

## Research Article

# Menstrual hygiene and sanitation practices among adolescent school going girls: a study from a South Indian town

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## ABSTRACT

**Background:** Hygiene practices of women during menstruation are of importance as it has health impacts in terms of increased vulnerability to reproductive tract infection. Proper menstrual hygiene, correct perception and belief protect women folk from this suffering. This study is aimed to explore the knowledge, attitude, social practices during menstruation among adolescent secondary schoolgirls.

**Methods:** This descriptive cross sectional study was undertaken among 150 adolescent school going girls by using provisional sampling in Thiruporur, India. Required data was collected through a pre-tested questionnaire during the study period and simple frequencies and comparative percentages were used to analyze the results.

**Results:** Only 18.67% of adolescent girls had knowledge about menstruation before menarche. As high as 67% of them did not know the cause of menstruation. 23.33% of the girls believed that menstrual bleed comes from the same pathway from which urine comes. Nearly all girls (96.67%) reported sanitary pad usage during the duration of mensuration. Two-third (66%) of the girls were secluded during menstruation and majority (81.3%) were restricted to attend school.

**Conclusions:** Though knowledge among the participant girls regarding mensuration and menstrual hygiene was not adequate, it was satisfactory to find that the sanitary pad usage among the sample was 100% due to government services which are provided free of cost. Definitely, it will improve the menstrual status of the girls from cloth to a safer sanitary absorbent usage.

**Keywords:** Menstrual hygiene, Adolescent girls, Menstruation, Sanitary pad, Reproductive tract infection

## INTRODUCTION

Adolescents (10-19 years) constitute about one fourth of India's population. Adolescents are generally considered healthy by themselves, their families, even healthcare providers and society at large. Yet they are known to suffer significant morbidity caused by. According to Census 2001, there are 225 million adolescents in the age group of 10-19 years, comprising nearly one-fifth of the total population (21.8 percent) of India.<sup>1</sup> Adolescence in girl is a period of transition between girl to womanhood

occurs during which specific and special attention to their hygiene and health should be provided. Hygiene practices of women during menstruation are of importance as it has health impacts in terms of increased vulnerability to reproductive tract infection. Reproductive tract infection has become a silent epidemic that devastates women's life is closely correlated with poor menstrual hygiene. Proper menstrual hygiene, correct perception and belief protect women folk from this suffering. Menstruation is generally regarded unhygienic and is not commonly discussed to the future generation due to lack of proper

knowledge or skills to communicate which creates a silent attitude. The mothers also lack sufficient knowledge and the skill to communicate to their daughters regarding menstruation and its hygiene. This has openly blocked the access of information to the adolescence. In addition, many myths regarding menstrual hygiene prevails in our society which adds to the lack of proper knowledge, attitude and practice about menstruation. Faulty perceptions or misconceptions on menstruation and menstrual cycle will lead to faulty menstrual practices. Either of these may engender reproductive health problems in the adolescent.<sup>2</sup> Therefore, learning about hygiene during menstruation is a vital aspect of health education for adolescent girls, as patterns that are developed in adolescence are likely to persist into adult life. Studies on menstrual hygiene among Indian women and adolescent girls are scarce. Our study is aimed to explore the knowledge, attitude, social practices during menstruation among adolescent secondary schoolgirls. Overall, this study will highlight the need of adolescent girls to have accurate and adequate information about menstruation, the social practices during menstrual period and its appropriate management. This study was aimed to provide an insight into the cultural setup in Thiruporur with regards to the most sensitive issue of society the menstruation.

## METHODS

This descriptive cross sectional study was conducted among 150 school going adolescent girls selected through provisional sampling in Thiruporur government girl's higher secondary school from April to October 2012. Adolescent school girls (10-19 years), who had attained menarche were included in the study. Inclusion criteria included those girls who had attained menarche, studying in middle school to intermediate school, and gave consent to the interview. Girls who had not attained menarche and gave no consent to the interview were excluded from the study. Face to face interview with structured pre-tested questionnaire was used as a tool of survey. After getting permission from ethical committee of Shri sathya sai medical college and research institute approval from school principal and head master was obtained, and required data was collected. Simple frequencies and comparative percentages are used to analyze the results.

