

# Study on Menstrual Hygiene Management among Urban and Rural Adolescent Girls in Marathwada Region of Maharashtra, India

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## Abstract

**Introduction:** Adolescence is a significant period in the life of a woman. Menstruation is a naturally occurring physiological phenomenon in adolescent girls and premenopausal women. Menstrual hygiene and management is an insufficiently acknowledged issue and has not received adequate attention. The lack of menstrual hygiene among rural population is alarming, and there is a need for policy-making and awareness programs to be initiated.

**Aim:** Hence the present study was aimed to compare the status of menstrual hygiene among rural and urban adolescent girls.

**Methods:** A community-based cross-sectional study was carried out among 250 adolescent girls (rural & urban), aged between 13 to 19 years residing in the field practice area of IIMSR Medical College, Badnapur, Jalna. Data was analyzed by using MS Excel 2010.

**Results:** Out of 250 participants, 48.8% girls from rural area and 51.2% from urban area. The mean age of the menarche was  $12.3 \pm 1.4$  and  $12.34 \pm 1.43$  in rural and urban girls, respectively. Knowledge of menstruation prior to menarche was found to be less in rural girls compared with urban girls. Regarding menstrual hygiene practices during menstruation, out of the total girls residing in rural area 49.18% girl and out of the total girls residing in urban area 62.5% girls were using sanitary pads. Restriction during menstruation was observed more in rural girls than in urban areas.

**Conclusion:** More awareness regarding menarche and menstruation was among urban girls than. Hygienic practices observed by girls were also more satisfactory in the urban area as compared with rural ones.

**Keywords:** Humans, Adolescent, Female, Young Adult, Adult, Menstruation, Hygiene, Menarche, Rural Population, Cross-Sectional Studies, Attention, Policy.

## INTRODUCTION

Adolescence is a significant period in the life of a woman. They are the formative years when a maximum amount of physical, psychological and behavioral changes take place. The world health organization (WHO) defines adolescent as individuals between 10 to 19 years of the age.<sup>[1]</sup> Menarche is not just a physiological process but it is a psychological, social and behavioral transition from adolescence to womanhood.<sup>[2]</sup> Although menarche is one part of the maturation process, it is often culturally defined as the indicator of a girl's maturity and readiness for marriage and sexual activity.<sup>[3]</sup> Menstruation is generally considered unclean in India. Social prohibitions, strong bondage with the taboos and traditional beliefs during menstruation, and hesitation of parents not discussing the

related issues openly to their adolescent daughters has blocked the way to get the right kind of information regarding menstrual hygiene.<sup>[4]</sup>

Menstrual hygiene and management is an insufficiently acknowledged issue and has not received adequate attention. The lack of menstrual hygiene among rural population is alarming, and there is an immediate need for policy-making and awareness programs to be initiated.<sup>[5]</sup> Insufficient, incorrect information regarding menstruation is often a

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cause of unnecessary restrictions in the normal activities of menstruating girls creating various psychological issues. Besides the lack of knowledge and awareness also lead to some poor personal hygienic practices during menstruation leading to many reproductive tract infections.<sup>[6]</sup> Many studies have indicated that there are vast disparities of this information gap between urban and rural adolescent girls, which do have impact on the practices during menstruation.<sup>[7]</sup> Menstrual hygiene depends upon the educational, socioeconomic and cultural status of the family, school curriculum also have some role in menstrual health.<sup>[8]</sup> Unfortunately, the situation worsens for girls due to lack of knowledge on menstruation preparedness and management or shyness and embarrassment.<sup>[9]</sup>

Menstrual Hygiene Management (MHM) is defined as 'women and adolescent girls using a clean menstrual management material to absorb or collect blood that can be changed in privacy as often as necessary for the duration of the menstruation period, using soap and water for washing the body as required, and having access to facilities to dispose of used menstrual management materials'.<sup>[10]</sup>

## AIM AND OBJECTIVE

This study was conducted among adolescent girls of rural and urban areas regarding their awareness related with menstruation and menstrual hygiene practices to prevent infections.

## MATERIAL AND METHODS

A community-based cross-sectional study was carried out among 250 adolescent girls (122 rural & 128 urban) between 13 to 19 years of age residing in the field practice area of the Department of Community Medicine of IIMSR Medical College, Badnapur, dist. Jalna, Maharashtra, India. This study was carried out in 3 months from 01st September to 30th November 2021 using a convenient sampling method technique. Ethical committee's approval was taken. Data was collected by house-to-house survey in the community and participants were interviewed by using a pre-designed, pre-tested questionnaire regarding menstrual hygiene management. The questionnaire consisted of socio-demographic details about menarche and menstrual cycle, information regarding menstruation, menstrual hygiene practices and the restrictions on their routine activities during menstruation.

