A delve into the menstrual problems in teenagers: a cross sectional study in an urban school in Kerala, India

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ABSTRACT

Background: Onset of menstruation (menarche) is an important milestone in the adolescent girl associated with physical, psychological and social changes. Majority of the girls experience menstrual problems during this period making it even more stressful to handle. Many factors are considered to contribute to these problems of which some may be modifiable. This study was conducted to identify the menstrual problems experienced by young school girls in an urban school in Kerala and to look at any modifiable factors.

Methods: Data was collected from girls belonging to the age group of 13-18 years from an urban private school in Kerala. A detailed semi-structured questionnaire was filled by each student who participated in the study. Information regarding age of menarche, menstrual irregularities, heavy menstrual bleeding, and dysmenorrhoea. BMI of each student was calculated.

Results: The mean age of menarche was 12.05 years. The mean weight at menarche was 40.74kg (SD±6.66). 24 girls (21.86%) reported to have irregular menstrual cycles, 76 girls (68.47%) had menstrual cycles coming between 24-35 days. 22 girls (19.82%) had cycles between 36-45 days. 11 girls (9.91%) had >45 days duration cycles. 18 girls (16.22%) reported prolonged menstrual flow of >7 days, and 2 girls (1.8%) had scanty flow. 9 girls (8.1%) reported heavy blood loss. 60 girls (54.1%) reported to have moderate flow. 42 girls (37.8%) had mild blood loss. Mild to moderate dysmenorrhoea was reported in 61 girls (54.9%), 17 girls (15.3%) reported severe dysmenorrhoea.

Conclusions: Menstrual disturbances still pose an important problem in the life of an adolescent. Reproductive awareness programmes should be made more accessible to the adolescents.

Keywords: Dysmenorrhoea, Menstrual irregularity, Menstrual problems, Teenagers, Urban school

INTRODUCTION

Onset of menstruation (menarche) is an important milestone in the adolescent girl which is associated with physical, psychological and social changes. Majority of the girls experience menstrual problems during this period making it even more stressful to handle. Many factors are considered to contribute to these problems of which some are modifiable. Adolescent girls seek medical help commonly for menstrual irregularities, dysmenorrhoea and heavy menstrual bleeding. Inspite of the fact that many girls have menstrual problems only a small portion seek medical help. This may be due to the stigma associated with menstruation. Jack of awareness about the medical options available and false beliefs associated with it. Girls attain menarche between the age of 12-13 years. Age of attaining menarche is showing a declining trend around the world. In India, even though
mean age of menarche is reported to be around 13-14 years, it is also showing a declining trend.\(^8\) Average menstrual cycle varies from 24-35 days.\(^9\) Any variation from this, i.e.<24 days or >35 days is considered as irregular.

This study was conducted to identify the menstrual problems experienced by young school girls in an urban school in Thrissur, Kerala and to look at any modifiable factors.

METHODS

This was a cross sectional study in an urban private school in Thrissur district in Kerala conducted after Institutional ethical clearance. Permission from the school authorities was obtained to conduct reproductive health awareness class which was followed by the study. Documented informed consent from the parents or guardian was taken. Adolescent Health awareness class was held for all girl students between 13 and 18 years, studying in 8\(^{th}\) through 12\(^{th}\) grade. Pubertal changes during menarche, normal menstrual patterns, menstrual problems and the importance of diet and exercise were discussed. Girls who had attained menarche and whose parent or guardian had given consent to give information were included in the study. Information obtained was entered in a semi structured questionnaire which included age of menarche, weight during menarche, menstrual irregularities (delayed cycles, scanty flow, heavy and prolonged flow) and dysmenorrhoea. Height and weight of the girls were recorded and Body Mass Index was calculated from these physical parameters. Awareness and access to information regarding reproductive health (Radio, TV, Magazines, internet, health awareness classes), medical help sought for the symptoms, alleviation of symptoms if any after the visit was also noted.

Awareness class was given to around 250 students in batches of 50, among whom 111 girls and their parents consented to participate in the evaluation. The data obtained from the completed questionnaire were analysed using SPSS software.

