within 2 to 3 years. The prevalence of menstrual dysfunction was found to be from 13.9% to 21% among college students.<sup>12,13</sup> This study found that the prevalence of 90 days frequency of cycle was around 8%- and 38-days frequency of cycle was around 10%.

The normal quantity of menstrual flow is said to be about 80ml. Abnormal uterine bleeding affects 5 to 15% of reproductive age group women in developing countries. Abnormal uterine bleeding can lead to serious medical consequences like anemia. Such medical consequences when left untreated can be life threatening. This also contributes to menstrual morbidity. Jansen et al, in their study found that anemia was observed with a menstrual blood loss of around 120 ml.<sup>14</sup> In the present study it is found that 7% of adolescent girls reported severe menstrual flow and 13% reported mild menstrual flow, which shows that there is an increased incidence of menstrual dysfunction and menstrual morbidity among adolescent girls.

Juyal R et al, in their study found that about 76.4% of girls reported 3 to 5 days of menstrual flow, 13% reported more than 5 days bleeding and about 10.6% girls reported 2 days of menstrual flow.<sup>15</sup> Similar findings were observed in the present study. In the present study it was also found that premenstrual syndrome was

increasingly prevalent among adolescent girls which increases menstrual morbidity.

## CONCLUSION

From this study, it was found that menstrual dysfunction like menorrhagia, dysmenorrhea, polymenorrhea and premenstrual syndrome were prevalent among adolescent girls. These were found to cause menstrual morbidity among adolescent girls. Hence it is necessary to educate and create awareness about menstrual morbidity among adolescent girls. This can be achieved by properly educating and training the mothers and teachers. Also, stress induced symptoms can be relieved by suggesting yoga and meditation to these people.

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