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Menstrual Hygiene Management among Young Unmarried Women in India

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Abstract

Menstruation among women is an integral part and a natural process that starts with menarche and stops at menopause. Women use sanitary pad, clothes and other methods to prevent blood stains from becoming evident. This paper examines the prevalence and discrepancies in the use of hygienic method during menstruation among unmarried women in India using nationally representative District Level Household and Facility Survey data (2007-08). The findings suggest that only one-third of the studied population used hygienic method during menstruation. Rural-urban and poor-non poor disparity persists across all background characteristics in use of hygienic method. Women with high school and above education (OR=8.8, p<0.001), from richest wealth quintile (OR=5.2, p<0.001) and women following Christian religion (OR=3.6, p<0.001) are more likely to use hygienic method as compared with women with no education, poor household and Hindu women respectively. Locally prepared low cost sanitary pads can be promoted across the country for easy accessibility and affordability. Effort should be made to produce them in bulk and supply them through female health workers such as ANM and Anganwadi worker across the country.

Key words: Menstrual Hygiene, Sanitary Pad, Unmarried Women, India

I. Introduction

The onset of menstruation is one of the most important physiological changes that occurs among girls after attainment of puberty. Except during the time of pregnancy, menstruation continues from puberty till menopause. A normal menstrual period occurs every 28 days and lasts for about three to seven days. On an average, a woman is likely to experience nearly 1800 days of her life menstruating. In other words, a woman approximately spends five years of her life menstruating.

Menstruation in Indian society is seen as an unhygienic, dirty and impure phenomenon (Singh, 2006; Kumar & Srivastava, 2011; Dhingra et al., 2009; Arora et al., 2013). There are certain restrictions and taboos imposed on women during the time of menstruation. They are not allowed to enter the kitchen, touch anybody or anything and are not permitted to enter a temple. (Kumar & Srivastava, 2011; Puri & Kapoor, 2006; Shah et al., 2013; Thakur et al., 2014). Although nowadays the situation has been changing among educated and urban resident women, most parts of rural India uphold such practices. Not only do the socio-cultural norms force women to adhere to such practices, often they themselves have been silent and feel ashamed about discussing menstrual hygiene management. They feel reluctant to enter the temple, considering themselves as impure (Kumar & Srivastava, 2011).

Menstrual hygiene management is a neglected issue in India and in other developing nations. Many girls drop out from school due to limited access and inability to purchase sanitary napkins, lack of toilets and water facility in the school premises (Garg et al., 2012). Most of them are forced to leave studies once they start menstruating. As per Census of 2011, women in the age group of 15-24 years constitute more than 9 per cent of the total population of India. The aggregate

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number of women in this age group is more than 110 million that equals five times the population of Australian continent alone. Yet the monthly menstrual need of such a huge population has been grossly neglected. The national health programme of India has failed to adequately showcase the need of menstrual hygiene management as an important area of concern.

There is a lack of evidence to bring forth the issue of unhygienic method and its ill effect from nationally representative data. A few micro level studies have focused on menstrual practices among school going girls (Acharya et al., 2006; Adika, 2013; Ali & Rizvi, 2010; Lawan et al., 2010). They have reported the prevalence of hygienic method between 10 to 30 per cent in India. Some studies have also been carried out on the prevalent cultural practices during menstruation (Kumar & Srivastava, 2011; Dhingra et al.,2009). However, a study of unmarried women from nationally representative data is made possible due to the availability of data from the third round of District Level Household and Facility Survey.

This paper analyses the prevalent use of hygienic and unhygienic methods during menstruation by different background characteristics. Some of the important covariates which predict the use of hygienic methods are highlighted. Analyses have also been carried out to describe the disparities in use of hygienic method among urban and rural women, as well as among poor and non-poor women. The study has the following twofold objectives: (a) To examine the present use of sanitary napkins and other methods during menstruation among unmarried women in India by their background characteristics, and (b) To study the rural-urban and poor-non poor disparity in the use of hygienic method among unmarried women.

