



## Menstrual Related Practices and Hygiene Among Adolescent Girls-A Comparative Study from Private, Government and Tribal Schools of Amravati District

P.V. Kale, P.A. Warbhe\*, A.K. Jawarkar and V.D. Khanande

Department of Community Medicine, Dr. Panjabrao Deshmukh Memorial Medical College, Maharashtra, India

\* Corresponding e-mail: [priyawarbhe@gmail.com](mailto:priyawarbhe@gmail.com)

**Received:** 05-January-2023, Manuscript No. ijmrhs-23-85553; **Editor assigned:** 09-January-2023, PreQC No. ijmrhs-23-85553(PQ); **Reviewed:** 09-February-2023, QC No. ijmrhs-23-85553(Q); **Revised:** 12-February-2023, Manuscript No. ijmrhs-23-85553(R); **Published:** 28-February-2023, J-invoice: J-85553

### ABSTRACT

**Background:** Adolescence in girls has been recognized as a special period that signifies the transition from girlhood to womanhood. Good hygienic practices such as the use of sanitary pads and adequate washing of the genital area are essential during menstruation. Hygiene-related practices of women during menstruation are of considerable importance, as it has a health impact in terms of increased vulnerability to reproductive tract infections. **Methods:** Cross-sectional, descriptive, and comparative study was carried out in randomly selected Private, Government, and Tribal schools of the Amravati district. **Results:** A total of 450 adolescent girls from Government, Private, and Tribal schools participated in the study. The mean age at menarche of government, private, and Tribal school girls were 12.98 years  $\pm$  0.79 years, 12.55 years  $\pm$  0.81 years, and 13.07 years  $\pm$  1.23 years respectively. The menstrual cycle was regular in the majority of girls from government, private, and tribal schools girls. Menstrual flow lasted for 2 days- 7 days in 86% and 82.7% of government and private school girls respectively while the flow was less than 2 days in 78.7% of tribal school girls. Adolescent girls from government, private and tribal schools (92.7%, 98%, and 55.3% respectively) used sanitary pads during menstruation. **Conclusions:** Menstrual cycle was regular in the majority of girls from government, private, and tribal schools girls. Nearly all girls from government and private schools knew about menstruation before menarche and the source of information were mothers or sisters and radio and television. Almost all girls from the government, the private school used sanitary pads during menstruation but girls from tribal schools used reusable clothes mainly.

**Keywords:** Menstrual related practices, Hygiene, Adolescent girls, Tribal schools

### INTRODUCTION

WHO has defined Adolescence as the period between 10 years- 19 years of life. Adolescent girls constitute about 1/5<sup>th</sup> total female population in the world. Adolescence in girls has been recognized as a special period that signifies the transition from girlhood to womanhood. Menstruation is a phenomenon unique to all females [1]. Menstruation

is generally considered unclean in Indian society. Isolation of menstruating girls and restrictions being imposed on them in the family have reinforced a negative attitude towards this phenomenon [2]. The first menstruation is often horrifying and traumatic to an adolescent girl because it usually occurs without her knowing about it [3]. There is a substantial lacuna in the knowledge about menstruation among adolescent girls. Several research studies have revealed this gap and they showed that there was a low level of awareness about menstruation among girls when they first experienced it [4]. Many studies have revealed that most adolescent girls had incomplete and inaccurate information about menstrual physiology and hygiene. It also revealed that mothers, television, friends, teachers, and relatives were the main sources that provided information on menstruation to adolescent girls [5]. Good hygienic practices such as the use of sanitary pads and adequate washing of the genital area are essential during menstruation. Women and girls of reproductive age need access to clean and soft, absorbent sanitary products which can, in the long run, protect their health [6]. Hygiene-related practices of women during menstruation are of considerable importance, as it has a health impact in terms of increased vulnerability to Reproductive Tract Infections (RTI). The interplay of socioeconomic status, menstrual hygiene practices, and RTI is noticeable. Today millions of women are sufferers of RTI and its complications and often the infection is transmitted to the offspring of the pregnant mother. Women having better knowledge regarding menstrual hygiene and safe practices are less vulnerable to RTI and its consequences [5].