## RESULTS

The study was carried out with adolescent girls studying in a government secondary school. A total of 150 girls participated in study and gave a response rate of 100%.

Table 1 shows the socio-demographic details of study subjects. Majority of the respondents, (57.3%), were aged between 13-15 years, while remaining was of age range in 16-19 years (42.6%). Most of the respondents were Hindu (91%) by religion, rest were Christian (8%) and Muslim (1%). A large group of respondents were in 9-10<sup>th</sup> standard (50.67%) and 11-12<sup>th</sup> standard (38.6%)

respectively. With only 10.6% in studying 6-8<sup>th</sup> standard. Considering socio-economic status, most of them (75.6%) belonged to upper lower, 20% to the lower middle and 4.6% to upper middle socio economic status (Table 1).

**Table 1: Demographic characteristics of the study subjects (N=150).**

Parameter		Total
Age	13-15 years	86 (57.3%)
	16-19 years	64 (42.6%)
Religion	Hindu	136 (90.6%)
	Christian	12 (8.0%)
	Muslim	2 (1.4%)
Type of family	Nuclear	132 (88.0%)
	Joint	17 (11.3%)
Education	6-8 <sup>th</sup> STD	16 (10.6%)
	9-10 <sup>th</sup> STD	76 (50.6%)
	11-12 <sup>th</sup> STD	58 (38.6%)
Socio economic status	Upper middle	7 (4.6%)
	Lower middle	30 (20%)
	Upper lower	112 (74.6%)

As observed in Table 2, when the students were asked questions to elicit their knowledge of menstruation and menstrual hygiene, most of them 81.3% knew about menstruation only after menarche. Only 18.67% of them had knowledge about menstruation before menarche. 78% of girl's experience with onset of menarche was frightening and for the rest it was confusing (14.7%) and expectant (7.3%) (Table 2).

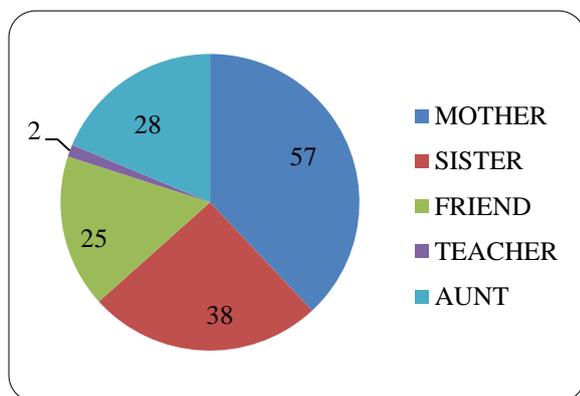
**Table 2: Knowledge and awareness regarding menstruation among adolescent girls (N=150).**

Variable		Frequency	Percentage (%)
Awareness about menstruation	Before menarche	28	18.67%
	After Menarche	122	81.33%
Experience at first menarche	Confusing	22	14.7%
	Frightening	117	78%
	Expectant	11	7.3%

As shown in the figure, of the 150 respondents who discussed their menstrual problems, the commonest person with whom this was most discussed was the mother (38%). The remaining had their first contact with the information through sister (25.33%), friends (16.67%) and relatives (18.67%) (Figure 1).

Distribution by perception on menstruation amongst the respondents as shown in Table 3 indicate that as high as 67% of them did not know the cause of menstruation, 42% believed menstruation as a physiological process, 8% as sin, 2.67% as curse and 0.67% as a disease. Girls

shared that they did not know specific about menstruation, especially the physiological basis - e.g. where the menstrual flow comes from - until their first personal experience of menstruation. 68% of them were not aware of the path from where bleeding comes, 23.33% of the girls believed that menstrual bleed comes from the same pathway from which urine comes and 8.67% of them supposed that menstrual bleed comes from separate pathway (Table 3).