II. Data and methods

This paper used the third round of District Level Household and Facility Survey (DLHS-3) data. DLHS-3 was conducted during 2007-08. This national level survey collected information from 7, 20,320 households from 28 states and six union territories of India. Unmarried women in the age group of 15-24 years are considered in the analysis. The sample consists of unmarried women who have ever menstruated (N=163530) from all over India. Appropriate sampling weights have been used in the analyses to adjust the non-response and multi-stage stratified sampling design effect of the survey.

Outcome variable

Women use different methods during menstruation to prevent bloodstains from becoming evident. A multiple response questionnaire was administered to the respondents to know the use of methods to prevent blood stains during menstruation. The responses include- whether they used cloth, sanitary napkins, locally prepared pads, nothing and others. All these methods were classified into two categories, i.e., hygienic and unhygienic. Hygienic method includes those women who used only sanitary napkins and locally prepared napkins. All other methods used such as cloth, any other method and those who used nothing were categorized to have used unhygienic method.

Predictor variables

The predictor variables used in the analysis are age of the respondent in the two categories (15-19 and 20-24), educational status includes no education, primary (1-5 years of schooling), secondary (6-9 years of schooling) and higher (10 and above), place of residence (rural, urban), religion (Hindu, Muslim, Sikh, Christian and others), wealth quintile (Poorest, Poorer, Middle, Rich, Richest), caste group (SC, ST, No tribe and Others), working status in last 12 months, type of toilet (flush, pit/dry, open and others) , any menstrual problem in last three months, family life education received, and awareness about RTI/STI.

In the tri-variate analysis poor and non-poor category was created from the wealth quintile. Poorest and poor women were merged to form poor category and middle, rich and richest quintile were merged to form non-poor category. The wealth quintile is an index of the economic status of a household. This index was constructed using household asset information and housing characteristics. Each household is assigned a weight generated through PCA (Principal Component Analysis). The sample is divided into quintiles, i.e., five different groups with an equal representation of individuals in each (IIPS, 2010).

Statistical measures

Bivariate analysis is used to explain the prevalence of use of hygienic methods, i.e., sanitary/locally prepared napkins by various economic and socio-demographic characteristics. Tri-variate analysis is used to examine the differentials between rural-urban as well as poor and non-poor women who use hygienic methods. Individual effects of socio economic and demographic factors on menstrual hygienic practices are measured using binary logistic regression. Logistic regression determines the impact of multiple independent variables presented simultaneously to predict membership of one or other of the two dependent variable categories. The logits (log odds) are the odd ratios (the slope values) of the regression equation. Odds ratios are used to interpret the effects of the explanatory variables for each of the outcome variable. Odds greater than one indicate an increased probability, while those less than one indicate a lower probability. The 95 per cent confidence interval (CI) for the odds ratio (OR) is also presented to ascertain the precision of the estimates. The data are analyzed using IBM SPSS 20. A few missing cases are excluded in the analysis. The missing case consists of 27 cases in the wealth index, three cases in toilet facility, five cases about family life education and 23 cases in menstrual problem in the last three months.

III. Background information of respondents

Information on the use of various methods to manage menstrual hygiene was collected from 163530 unmarried women in the age group of 15 to 24 years. Table 1 provides background information of the respondents. Three-fourths of them were in the age group of 15-19 years and the remaining quarter of them in the age group of 20-24 years. A majority of the respondents had education level above high school (42 per cent). Less than 10 per cent of them were illiterate. Most of the studied population was from rural area (73 per cent). More than 60 per cent of them were Hindus. The socio-economic characteristics of the respondents reveal that11 per cent of them were from poor category and 15 per cent from second wealth quintile. The proportion of respondents in remaining three wealth quintile categories ranges between 20 and 30 per cent. Tribal women constitute a majority of respondents (20 per cent) as per their population share in the overall population. As per the Census, less than 10 per cent of the total population of India is composed of tribes but in the studied population around20 per cent are tribes.

Three-fourths of the respondents did not work in the last 12 months, indicating many of them would be still studying and hence are not employed. Type of toilet facilities available at the residence of women can determine the use of hygienic or unhygienic methods during menstruation. Nearly half of the respondents did not have toilet facility or used open space and 40 per cent of them had flush toilets. Three-fourths of the respondent received family life education and the rest had not received it. Around a quarter of these women had one or the other kinds of menstrual problem in the last three months. On asking about awareness of RTI/STI, only 31 per cent of them were found to be aware of RTI/STI.

