

# Menstrual Practices among Rural High School Students in Thrissur - Central Kerala

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## ABSTRACT

### BACKGROUND

Adolescence is the transitional phase of growth and development between childhood and adulthood. Menstruation, which is a milestone event in a girl's reproductive life begins during this period and it is also one of the major causes of stress in this stage. Adequate knowledge and good menstrual practices can help in addressing this stress and also in preventing reproductive tract infections to a great extent. This study tries to assess the awareness with regard to menstrual practice and its determinants among adolescent girls in a rural area of Central Kerala. The study also aims to explore the social taboos related to menstrual practices.

### METHODS

This cross-sectional study was conducted at two high schools in Thrissur district of Central Kerala. The study methodology involved visiting the selected schools and questions about menstrual practices were put to students individually ensuring adequate privacy, with the aid of a semi-structured interview schedule. 196 adolescent girls participated in the study. The data was coded and entered into MS excel. Further analysis was done using the software SPSS 16.0 version.

### RESULTS

The percentage of girls using sanitary pad is 32.1 %, clothes were used by 12.2 % girls, and 55.6 % used either cloth or sanitary pad. Most of them disposed their sanitary pads by burning them (75.6 %), but 16.3 % threw their pads / clothes in the general waste, some flushed them in the toilet (8.1 %). 64.3 % of them washed and exposed their undergarments in the sun but 35.7 % washed and kept them inside their house. 84.7 % of girls were aware about menstruation at the time of menarche. In 58.7 % of cases the source of information was their mother. Regarding social taboos during menstruation, the most common one was inability to attend social or religious functions during menstruation (76 %) followed by restrictions in going out (9.7 %), and 7.7 % in food preparation. 7 % of girls had to sleep in a corner of the room while they were menstruating. Maternal education, family income and awareness regarding menstruation had statistically significant association with usage of sanitary pads.

### CONCLUSIONS

Majority of the adolescent girls had awareness regarding menstruation. However, there were some who followed less than ideal practices when it comes to disposal of sanitary napkins / clothes and care of undergarments. The wrong concepts like menstruation is a 'disease of impurity' and menstruation occurs when 'bad blood' collects is still prevalent among the adolescent girls. It is of concern that the social taboos regarding menstruation are still widely embraced by the society.

### KEYWORDS

Menstrual Practices, Menstrual Awareness, Kerala, Menstruation

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**BACKGROUND**

Adolescence is the transitional phase of growth and development between childhood and adulthood. There are about 1.2 billion adolescents in the world, totalling one sixth of the global population. It is a period of rapid physical, cognitive and psychosocial growth. This affects how they feel, think, make decisions, and interact with the world around them. It is a unique stage of human development and an important time for laying the foundations of good health.<sup>1</sup>

In the case of an adolescent girl, adolescence is recognised as a special period in her life cycle which requires special attention. Menstruation, which is a milestone event in a girl's reproductive life, begins at this period and it is also one of the major causes of stress in this stage. Hence, all aspects of menstruation should ideally be understood by adolescent girls. But the reality is far from perfect. It is to be understood whether they have proper awareness about menstruation at the time of menarche. Lack of awareness or improper practices could have far reaching implications in later life. Many studies in India have shown that menstrual practices in India are not adequate<sup>2,3,4</sup> and there are good proportion of girls with problems related with menstruation.<sup>5</sup>

In spite of huge advances made by Kerala in the area of health, the menstrual practices especially in rural areas are unsatisfactory in certain spheres. The study tries to assess the awareness and menstrual practices and its determinants among adolescent girls in a rural area of Central Kerala. The study also aims to explore the social taboos that affect menstrual practices. By finding out deficient practices, corrective measures can be taken by the concerned health authorities.

**METHODS**

This institution based observational study, cross-sectional in design was carried out among the school going adolescent girls of 2 rural schools in Puzhakkal block, Thrissur district for 4 months from May 2019 to August 2019. The inclusion criteria were all female students in the selected schools in the high school category (8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> standards) who have attained menarche. Adolescent school girls who were not willing to participate in the study and those with chronic illness were excluded from the study.

Sample size was calculated using the formula  $4pq / d^2$ . P was taken as the percentage of female students using sanitary pads for menstrual care. As per the study conducted by Sagar Borker et al in Anjarakkandy<sup>2</sup> the percentage of girls using sanitary pads was 36.2 %. Applying this to the above formula with an absolute precision of 7 % which is less than 20 % of P the minimum sample size was found to be 188.

