

## A study on menstrual disorders among Young adults in Tirupati

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### Abstract

Menstrual disorders are a major public health problem for women, especially among younger age groups. The purpose of this study is to investigate the prevalence of menstrual disorders in young adults in Tirupati.

To evaluate the menstrual problems especially primary dysmenorrhea, oligo menorrhea, menorrhagia, amenorrhea and premenstrual syndrome (PMS) and its severity among young adults.

A cross-sectional study was conducted through a structured questionnaire among 587 young women (UG and PG students) aged 18-23 years in Tirupati. The data was collected on socio-demographic, anthropometry information, dietary habits, menstrual patterns, symptoms of menstrual disorders especially primary dysmenorrhea, menorrhagia, amenorrhea, oligomenorrhea and premenstrual syndrome (PMS). Prevalence of Menstrual disorders were identified and analyzed by percentages.

Mean age at menarche was  $13.4 \pm 1.1$  years, with a range of 10–18 years. Primary Dysmenorrhea reported by 290 subjects (49.40%), while 23 subjects' (3.91%) mentioned menorrhagia, amenorrhea was noticed in 8 subjects (1.36%), while 170 (29.0%) subjects reported by oligomenorrhea, 32 (5.43%) subjects' were suffering with Premenstrual Syndrome (PMS) and 64 (10.90%) subjects were mentioned no menstrual problems.

In conclusion Primary dysmenorrhea and irregular cycles were more prevalent in selected subjects. Majority of symptoms were pain in abdomen, menstrual cramps, back pain, irregular with light flow and unpredictable flow. Primary dysmenorrhea and irregular cycles were the important causes for college absenteeism, to attend social activities etc.

To prevent menstrual disorders in young women comprehensive educational programs on lifestyle changes, such as promoting regular physical activity and healthy eating habits.

**Key words :** Young Adults, menstrual disorders, lifestyle, dysmenorrhea, oligomenorrhea education programmes.

**M**enstruation is a normal physiological phenomenon in women, occurs periodically and reflects fertility. However, this normal phenomenon is not easy and is often accompanied by a degree of distress and embarrassment. Almost all women will experience few types of menstrual disorder in their lifetime. The normal menstrual cycle varies on action and interaction of hormones released from hypothalamus-pituitary and ovaries and their effect on the endometrium. Menstruation, is the periodical flow of blood from the uterus through the cervix and out through the vagina, and it is also called a “period”. Menstruation occurs during the years between puberty and menopause<sup>4</sup>. Monthly menstrual periods are a normal part of a woman’s life. Cycles count from the first day of one period to the first day of the next period. The average menstrual cycle is 28 days long. The cycle ranges from 21-35 days in adults and 21-45 days in teenagers<sup>6</sup>.

Menstrual disorders often decrease the quality of life of adolescents and young women. Severe and persistent menstrual disorders are often associated with physical, psychological, social, spiritual, and reproductive problems, resulting in menstrual problems affecting young adult lifestyles occur. The prevalence of menstrual disorders was 87%.<sup>22,24</sup>. The list of menstrual disorders includes dysmenorrhea, menorrhagia, amenorrhea, irregular cycle, and premenstrual

syndrome (PMS). Dysmenorrhea is the most common gynecological condition in women, with a prevalence of 60% to 93%.<sup>6</sup>. Dysmenorrhea is pain felt before or during menstruation, localized in the lower abdomen, hamstrings, and varying in severity from mild, moderate, to severe. Menorrhagia refers to excessive bleeding (>80 mL) either regular cycles of bleeding lasting more than 7 days. Amenorrhea is an uninterrupted break of menses for 3 months, while oligomenorrhea can be 35 days or more apart<sup>24</sup>. Premenstrual syndrome is a range of cyclical, recurrent, physical, emotional, and behavioral symptoms that appear during the late luteal phase of the menstrual cycle and resolve with the onset of menstruation. These symptoms include weight gain or loss, headaches, fatigue, nervousness, irritability and mood swings<sup>10</sup>.