**Figure 1: Source of knowledge related to menstruation.**

**Table 3: Distribution by perception on menstruation amongst respondents (N=150).**

Variable	Frequency	Percentage (%)
Cause	Physiological	63 (42.00%)
	Sin	12 (8.00%)
	Curse	4 (2.67%)
	Disease	1 (0.67%)
	Don't know	70 (46.67%)
Path of menstrual bleeding	The same path from where urine comes	35 (23.33%)

Regarding the practices of menstrual hygiene many enquiries were made. For actual material used in last menstruation, nearly all girls (96.67%) reported sanitary pad usage. Whereas, 1.33% of all believed in cloth usage and 2% in using other absorbent during menstruation. 56% of study respondent did not know about the effects of physical exercise during menstruation and 40% of them thought that physical exercise during menstruation was good. 51.3% of the girls, used to changed pad after it was completely soaked and 48.7% changed pad on timely interval. The number of times the girls used to change pad as a form of the menstrual protection dressings was once a day in 18%, twice a day in 54.7% and to more than two times a day in 27.3% of girls. Almost all girls (96%) used to take shower during the menstruation period. The parameters used for assessing the students' practice of menstrual hygiene are summarized in Table 4.

**Table 4: Practices of menstrual hygiene among adolescent girls (N=150).**

Practices	Frequency	%
Absorbent	Sanitary pad	145 (96.67%)
	Cloth	2 (1.33%)
	Others	3 (2.00%)
Physical exercises	Good	60 (40.00%)
	Bad	6 (4.00%)
	Don't know	84 (56.00%)
Criteria for change of pad	Complete soaking	77 (51.3%)
	Based on time interval	73 (48.7%)
How many times do you change the pad	Once a day	27 (18%)
	Twice a day	82 (54.7%)
	More than two times a day	41 (27.3%)
Shower	Yes	144 (96.00%)
	No	6 (4.00%)

Table 5 shows the different restrictions practiced during menstruation. Nearly two-third (66%) of the girls were secluded during menstruation, followed by girls who were restricted to cook (38.7%), asked to sleep separately (64.7%), restricted from household work (38.7%), restricted to play (92%), restricted to attend school (81.3%) and 26% of them were restricted to touch males during menstruation (Table 5).

**Table 5: Restrictions practiced during menstruation (N=611\*).**

Restriction practiced for	Frequency (%)
Seclusion	99 (66%)
Cooking	58 (38.7%)
Sleeping separately	97 (64.7%)
Household work	58 (38.7%)
Playing	138 (92%)
Attending school	122 (81.3%)
Touch males	39 (26%)

\*Multiple responses

## DISCUSSION

A key priority for women and girls is to have necessary knowledge, facilities, and cultural environment to manage menstruation hygienically and with dignity. Studies conducted on this specific arena, indicate the varying degree to which adolescents exhibit their level of knowledge and awareness to menstruation and menstrual hygiene.

In this study only 18.67% of the adolescent girls had awareness about menstruation before menarche. Similar findings were reported by other authors also. Bobhate PS and Shrivastava SR in their cross-sectional study

undertaken in an urban slum area of Mumbai, reported that only 20.3% of the participants were aware about menstruation before menarche.<sup>3</sup> Jogdand K and Yerpude P in a community based study done in West Bengal experienced that only 36.19% girls were aware of menstruation prior to the attainment of menarche.<sup>4</sup> A study from Nagpur district Subhash B. Thakre et al. made it evident that only 143 (36.95%) of the participants were aware about menstruation before menarche.<sup>5</sup> Similarly in a study conducted in rural secondary school of West Bengal, Sudeshna R and Dasgupta A stated that only 42% of the girls had knowledge about menstruation before their onset of menarche.<sup>6</sup>