### **Objective**

To assess and compare menstrual hygiene and practices amongst adolescent girls from selected schools.

## **MATERIALS AND METHOD**

### **Study Setting**

The study was carried out in randomly selected Private, Government, and Tribal schools of the Amravati district.

### **Study Design**

A cross-sectional, descriptive, and comparative study.

### **Sample Size and Sampling Method**

Random Sampling to choose 2 schools from each cluster (Private, government, and Tribal schools), then complete enumeration of sample based on inclusion criteria.

### **Study Period**

6 months

### **Inclusion Criteria**

- Adolescent girls (10 years-19 years), Achieved Menarche.
- Willing to participate after giving written informed consent.

### **Research Tool**

Pretested, Validated questionnaire in language best understood by girls was filled from each participant, and written response to each question was collected back after the stipulated time on the same day in a classroom setting.

Health Education regarding menstrual hygiene and related practices was provided to all girls in the form of a power-point presentation and personal queries were answered.

Each school was provided with health education material in form of posters to be displayed on school premises.

### Ethical Consideration and Confidentiality

This study was initiated only after approval from the institutional ethical committee and permission from the school authorities. Written consent from the participant's guardian and assent from participants was obtained after explaining the objectives of the study.

### Statistical Analysis

Data were entered into MS excel. Based on the questionnaire, proportions, and percentages were calculated for qualitative data.

## RESULTS

A total of 450 adolescent girls from Government, Private, and Tribal schools participated in the study. The mean age of government, private, and tribal school girls was 14.25 years  $\pm$  0.67 years, 14.09 years  $\pm$  0.43 years, and 14.73 years  $\pm$  1.58 years respectively.

The majority of girls were Hindu by religion, 70% girls from the government, 78% from private, and 98.7% from tribal schools. Nearly 72.7% of girls from government and 98.7% of girls from private schools were residing in an urban area while 100% of girls from tribal schools were from tribal areas. The details of mean age, religion, and place of residence are shown in Table 1.

**Table 1 Mean age, religion and place of residence of study participants**

Variables	Government School	Private School	Tribal School
Mean Age	14.25 years $\pm$ 0.67 years	14.09 years $\pm$ 0.43 years	14.73 years $\pm$ 1.58 years
<b>Religion</b>			
Hindu	105(70)	117(78)	148(98.7)
Muslim	0(0)	10(6.7)	0(0)
Jain	0(0)	4(2.7)	0(0)
Christian	0(0)	3(2)	0(0)
Buddhist	45(30)	12(8)	2(1.3)
ST	0(0)	1(0.7)	0(0)
Others	0(0)	3(2)	0(0)
<b>Place of residence</b>			
Urban	109(72.7)	148(98.7)	0(0)
Rural	41(27.3)	2(1.3)	0(0)
Tribal	0(0)	0(0)	150(100)
<i>(Figures in parenthesis indicate percentages)</i>			

**Table 2 Socio-demographic Details of study participants**

Variables	Government School	Private School	Tribal School
<b>Education of Father</b>			
Illiterate	1(0.7)	2(1.3)	26(17.3)
Up to 10th standard	58(38.7)	10(6.7)	93(62)

12 <sup>th</sup> standard	74(49.3)	25(16.7)	31(20.7)
Diploma or Above	17(11.3)	113(75.3)	0(0)
<b>Education of Mother</b>			
Illiterate	6(4)	1(0.7)	44(29.3)
Up to 10th standard	63(42)	14(9.3)	91(60.6)
12th standard	68(45.3)	29(19.3)	15(10)
Diploma or Above	13(8.7)	106(70.7)	0(0)
<b>Occupation of Father</b>			
Profession	17(11.3)	84(56)	0(0)
Semi Profession	73(48.7)	5(3.3)	53(35.3)
The clerical, shop owner, farmer	30(20)	55(36.7)	51(34)
Skilled worker	14(9.3)	5(3.3)	3(2)
Semi-Skilled/Unskilled	5(3.3)	0(0)	35(23.3)
Not Alive	11(7.3)	1(0.7)	8(5.3)
<b>Occupation of Mother</b>			
Profession	11(7.3)	33(22)	0(0)
Semi Profession	8(5.3)	0(0)	0(0)
The clerical, shop owner, farmer	17(11.3)	9(6)	40(26.7)
Skilled worker	2(1.3)	2(1.3)	12(8)
Homemaker	109(72.7)	105(70)	84(56)
Not Alive	3(2)	1(0.7)	14(9.3)
<b>Family Type</b>			
Nuclear	94(62.7)	108(72)	53(35.3)
Joint	56(37.3)	42(28)	97(64.7)