Previous studies have shown a higher prevalence of dysmenorrhea and irregular menstruation among female students (73% and 65%), and these problems disrupt women’s social activities and attendance<sup>5,13</sup>. Other studies have reported that a significant proportion of women suffer from oligo menorrhea or amenorrhea, which are related to body mass index (BMI) and other complications such as polycystic ovary syndrome (PCOS)<sup>11,14,20</sup>. Dysmenorrhea and PMS are most commonly associated with absenteeism from classes and colleges, restrictions on socializing, college work, sports, and daily activities<sup>32</sup>.

Although many studies have been previously conducted to address problems related to menstrual irregularities in young college students, there are few reports on the effects of stress on menstrual patterns not only in India but in various parts of the world<sup>3,8,17,27,28,30,31,32</sup>. However, this part of women's health is mostly ignored by primary health care. More than 90% of menstrual cramps are preventable with early detection and appropriate treatment only<sup>21</sup>. For early prevention, we can look for etiological relationships between menstrual disorders, body mass index (BMI), diet, physical activity, and psychological stress. Based on this background, the present study was designed to investigate the prevalence of menstrual disorders in young adults (UG and PG students) in Tirupati.

#### *Subjects and Methods :*

This study was conducted at UG and PG colleges and Universities in Tirupati, Andhra Pradesh. (Whereas number of Degree colleges and Universities are located and also more number of young adults is available from different Socio-economic and cultural groups). A total of 587 students in the 18-23 years age group for the 2020-2021 academic year students were selected as study subjects. A self-explanatory questionnaire was given and data was collected from each participant. Questionnaire includes socio-demographic data (Such as age, residence, parents' qualification and occupation, type of family and family monthly income), Anthropometry (height, weight, BMI, waist and hip measurements, waist-to-hip ratio). Dietary habits like meal pattern, habits of outside foods *etc.* It also contains menstrual cycle details for students such as menarche age, cycle length, cycle regularity and symptoms of Menstrual disorders

especially Primary Dysmenorrhea, Menorrhagia, Amenorrhea, Oligo menorrhagia and Premenstrual Syndrome (PMS).

This study was approved by the Institutional Ethics Committee of Sri Padmavati Mahila Visvavidyalayam, Tirupati, AP, India. Each subject was informed about the purpose of the study and gave written informed consent prior to data collection.

Table-1 Socio-demographic Characteristics of Selected Young Adults

| Characteristics                   | No. of Students (n=587) | % Percentage |
|-----------------------------------|-------------------------|--------------|
| <b>Age (Years)</b>                |                         |              |
| 18                                | 114                     | 19.40        |
| 19                                | 118                     | 20.10        |
| 20                                | 167                     | 28.40        |
| 21                                | 53                      | 9.00         |
| 22                                | 79                      | 13.50        |
| 23                                | 56                      | 9.60         |
| <b>Educational Qualification</b>  |                         |              |
| Inter                             | 52                      | 8.90         |
| Degree                            | 376                     | 64.10        |
| PG                                | 72                      | 12.30        |
| B. Ed                             | 26                      | 4.40         |
| MBA                               | 24                      | 4.10         |
| MCA                               | 37                      | 6.20         |
| <b>Residence</b>                  |                         |              |
| Hostler                           | 416                     | 70.90        |
| Day Scholar                       | 171                     | 29.10        |
| <b>Religion</b>                   |                         |              |
| Hindu                             | 559                     | 95.40        |
| Christian                         | 16                      | 2.60         |
| Muslim                            | 12                      | 2.00         |
| <b>Type of Family</b>             |                         |              |
| Joint                             | 109                     | 18.60        |
| Extended                          | 22                      | 3.70         |
| Nuclear                           | 456                     | 77.70        |
| <b>Family Monthly Income (Rs)</b> |                         |              |
| <10,000                           | 265                     | 45.10        |
| 10,001-20,000                     | 124                     | 21.10        |
| 20,001-30,000                     | 44                      | 7.50         |
| 30,001-40,000                     | 62                      | 10.60        |
| >40,000                           | 92                      | 15.70        |

Table-1 represents the socio-demographic characteristics of the study subject's. All the participants were aged from 18-23 years. Majority of the subject's in the age of 20 years (28.40%). All the participants were educated. 64.10% subjects were undergraduate students. Most of the subjects 416 (70.90%) studying in hostel, whereas 171 (29.10%) subjects came from home to the college. Majority of the subject's religion is Hindu (95.40%) and type of family is nuclear (77.70%). 265 (45.10%) subject's family monthly income was low *i.e.*, Rs. <10,000.