Assent of the participant was obtained and written informed consent of their parent or guardian was also taken before interviews were initiated. All the participants were assured that confidentiality will be maintained. At the end of the interview, the participants were educated about facts of menstruation and explained about cleanliness during menses. Data was analyzed for descriptive statistics by frequency & percentages. The chi-square test was applied for statistical significance. The confidence interval was taken as 95% and level of significance taken as  $p < 0.05$ . Statistical analysis was carried by Microsoft Excel 2010.

## RESULTS

Table 1 depicts that out of 250 study participants, 122 (48.8%) were from rural area and 128 (51.2%) were from urban area, majority of the study participant were between the age of 15 to 18 years 78 (63.93%) and 73 (57.03%) from rural and urban area respectively. The mean age of the participants was  $15.91 \pm 1.9$  and  $15.85 \pm 2.03$  in rural and urban areas, respectively. Among the study participants of rural area 60 (49.18%) were Hindus, 55 (45.08%) were Muslims 7 (5.73%) were Christians and among the study participants from urban area 61 (47.65%) were Hindus, 62 (48.49%) were Muslims and 5 (3.9%) were Christians. Regarding participants, the maximum number were studying in 8<sup>th</sup> class, 48 (39.35%) and 51 (39.84%) from rural and urban areas, respectively. Only 4.9% of the fathers and 1.62% of mothers of the participants from rural school were graduates, while in urban school 11.7% of fathers and 7.8% of mothers respondents were graduates. Regarding the socioeconomic status of study participants, the majority belong to lower class 76 (62.29%) and 61 (47.65%) from rural and urban areas, respectively. Majority 85 (69.68%) of the study participants from rural areas lived in joint family; in urban areas, 90 (70.31%) of the study participants lived in a nuclear family. Age in years, socioeconomic status & type of family were found to be statistically significant i.e.  $p$ -value  $< 0.05$ .

Table 2 shows that age of menarche was 12 to 13 years in majority 64 (52.45%) and 68 (53.13%) of the participants in rural and urban areas, respectively. The mean age of the menarche was  $12.3 \pm 1.4$  and  $12.34 \pm 1.43$  in rural and urban participants. Also majority 82 (67.21%) and 81 (63.28%) participants had regular menstrual cycles from rural and urban areas, respectively. Regarding the amount of flow, 70 (57.38%) participants from rural areas and 79 (61.72%) participants from urban areas had moderate flow. Dysmenorrhea was the complaint in more than half 66 (54.10%) and 68 (53.13%) participants of rural and urban area, respectively.

As Table 3 shows that 72 (59.01%) rural participants has knowledge about menstruation prior to menarche, and it was less as compared to 99 (77.34%) urban participants, and the difference was statistically significant ( $p < 0.001$ ). The main source of information about menarche and menstruation to the participants were their mothers 168 (67.2%) followed by sister 46 (18.4%) while friends and media accounted for the remaining cases in both rural and urban participants and this difference was also statistically significant ( $p < 0.034$ ). Only a few participants know where bleeding starts 28 (22.95%) and 41 (32.03%) from rural and urban areas, respectively. Awareness of the menstrual process as normal physiological process was more in urban participants 94 (73.44%) as compared rural participants 82 (67.22%), but it was not statistically significant ( $p > 0.05$ ). Menstrual process as a disease was reported by 28 (22.95%) and 24 (18.75%) urban and rural girls respectively. The reaction of the experience of menarche to first menstruation was normal in the majority 68 (55.73%) and 79 (61.81%) study participants from rural and urban areas, respectively.