To achieve the required sample size 2 schools were randomly selected from a list of rural schools in Puzhakkal block. The selected schools were Poomala High School and Santha Higher Secondary School Avanoor.

All the eligible students in the selected school who were meeting the criteria were considered for the study. Thus 196 female students were enrolled in the study. The study was conducted after getting clearance from Institutional Ethical Committee, Government Medical College, Thrissur. The investigator visited the selected schools and questions about menstrual practices were put to students with adequate privacy, individually using a semi structured interview schedule. Five questions were used to assess awareness about menstruation and practices. Those with 4 - 5 answers correct were deemed to have good awareness, 2 - 3 moderate awareness and 0 - 1 as low awareness. After completion of data collection, the investigator educated the study participants on good menstrual practices with the aid of structured class and leaflets.

**Statistical Analysis**

The data was coded and entered into MS Excel. Further analysis was done using the software SPSS 16.0 version. Menstrual practices and awareness were measured as percentages. Chi-square test was used to find the association of factors with menstrual practices. The value of  $p < 0.05$  was taken as statistically significant.

**RESULTS**

The study on menstrual practices among rural high school students in Thrissur among 196 high school students yielded the following results.

It can be seen from table 1 that all the classes has been adequately represented in the sample with highest number of students form 9<sup>th</sup> standard (35.7 %). There were students aged between 13 - 16 years with highest number in the 15 years category (38.3 %). Most of the mothers were educated up to high school or higher secondary or above (66.2 %) but 8.8 % were educated only up to primary level or were illiterate. For paternal education 82.1 % were educated up to high school or above. 17.9 % of the fathers had studied only up to middle school or below.

| Class                          | Number of Students | Percentage |
|--------------------------------|--------------------|------------|
| 8 <sup>th</sup> Standard       | 53                 | 27.0       |
| 9 <sup>th</sup> Standard       | 70                 | 35.7       |
| 10 <sup>th</sup> Standard      | 73                 | 37.2       |
| <b>Age</b>                     |                    |            |
| 13 Years                       | 16                 | 8.2        |
| 14 Years                       | 54                 | 27.6       |
| 15 Years                       | 75                 | 38.3       |
| 16 Years                       | 51                 | 26.0       |
| <b>Education of Mother</b>     |                    |            |
| Graduate And Above             | 24                 | 12.2       |
| Higher Secondary / High School | 106                | 54         |
| Middle School                  | 51                 | 26         |
| Primary / Illiterate           | 15                 | 8.8        |
| <b>Education of Father</b>     |                    |            |
| Graduate and Above             | 22                 | 11.2       |
| Higher Secondary               | 33                 | 16.8       |
| High School                    | 106                | 54.1       |
| Middle School or Below         | 35                 | 17.9       |

**Table 1. Socio-Demographic Characteristics of the Study Participants**

| Hygiene Practices                          | Number of Students | Percentage |
|--|--------------------|------------|
| <b>Type of Absorbent Used</b>              |                    |            |
| Sanitary napkin                            | 63                 | 32.1       |
| Cloth                                      | 24                 | 12.2       |
| Both used                                  | 109                | 55.6       |
| <b>Change of Absorbent</b>                 |                    |            |
| Once                                       | 5                  | 2.6        |
| Twice                                      | 81                 | 41.3       |
| Thrice                                     | 87                 | 44.4       |
| Four times or more                         | 23                 | 11.7       |
| <b>Frequency of Bathing</b>                |                    |            |
| Once daily                                 | 21                 | 10.7       |
| Twice daily                                | 175                | 89.3       |
| <b>Cleaning of External Genitalia</b>      |                    |            |
| Every time                                 | 163                | 83.2       |
| Mostly                                     | 33                 | 16.8       |
| Method of cleaning of external genitalia   |                    |            |
| With water                                 | 103                | 52.6       |
| With soap and water                        | 91                 | 46.4       |
| <b>Disposal of Sanitary Pads (n = 172)</b> |                    |            |
| Burning                                    | 130                | 75.6       |
| Throwing in general waste                  | 28                 | 16.3       |
| Flushing                                   | 14                 | 8.1        |
| <b>Care of Undergarments</b>               |                    |            |
| Wash and expose to sun                     | 126                | 64.3       |
| Wash and hide                              | 70                 | 35.7       |
| <b>Hygiene Practices</b>                   |                    |            |
| <b>Type of Absorbent Used</b>              |                    |            |
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| Once                                       | 5                  | 2.6        |
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| Thrice                                     | 87                 | 44.4       |
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| Every time                                 | 163                | 83.2       |
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| Burning                                    | 130                | 75.6       |
| Throwing in general waste                  | 28                 | 16.3       |
| Flushing                                   | 14                 | 8.1        |
| <b>Care of Undergarments</b>               |                    |            |
| Wash and expose to sun                     | 126                | 64.3       |
| Wash and hide                              | 70                 | 35.7       |