Table 1: Percentage distribution of respondents by selected background characteristics in India, 2007-08, DLHS III

Background characteristics	Percentage	Number
Age group (years)		
15-19	74.6	121930
20-24	25.4	41600
Education		
No education	9.4	15426
Primary	11.9	19415
Secondary	37.1	60737
High School & above	41.6	67952
Place of residence		
Rural	72.9	119155
Urban	27.1	44375
Religion		
Hindu	69.4	113431
Muslim	14.5	23686
Christian	8	13039
Sikh	3.5	5663
Others	4.7	7711
Wealth quintile		
Poorest	11	17969
Second	14.8	24156
Middle	20.5	33446
Fourth	25.5	41713
Richest	28.3	46219
Caste		
Scheduled caste	16.1	26394
Scheduled tribe	19.9	32572
No caste/tribe	34.4	56260
None of them/others	27.6	45074
Worked in last 12 months		
Yes	75.3	123154
No	24.7	40376
Type of toilet		
Flush	40	65420
Pit/Dry	14.6	23827
No facility/Open space	44.8	73234
Others	0.6	1046
Received Family Life Education		
Yes	72.1	117859
No	27.9	45666
Any menstrual problem in last 3 months		
Yes	22.5	126721
No	77.5	36786
Aware about RTI/STI		
Yes	31.4	51299
No	68.6	112231
Total	**100.0**	**163530**

IV. Results

Use of hygienic method

The percentage distribution of use of hygienic method by various background characteristics is shown in Table 2. A little more than one-third of unmarried women used hygienic method during menstruation. The use of hygienic methods during menstruation was lower among unmarried women in age group of 15-19 years as compared with women in the age group of 20-24 years. As the level of education improved, the use of hygienic methods also increased. Less than five per cent women without any education used hygienic methods to prevent blood stains from becoming evident during menstruation. On the other hand, more than half of the women with high school level or above education used hygienic method. The urban-rural disparity is palpable, only a quarter of women from rural area used hygienic method compared with 52 per cent women from urban area. Use of hygienic method by religion of the women shows that Muslim have the lowest usage (29 per cent) of hygienic method. On the other hand, more than 60per cent of Christian women, 50 per cent of Sikh women and 35 per cent of Hindu women used the hygienic method. Economic status of the household of the women turns out to be a dominant factor in the use of hygienic method. Less than 10 per cent of girls in the poorest and poor category women used hygienic method compared with 64 per cent among the richest and 33 per cent among rich women. Use of hygienic method is higher among other caste women (47 per cent), followed by Scheduled Tribe women (41 per cent). Women from Scheduled Castes and Other Backward Castes (no caste/tribe) are less likely to use hygienic method during menstruation. Women who worked in the last 12 months are less likely to use hygienic method as compared with those who did not work.

Toilet facility at home is very essential for women to ensure privacy in changing sanitary pads. Results show that those who do not have toilet facility rarely use (only 12 per cent) hygienic methods as compared with those who have toilets (55 per cent). Use of hygienic method is higher among those who have received family life education. Similarly, more women who were aware about RTI/STI used hygienic method as compared with those who were not aware about RTI/STI. The use of hygienic method during menstruation is highly skewed by place of residence as well as wealth index of the household. Therefore, we carried out tri-variate analysis to describe the urban-rural and poor-non poor nuances in the use of hygienic method during menstruation.

Urban-rural differentials in use of hygienic methods

Table 3 shows urban-rural differentials in the use of hygienic methods. Only a quarter of women residing in rural area used hygienic method during menstruation, whereas more than half of urban women used it. The use of hygienic method is invariably higher among the urban women across socio-economic characteristics. Urban-rural differential in the use of hygienic method is the highest among women from Christian and Sikh religions (35 per cent point difference). Similarly, the use of hygienic method is substantially higher among women from Scheduled Tribe category. However, the use of hygienic method by wealth quintile between rural and urban women shows not much difference as like other background characteristics. Except from the women in the richest quintile household, the use of hygienic method among all other income groups follow more or less similar pattern in urban and rural areas. Women from rural area who did not work in last 12 months are less likely to use hygienic method as compared to women who worked in urban area. The gap between working women and non-working women from rural and urban area is more than 25 percentage point. Discrepancies between rural and urban women persist by the type of toilet they use, whether they received family life education or they were aware about RTI/STI. Higher differentials between women from rural and urban areas were observed among those who did not receive family education and those who were not aware of RTI/STI. Women from urban area are more likely to use hygienic method as compared with women from rural area invariably across different background characteristics.