Many of other studies reported contradictory observations. A cross-sectional study conducted among the 160 adolescent schoolgirls in West Bengal, Dasgupta A. and Sarkar M. observed that 108 (67.5%) girls were aware about menstruation prior to attainment of menarche.<sup>7</sup> A cross-sectional survey, done in Nepal by water aid, reported that a large majority of survey respondents (92%) had known about menstruation before their menarche.<sup>8</sup> Similarly Lawan UM et al. also found in their study done in Nigeria, a considerably high level of awareness among their study subjects about menstruation before menarche.<sup>2</sup>

Typically the onset of menstruation is a traumatic and fearful experience for young girls in India. Girl's experience with onset of menarche was frightening in case of 78% of all respondents. It was confusing for 22 (14.7%) and expectant for rest of 11 (7.3%).

In this study mother was the prime (38%) source of information. Similar to our study observation other workers have also shown mother as the central source of information about menstruation. In a cross-sectional study conducted among school girls in Nigeria observed that commonest person with whom this was most discussed was the mother, 189 (47.1%). The aunt, and health professionals each respectively accounted for 13 (3.3%), while boyfriends, and teachers, were responsible for 3 (0.7%) and 2 (0.4%).<sup>9</sup> Similarly in another Nigerian study, the majority, 136 (35.3%) of study subjects first heard of menstruation and/or menstrual hygiene from their parents. Few subjects however (14.3%) learnt about the topic from the school teachers and matrons.<sup>2</sup> In a cross-sectional survey carried out among secondary schoolgirls, El-Gilany AH, Badawi K, El-Fedawy S. reported that mass media and mothers (92.2%) were the most common sources of information about menstrual hygiene.<sup>10</sup> Results from various other studies made similar observation that girl's mother was found to be first source of information regarding menstruation.<sup>3-6,8</sup> Teachers, friends and relatives were other sources of information. Contrary to our study, Dasgupta A and Sarkar M revealed that mother was the first informant only in case of 60 (37.5%) girls.<sup>7</sup>

While studying the distribution by perception on menstruation amongst the study subjects, more than half of participants 67% did not know the cause of menstruation, 42% believed menstruation as a physiological process. A very few of them attributed it as a sin (8%), 2.67% as a curse and 0.67% as a disease. Furthermore, regarding source of blood in menstruation, girls shared that they did not know specific about menstruation, especially the physiological basis - e.g. where the menstrual flow comes from - until their first personal experience of menstruation. A large number (68%) of them were not aware of the path from where bleeding comes. Similarly results were observed in other studies. In Nagpur study, it was observed that 80.62% of the study subjects were not aware of the cause of the bleeding, 18.35% of the girls believed that it was a physiological process and 4 (1.03%) believed it as a curse from God.<sup>5</sup> Sudeshna R and Dasgupta A. observed in their study that about one third of the population did not have the correct knowledge of the actual cause of menstruation.<sup>6</sup> Adinma E and Adinma J. observed that 39.3% of girls perceived menstruation as a physiological process, while 28.4% viewed menstruation as release of 'bad blood'. Amongst other perceptions on menstruation, cleansing of the womb (26.9%), and washing off of an undeveloped baby (17.8%) were also noticed. None (0.0%) of the respondents perceived menstruation to be a consequence of evil forces/curse from gods.<sup>9</sup>

On the contrary, in Nepal survey it was recognized that 81% of all respondents perceived menstruation as a normal physiological process. However, a very few respondents (2%) mentioned disease or curse/sin as the cause of menstruation that is in accordance to our study results. Likely, they also reported that majority of the respondents (73%) identified vagina, and only 13% identified uterus, as where the menstrual blood comes from.<sup>8</sup> Another study also observed that as a cause of menstruation, majority of girls perceived it as a physiological / hormonal process 154 (63.9%). 38 (15.8%) of girls believed that it is caused by a disease.<sup>3</sup>