**Table 2. Distribution of Adolescent Girls According to Their Hygiene Practices during Menstruation**

| Social Restrictions                       | Number of Students | Percentage |
|---|--------------------|------------|
| In Attending Social / Religious Functions | 149                | 76         |
| In Food Preparation                       | 15                 | 7.7        |
| In Going Out                              | 19                 | 9.7        |
| Playing                                   | 5                  | 2.6        |
| Sleeping in a corner of the room          | 15                 | 7.         |

**Table 3. Awareness about Menstrual Practices among Adolescent Girls**

| Awareness   | Number of Students | Percentage |
|---|--------------------|------------|
| <b>Ideal Absorbent during Menstruation as per the Student</b> |                    |            |
| Sanitary pad  | 47                 | 24         |
| Cloth   | 54                 | 27.6       |
| Both can be used  | 95                 | 48.4       |
| <b>Awareness about Menstruation at the Time of Menarche</b>   |                    |            |
| Aware   | 166                | 84.7       |
| Not aware   | 30                 | 15.3       |
| <b>Source of Information</b>                                  |                    |            |
| Mother  | 115                | 58.7       |
| Media / Text books  | 33                 | 16.8       |
| Grandmother   | 12                 | 6.1        |
| Relatives   | 14                 | 7.2        |
| Friends   | 22                 | 11.2       |
| <b>Cause of Menstruation</b>                                  |                    |            |
| Disease of impurity   | 17                 | 8.7        |
| Normal physiology   | 91                 | 46.4       |
| Don't know  | 88                 | 44.9       |
| <b>Source of Menstrual Blood</b>                              |                    |            |
| Uterus  | 73                 | 37.2       |
| Stomach   | 6                  | 3.1        |
| Urinary tract   | 43                 | 22         |
| Don't know  | 74                 | 37.8       |
| <b>Reason for Menstruation</b>                                |                    |            |
| When bad blood collects in the body                           | 70                 | 35.7       |
| Due to hormonal changes in the uterus                         | 94                 | 48.0       |
| Don't know  | 32                 | 16.3       |

**Table 4. Social Restrictions during Menstruation**

| Associated Factor                    | Percentage of Sanitary Pad Usage in the Group | Pearson Chi-Square | P-Value            |
|--------------------------------------|---|--------------------|--------------------|
| <b>Awareness about Menstruation</b>  |   |                    |                    |
| Good Awareness (4 - 5)               | 100   | 25.8               | 0.01 (Significant) |
| Medium Awareness (2 - 3)             | 30.8  |                    |                    |
| Low awareness (0 - 1)                | 25.5  |                    |                    |
| <b>Class of Study</b>                |   |                    |                    |
| 8 <sup>th</sup> standard             | 34  | 0.6                | 0.739              |
| 9 <sup>th</sup> standard             | 34.3  |                    |                    |
| 10 <sup>th</sup> standard            | 28.8  |                    |                    |
| <b>Education of Mother</b>           |   |                    |                    |
| Higher secondary or above            | 40.9  | 3.5                | 0.044              |
| High school or below                 | 27.7  |                    |                    |
| <b>Monthly Family Income / Month</b> |   |                    |                    |
| < 10,001                             | 22.4  | 6.03               | 0.049              |
| 10,000 - 29973                       | 43.8  |                    |                    |
| > 29973                              | 36.4  |                    |                    |