Parent's education 61%, 92 %, and 21% of girls' fathers were educated above the 12<sup>th</sup> class from government, private and tribal schools respectively, and 54%, 90%, and 10% of girl's mothers were educated above class 12<sup>th</sup> from government, private and tribal schools respectively. Parent's occupation- Fathers of participating girls were employed as semi-professional in 48.7% of government school girls and 35.3% of tribal school girls while were employed as professionals in 56% of private school girls. Majority of mothers of participating girls from government, private and tribal schools were homemakers (72.7%, 70%, and 56% respectively). The majority of girls from government and private schools lived in a nuclear type of family (62.7% and 72% respectively) while 64.7% of girls from tribal schools lived in a joint family. The socio-demographic details of the study participants are shown in Table 2.

**Table 3 Details of Menstrual Cycle among study participants**

Variables	Government School	Private School	Tribal School
Mean Age at menarche	12.98 years ± 0.79 years	12.55 years ± 0.81 years	13.07 years ± 1.23 years
<b>Menstrual Cycle</b>			
Regular	122(81.3)	123(82)	131(87.3)
Irregular	28(18.7)	27(18)	19(12.6)
<b>Flow</b>			

<2days	8(5.3)	6(4)	118(78.7)
2 days-7 days	129(86)	124(82.7)	12(8)
>7 days	13(8.7)	20(13.3)	20(13.3)
<b>Bleeding</b>			
Scanty	8(5.3)	7(4.7)	110(73.3)
Normal	124(82.7)	140(93.3)	29(19.3)
Excess	18(12)	3(2)	11(7.3)

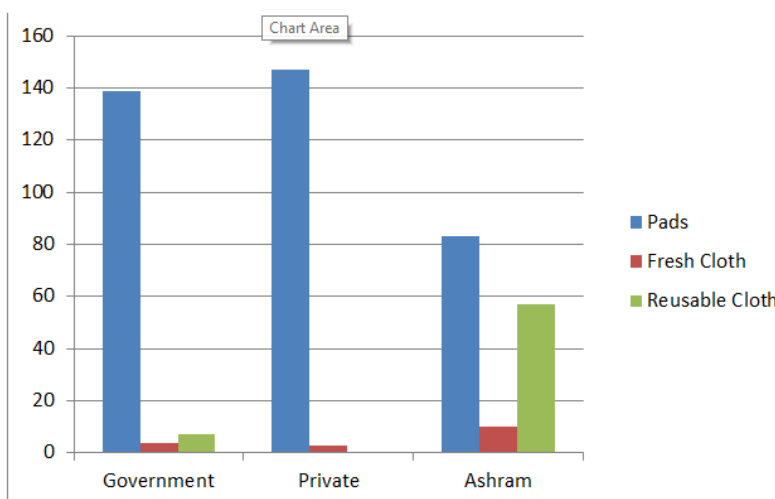
The mean age at menarche of government, private, and tribal school girls was 12.98 years  $\pm$  0.79 years, 12.55 years  $\pm$  0.81 years, and 13.07 years  $\pm$  1.23 years respectively. The menstrual cycle was regular in the majority of girls from government, private, and tribal schools girls. Menstrual flow lasted for 2 days-7 days in 86% and 82.7% of government and private school girls respectively while the flow was less than 2 days in 78.7% of tribal school girls. Bleeding was normal in 82.7% and 93.3% of government and private school girls while it was scanty in 73.3% of tribal school girls. The details of the menstrual cycle among the study participants are shown in Table 3.