**Table 1:** Socio-demographic characteristics of the study population

Demographic characteristics	Rural (n=122)		Urban (n=128)		p-value
	No.	Percentage	No.	Percentage	
Age (in yrs)	32	26.22	40	31.25	0.007
13-14	38	31.15	34	26.56	
15-16	40	32.79	39	30.46	
17-18	12	09.83	15	11.71	
19 & above					
Religion	60	49.18	61		0.734
Hindu	55	45.08	62	47.65	
Muslim	07	05.73	05	48.49	
Christian				03.90	
Education of participants					
8 <sup>th</sup> Std	48	39.35	51	39.84	0.679
9 <sup>th</sup> Std	36	29.50	32	25.00	
10 <sup>th</sup> & above	38	31.15	45	35.15	
Father's Education					
Illiterate	08	6.56	09	7.03	0.260
Primary school	58	47.57	53	41.40	
High school	50	40.98	51	39.84	
Graduate & above	06	4.91	15	11.71	
Mother's Education					
Illiterate	06	4.91	05	03.90	0.144
Primary school	54	44.26	56	43.75	
High school	60	49.18	57	44.53	
Graduate & above	02	1.62	10	07.82	
Socio-economic Status					
Class I	04	03.28	08	06.25	0.027
Class II	20	16.39	23	17.7	
Class III	22	18.04	36	28.13	
Class IV	40	32.79	43	33.59	
Class V	36	29.50	18	14.06	
Type of Family					
Nuclear	30	24.59	90	70.31	0.001
Joint	85	69.68	30	23.43	
Three generation	07	05.73	08	06.25	

**Table 2:** Distribution of study participants based on details about menarche and menstrual cycle

Menstrual patterns	Rural (n=122)		Urban (n=128)	
	No.	Percentage	No.	Percentage
Age at menarche				
10-11 yrs	18	14.76	34	26.56
12-13 yrs	64	52.45	68	53.13
14-15 yrs	40	32.79	26	20.31
Regularity of menses				
Regular	82	67.21	81	63.28
Irregular	40	32.79	47	36.71
Amount of Flow				
Scanty	26	21.31	20	15.63
Moderate	70	57.38	79	61.72
Heavy	26	21.31	29	22.65
Dysmenorrhea				
Yes	66	54.10	68	53.13
No	56	45.90	60	46.87

As Table 4 depicts menstrual hygiene practices during menstruation among study participants, 60 (49.18%) rural and 80 (62.5%) urban participants were using sanitary pads and it was not found to be statistically significant ( $p > 0.05$ ). Frequency of changing absorbent was less 41 (33.6%) in rural as compared to 90 (70.31%) urban participants and this difference was statistically significant ( $p < 0.001$ ). Majority 95 (77.86%) rural participants disposed of their used adsorbent by burning/buried it, 12 (9.84%) washed and reuse and 08 (6.55%) threw it in dust bin and only 07 (5.74%) flushed it in toilet. In the urban area, 72 (56.25%) participants disposed of their used adsorbent by burning/burying it. In comparison, 39 (63.046%) threw in dust bin, 09 (7.03%) were flushing it in toilet and only 08 (6.25%) washed and reuse it & this was statistically significant ( $p < 0.001$ ) It was reported that 101 (82.75%) rural participants cleaned their external genitalia more than three times a day while 117 (91.40%) urban participants did it. This difference was also statistically significant ( $p < 0.001$ ). Related

**Table 3:** Distribution of study participants on the basis of information/knowledge regarding menstruation

	Rural (n=122)		Urban (n=128)		p-value
	No.	Percentage	No.	Percentage	
Knowledge about menstruation prior to menarche]					
Yes	72	59.01	99	77.34	< 0.001
No	50	40.99	29	22.66	
Source of information regarding menstruation					
Mother	88	72.13	80	62.5	0.034
Sister	21	17.22	25	19.53	
Friend	08	06.55	05	03.90	
Media	05	04.09	18	14.06	
Organ from where bleeding starts					
Know	28	22.95	41	32.03	0.108
Don't know	94	77.05	87	67.97	
Awareness of menstrual process					
Physiological	82	67.22	94	73.44	0.558
Disease	28	22.95	24	18.75	
Don't know	12	09.83	10	07.81	
Experience of menarche					
Normal	68	55.73	79	61.71	0.622
Depressive	30	24.59	28	21.88	
Shocking	24	19.67	21	16.41	

to hand washing majority of participant 90 (73.77%) and 32 (26.22%) were using soap and water from rural and urban areas, respectively. Regarding the toilet facility at house 89.84% urban and only 49.18% rural participant had it; the difference was statistically significant ( $p < 0.001$ ).