Table 2: Use of hygienic or unhygienic method by socio-economic characteristics among unmarried women in India, 2007-08 (DLHS-III)

Background characteristics	Hygienic Methods (%)	Number
Age (years)* **		
15-19	32.2	121930
20-24	51.1	41600
Education* **		
No education	4.3	15426
Primary	10.0	19415
Secondary	26.6	60737
High School & above	57.8	67952
Place of residence* **		
Rural	24.7	119155
Urban	52.4	44375
Religion* **		
Hindu	34.7	113431
Muslim	28.8	23686
Christian	60.5	13039
Sikh	50.4	5663
Others	59.8	7711
Wealth quintile* **		
Poorest	8.8	17969
Poor	11.2	24156
Middle	18.2	33446
Rich	32.7	41713
Richest	64.3	46219
Caste* **		
Scheduled caste	28.9	26394
Scheduled tribe	41.3	32572
No caste/tribe	31.0	56260
None of them/others	47.0	45074
Worked in last 12 months* **		
Yes	24.0	40376
No	41.1	123154
Type of toilet* **		
Flush	55.5	65420
Pit/Dry	39.3	23827
No facility/Open space	12.1	73234
Others	41.1	1046
Any menstrual problem in last 3 months* **		
No	37.8	126721
Yes	35.2	36786
Received family life education* **		
Yes	43.3	117859
No	20.4	45666
Aware about RTI/STI* **		
Yes	52.1	51299
No	29.8	112231
Total	**37.2**	**163530**

*Note: *** The Chi-square statistic is significant at the p < 0.001 level.*

Table 3: Urban-rural differentials in use of hygienic methods among unmarried women in India, 2007-08, DLHS III

Background characteristics	Rural		Urban	
	Per cent	Number	Per cent	Number
Age (years)				
15-19	20.9	91799	47.1	30131
20-24	36.7	27356	64.2	14244
Education				
No Education	2.9	13303	7.5	2123
Primary	8.0	16404	14.4	3011
Secondary	19.5	47828	38.5	12909
High School & Above	43.5	41620	68.3	26332
Religion				
Hindu	19.2	83886	53.9	29545
Muslim	18.9	14599	35.5	9087
Christian	48.7	9954	83.5	3085
Sikh	38.3	4379	73.1	1284
Other	55.6	6337	71.5	1374
Wealth quintile				
Poorest	9.0	17507	5.2	462
Poor	11.3	22719	10.1	1437
Middle	18.0	29580	19.2	3866
Rich	31.6	31061	34.3	10652
Richest	54.6	18270	67.2	27949
Caste				
Scheduled castes	17.0	19758	44.9	6636
Scheduled tribes	33.1	28000	69.3	4572
No caste/tribe	18.3	39408	43.2	16852
None of them/others	29.5	29609	62.2	15465
Worked in last 12 months				
Yes	28.1	86246	54.8	36908
No	15.6	32909	40.7	7467
Types of toilets				
Flush	44.2	31898	60.4	33522
Pit/Dry	37.5	20186	44.4	3641
No facility/Open space	10.8	66630	17.8	6604
Others	29.7	440	45.6	606
Received family life education				
Yes	29.7	82834	57.9	35025
No	13.1	36318	32.7	9348
Any menstrual problem				
No	24.9	91962	53.2	34759
Yes	23.9	27175	49.5	9611
Aware about RTI/STI				
Yes	38.0	33836	64.5	17463
No	19.3	85319	44.6	26912
Total	24.7	119155	52.4	44375

Note: *The Chi-square statistic is significant at the p <0.001 level for all the selected independent variables.*

Table 4: Differentials in use of hygienic methods by poor and Non-Poor unmarried women in India, 2007-08, DLHS III