**Table 4 Information about menstruation among study participants**

Did you receive any information about menarche and menstrual hygiene before menarche?	Categories	Government School	Private School	Tribal School
	Yes		107(71.3)	131(87.3)
No		43(28.7)	19(12.7)	80(53.3)
What was your source of information regarding menstruation?	Mother/Sister	116(77.3)	138(92)	14(9.3)
	Teacher	17(11.3)	3(2)	40(26.7)
	Friends	16(10.7)	9(6)	12(8)
	Radio/TV	1(0.7)	0(0)	84(56)

(Figures in parenthesis indicate percentages)

The majority of girls from government and private schools (71.3% and 87.3% respectively) knew about menstruation before menarche. Their source of information was mother/sister in 77.3% and 92% respectively while it was radio and television for 56% of tribal school girls. The details of information about menstruation among study participants are shown in Table 4.



**Figure 1 Types of absorbents used during menstruation**

The above Figure 1 shows the majority of girls from government, private and tribal schools (92.7%, 98%, and 55.3% respectively) used sanitary pads during menstruation.

**Table 5 Menstrual Hygiene Practices among study participants**

	Categories	Government School	Private School	Tribal School
<b>Types of absorbents used during menstruation</b>	Sanitary Pads	139(92.7)	147(98)	83(55.3)
	Fresh Cloth	4(2.7)	3(2)	10(0.6)
	Reusable Cloth	7(4.7)	0(0)	57(38)
<b>Number of times absorbent changed per day</b>	2 times-5 times	22(14.7)	29(19.3)	21(14)
	>5 times	5(3.3)	8(5.3)	72(48)
	As per need	123(82)	113(75.3)	57(38)
<b>Disposal of used menstrual absorbent</b>	Dust Bin	105(70)	129(86)	29(19.3)
	Wash and Reuse	9(6)	4(2.7)	81(54)
	Burn/ Bury	32(21.3)	14(9.3)	4(2.7)
	Flush in toilet	4(2.7)	3(2)	36(24)
<b>Cleaning of Genital area per day</b>	<3 times	58(38.7)	65(43.3)	87(58)
	>3 times	61(40.7)	45(30)	41(27.3)
	Only during bath	31(20.7)	40(26.6)	22(14.6)
<b>The agent used for cleaning purposes</b>	Only water	42(28)	66(44)	141(94)
	Soap and water	83(55.3)	65(43.3)	9(6)
	Antiseptic	25(16.7)	19(12.7)	0(0)

The majority of girls from government, private and tribal schools (92.7%, 98%, and 55.3% respectively) used sanitary pads during menstruation. 82% of government and 75.3% of private schools changed their pads as per need while 48% of tribal school girls changed their pads more than 5 times a day. 70% of government and 86% of private schools disposed of pads in dust bins while 54% of tribal school girls washed and reused the cloth. 40.7% of girls from government schools cleaned their genitalia more than 3 times during menstruation while the majority of girls from private and tribal schools cleaned less than 3 times (43.3% and 58% respectively). Soap and water was the main agent used by government school girls (55.3%) while the majority of the girls from private and tribal school used only water (44% and 94% respectively). The details of menstrual hygiene practices among study participants are shown in Table 5.

## DISCUSSION

In our study, the mean age of government, private, and tribal school girls was 14.25 years  $\pm$  0.67 years, 14.09 years  $\pm$  0.43 years, and 14.73 years  $\pm$  1.58 years respectively. The mean age at menarche of government, private, and tribal school girls were 12.98 years  $\pm$  0.79 years, 12.55 years  $\pm$  0.81 years, and 13.07 years  $\pm$  1.23 years respectively. A study from a rural area in southern Haryana shows mean age ( $\pm$  standard deviation [SD]) of the study participants was 15.5 years  $\pm$  1.09 years. The mean age ( $\pm$  SD) of menarche in the study population was 12.8 years  $\pm$  1.73 years [7]. In our study around 61%, 92%, and 21% of girl's fathers were educated above the 12<sup>th</sup> class from government, private and tribal schools respectively, and 54%, 90%, and 10% of girl's mothers were educated above the class 12th from government, private and ashram schools respectively. Father's occupations consisted of semi-professional in 48.7% of government school girls and 35.3% of tribal school girls while they were employed as professionals in 56% of private school girls. The majority of mothers of government, private, and tribal school girls were homemakers (72.7%, 70%, and 56% respectively). A study from North Karnataka showed 44.3% of the fathers of