As Table 5 shows that the restriction during menstruation, 58 (47.54%) of rural and 38 (29.69%) of urban participants sit and sleep separately and this difference was statistically significant ( $p < 0.05$ ), while 40 (32.78%) of rural and 37 (28.91%) urban participants were not allowed to enter in the kitchen, 58 (47.55%) of rural and 60 (45.87%) of urban participants were not attending religious activity. In the rural area 102 (83.61%) of participants while in the urban area 93 (72.66%) were not attending their school during menstruation and this difference was statistically significant ( $p < 0.005$ ). Regarding social parameters i.e. mingling with friends 62 (50.81%) rural participants and 61 (47.66%) urban participants were not mingling with friends during the period of menstruation.

## DISCUSSION

The present study assessed the status of menstrual hygiene and compared it among rural and urban adolescent girls. This study shows that out of 250 study participants, 171 (68.4%) participants were aware of menstruation before menarche of which 72 (59.01%) were rural and 99 (77.34%) were urban. This study's findings almost corroborated with a similar study conducted by Senapathi *et al.*<sup>[11]</sup> in which 69.67% of respondents were aware about menstruation before attending their menarche. In this study mother was the first informant and the main source of information about menstruation in

88 (72.13%) rural and 80 (62.50%) urban participants. Other sources of information were sister for 21 (17.22%) rural and 25 (19.53%) urban participants, friends and media accounted for remaining participants. Study done by Patle R *et al.*<sup>[12]</sup> supported the present study's findings where mothers were the first informants for 71.33% of the participants. In a similar study done in rural by Hema Priya S *et al.*<sup>[4]</sup> reported that mother was the major 32.1% source of information, followed by friends and sister in 24.7 and 23.9%, respectively. This study observed that 82 (67.22%) rural and 94 (73.44%) urban participants believed menstruation as a normal. Similar findings were reported by Senapathi *et al.*<sup>[11]</sup> In a study by Paria *et al.*, 67.42% rural and 72.32% urban girls considered menstruation as a normal physiological process.<sup>[8]</sup> only 18.42% rural and 22.18% urban girls believed cause of menstruation is physiological.

This study observed that 60 (49.18%) rural participants and 80 (62.50%) urban participants were using sanitary pads. Similar findings were reported by Seenapathi *et al.*<sup>[11]</sup> in 49.24% rural and 65.17% urban girls. In another similar study by Paria *et al.*<sup>[8]</sup> found 64% girls in urban area and 45.11% girls in rural area use sanitary pads. Patle *et al.*<sup>[12]</sup> shows in their study that the use of sanitary pad was higher among girls in urban schools 50% in comparison to rural 19%. Nair *et al.*<sup>[1]</sup> 74.8% of the girls used homemade sanitary pads and 24% used ready-made ones. So in this study, sanitary pads were used more among urban participants than rural participants. The more availability of sanitary pads in urban areas might be the reason for this finding and in rural areas less access to sanitary pads and poverty and to some extent ignorance also ignorance might be an obstacle for using sanitary pads. This

**Table 4:** Distribution of study participants based on menstrual hygiene practices

	Rural (n=122)		Urban (n=128)		p-value
	No.	Percentage	No.	Percentage	
Type of absorbent used during menstruation					
Old cloth					
New cloth	12	09.83	08	06.25	0.098
Sanitary pads	50	40.98	40	31.25	
	60	49.18	80	62.50	
Frequency of changing absorbent					
4-6 hrs	23	18.85	33	25.78	< 0.001
6-8 hrs	18	14.75	57	44.53	
8-10 hrs	70	57.37	30	23.44	
>10 hrs	11	09.01	08	06.25	
Disposal of used absorbent					
Thrown in the dust bin	08	06.55	39	30.46	< 0.001
Washed and reuse	12	09.84	08	06.25	
Burned/buried	95	77.86	72	56.25	
Flushed in toilet	07	05.74	09	07.03	
Cleansing of external genital					
Frequent (> 3 times)	101	82.78	117	91.40	0.041
Infrequent (< 3 times)	21	07.22	11	08.60	
Hand washing practices					
With water only	32	26.22	21	16.40	0.057
With Soap/Dettol and water	90	73.77	107	83.60	
Toilet facility at home					
Yes	60	49.18	115	89.84	< 0.001
No	62	50.81	13	10.15	

study observed that the majority 70 (57.37%) rural participants change their absorbent after 8 to 10 hours while in the urban area majority 57 (44.53%) girls change their absorbent after 6-8 hours. Similar findings was observed by Senapathi *et al.*<sup>[11]</sup> for rural girls 56.06% but in their study for urban girls majority (45.53%) girls change their absorbent after 4 to 6 hours. Related to cleaning of external genitalia 101 (82.78%) rural and 117 (91.4%) urban participants were cleaning more than three times a day which was satisfactory. A study by Choudhary *et al.* found almost similar findings for urban girls.<sup>[7]</sup> Where 89.4% urban girls had satisfactory cleaning of genitals and for rural girls it was 60.9% which was lesser than present study. In a similar study by Abu Tal Ha<sup>[13]</sup> reported 49% changed their menstrual absorbent, and 44% washed their genitalia three times a day.