Table-2 Menstrual Characteristics Among Young Adults

| Parameter                       | No. of Student's (n=587) | % Percentage |
|---------------------------------|--------------------------|--------------|
| <b>Age of Menarche (years)</b>  |                          |              |
| 10-12                           | 99                       | 17.00        |
| 13-15                           | 481                      | 82.00        |
| 16-18                           | 07                       | 1.00         |
| <b>Length of Monthly Cycle</b>  |                          |              |
| 21-25 days                      | 60                       | 10.20        |
| 26-35 days                      | 321                      | 54.70        |
| 36-42 days                      | 36                       | 6.10         |
| More than 42 days               | 170                      | 29.00        |
| <b>Duration of Flow</b>         |                          |              |
| 1-3 days                        | 191                      | 32.50        |
| 4-6 days                        | 346                      | 59.00        |
| >6 days                         | 50                       | 8.50         |
| <b>Cycle Regularity</b>         |                          |              |
| Yes                             | 437                      | 71.00        |
| No                              | 170                      | 29.00        |
| <b>Clotting Experience</b>      |                          |              |
| Yes                             | 131                      | 22.30        |
| No                              | 456                      | 77.70        |
| <b>Sanitary Napkins per day</b> |                          |              |
| 1-2 /day                        | 255                      | 43.50        |
| 3-4/day                         | 302                      | 51.40        |
| Above 4/ day                    | 30                       | 5.10         |

The Table-2 revealed characteristics of menstrual pattern. Majority of the subjects were first menarche age was in the age range of 10-16 years (82.00%). From 587 young females 60 (10.20%) subjects were reported their length of monthly cycle at 21-25 days, 321 (54.70%) subjects mentioned their length of cycle at 26-35 days, whereas 36 (6.10%) young adults noticed their cycle length at 36-42 days and 170 (29.00%) young adults reported their length of monthly cycle is more than 42 days respectively. And also 437 (71.00%) subjects mentioned their cycle is regular and 170 (29.00%) young adults reported their monthly cycle is irregular. 59.00% subjects reported their duration of flow was normal *i.e.*, 4-6 days and 51.40% subject's usage of sanitary napkins per days was normal.

Table-3 reveals that prevalence of menstrual disorders in subjects as in the form of percentages. From 587 subjects 18-23 years 290 (49.40%) subjects noticed their symptoms against Primary Dysmenorrhea, whereas 23 (3.90%) and 08 (1.3%) subjects reported that menorrhagia and amenorrhea. 170 (29.00) young females mentioned their symptoms of oligomenorrhea, 32 (5.40%) young females noticed against the symptoms of premenstrual syndrome and 64 (11.00%) subjects mentioned that they don't have any menstrual problems. The most common menstrual disorder prevalence in this study was that the majority of young adults suffered from primary dysmenorrhea and oligomenorrhea.

Table-4 revealed the Body Mass Index (BMI) classification as percentages. A total of 587 subjects aged 18-23 years, 200 (34.10%) young adults BMI is <18.5 considered as underweight, 250 (42.60%) young adults BMI



is between 18.5 to 24.9 as normal, whereas 85 (14.50%) subjects BMI is 25-30 as overweight and 52 (8.90%) students body mass index is more than 30 as obese.

The Table-5 revealed that Waist-Hip Ratio (WHR) classification in percentages. A total of 587 subjects aged 18-23 years, out of this 455 (77.50%) young females WHR range was in low *i.e.*, (0.80 or less), Whereas 12.90% subjects WHR range is moderate and 9.50% subject's range is high *i.e.*, (0.86 or high).