RESULTS

The data obtained from the study was as follows:

Age of menarche

The mean age of menarche was 12.05 years. 78 (70.27\%) girls attained menarche between 12-14 years. 30 (27\%) girls attained menarche at 10 and 11 years. Only 1 girl had history of precocious puberty (Figure 1).

Weight during menarche

Weight during menarche was calculated. The mean weight at menarche was 40.74kg (SD ±6.66). This was lesser than the western standards which is 47.8kg in the US. Mean weight of the girls at the time of study was 47.43kg. Mean height was 155.66cm. 74 girls (66.7\%) had normal BMI. 32 girls (28.8\%) were underweight and 5 girls (4.5\%) were overweight (Figure 2).

Menstrual irregularities

Both regularity and frequency of the cycles were noted. Cycles that appeared regularly irrespective of the frequency were defined as regular cycles. Frequency of cycles was defined as the time elapsed between 2 consecutive cycles.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Cycles</th>
<th>Frequency of cycles</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Regular</td>
<td>Irregular</td>
</tr>
<tr>
<td>No. of girls</td>
<td>87</td>
<td>24</td>
</tr>
<tr>
<td>Percent age</td>
<td>78.4%</td>
<td>21.6%</td>
</tr>
</tbody>
</table>

24 girls (21.86%) reported to have irregular menstrual cycles, while 78.4\% felt they had regular cycles. The frequency of cycles varied even in those who reported regular cycles. 76 girls (68.47\%) had menstrual cycles...
The duration of menstruation was noted as the number of days the bleeding lasted once it had started. Mild flow constituted change of 1-3 pads per day, moderate flow 4-5 pads per day and heavy flow 6-7 pads per day changes per day. Any need to change pad or clothing every 1-2 hours were also grouped under heavy flow.

64 girls (57.66%) had 4-7 days of menstrual flow, while 27 girls (24.32%) had 2-4 days of flow, 18 girls (16.22%) reported prolonged menstrual flow of >7 days, and 2 girls (1.8%) had scanty flow which was either spotting or less than 2 days (Table 2).

### Table 2: Duration and amount of flow.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Duration of flow</th>
<th>Amount of flow</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-2 days</td>
<td>2-4 days</td>
</tr>
<tr>
<td>No of girls</td>
<td>2</td>
<td>27</td>
</tr>
<tr>
<td>Percentage</td>
<td>1.8%</td>
<td>24.32%</td>
</tr>
</tbody>
</table>

9 girls (8.1%) reported heavy blood loss quantified by the number of pad changes per day. 60 girls (54.1%) reported to have moderate flow. 42 girls (37.8%) had mild blood loss (Table 2).

### Dysmenorrhea

Visual analogue scale was used to quantify dysmenorrhea. On a scale of 1 to 10, any pain up to 5 was quantified as moderate pain and any value more than 5 was categorised as severe pain. Mild to moderate dysmenorrhea was reported in 61 girls (54.9%), while 17 girls (15.3%) reported severe dysmenorrhea. 33 girls (29.7%) suffered no pain (Table 3).

### Table 3: Dysmenorrhea.

<table>
<thead>
<tr>
<th>Pain</th>
<th>No pain</th>
<th>Mild to moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of girls</td>
<td>33</td>
<td>61</td>
<td>17</td>
</tr>
<tr>
<td>Percentage</td>
<td>29.7%</td>
<td>54.9%</td>
<td>15.3%</td>
</tr>
</tbody>
</table>

The main sources of awareness of reproductive health were from relatives, friends and printed material. Many girls received information from more than one source with 20 of them receiving information from more than 2 sources. Hence it was not possible to calculate the relative contribution of the sources of information. It was seen that a majority of the girls got reproductive health information from their relatives or friends (mostly from their mothers). Mutual discussion in the classes between friends was also cited as an important source of information. Printed material stood second as a popular source of information. Health awareness classes conducted previously in the school and visit to health care providers were also an important source (Table 4).