**Table 5. Factors Associated with the Type of Absorbent Used for Menstruation**

As far as sanitary practices during menstruation are concerned 32.1 % were using sanitary napkins during menstrual periods. 12.2 % were exclusively using cloth during periods. 55.6 % were using either sanitary pad or cloth. Most of them changed their absorbent thrice daily (44.3 %) or twice daily (41.3 %). Almost all of them were maintaining their body hygiene by bathing twice daily (89.3 %). Most of them were cleaning their external genitalia

every time they went to the toilet. Most of them used water for cleaning external genitalia (52.6 %) whereas 47.4 % used soap and water for cleaning. Most of them disposed their sanitary pads by burning them (75.6 %) but 16.3 % threw their pads / clothes in the general waste, some flushed them in the toilet (8.1 %). 64.3 % of them washed and exposed their undergarments in the sun but 35.7 % washed and kept them inside their house.

84.7 % of girls were aware about menstruation at the time of menarche. In 58.7 % of cases the source of information was their mother. In 16.8 % it was social media, TV or textbooks, 11.2 % from friends and 7.2 % from relatives. 46.4 % considered menstruation as a normal physiology, 44.9 % did not know the cause of menstruation and 8.7 % thought it was a disease of impurity. 37.8 % knew the source of menstrual blood is the uterus, 22 % thought it was from urinary tract, 3.1 % from stomach. 37.8 % did not know the source of menstrual blood. 48 % knew that menstruation occurs due to hormonal changes in the uterus, 35.7 % thought it was due to collection of bad blood in the body and 16.3 % did not know the reason.

Regarding social taboos during menstruation most common one was inability to attend social or religious functions during menstruation (76 %) followed by restrictions in going out (9.7 %) and 7.7 % in food preparation. 7 % of girls had to sleep in a corner of the room while they were menstruating.

All the students with good awareness regarding menstruation and menstrual hygiene were found to be using sanitary pads. Among those with low awareness only 25.5 % were using sanitary pads. This was also found to be statistically significant. Another factor that was associated with sanitary pad usage was the education of the mother. Among those students whose mothers have studied only up to high school or below, sanitary pad usage was only 27.7 % whereas those who have studied up to or above higher secondary the usage was 40 %. This was also statistically significant. Another factor that was found to be statistically significant associated with sanitary pad usage was monthly family income. In those with family income less than 10,000 the prevalence of pad usage was only 22.4 % whereas in the group where income was between 10,000 to 29973 it was 43.8 %.<sup>6</sup>

## DISCUSSION

Only 1 / 3<sup>rd</sup> of the girls as per the study were using sanitary pads, 12.2 % only clothes and 55 % were using either pads or cloth absorbent during menstruation. This is not an ideal practice as use of clothes pads could lead to health problems. As per UNICEF (United Nations Children's Fund), compared to sanitary pads, cloth is often not recommended for menstrual hygiene management as their use has been associated with abnormal vaginal discharge, skin irritations and urogenital infections.<sup>7</sup> As per the study conducted by Bini et al in Thrissur district the percentage of girls using sanitary pads was 10.2 %, clothes 15.3 % and both clothes and pad was 74.5 %.<sup>6</sup> The current study reported a higher prevalence of sanitary pad usage compared to this study. As

per the study conducted by 1 Linda Varghese et al in Thiruvananthapuram the use of sanitary pads in adolescent girls was 24 %, clothes was 0.9 % and both clothes and pad was 37.1 %.<sup>8</sup> But in the northern states of India this scenario is different. As per the study conducted by Aarohi Mitra et al in Rajkot, Gujarat 73.3 % were using clothes and 26.7 % were using sanitary pads.<sup>9</sup>

The number of sanitary pads to be used in a day depends on the amount of bleeding. On an average a person uses 3 sanitary pads in a day. As per the current study 44.4 % use 3 pads per day but 41.3 % use only 2 pads per day which could be less than ideal. As per the study conducted by Belen Torondel et al in Orissa it was found that those women who tend to change their sanitary pads less often are at a higher risk of bacterial vaginitis and candidiasis compared to those who change it often.<sup>10</sup>