The menstrual cycle is an inevitable part of a woman's life and an important indicator of normal sexual and reproductive health. Age at menarche is influenced by nutritional status, socioeconomic status, health status, and genetic factors. It is typically between 12 and 13 years. In the present study it is revealed that prevalence of menstrual problems in young adults aged from 18-23 years. In developing countries, women of childbearing age are greatly affected by menstrual irregularities, but women are less concerned about them because they do not suffer from threatening conditions. Nonetheless, changes in menstrual patterns with respect to regularity, menstrual cycle length, duration, irregular cycles, and primary dysmenorrhea in the reproductive age group are important for physical, physiological, and psychological health. It can affect the daily life from a perspective<sup>22</sup>.

In this study, the mean age of menarche was  $13.4 \pm 1.1$  years. However, some Indian studies give an average of  $11.82 \pm 1.42$  years in Allahabad,<sup>16</sup>  $11.75 \pm 0.57$  years in Jaipur<sup>29</sup> and  $14.33 \pm 0.00$  years in

Chhattisgarh<sup>34</sup>. The age of menarche varies widely around the world. It was found to be 12.3 years in Malaysia<sup>19</sup>, 12.49 years in Egypt<sup>1</sup>, 13.2 years in Lebanese girls<sup>15</sup>. This means that the average age of menarche varies by population and location.

The results of this study suggest that the prevalence of menstrual disorders were 89.09%. The prevalence of menstrual disorders in India is reported to be 85.0-93.4%.<sup>25</sup> A total of 587 young females 191 (32.50%) subjects reported their duration of flow was 1-3 days, whereas 346 (59.0%) young adults reported their duration of flow was normal *i.e.*, 4-6 days and 50 (8.50%) subjects noticed their duration of flow is more than 6 days. A study by Nabila *et al.*,<sup>22</sup> reported that 71.6% of his students noticed normal duration of blood flow.

In this study, primary dysmenorrhea was identified as the most common menstrual disorder (49.4%). Dysmenorrhea is an important sign of dysfunction of the hypothalamic-pituitary-ovarian axis. More recently, it has become an important public health problem in the women's population. It is characterized by focal pain in the lower abdomen<sup>32</sup>. In the Present study prevalence of primary dysmenorrhea among young adults was 49.4%, which was comparable to the study was reported by Sreelakshmi *et al.*,<sup>32</sup> in Mallareddy Medical college for women, suraram, Hyderabad, India was 57%. Dinesh Kumar *et al.*,<sup>9</sup> reported a high prevalence of dysmenorrhea (57.7%) among unmarried women in rural, urban and slum areas of UT, Chandigarh and India.

Currently, most subjects are *i.e.*, 42.60% BMI is between 18.5 to 24.9 as normal. Sreelakshmi *et al.*,<sup>33</sup> reported a statistically

significant association of BMI with dysmenorrhea and premenstrual syndrome (both  $p < 0.05$ ). However, in a study by Rupavani *et al.*<sup>26</sup>, Ananda Lakshmi *et al.*,<sup>2</sup> and Sujata *et al.*<sup>35</sup> increased BMI was not significantly associated with dysmenorrhea. A study by Lakkawar *et al.*,<sup>18</sup> reported that increased BMI was associated with infrequent cycles. However, no association was found with other menstrual disorders. In the present study population majority of the young females fall under underweight and low waist hip ratio, hence underweight is also one of the causative factor for menstrual problems of the present study subjects.

From this aspect, early detection, research, and discovery of teenage menstrual abnormalities through health education such as nutritional improvement and regular exercise, regular health checkups, support measures, lifestyle improvements are important and helps improve overall health, especially reproductive health. Prevents many menstrual cramps.

Despite the high frequency and adverse effects of menstrual cramps, young women deal with their pain and see it as a normal phenomenon. They hesitate to seek medical advice for their problem. The conclusion of this study was that primary dysmenorrhea and menstrual irregularities are more common in young women. It was an irregularity due to unpredictable blood flow. People who experience dysmenorrhea or irregular menstruation influence their absence from college. Early detection and intervention can resolve menstrual disorders. The impact of educational programs to improve lifestyles,

such as promoting regular physical activity and healthy eating, should be emphasized to prevent menstrual disorders among young girls in school.

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