Background characteristics	Poor		Non-Poor	
	Per cent	Number	Per cent	Number
Age (years)				
15-19	8.3	35079	39.3	86830
20-24	19.4	7046	55.7	34548
Education				
No education	1.5	9442	7.4	5983
Primary	4.2	9526	14.3	9883
Secondary	11.3	17018	31.3	43715
High School & above	29.0	6139	59.9	61797
Place of residence				
Rural	10.3	40226	31.8	78911
Urban	8.8	1899	54.5	42467
Religion				
Hindu	5.1	30948	42.8	82459
Muslim	4.0	4774	33.0	18909
Christian	33.3	3674	69.3	9365
Sikh	11.7	94	51.0	5569
Others	45.1	2635	66.5	5076
Caste				
Scheduled castes	5.6	7844	36.2	18542
Scheduled tribes	19.0	14005	55.4	18561
No caste/tribe	4.6	13574	36.9	42677
None of them/others	7.8	5752	51.1	39318
Worked in last 12 months				
Yes	13.2	26997	46.8	96137
No	4.7	15128	32.9	25241
Types of toilets				
Flush	25.1	1414	56.0	63998
Pit/Dry	35.3	5687	40.4	18139
No facility/Open space	5.1	34864	17.9	38354
Others	26.5	160	43.0	885
Received family life education				
Yes	12.7	24114	49.0	93726
No	6.8	18011	27.0	27647
Any menstrual problem				
No	10.6	32897	44.8	93803
Yes	8.8	9226	41.7	27554
Aware about RTI/STI				
Yes	17.6	7708	56.5	43587
No	8.5	34417	36.8	77791
Total	10.2	42125	44.1	121378

Note: The Chi-square statistic is significant at the p<0.001 level for all the selected independent variables.

Table 5: Odds ratios for use of hygienic method by background characteristics of unmarried women in India, 2007-08, DLHS III

Background characteristics	Odds Ratio	Confidence Interval
Age(years)		
15-19®		
20-24	1.246***	1.21-1.283
Education		
No Education®		
Primary	1.792***	1.613-1.992
Secondary	3.902***	3.552-4.286
High School & Above	8.809***	8.016-9.68
Place of residence		
Rural®		
Urban	1.78***	1.726-1.836
Religion		
Hindu®		
Muslim	0.834***	0.802-0.868
Christian	3.609***	3.414-3.816
Sikh	1.075*	1.008-1.146
Other	4.801***	4.5-5.122
Wealth quintile		
Poorest®		
Second	1.132**	1.048-1.222
Middle	1.605***	1.496-1.721
Fourth	2.532***	2.361-2.716
Richest	5.264***	4.882-5.676
Caste		
Scheduled castes®		
Scheduled tribes	1.422***	1.348-1.5
No caste/tribe	0.944**	0.905-0.984
None of them/others	1.212***	1.163-1.264
Worked in last 12 months		
Yes®		
No	0.779***	0.753-0.806
Types of toilets		
Flush®		
Pit/Dry	1.124***	1.08-1.17
No facility/Open space	0.507***	0.488-0.527
Others	0.813**	0.706-0.937
Any menstrual problem in last 3 months		
Yes®		
No	0.946***	0.918-0.976
Received family life education		
Yes®		
No	0.733***	0.708-0.758
Aware about RTI/STI		
Yes®		
No	0.637***	0.62-0.655

*Note: *** Significant at p<0.001, ** Significant at p<0.01, * Significant at p<0.05; R Square: 0.439*

Poor-non poor differentials in use of hygienic methods

Women from poor family are less likely to use hygienic methods as compared with non-poor women across selected background characteristics. Use of hygienic method is low among women in the age group of 15-19 years. However, this difference is very high (30 per cent point) between poor and non-poor. Similarly, percentage difference in the age group of 20-24 years is about 26 per cent point between poor and non-poor women. Differentials in use of hygienic method persisted across different levels of education as well as by poor and non-poor bifurcation. Nevertheless, higher differentials were observed among women with secondary level of education and with high school and above education. Less than 10 per cent rural as well as urban women used hygienic method who were categorized as poor. On the other hand, 32 and 54 per cent of non-poor women from rural and urban areas respectively used hygienic method during menstruation. More pronounced differentials were observed among women following Christian religion (36 per cent point), Scheduled Tribes (36 per cent point), women from higher caste (here none of them/other caste) (43 per cent point), women using flush toilet (26 per cent point) and women who received family life education as well as women who were aware about RTI/STI (nearly 35 per cent point each).