Other menstrual hygiene practices like cleaning of the genital area, methods used for cleaning, bathing and care of undergarments have a profound impact on the genital and general health of the female. In the current study it was heartening to know that 83.2 % of the girls washed their genitalia every time they used the toilet. But the method of cleaning was with soap and water only in 47.4 % of cases, rest used water only. But only 64.3 % of the girls properly washed their undergarments and exposed them to the sun. Others washed them and kept them in their house. As per the case control study conducted by Padma Das et al in Odisha it was seen that those who cleaned their external genitalia with water alone are at 2.4 times risk of developing urogenital infections compared to those who use both soap and water. Frequency of washing more than twice daily was also associated with a protective effect against infections.<sup>11</sup> In the study conducted by Shantanu Sharma in Delhi 90 % had a bath every day during menstruation, practice of cleaning external genitalia was there only in 67 % of cases, out of them 71.5 % used soap and water. As per the study conducted by Belen Torondel et al in Orissa found significant differences in candida infection were associated with the place of drying and the place of storage of the cloths. Women who dried their reusable menstrual absorbent inside their house and women who kept the stored cloth hidden in the toilet compartment were more likely to have candida infections compared with women who dried them in the sun or open space.<sup>10</sup>

Another important factor that affects the menstrual hygiene practices is the awareness of the girls. As per the current study good awareness was significantly associated with sanitary pad usage. As per the study 84.3 % were aware about menstruation which is a good sign. This is higher compared to the study conducted by Baishakhi Paria in West Bengal where only 35.7 % were aware about menstruation at the time of menarche. 21.07 % girls believed menstruation as a physiological process while majority had no idea about the cause of it.<sup>12</sup> In another study conducted by A Dasgupta and M Sarkar in India 67.5 % girls were aware about menstruation prior to attainment of menarche.<sup>13</sup> Among 160 respondents, mother was the first informant only in case of 60 (37.5 %) girls which is lower than the current study. In the present study 37.2 % knew that source of menstruation is from the uterus. This is higher

than the study conducted by Aarohi Mitra in Gujarat where only 24 % knew the source of menstrual bleeding to be from the uterus.<sup>8</sup>

Disposal of the sanitary pads is both a social and health hazard if not properly disposed. In the current study 75.6 % resorted to burning them which is a good method. This is in contrast to the study from Delhi where 91.9 % threw it in the routine waste.<sup>4</sup> Still it is a cause of worry that 16.3 % of them throw the sanitary pads / clothes into general waste and 8.1 % of them flush it in the toilet.

It is a matter of concern that social taboos regarding menstruation still exists in the society. These social taboos has deep roots embedded in menstruation related myths.<sup>14</sup> 76 % reported that they were unable to attend social or religious functions during menstruation while 9.7 % had restrictions in going out 7.7 % had restrictions on food preparation. 7 % of girls had to sleep in a corner of the room while they were menstruating. A study conducted by Kamaljit K et al revealed similar results with 72 % of the respondents having restrictions on visiting religious places and touching sacred books, while 27.3 % could not take specific food, 12.7 % had restrictions on to playing, going out and cycling.<sup>15</sup>

All the girls with good awareness regarding menstruation and menstrual hygiene were found to be using sanitary pads. Among those with low awareness only 25.5 % were using sanitary pads. This was also found to be statistically significant. Another factor that plays a role in menstrual practice and awareness is the education of the mother.<sup>16,17</sup> In this study among those students whose mothers have studied only up to high school or below, sanitary pad usage was only 27.7 % where as those who have studied up to or more than higher secondary the usage was 40 %. This was also statistically significant. Mothers education was found to be related to sanitary pad usage in studies conducted at Varanasi, Mumbai and Andhra Pradesh.<sup>16,18,19</sup> Another factor that was found to be statistically significantly associated with sanitary pad usage was monthly family income. In those with family income less than 10,000 the prevalence of pad usage was only 22.4 % whereas in the group where income was between 10,000 to 29973 it was 43.8 %.<sup>7</sup> This association between menstrual practice and economic status was also seen in a study conducted by Sangeeta Kansal et al. and it was observed that respondents who were in higher economic classes maintaining more hygienic practices in comparison to middle and lower class and the association was also found to be significant.<sup>16</sup>

## CONCLUSIONS

Majority of the adolescent girls had awareness regarding menstruation and ideal practices to be followed. However, there were some who followed less than ideal practices when it comes to disposal of sanitary napkins / clothes and care of undergarments. The wrong concepts like menstruation is a 'disease of impurity' and menstruation occurs when 'bad blood' collects is still prevalent among the adolescent girls. It is of concern that the social taboos

regarding menstruation are still widely embraced by the society.

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