Menstrual hygienic practices in the present study among rural and urban participants (49.18 and 62.5%) were using sanitary pads (33.60 and 70.31%) were changing pads more frequently, (82.78 and 91.4%) satisfactorily cleaning their external genitalia and (73.77 and 81.6%) were washing their hands with soap and water after cleaning, so in this study found that hygienic practices are more satisfactory in the urban area as compared to rural participants. It was also found in the study done by Patle R *et al.*<sup>[12]</sup> that hygienic practices are more satisfactory in the urban area 62.03% as compared to the rural 43.40%. In this study majority of urban participants, 89.84% had toilet facilities in their houses while only 49.18% rural participants had this facility in their houses. Paria *et al.*<sup>[8]</sup> in their study reported 83.63% urban and 56.39% rural

adolescent girls had separate toilet facilities, Senapathi *et al.*<sup>[11]</sup> reported 87.50% urban and 40.15% rural girls had toilet facilities at their homes.

This study revealed different types of restrictions practiced during menstruation 58 (47.54%) rural and 38 (29.69%) urban participants sit and sleep separately, 40 (37.78%) rural and 37 (28.91%) urban participants were not allowed to enter in the kitchen, 58 (47.57%) rural and 60 (46.87%) urban participants were not attending religious activity. In the rural area 102 (83.61%) participants while in the urban area 93 (72.66%) were not attending their school during menstruation, 62 (50.81%) and 61 (47.66%) participants were not mingling with friends in rural and urban area, respectively. The difference on restrictions between rural and urban girls sit/sleep separately (47.54 and 29.69%), no entry in kitchen (37.78 and 28.9%), no religious activities (47.54 and 46.87%), not attending school (83.61 and 72.66%) and no mingling with friends (50.81 and 47.66%), restrictions were looking more in rural areas as compared to urban area but this difference was found to be significant for sit/sleep separately and not attending school ( $p < 0.05$ ). In a similar study be, Senapathi *et al.*<sup>[11]</sup> observed (96.21%) and (83.92%) of urban school girls not allowed to attend religious functions other restrictions included playing outdoor (85.60 and 41.96%), attending school (15.15 and 5.35%) and helping mothers in kitchen (65.15 and 23.21%) rural and urban girls respectively. Dasgupta *et al.*<sup>[14]</sup> found that 85% girls practiced different restrictions during menstruation, 70.59% girls did not attend any religious occasion, 65% girls

**Table 5:** Distribution of study participants based on the restrictions on their routine activities practiced during menstruation

Restrictions practiced during menstruation	Rural (n=122)		Urban (n=128)		p-value
	No	Percentage	No	Percentage	
Sit/Sleep separately					0.003
Yes	58	47.54	38	29.69	
No	64	52.54	90	70.31	
Entry in the kitchen					0.506
Yes	82	67.22	91	71.09	
No	40	32.78	37	28.91	
Religious activity					0.916
Yes	64	52.45	68	54.13	
No	58	47.55	60	45.87	
Go to school					0.036
Yes	20	16.39	35	27.34	
No	102	83.61	93	72.66	
Mingling with friends					0.617
Yes	60	49.18	67	52.34	
No	62	50.81	61	47.66	

did not play, 33.82% girls did not perform any household work, 16.18% girls did not attend school and 10.29% girls did not attend any marriage ceremony during the menstrual period.

## CONCLUSION

The present study brings out the overall status of menstrual hygiene management (MHM) among adolescent girls of rural and urban areas. Awareness regarding menarche and menstruation was more among urban girls than rural girls and hygienic practices were also more satisfactory in the urban area than rural ones. So there is a need of health education about proper hygienic practices as well as the provision of pads, accessibility and separate toilet facility in rural areas and also there is need to bring them out of misconceptions, traditional beliefs and restrictions related to menstruation.

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## CONFLICTS OF INTEREST

Nil

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