Odds ratios for use of hygienic method

The results of the binary logistic regression are presented in Table 5. The regression result indicates that education has a significant effect on the use of hygienic methods among unmarried women, i.e., increase in years of education leads to increase in the use of hygienic methods during menstruation. Women who are educated up to high school or above are eight times more likely to use sanitary method during menstruation than uneducated women (OR 8.809, 95 % CI 8.016-9.68). Higher odds are observed among Christian women and richest women with OR 3.6 and 5.2 respectively. All other predictors fitted in the model are statistically significant. The result also shows in a desired direction but the odds for better education, better economic status and Christian religion give high odds ratio value determining the important factors associated in use of hygienic method.

V. Discussion

The use of hygienic method among unmarried women in the age group of 15-24 years is very low. Only one-third of the studied population used hygienic method. This study found a disparity in the use of hygienic method between rural and urban (Ray et al., 2010; Thakre et al., 2012) as well as poor and non-poor women (Kulkarni & Chauhan, 2009). Accessibility and affordability are key issues that determine the use of hygienic practice (Dasgupta & Sarkar, 2008; Thakre et al., 2012; Ray & Dasgupta, 2012; Kulkarni & Chauhan, 2009). There is a huge gap in the utilization of sanitary pads/napkins among the poor and non-poor women (Kamath et al., 2013). Thus, poverty is one of the significant causes of non-use of sanitary products. Universalisation of sanitary pad use is possible only by making it available at affordable prices through social marketing.

Discussion of the issue of menstrual hygiene is done without the required comfort level (Kumar & Srivastava, 2011). In India, sanitary pads are sold in the chemist's shop and the departmental store. The urban population may have access to them from these outlets, but hardly any chemist's shop is found in rural area. Even if there is a shop, it turns out to be a shop of a relative in the village because in the Indian villages every person is known to another and people are considered to be relatives/neighbours. A woman feels shy to ask for a sanitary pad to a shopkeeper who is a relative. It is also noticed widely that even in urban area, the chemist's shopkeeper wraps sanitary pad packet in a piece of paper before handing it over to the customer. This shows a sense of discomfort to openly buy and sell sanitary pads in India.

The study underscores the effective and positive relationship of family life education of girls and use of hygienic method during menstruation. It can clear the cob webs of age old practices and beliefs of menstruation from the minds of women. They will feel free to intrude the cleaner and hygienic practices in their lives with the help of family life education. The acceptance of menstruation as a normal and natural process among them needs to be inculcated. This is reiterated from the finding that educated women are more likely to use hygienic method.

The study on menstrual practices of unmarried women in India is important in planning reproductive health issues of young girls. Some studies have already established the relationship between reproductive tract infections with unhygienic practices during menstruation (Mani, 2014; Acharya et al., 2006). Thus, emphasis must be given to promote hygienic practices among the girls from the onset of puberty to safeguard them from reproductive health morbidities.

VI. Conclusion

Unhygienic menstrual practice is a risk factor for many reproductive health morbidities. The traditional socio-cultural practices related to menstruation in India have made the women to follow unhygienic practices. On the other hand, household wealth status, place of residence, and affordability and accessibility of sanitary pad determines the use of hygienic method among the studied population. The distribution of sanitary pads with minimum charges can be done in the village health centres. It will immensely benefit the adolescent as well as women because access to a female outreach worker such as ANM or Anganwadi worker is much easier for a female. Disposal of menstrual waste can also affect the use of sanitary napkins at the village level. Thus, the proper waste management infrastructure is also the need of the hour.

Experiments have been carried out to produce low cost sanitary pads. A documentary movie titled ‘Menstrual Man’ based on a social entrepreneur has caught attention of many (http://www.menstrualman.com/). This person crossed all hurdles to be the man who produced low cost sanitary pad. Locally prepared, low cost sanitary pads can be promoted across the country. This will not only provide low cost item but also gainful employment to the women working in this industry. Effort should be made to produce such napkins in bulk and supply them through female health workers such as ANM and Anganwadi worker across the country.

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