Regarding source of menstrual bleeding, Dasgupta A and Sarkar M had similar results stating that most of the girls (97.5%) did not know about the source of menstrual bleeding. However, they also reported that a majority of them (86.25%) girls believed it as a physiological process.<sup>7</sup> A study in Mumbai slum area also observed that most of the respondents were not aware (75.5%) and only 14.5% of them knew that blood come from uterus.<sup>3</sup> Other workers have reported dissimilar results, stating that among all only 2.58% and 17.9% of the adolescent girls knew that the source of the menstrual bleeding was the uterus, respectively.<sup>5,6</sup>

In a bid to better the health of adolescent girls, and ensure reproductive health of women, the state government has launched a 'napkin revolution' all over the state. That Free sanitary napkins are distributed to rural girls, new mothers and girls studying in government schools. The

above government initiative reflects the reasons for nearly complete usage of sanitary pads menstruation as proved by the results shown by the current study. Nigerian study supported our study results stating 93.8% of the school girls that have commenced menstruation used sanitary pads as absorbent during their last menstrual period. The remaining 23 (6.2%) used either designated pieces of cloth that they washed/ boiled, dried and re-used; or used any available piece of cloth that they discarded after use respectively (Sudeshna R and Dasgupta).<sup>2</sup>

On contrary, other workers have reported lower usage of sanitary napkins among the adolescent school girl. El-Gilany et al. reported that two-thirds of the girls (66.8%) used sanitary pads, while 12% used old pieces of cloth thrown away after use, respectively.<sup>10</sup> Nigerian study result showed toilet tissue paper (41.3%) as the most common material to absorb the menstrual blood. Sanitary pad was used by 180 (32.7%) of the respondents, while 79 (14.4%), and 59 (10.7%) used clothes, and multiple materials respectively respectively (Sudeshna R and Dasgupta).<sup>2</sup> Few other studies stated that only 11.25% of girls used sanitary pads during menstruation, 42.5% girls used old cloth pieces and 6.25% girls used new cloth pieces. Sixty-four (40%) girls used both cloth pieces and sanitary pads during menstruation.<sup>7,9</sup> Similarly, Nepal study revealed that 33% used disposable sanitary pad, 40% used new cloth whereas as about a fourth (26%) used old piece of cloth from sari or scarf.<sup>8</sup> Likewise, similar observation was made evident in other studies showing nearly half of the respondents using sanitary pad.<sup>3-5</sup> However, in contrast to our results, Sudeshna R and Dasgupta A. observed that majority (62.6%) of the girls used only cloth as their menstrual absorbent.<sup>6</sup>

In southern Indian state of Tamil Nadu as well as in many other parts of India, menstruation is considered filthy and impure. Therefore, there are a widespread beliefs and restrictions that surround handling food, access to temple and staying outside the house. This Study inquired into the beliefs that result in restrictions of lifestyle. Nearly all girls experience some lifestyle restriction associated with menstruation. Among different types the commonest restrictions practiced during menstruation were abstaining from playing (92%) and attending school (81.3%). A considerable number of girls were secluded (66%) and asked to sleep separately (64.7%). Surprisingly, touching the male family member during menstruation was also not allowed in a fewer number of cases (26%). It clearly indicates that there are still large number of traditional beliefs and restrictions surrounding menstruation. Nearly similar findings were reported by other workers stating that majority of girls was restricted from playing and doing routine household work along with attending religious occasions.<sup>3,4</sup> Sudeshna R and Dasgupta A. also reported that about 38% of the girls reported of being absent from school during their last menstrual period.<sup>6</sup> Subhash B. Thakre et al. in their study depicts that a fair number of girls (26.36%) were not

allowed to do household work and sleep on the routine bed. However, they reported that majority of them (71.78%) girls did not attend any religious functions or visit temples.<sup>5</sup> Regarding the practice of abstaining a girl from touching males in the family, Dasgupta A and Sarkar M. and Nepal survey, reported similar findings. However, it is reported in these two studies that the restriction from attending religious activities was the commonest observation made.<sup>7,8</sup>

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