the girls had primary education or were lesser educated. Similarly, 49.7% of the mothers had primary education or were lesser educated. Most of the fathers of the girls were farmers (29.7%) or laborers (21.1%). The majority of the mothers were housewives (69.7%). also, a study from a rural area in southern Haryana showed mothers of more than two-fifth of the participants (43.5%) were illiterate [7].

In our study: The menstrual cycle was regular in the majority of girls from government, private, and tribal schools girls. Menstrual flow lasted for 2 days-7 days in 86% and 82.7% of government and private school girls respectively while the flow was less than 2 days in 78.7% of tribal school girls. Bleeding was normal in 82.7% and 93.3% of government and private school girls while it was scanty in 73.3% of tribal school girls. A study from North Karnataka showed a majority of the girls had their periods every 28 days-34 days (37.2%). A significant number of girls (12.2%) said they have heavy periods. Most of the girls bled for 6 days or less, however, 9% of the girls said that they bleed for 7 or more days [8]. In our study majority of girls from government and private schools (71.3% and 87.3% respectively) knew about menstruation before menarche. The source of information was mother or sister for girls from government and private schools (77.3% and 92% respectively) while it was radio and television for 56% of tribal school girls. A systematic review and analysis from India showed among 88 studies with available information, the pooled prevalence of pre-menarche awareness was 48%. Among girls aware before menarche, mothers were the most frequent source of information followed by friends. Other sources such as relatives (including sisters) and teachers were less commonly reported [9].

In the current study majority of girls from government, private and tribal schools (92.7%, 98%, and 55.3% respectively) used sanitary pads during menstruation. Around 40.7% of girls from government schools cleaned their genitalia more than 3 times during menstruation while the majority of girls from private and tribal schools cleaned less than 3 times (43.3% and 58% respectively). Soap and water was the main agent used by government school girls (55.3%) while the majority of the girls from private and tribal schools used only water (44% and 94% respectively). In a study from Pondicherry, three-fourths of girls (77%) used sanitary pads and 100% of girls took baths daily. The practice of washing genitalia with soap and water during menses was observed by only 43% in this study [10]. In a study from Karnataka, around 46.06% of the girls preferred old cloth pieces rather than sanitary pads as menstrual absorbent. The reasons cited by the participants for not using sanitary pad was high cost, shyness to buy, lack of knowledge, and disposal problems [11].

## CONCLUSION

The menstrual cycle was regular in the majority of girls from government, private, and tribal schools girls. Menstrual flow lasted for 2 days-7 days in most girls from government and private schools while it was less than 2 days in the majority of tribal school girls. The menstrual bleeding flow was normal in almost all government and private school girls while it was scanty in most tribal school girls. Nearly all girls from government and private schools knew about menstruation before menarche and the source of information were mothers or sisters for government and private school girls while it was radio and television for tribal school girls.

Almost all girls from government, and private schools used sanitary pads during menstruation but girls from tribal schools used reusable cloth. Most of the girls changed their pads as per need. The majority of government and private school girls disposed of sanitary pads in dust bins while 54% of tribal school girls washed and reused the cloth. Nearly 41% of girls from government schools cleaned their genitalia more than 3 times during menstruation while the majority of girls from private and tribal schools cleaned less than 3 times. Soap and water was the main agent used by government school girls (55.3%) while the majority of the girls from private and tribal schools used only water (44% and 94% respectively).

## RECOMMENDATIONS

Menstrual hygiene and the use of sanitary disposable pads during menstruation needs to be emphasized and introducing it through familiar backgrounds such as school and teachers encourages girls to adopt healthy habits. Further detailed investigations need to be carried out to assess the reasons behind scanty menstrual flow and other menstruation-related issues, particularly in tribal girls.

## DECLARATIONS

### Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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