### Table 4: Source of information of reproductive health.

<table>
<thead>
<tr>
<th>Source</th>
<th>Number of girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Television, radio</td>
<td>17</td>
</tr>
<tr>
<td>Magazines, books, pamphlets</td>
<td>56</td>
</tr>
<tr>
<td>Internet</td>
<td>30</td>
</tr>
<tr>
<td>Health awareness class, health care providers</td>
<td>50</td>
</tr>
<tr>
<td>Relatives, friends</td>
<td>74</td>
</tr>
</tbody>
</table>

The main sources of awareness of reproductive health were from relatives, friends and printed material. Many girls received information from more than one source with 20 of them receiving information from more than 2 sources. Hence it was not possible to calculate the relative contribution of the sources of information. It was seen that a majority of the girls got reproductive health information from their relatives or friends (mostly from their mothers). Mutual discussion in the classes between friends was also cited as an important source of information. Printed material stood second as a popular source of information. Health awareness classes conducted previously in the school and visit to health care providers were also an important source (Table 4).

### DISCUSSION

Attainment of menarche and a few cycles after menarche may be a turbulent period in a girl’s life. The symptoms associated with this are easily treatable and in today’s advanced medical world there are many ways to enjoy a “happy period” instead of dreading the unavoidable monthly ritual. Awareness regarding treatment for menstrual problem was low till recently. But in our study it was seen that 90% of the students were aware of the problems associated with menarche and subsequent period.

Age of menarche is considered to be influenced by heredity, environment, physique, physical activity and socioeconomic factors. Mean age of menarche is considered to be between 12 to 13 years in well-nourished population. Agarwal et al also reported a mean age of 12.6 years of menarche in affluent girls in India. In our study also the mean age of menarche was...
12.05 years. The mean weight at menarche noted in our study was 40.74 kg which was less than the mean weight at menarche of 47.8kg noted in US population.12

Regularity of cycles is influenced by body mass index, hormonal and environmental factors. Menstrual cycle is commonly irregular and less frequent in the initial years of puberty because of more frequent anovulatory cycles and after a few years becomes regular as in adults.13 In our study 21.86% of girls had irregular cycles and frequency of the periods varied between 36-45 days in 19.82% and more than 45 days in 9.91% of girls. This may have been probably because many were in their initial years post menarche.

Quantifying blood loss is difficult especially in young girls as it is subjective and measurement of blood loss may not be accurate.14 Assessment of blood loss on the basis of menstrual hygiene products used may also be inaccurate because it can vary depending on the type of product (cloth, pads, cotton), socioeconomic status, disposal facility and practices of the girls.5,15 6.22% girls reported prolonged menstrual blood flow of more than 7 days. 8.1% girls reported heavy blood loss quantified by the number of pads used. Since assessment of blood loss is subjective this may need further medical evaluation to know the true gravity of the situation.

Excessive blood loss can be managed by NSAIDs, balanced nutrition, vitamin and iron supplementation, antifibrinolytics and in many cases, reassurance. Health care awareness is important in most cases of menstrual disturbances which are perceived as grave by the girls, since many of the problems resolve spontaneously and often require only supportive and symptomatic management.

Dysmenorrhea was reported in 70.2% girls of which 15.3% reported severe dysmenorrhea. Dysmenorrhea was found to be the most common menstrual problem among girls in a study conducted in a similar population by Nair MK et al.5 Most cases of dysmenorrhea are primary and spasmodic and is prostaglandin mediated. This can be effectively managed with appropriate analgesics. It was observed in our study that only 17.9% of girls who suffered from dysmenorrhoea sought medical help. Of them 85% got relief of symptoms.

Awareness of reproductive health issues is very essential in adolescent age group as it will positively affect the quality of life and have long term health implications.16 In our study the main source of awareness was found to be relatives and friends followed by printed material. Health awareness classes were reported to be effective by 50% (56) girls. This may be due to the fact that girls studying in the 8th and 9th grade had not been exposed to any health awareness programme previously. Studies have shown a significant improvement in knowledge on adolescent health in health education intervention.16

**CONCLUSION**

Menstrual disturbances still pose an important problem in the life of an adolescent. Proper knowledge about menstrual hygiene practices, nutritional education, and quantification of subjective symptoms will go a long way in improving reproductive health. Reproductive awareness programmes should be made more accessible to the adolescents.

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**REFERENCES**


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